ANA CAROLINA GLÓRIA SIMÃO

DETERMINANTS OF PSYCHOLOGICAL ADJUSTMENT IN INSTITUTIONALIZED ADOLESCENTS: THE ROLE OF INDIVIDUAL, SOCIAL, AND ENVIRONMENTAL FACTORS

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Trabalho efetuado sob a orientação de:

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UNIVERSIDADE DO ALGARVE

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2025

Determinants of psychological adjustment in institutionalized adolescents: the role of individual, social, and environmental factors

“Declaração de autoria de trabalho”

Declaro ser a autora deste trabalho, que é original e inédito. Autores e trabalhos consultados estão devidamente citados no texto e constam da listagem de referências incluída.

À minha família,

porque sempre vos tive.

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LIST OF ABBREVIATIONS

AIC	Akaike Information Criterion
ANOVA	Analysis of variance
BIC	Basic Information Criterion
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
df	Degrees of freedom
DT	Dark Triad
EFA	Exploratory Factor Analysis
ER	Emotional regulation
KMO	Kaiser-Meyer-Olkin
MANOVA	Multivariate analysis of variance
NASS	Need for activities related to social support
OoH	Out-of-Home
PRCI	Positive Residential Care Integration
RCS	Residential care settings
RMSEA	Root Mean Square Error of Approximation
ROC	Receiver Operating Curve
SD3	Short Dark Triad
SSS	Satisfaction with social support
SDQ	Strengths and Difficulties Questionnaire
TLI	Tucker-Lewis Index
VASQ	Vulnerable Attachment Style Questionnaire
WHO	World Health Organization

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[1] Research presented as an oral communication at the Portuguese Association of Addictology Conference (2025)

RESUMO

Relatórios internacionais indicam que Portugal é um dos países com mais crianças e jovens retirados às famílias. O acolhimento residencial é a medida de promoção e proteção mais aplicada, havendo milhares de jovens a viver afastados das suas famílias de origem. As consequências associadas ao acolhimento encontram-se bem documentadas na literatura, nomeadamente ao nível do desenvolvimento físico, cognitivo, prevalência de problemas mentais ou de relacionamento interpessoal. Estes jovens tendem a apresentar um desenvolvimento marcado por experiências de grande insegurança e ambivalência afetiva, exibindo com frequência estilos de vinculação inseguros ou desorganizados, níveis de desregulação emocional que comprometem a qualidade das suas relações interpessoais, e estratégias de enfrentamento desadaptativas. Simultaneamente, neste contexto o grupo de pares e a qualidade da relação com os novos cuidadores institucionais assume um papel de grande apoio emocional que permite mitigar alguns dos fatores de risco e promover um melhor ajustamento. O ajustamento psicológico destes jovens é multideterminado e diversos estudos analisaram o impacto de diferentes variáveis no desenvolvimento de problemas internalizantes (e.g., ansiedade, sintomatologia depressiva) e externalizantes (e.g., problemas de comportamento, hiperatividade). Este trabalho pretendeu investigar a influência de um vasto conjunto de variáveis (individuais, sociais e ambientais) no ajustamento psicológico de uma amostra ampla de jovens a viver em 46 instituições de acolhimento residencial de todo o país. Apresentamos os oito estudos desenvolvidos, começando com uma revisão sistemática da literatura que agrupou em quatro domínios o conjunto dos determinantes que a literatura dos últimos trinta anos aponta como sendo fatores que influenciam o ajustamento psicológico destes jovens. Para a realização dos sete estudos empíricos utilizaram-se escalas de autorrelato para recolher dados sobre o ajustamento psicológico dos jovens e simultaneamente triangular com a perceção dos seus cuidadores institucionais. Investigámos a influência das características da Tríade Negra da personalidade, dos estilos de vinculação, do apoio social que os jovens percebem ter disponível, das estratégias de enfrentamento mais utilizadas, e das competências de regulação emocional. Procedemos à adaptação e validação de uma escala para avaliar a perceção de integração dos jovens nas instituições, e de uma escala para avaliar os estilos de

vinculação enquanto fator de vulnerabilidade para o desenvolvimento de sintomatologia depressiva. Ambos os instrumentos apresentaram características psicométricas adequadas recomendando-se a sua utilização em contextos de acolhimento institucional. Os resultados dos restantes estudos empíricos apontam para a maior presença de traços da Tríade Negra nos rapazes comparativamente com as raparigas, havendo diferenças ao nível da idade. Os traços da Tríade Negra, em particular a psicopatia, revelaram-se fortes preditores do ajustamento psicológico, mas também da capacidade dos jovens para regular as suas emoções. A utilização de estratégias de enfrentamento de evitamento e um padrão de vinculação marcado por estilos inseguros são igualmente fortes preditores do desajustamento destes jovens. O apoio social assume uma relevância importante com a manutenção do contacto com as famílias biológicas a surgir como um fator de diferenciação. Os resultados obtidos permitiram criar perfis de ajustamento e os jovens foram agrupados em três grupos diferenciados, caracterizados ao nível sociodemográfico, dos comportamentos de risco e dos fatores que conferem maior vulnerabilidade, como por exemplo o motivo do acolhimento. Observaram-se ainda inconsistências entre a perceção dos jovens e dos seus cuidadores acerca das capacidades e dificuldades que apresentam, com maior discrepância no que se refere à presença de problemas internalizantes. Simultaneamente, os jovens percecionam-se como possuindo mais comportamentos pro-sociais. Terminamos com a reflexão sobre as implicações que os resultados obtidos podem ter na prática diária dos profissionais que trabalham com estes jovens, mas também no que se refere a medidas mais abrangentes de prevenção do desajustamento e promoção de competências e fatores protetores. Apresentamos diferentes estratégias de intervenção que podem ser implementadas de forma a minimizar alguns dos impactos que a institucionalização pode ter nos jovens.

Palavras-chave: Acolhimento residencial; Adolescentes; Ajustamento psicológico; Estratégias de enfrentamento; Tríade Negra da personalidade; Vinculação

ABSTRACT

International reports indicate that Portugal is among the countries with the highest number of children and young people removed from their families. Residential care is the most common protection measure, with thousands of youths living away from their families. Research has documented the negative consequences of institutional care, including impacts on physical and cognitive development, higher prevalence of mental health problems, and interpersonal difficulties. Adolescents in residential care often present insecure or disorganized attachment styles, emotional dysregulation, and maladaptive coping strategies. Despite this, peer groups and supportive relationships with institutional caregivers play a key role in mitigating risks and promoting adjustment. Psychological adjustment in these youths is multidetermined. This work investigated individual, social, and environmental determinants of adjustment in a large sample of adolescents living in 46 residential care institutions across Portugal. The thesis comprised eight studies: a systematic review that identified four domains of determinants highlighted in the last three decades of literature, and seven empirical studies based on self-report measures complemented by caregiver assessments. The studies explored the influence of Dark Triad personality traits, attachment styles, perceived social support, coping strategies, and emotional regulation skills. Two instruments were adapted and validated: one measuring youths' perceived integration in institutions and another assessing attachment styles as vulnerability factors for depressive symptoms, both showing adequate psychometric properties. Findings revealed higher levels of Dark Triad traits in boys, with psychopathy emerging as a strong predictor of adjustment and emotional regulation difficulties. Avoidant coping strategies and insecure attachment were also key predictors of maladjustment, while social support and contact with biological families proved protective. Three distinct adjustment profiles were identified, and discrepancies noted between youths and caregivers' perceptions, especially regarding internalizing problems. The thesis concludes with implications for professional practice, and intervention strategies aimed at reducing the negative impact of institutionalization and fostering protective factors.
Keywords: Adolescents; Attachment; Coping; Dark Triad traits; Psychological adjustment; Residential care.

INTRODUCTION

(…) I'm nobody's child
I'm nobody's child
I'm like a flower just growing wild
No mommy's kisses and no daddy's smiles
Nobody wants me, I'm nobody's child (…)
No mother's arms to hold me or soothe me when I cry
Sometimes it gets so lonely here I wish that I could die
I'd walk the streets of heaven where all the blind can see
And just like all the other kids there'd be a home for me (…)

(Nobody's child – Hank Snow)

The United Nations Convention on the Rights of the Child is an international treaty designed to protect children and adolescents, recognizing their vulnerability and need for special attention and care, with the family bearing primary responsibility for these functions. Articles 3 and 12 stipulate that, in the absence of adequate family conditions, the State must safeguard the child's best interests and ensure their right to be heard in judicial and administrative proceedings so that decisions affecting them consider their views (United Nations, 1989).

Acknowledging that children do not always live in protective environments, Portugal enacted the Law for the Protection of Children and Young People in Danger on January 1, 2001, later revised by Law 142/2015, to promote the rights and protection of children at risk and ensure their well-being and full development. When remaining in the family environment fails to ensure the necessary protection, Decree-Law 164/2019 establishes the framework for residential care, aiming to meet the physical, psychological, emotional, and social needs of children and young people, fostering integration into a safe socio-familial context that supports education, well-being, and full development while minimizing emotional harm.

In 2024, the Portuguese Child and Youth Protection Commissions received over 58,000 reports of children at risk, resulting in 54,707 new intervention cases (Comissão Nacional de Promoção dos Direitos e Proteção das Crianças e Jovens [CNPDPCJP], 2025). The most recent data show that 6,446 children and adolescents are currently in Out-of-Home (OoH) care, with 84% placed in residential institutions. A quarter of these cases stem from behavioral problems. Children are also entering residential care at increasingly older ages – a trend that has continued to rise over the past three years. On average, young people remain in the care system for around three years, though a considerable number stay for six years or longer (Instituto da Segurança Social [ISS], 2024).

The number of children in the child protection system has increased in recent years. Beyond financial implications, the social costs are substantial. Many of these youth have been removed from familiar environments – family, friends, and schools – and the majority have experienced maltreatment, resulting in adjustment difficulties, including challenges in emotional regulation, attachment formation, and adaptation to academic and social demands. Maltreated children are at heightened risk for

psychopathology, such as depression, anxiety, substance abuse, and personality disorders (Teicher & Samson, 2013), as well as delinquency and antisocial behavior (Allen et al., 2021). Consequently, children in OoH care face significant vulnerability to unfavorable developmental outcomes. The high prevalence of maltreatment may contribute to perceptions that the system is overwhelmed by increasingly troubled children, creating the risk of pathologizing those who do not exhibit such problems.

Understanding the factors influencing psychological adjustment in this population is essential for developing targeted and effective interventions. Solutions must be comprehensive, multilevel, and multidisciplinary, engaging professionals from diverse fields to reverse negative trends and mitigate the effects of institutionalization.

This thesis is structured into three parts. The first part presents the theoretical framework, including: 1) a literature review on psychological adjustment among institutionalized youth; 2) studies on the Dark Triad traits of personality and its relevance to youth research; 3) the influence of attachment styles on mental health and interpersonal relationships; 4) the role of social support in well-being and behavioral outcomes; 5) coping mechanisms and their protective effects against psychopathology; and 6) the importance of emotional regulation strategies for social and psychological adjustment.

The second part details the empirical studies conducted. It begins with a systematic literature review of determinants of psychological adjustment, followed by the validation and adaptation of two measurement instruments. Using a broad nationally collected sample, three studies explore the variables discussed in the theoretical framework, culminating in a final study profiling youth from 46 national residential care institutions and triangulating their adjustment data with the perspectives of care professionals.

The third part provides an integrated discussion of findings, conclusions, limitations, strengths of the research, and future research directions aimed at deepening the understanding of adolescents' psychological adjustment. It concludes with a personal reflection on the impact of this thesis and on the role society can play in improving the lives of youth in residential care – often placed there involuntarily and removed from families under circumstances beyond their control, within legal, social, family, or institutional systems in which they are seldom heard or involved.

PART I – STATE OF THE ART AND RESEARCH QUESTIONS

CHAPTER 1 | “I want to break free”: Psychological adjustment of adolescents in residential care

You were never here, you were never there,

did you ever loved me or did you ever cared?

Don’t you feel bad, don’t you feel despair?

Gave up on me sou you put me back in care

This is my life, I only wanna share (…)

It’s too late, nothing I can do

Now that you’re gone, can’t even spell the truth.

What did I do? I wanna go to school

you don’t understand what I’ve been thru,

don’t you ever wonder what I meant to you?

You were never here, you were never there,

Did you ever loved me or did you ever cared?

(“Never ever” – song written by a child in foster care)

This first section provides a conceptual framework for understanding the psychological adjustment of adolescents in residential care settings (RCS). Selected variables were chosen based on their relevance in the literature regarding this population, as well as their potential predictive value for adjustment outcomes, even when not yet extensively studied.

1.1 Life inside residential care

Research on cumulative disadvantage highlights the importance of a life-course perspective, showing that adverse early experiences can have enduring effects (Fernández-García et al., 2023). Adolescents in residential care, who are particularly vulnerable to such adversities, represent a key group for examining how these disadvantages unfold and how they may be mitigated. Outcomes including internalizing, externalizing, and prosocial behaviors are critical markers of social well-being and risk for psychopathology (Truhan et al.,2023).

Exposure to maltreatment, neglect, and disrupted attachment relationships (Quiroga & Hamilton-Giachritsis, 2016) strongly predicts developmental delays, behavioral and attachment difficulties (Costa et al., 2022; Vasileva & Petermann, 2018), emotional regulation challenges (Kim & Cicchetti, 2010), ineffective coping strategies (Compas et al., 2017), and chronic violent delinquent behavior in approximately 35% of cases (Fox et al., 2015). Stressful life events further contribute to psychological symptoms, with cumulative stress predicting both internalizing and externalizing difficulties. Evidence suggests a bidirectional cycle in which stress leads to psychopathology, which in turn generates additional stressors, reinforcing emotional and behavioral challenges (Grant et al., 2004).

The impact of OoH placements on child development has been debated for more than a century, with early works stressing the importance of individualized care (Chapin, 1915). Today, an estimated 5.4 million children worldwide live in institutional care (Desmond et al., 2020). The World Health Organization (WHO, 2025) estimates that about 15% of adolescents (ages 10-19) experience mental health disorders, with higher prevalence among those in care.

Within the European Union, institutionalization remains the predominant form of care for children in psychosocial danger or without parental supervision, despite

international efforts to promote family- and community-based alternatives (Frazer & Marlier, 2014; Šiška & Beadle-Brown, 2020). In Portugal, institutionalization continues to be the primary form of alternative care for children without parental care or exposed to psychosocial risk. In 2023, more than 6,400 young people were living apart from their families, with over 80% institutionalized, and 25 % presenting behavioral problems (ISS, 2024).

Alternative care refers to arrangements for children and adolescents deprived of parental care, living outside their country of habitual residence, or affected by emergencies. It generally takes two forms: family-based care (e.g. kinship or foster care) and non-family-based care (e.g., residential institutions or supervised independent living) arrangements (United Nations, 2022). This thesis specifically addresses adolescents in Portuguese RCS.

Institutional rearing almost often limits reciprocal interactions with stable caregivers. A substantial body of research shows that children raised in institutions face increased risks in physical, socioemotional, and cognitive development (Bakermans-Kranenburg et al., 2011; The St. Petersburg-USA Orphanage Research Team, 2008). Even after adoption, difficulties such as internalizing and externalizing problems, emotional regulation challenges, aggression, inattention, and attachment issues may persist (Pace et al., 2017; Paine et al., 2021).

Positive developmental outcomes are closely tied to opportunities for psychological autonomy, consistent regulation, and supportive relationships. Adherence to institutional rules can foster trust and reciprocity between young people and caregivers, strengthening relational bonds (Rauktis et al., 2011).

However, instability in placements exacerbates adjustment problems. Even children who enter care with few behavioral difficulties often develop increased problem behaviors proportional to the number of placements experiences (Bederian-Gardner, 2018). This suggests that negative outcomes may stem more from instability and disruption of attachments than from institutionalization per se.

1.2 Road to nowhere? Adolescents learning to adjust

Psychological adjustment in adolescence refers to the ability to mobilize emotional, cognitive, and social resources to effectively meet environmental demands

(Schoeps et al., 2019). This construct is commonly assessed through the presence of internalizing and externalizing symptoms, which often co-occur (Dwight et al., 2024; Keil & Price, 2006). Difficulties in adjustment may manifest as psychological distress, psychosomatic complaints, or disruptive behaviors (Mayorga-Sierra et al., 2020; Ordóñez et al., 2015).

Institutionalization can significantly shape adjustment outcomes due to changes in social dynamics and caregiving relationships (Font & Kim, 2022). Personal adjustment is expressed through emotions, behaviors, and cognitions. When insufficient, it can result in low self-esteem, anxiety, sadness, guilt, or somatic complaints, which may hinder compliance with social norms and institutional rules (Moreno-Manso et al., 2017; Mota et al., 2017). Multiple individual, social, and contextual factors influence adjustment trajectories among adolescents in RCS (Simão et al., 2025).

Adolescence is a critical developmental stage for the onset of psychopathological symptoms, with many mental illnesses first emerging during this period (McWey et al., 2010; Polanczyk et al., 2015). Anxiety and depressive disorders are among the most prevalent conditions, and the emergence of emotional and behavioral difficulties is closely tied to earlier developmental contexts (Polanczyk et al., 2015). Externalizing problems typically rise from early to middle adolescence, peak, and then decline by late adolescence.

Rates of internalizing problems among youth in RCS range from 6% to 68%, while externalizing disorders affects 32% to 67% of this population across North America and Europe – levels consistently higher than those found in community samples (Gearing, 2013). Young people in RCS also exhibit higher prevalence of medical, developmental, and behavioral difficulties compared to peers in family care or community samples, with externalizing problems being especially frequent. These difficulties contribute to longer stays in care, lower chances of reunification with biological families, and reduces placement stability (Keil & Price, 2006).

Externalizing behaviors encompass a wide range of disruptive actions such as aggression, rule-breaking, vandalism, theft, or running away (Frick et al., 1993). Risk factors include abuse, neglect, hostile parenting, exposure to community violence, and association with deviant peers (Krueger et al., 2021). Additionally, maladaptive

personality traits may heighten vulnerability to externalizing disorders in toxic environments.

Institutional environments vary in their degree of deprivation, with different developmental consequences. Gunnar et al. (2000) identified three levels: a) severe deprivation of healthcare, nutrition, stimulation, and relational input, often leading to growth failure; b) adequate basic care but insufficient interaction and stimulation, resulting in sensorimotor and cognitive delays; and c) environments where health and stimulation needs are met, but long-term, stable caregiving relationships are absent, hindering secure attachment formation. Long-term caregiver deprivation is thus a key risk factor for socioemotional and behavioral difficulties (Gunnar et al., 2000; Lee et al., 2010).

Adequate adjustment across personal, school, social, and family domains is essential for well-being, while maladjustment is linked to the interaction of biological, psychological and environmental factors (Moreno-Manso et al., 2017). Children in OoH placements are consistently more likely to develop emotional and behavioral difficulties than those raised by biological parents, regardless of placement type, and these difficulties often persist into adulthood (Kim & Chun, 2016; McWey et al., 2010).

Despite these risks, OoH care can also provide a protective function. When structured effectively, it may compensate for the absence of a stable family environment, offering adolescents opportunities for personal reconstruction, emotional recovery, and the resolution of earlier trauma (Martins & Szymanski, 2004).

1.3 Factors that shape adolescents' inner world

A wide range of factors may affect the psychological adjustment of young people in OoH placements (Simão et al., 2025). Within institutional contexts, elements such as institutional rules, satisfaction with the environment, and the quality of relationships with caregivers and peers play central roles. In addition, difficulties in adjustment may be linked to circumstances preceding placement, including family background, the absence of adequate coping strategies, limited support, or disrupted attachment relationships.

Several variables moderate the association between institutional environments and the manifestation of internalizing and externalizing symptoms. Research has

shown that the type of maltreatment experienced, as well as the child's age and gender, influences both the onset and developmental course of behavioral problems (McWey et al., 2010). The impact of institutionalization also depends on placement characteristics, such as location, organizational structure, and the level of supervision provided. Evidence regarding the duration of placement is mixed. While longer stays have been associated with the emergence of maladaptive behaviors, placement stability itself is often a protective factor. Longer placement duration may reflect greater stability, yet it has also been linked to increases in acting-out behaviors – possibly explained by a greater sense of security that enables adolescents to challenge boundaries and authority (Iglehart, 1993).

Placement stability is consistently highlighted as a critical factor for mental health (McGuire et al., 2018). When children are removed from neglectful or unsafe environments, further disruptions caused by multiple placements can compound developmental difficulties and negatively affect adjustment (Aarons et al., 2010; Almas et al., 2020; Newton et al., 2000). Frequent transitions often entail changes in caregivers, schools, and peer networks, each representing additional sources of stress (Bederian-Gardner et al., 2018).

Age and gender are also important determinants. Older adolescents in RCS present more severe mental health difficulties, and in recent years, the age of the institutionalized population has increased (Moreno-Manso et al., 2023). Consistent findings indicate that girls are more likely to exhibit internalizing symptoms, such as depression and anxiety, while boys more often present with externalizing behaviors such as aggression and rule-breaking (Campos et al., 2019; Cotton et al., 2020).

Beyond demographics, adverse life experiences strongly influence adjustment. Parental death, family dissolution, and other traumatic events increase vulnerability to emotional and behavioral problems. Institutionalized youth face repeated stressors, including separation from caregivers, disruptions in school, and the challenge of adapting to institutional life, all of which negatively affect well-bring (McCall, 2013). Importantly, the quality of child-caregiver interactions within institutions is strongly associated with outcomes: positive and consistent caregiving relationships enhance physical, cognitive, and socioemotional development (McCall, 2013).

Attachment insecurity is a particularly salient risk factor. Research consistently shows that children in institutional care are more likely to display insecure or disorganized attachment patterns and poorer peer relationships (Ainsworth et al., 2015; Bakermans-Kranenburg et al., 2011; Lee et al., 2010; Lemos et al., 2021). Furthermore, the experience of loss and trauma increases the likelihood of maladaptive developmental outcomes (McGinnis, 2021). The lack of stable, sensitive caregiving relationships limits opportunities for developing secure bonds, undermining emotional regulation and normal socioemotional development (Isenhour et al., 2021; McCall, 2013). These vulnerabilities are closely associated with externalizing behaviors and increased risk of later psychopathology. Insecure attachment styles have been identified as significant predictors of depressive symptoms among institutionalized youth (McGinnis, 2021).

The convergence of these factors suggests that adolescents in RCS constitute a particularly vulnerable group, whose developmental pathways are marked by heightened exposure to risk and limited access to protective relational resources. This evidence underscores the importance of examining the interplay between regulatory processes, psychological adjustment, and institutional variables to better understand, and ultimately improve, the well-being of adolescents in care.

CHAPTER 2 | “Bohemian Rhapsody” – Dark Triad personality traits

A Narcissist, a Psychopath and a Machiavellian walk into a bar.

The bar tender asks: who has the darkest personality out of you three?

The Narcissist says ‘me’.

The Psychopath says ‘I don’t care’

and the Machiavellian says ‘it’s whoever I want it to be’.

2.1 Understanding personality beyond labels

Personality should not be regarded as a singular or uniform construct. Rather, it reflects a constellation of traits that capture stable patterns of perceiving, interpreting, and relating to both the external environment and one's internal experience. These traits are expressed across social contexts and are best understood dimensionally, existing along a continuum from normative to more extreme expressions (Muris et al., 2017). Empirical evidence increasingly highlights that personality is not fixed but demonstrates plasticity across the lifespan, underscoring its capacity for change and development (Götz et al., 2020).

Traditional research on personality in normative populations has largely relied on broad models such as the Big Five (McCrae & Costa, 1987), which have proven effective in capturing individual differences, including maladaptive tendencies. However, dysfunctional behavioral patterns are often the result of complex interactions among multiple broad traits and their specific facets. This recognition has prompted the development of alternative frameworks to better capture dysfunctional personality expressions (Klimstra et al., 2014).

2.2 The Dark Triad: traits that leave their mark

Among the taxonomies of maladaptive personality traits, the Dark Triad (DT) – introduced by Paulhus and Williams (2002) – has attracted significant empirical attention. The construct encompasses three subclinical traits: Machiavellianism, narcissism, and psychopathy, each involving both adaptive and maladaptive components. While theoretically distinct, they frequently co-occur, forming a profile characterized by elevated levels across all three dimensions (Furnham et al., 2013). Although each construct is theoretically unique, their shared tendencies toward socially deviant behaviors illustrate overlapping features (Muris et al., 2017; Paulhus & Williams, 2002).

The three DT share several core features: social malevolence, emotional detachment, manipulation, self-promotion, and varying levels of aggression (Muris et al., 2017; Paulhus & Williams, 2002). Specifically, Machiavellianism involves strategic manipulation, pragmatic social interactions, strong emphasis on self-gratification and personal gain, and emotional indifference (Götz et al., 2020; Klimstra et al., 2014; Muris

et al., 2022). Narcissism is characterized by inflated self-importance, a need for admiration, and efforts to maintain a grandiose self-image (Klimstra et al., 2014). Whereas narcissism is driven by an exaggerated self-admiration and a preoccupation with personal grandiosity, Machiavellianism is characterized by a strategic orientation toward interpersonal manipulation, grounded in deceitful and morally transgressive conduct (Muris et al., 2022). Psychopathy, in turn, is associated with impulsivity, sensation-seeking, callousness toward others, indifference about problematic performance at work or school, deficient affect, and a lack of empathy or remorse, often resulting in reckless interpersonal conduct (Muris et al., 2022; Paulhus & Williams, 2002). Although not pathological, these traits are associated with ethically and socially transgressive behaviors and are consistently linked to negative psychosocial outcomes (Hu & Lan, 2022). Nonetheless, some studies suggest that in certain contexts, they may confer adaptive benefits, such as increased self-confidence and goal pursuit (Szabó et al., 2022).

Although these traits are considered socially undesirable, they fall within the spectrum of normative psychological functioning and do not imply clinical pathology (Paulhus & Williams, 2002). Specifically, these constructs are referred to as Machiavellianism, subclinical narcissism, and subclinical psychopathy (Muris et al., 2017; Paulhus & Williams, 2002).

Each DT trait shows distinct developmental and psychological correlates. Machiavellianism, often shaped by environmental factors such as adverse parenting, has been tied to relational and overt aggression and appears especially sensitive to experiential influences (Furnham et al., 2013; Götz et al., 2020). Sex differences in Machiavellianism are much less consistent (Chiorri et al., 2019; Klimstra et al., 2014). Maladaptive narcissism is frequently linked to interpersonal conflict and behavioral problems, although adaptive forms may promote positive adjustment. Subclinical psychopathy consistently predicts risk-taking, substance use, and aggression, making it particularly strong marker of externalizing problems (Muris et al., 2022; Truhan et al., 2023).

Adverse emotional outcomes also emerge in relation to DT traits, including anxiety, low empathy, emotional instability, and alexithymia, particularly in association with psychopathy and Machiavellianism. While certain studies emphasize potential

functional advantages of these traits, the predominant evidence highlights their negative impact on both interpersonal relationships and mental health (Gómez-Leal et al., 2019).

2.3 When darkness meets adolescence

Adolescence represents a critical developmental stage characterized by rapid psychological, social, and emotional changes, which may intensify the expression of dark traits. Research shows that behaviors reflective of the DT are already observable between ages 11 and 17 (Lau & Marsee, 2013). As adolescents mature, they can provide increasingly differentiated self-assessments of these traits.

The rising interest in the DT reflects the increasing recognition of its relevance across a wide spectrum of behaviors. Research on the relationship between personality traits and adolescent adjustment is emerging, illustrating the relevance of these traits (Moshagen et al., 2018). However, as noted by Hu and Lan (2022), there remains a relative scarcity of empirical studies examining the specific impact of malevolent personality traits on the mental health of young individuals.

The literature indicates that age, gender, and educational context are influential factors in the development and expression of DT traits during adolescence. Males tend to score higher on psychopathy and narcissism, extraversion, and externalizing problems, whereas females often report higher internalizing symptoms, such as depression and anxiety (Chiorri et al., 2019; Klimstra et al., 2014; Muris et al., 2022). Importantly, Muris et al. (2022) found psychopathy to be the most robust predictor of maladaptive outcomes among adolescents, surpassing the effects of familial and peer influences (see also DeLisi, 2009; Zhao & Jin, 2023).

There is consistent evidence suggesting that individuals scoring high on DT traits are more likely to experience and cause negative psychosocial consequences (Muris et al., 2017). Most research has centered on externalizing behaviors and studies on the DT in youth has focused on its links to aggression and behavioral dysregulation (Lau & Marsee, 2013). High DT traits have been strongly linked to antisocial behavior and delinquency in both children and adolescents (Sijtsema et al., 2019), with notable age and gender differences in expression (Götz et al., 2020; Muris et al., 2013, 2017; Shen,

2023). A considerable body of research has examined the socially detrimental impacts associated with DT traits but comparatively less attention has been devoted to the adverse emotional outcomes experienced by individuals exhibiting elevated levels of these traits (Gómez-Leal et al., 2019). Beyond externalizing issues, recent evidence points to the DT's association with internalizing difficulties, including depression and anxiety (Shen, 2023; Wang et al., 2023). While research has predominantly focused on adult populations, emerging findings suggest that adolescents with elevated DT traits may also be at greater risk for depressive symptomatology (Paknejad & Mazandarani, 2024; Shen, 2023). This is particularly concerning given that adolescence is a sensitive window for the onset of depressive disorders.

Developmentally, Götz et al. (2020) observed that Machiavellian traits tend to increase during the transition from late childhood into adolescence, and other research suggests that narcissistic tendencies may intensify during adolescence, a critical developmental stage in which vulnerabilities to negative parenting – such as emotional neglect or detachment – may contribute to the formation of narcissistic traits (Muñoz Centifanti et al., 2013).

Given that adolescence is a critical period for psychological vulnerability, further investigation into how DT traits may contribute to depressive symptomatology is essential for identifying early risk factors. Additionally, this line of inquiry expands the scope of DT research beyond externalizing behavior and supports the view that these traits may have a passive but significant negative influence on psychological well-being. Muris et al. (2013) used data from multiple informants on adolescent aggression and delinquent behavior, while considering all DT traits simultaneously, and recommended further study of the connections between adolescent adjustment and the DT of personality.

2.4 Dark traits in adolescents in care

Prior findings suggest that the DT traits can serve as significant predictors of psychological outcomes, above and beyond what is explained by the more widely studied Big Five traits (McCrae & Costa, 1987). This highlights the importance of further investigation, particularly among youth residing in RCS to address the current imbalance in the literature, which has primarily focused on adult populations.

Additionally, exploring these associations may shed light on the problematic behaviors that often precede or emerge during institutionalization.

Despite growing attention, research on the DT in adolescence remains limited, particularly concerning internalizing outcomes and vulnerable populations such as youth in RCS. Much of the literature has focused on normative samples residing with biological families, leaving open questions about whether the same mechanisms apply to institutionalized adolescents. Given that residential care often involves disrupted attachment processes and limited opportunities for secure relationships (Bakermans-Kranenburg et al., 2011), the expression of DT traits in this context may carry unique risks for both behavioral and emotional adjustment.

In addition to differentiating the predictive strength of each trait, Zhao and Jin (2023) demonstrated that the underlying mechanisms by which DT traits affect behavioral outcomes also vary. However, their findings were derived from a normative adolescent sample residing with biological families. It remains necessary to explore whether these mechanisms operate similarly in more vulnerable groups, such as adolescents in care. Notably, core elements of the DT have also been identified as significant predictors of suicidal ideation among adolescents, reinforcing their relevance to both behavioral and emotional maladjustment (Wang et al., 2023).

Developmental patterns of DT traits may be exacerbated in institutional settings, where disorganized attachment behaviors may result from limited opportunities to form secure bonds or delayed development of organized attachment systems (Bakermans-Kranenburg et al., 2011).

The effects of parenting on the development of adolescents can vary based on the characteristics of the adolescents which also may have an impact on externalizing behaviors and other behavioral outcomes. Additionally, relationships between adolescents' traits and outcomes are influenced by parental adversity and sociodemographic circumstances (Thomsen & Homel, 2024; Truhan et al., 2025). Since institutionalized adolescents have varying degrees of relationships with their biological parents and encounter more adversity, this aspect is especially pertinent to this thesis. Personality influences how people react to stress and therefore adolescent DT personality may influence perceived adjustment in contexts exposed to greater stress and adversity.

Adolescents' adjustment may be influenced and explained by the relationships among their family, peers, and personal contexts. Dark personality traits have been linked to the family, which is the most immediate setting for socialization and development, and research indicates that dysfunctional parent-child relationships result in a variety of dark personality traits (Zhao & Jin, 2023). These findings highlight the importance of studying these traits in adolescents in RCS.

In summary, the DT encompasses a set of interrelated yet distinct traits – Machiavellianism, narcissism, and psychopathy – that are observable in adolescence and linked to both externalizing and internalizing problems. While certain adaptive advantages may exist, the prevailing evidence highlights their role in maladjustment. Little is known about how these traits operate within vulnerable adolescent populations, particularly those in RCS. Addressing this gap is essential to better understand developmental risks and to inform preventive and therapeutic interventions targeting maladaptive personality processes during this sensitive developmental period.

CHAPTER 3 | “Crazy little thing called love” – Attachment relationships

“Nunca vi os meus pais trocarem um beijo
Amor todos falam dele, mas eu nunca o vejo
Separaram-se eu era o puto, tamanho de mochila
Vi a discussão dos dois da primeira fila
Dizem que me amam e eu finjo que acredito
Se isso fosse verdade, não precisava ser dito.
E chegou-me ao ouvido como poderia ter sido melhor a vida deles
se eu não tivesse nascido (…)
No fundo, sou apenas fruto de algo que não deu certo
Filho de pais ausentes, eu pertenço a esse nicho
Prenda do dia da mãe guardei, até mandar p'ro lixo
Ganhei centímetros no caminho, mas perdi o carinho
Por cada coisa que eu aprendi a fazer sozinho
Eles deram o melhor que podiam, isso é que me dói mais
Dizem que um dia vou trocar de lugar com os meus pais
Só que vou amar de verdade o meu par, no meu lar
E ao meu filho eu vou dar todo o amor que eu nunca senti
Nunca senti
Nunca senti
Nunca senti”

(“Imagina” – Papillon)

3.1 Attachment and the ties that shape us

Early socioemotional experiences and the quality of attachment have a lasting impact on mental health across the lifespan (Ainsworth, 1979). Attachment theory emphasizes that attachment behavior is sensitive, adaptive, and relatively consistent across development and contexts. A central concept is the secure base, which underpins both theoretical frameworks and assessment practices. Circumstances that restrict or disrupt infant's behaviors, or impair adult's ability to respond effectively, may compromise the development of attachments (van IJzendoorn et al., 1992).

Research consistently shows that caregiver behavior, more than infant behavior, shapes attachment quality. Earlier exposure to environments characterized by low emotional support and disorganized care may hinder the development of aspirations and coping skills.

3.2 Care, connection, and growth

Attachment plays a pivotal role in the adjustment of institutionalized children, given its influence on later socioemotional development.

Institutionalization is a risk factor for adverse developmental outcomes, though a high-quality caregiving environment can buffer these effects (Barone et al., 2016). Children's emotional and social outcomes are closely tied to caregiver's availability, sensitivity, acceptance, and capacity to create a sense of belonging. Stable, long-term relationships further support secure attachments. Institutional settings, however, face challenges such as high child-to-caregiver ratios, caregiver turnover, and inadequate training. Care often emphasizes physical needs over emotional support, limiting opportunities for individualized interactions and the development of secure attachments.

Children raised in institutions show high rates of insecure and disorganized attachment (Ainsworth et al., 2015; Bakermans-Kranenburg et al., 2011). These patterns are concerning both for current socioemotional development and for long-term outcomes, as disorganized attachment in particular predicts later adjustment difficulties (Lionetti et al., 2015). Family-related risk factors such as parental alcoholism, mental illness, and child maltreatment further increase the likelihood of disorganized attachment. Maltreated children often display atypical or aggressive responses to

peers' distress and present elevated depressive symptoms (Lyons-Ruth & Jacobvitz, 1999). Maltreated and institutionalized children frequently lack a stable attachment figure, appearing detached or withdrawn.

3.3 The price of instability

Multiple caregivers and frequent placement changes undermine opportunities to form secure attachments and are linked to poorer behavioral adjustment (Almas et al., 2020; Boris & Zeanah, 1999). In this sense, placement instability increases internalizing and externalizing problems. Moreover, children in OoH care remain at greater risk for insecure attachment with other significant figures, including peers and teachers (Bederian-Gardner et al., 2018). Placement instability repeatedly disrupts relational bonds, heightening stress and making secure attachment more difficult (Bederian-Gardner et al., 2018). For children who have lost primary caregivers, forming new secure attachments is essential for emotional well-being.

Remaining in the same institution can promote stability, consistency, and emotional reorganization, supporting young people's adjustment. The presence of significant attachment figures – whether caregivers or peers – is essential for fostering secure relationships and healthy emotional development (Cavalcante & Magalhães, 2017; Pietromonaco & Barrett, 2000). In times of distress, securely attached children typically seek proximity to trusted figures.

Children in OoH care face higher risks for emotional and behavioral problems than those raised by biological parents, with difficulties often persisting into adulthood (Kim & Chun, 2016). According to attachment theory, securely attached children adapt more successfully to new environments and relationships, while those insecurely attached are more likely to exhibit hostility. Disorganized attachment has been linked to aggression toward peers, particularly in contexts of family conflict, parental hostility, or parental depression (Lyons-Ruth, 1996).

Nonetheless, attachment theory alone may not fully account for aggressive behavior in OoH. Other variables – such as age, gender, placement instability, and length of time in care – also contribute to severity of aggression (Almas et al., 2020; Newton et al., 2000). In this sense, identifying factors that predict aggressive behaviors

among individuals in OoH care is critical to enhance the quality and stability of their living environments.

In sum, attachment is a cornerstone of socioemotional development, profoundly shaping outcomes for institutionalized and maltreated children. High-quality caregiving environments, stability in placements, and the presence of consistent attachment figures can mitigate the risks associated with institutionalization and OoH care. While attachment theory provides a valuable framework for understanding socioemotional difficulties and aggression, contextual and individual factors must also be considered to promote resilience and well-being in vulnerable populations.

CHAPTER 4 | “Somebody to love” – Social support

“Eu fico aqui atrás de ti, sem ver o teu olhar,
ao espelho chamo alguém na esperança de a ti encontrar,
Tu nunca estás comigo. Contigo não vou ficar,
não quero ficar sozinho, aqui sem ti.”

(“Não vou ficar” – Delfins)

4.1 What support really means

Across the lifespan, nurturing interpersonal relationships, a sense of belonging, and engagement in social communities have been consistently associated with wide-ranging psychological and physiological benefits. Social support is commonly defined as "the existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us." (Sarason et al., 1983, p. 127). Importantly, research suggests that the perception or belief in available social support – regardless of whether it is actively utilized – accounts for many of its protective effects (Taylor, 2011).

Social support has been found to mitigate the effects of stress by enhancing emotional regulation and reducing symptoms of anxiety and depression. Empirical studies have consistently linked social support to improved mental and physical health outcomes (Demaray & Malecki, 2014). The perception of support becomes particularly salient under conditions of stress and vulnerability, promoting psychological functioning and well-being (Degner et al., 2010).

4.2 Bridge over troubled water: connections can save a life

Although the positive effects of social support on adolescents' mental health are well documented (Demaray & Malecki, 2014), studies focusing on vulnerable youth, particularly those in residential care, remain relatively scarce despite the complex social, emotional, and academic challenges these population face (Magalhães et al., 2016; Martín & Dávila, 2008). Adolescents in RCS face cumulative risk factors that often complicate their adjustment processes (Costa et al., 2022). Removal from their family environment and placement into institutional care frequently disrupts established relationships with significant figures such as parents, friends or trusted adults (Kendrick, 2005), placing their adaptive development and well-being at further risk (Magalhães et al., 2016).

In this context, the creation of meaningful and secure relationships within residential care assumes critical developmental importance. Supportive interactions with peers and professionals can help these adolescents navigate adversity more effectively (Bravo & Del Valle, 2003; Kendrick, 2005; Soldevila et al., 2013).

A sense of belonging to the residential care community contributes to emotional security, identity formation, social integration, and resilience (Magalhães et al., 2016; Mota & Matos, 2015). Within the residential care context, social support has been consistently identified as a protective factor in promoting the mental health of children and adolescents (Erol et al., 2010; Martín & Dávila, 2008; Soldevila et al., 2013). High levels of perceived support have been linked to lower emotional and behavioral difficulties (Erol et al., 2010; Hiller et al., 2021) and to reduced symptoms of posttraumatic stress (Gearing et al., 2015). These findings underscore the buffering effect of strong support systems against psychological distress in institutional settings (Erol et al., 2010; Singstad et al., 2022).

4.3 Different sources of support

Findings regarding the sources of support in residential care appear mixed. Some studies indicate that adolescents continue to view family members as their main support figures (Attar-Schwartz & Fridman-Teutsch, 2018; Dinisman et al., 2013), while others suggest that only minority identify family in this way, relying instead on peers and residential staff (Ferreira et al., 2020; Fournier et al., 2014). Overall, both family members and professionals emerge as important providers of emotional, affective, and informational support (Dinisman et al., 2013; Ferreira et al., 2020; Gearing et al, 2015; Martín & Dávila, 2008).

Young people's social network is not restricted to the group home with studies reinforcing that the sources of support identified by youth in care could emerge either in the family or in the residential context (Bravo & del Valle, 2003; Ferreira et al., 2000; Martín & Dávila, 2008).

The desire to maintain close and frequent contact with family appears to play a significant role in how adolescents perceive their well-being (Schutz et al., 2017). Connection with family members offers a sense of belonging that mitigates feelings of isolation and contributes to identity stability (Mota & Matos, 2015).

Professionals in RCS also play a central role in fostering positive outcomes. Supportive relationships contribute to reductions in behavioral problems and improvements in psychosocial functioning (Erol et al., 2010; Fournier et al., 2014). However, young people in RCS often perceive a lack of emotional engagement and the

absence of emotional bonds from social workers. Furthermore, instability in care environments, including rotating staff and frequent placement changes, often hinders the formation of secure and trusting relationships (Gaskell, 2010; Soldevila et al., 2013).

Peers are another critical source of support. Adolescents frequently report relying on peer relationships as coping mechanisms to manage stress and adversity, highlighting their significance in promoting resilience (Fournier et al., 2014).

Evidence from studies involving at-risk youth underscores the critical role of positive and supportive relationships in fostering emotional stability and also enhancing young people's capacity to form and maintain positive social bonds, thereby supporting the development of social competence (Fournier et al., 2014; Mota & Matos, 2015).

4.4 The gendered faces of support

Gender differences in social support are well established and seemed associated with social roles (Matud et al., 2003). Women tend to offer greater social support and rely on supportive networks more than men, particularly in times of stress, and are often more positively impacted by such support (Taylor, 2011). Women generally report more emotionally close relationships, whereas men tend to report larger, though less intimate, social networks (Matud et al.2003). Research with adolescents in RCS similarly shows that both genders identify multiple meaningful sources of support, which function as buffers against psychological difficulties and promote positive adjustment (Demaray & Malecki, 2014).

Overall, the literature underscores the protective role of social support in adolescent development, particularly for youth in residential care who face heightened vulnerability. Although findings vary regarding the primary sources of support, family, professionals, and peers all play meaningful roles. Crucially, stability and quality of these relationships, rather than their mere presence, appear to be the strongest predictors of positive developmental trajectories. These insights highlight the importance of fostering consistent, supportive environments within RCS to enhance well-being and mitigate risk.

CHAPTER 5 | “Under pressure” – Coping strategies

“Although the world is full of suffering, it is also full of the overcoming of it.”

(Helen Kelly)

5.1 The art of coping

Coping refers to the strategies individuals use to manage stressful circumstances. These strategies aim to regulate responses to daily inconveniences, acute life events, long-term stressors, and chronic adversity – all recognized as significant risk factors for psychopathological symptoms. Coping is a multidimensional construct involving the regulation of emotional, behavioral, cognitive, physiological, and environmental stressors (Folkman, 1984). It is a process shaped by both environmental characteristics and individual differences, which influence how stressors are appraised and what resources are mobilized (Folkman & Moskowitz, 2004).

A distinction is often made between coping styles and coping strategies. Coping styles reflect relatively stable tendencies to respond to stress, whereas coping strategies are situational involving specific cognitive or behavioral actions taken in response to a stressor (Antoniazzi et al., 1998). Effective coping is flexible and dynamic, requiring adaptation across contexts and over time (Lazarus, 1993).

Coping domains can be classified into two broad categories: adaptive coping, and maladaptive coping. Each domain encompasses a wide range of heterogeneous strategies. Adaptive strategies aim to resolve or reduce the stressor and improve well-being, while maladaptive strategies provide temporary relief but are ultimately unhealthy, ineffective, and can worsen emotional problems (Folkman & Moskowitz, 2004).

5.2 Paths and models of managing problems

The transactional model proposed by Lazarus and Folkman (1984) conceptualizes coping as a dynamic and intentional process requiring cognitive appraisal of stress. Coping involves conscious, purposeful cognitive and behavioral efforts. When stressors are appraised as controllable, individuals are more likely to adopt problem-focused coping strategies (e.g., problem-solving, planning). When stressors are judged uncontrollable, predominate emotion-focused strategies (e.g., avoidance, distraction) (Folkman & Moskowitz, 2004). Thus, the impact of stress during adolescence depends not only on the objective features of stressors but also on adolescents' subjective appraisals of threat and controllability (Lazarus, 1993).

Expanding on this framework, Skinner and Zimmer-Gembeck (2007) identified a broader repertoire of coping responses, including support seeking, accommodation, opposition, denial, self-reliance, social withdrawal, aggression, helplessness, and positive reappraisal. Coping strategies therefore reflect both situational demands and individual resources.

5.3 Developmental trajectories of coping

Coping develops progressively across childhood and adolescence. In early childhood, coping relies primarily on automatic regulation and caregiver co-regulation. By adolescence, strategies become more differentiated, flexible, and autonomous, supported by advances in executive functioning and metacognition (Compas et al., 2017).

Adolescents tend to use more emotion-focused coping than children but do not differ substantially from young adults, suggesting stabilization of strategies by late adolescence (Antoniazzi et al., 1998). With increased opportunities for social learning in supportive contexts, adolescents broaden their repertoire, often employing problem-solving, support seeking, distraction, and cognitive restructuring (Skinner & Zimmer-Gembeck, 2007).

Developing effective coping behaviors is crucial for navigating the transition from childhood to adolescence. Coping act as a mediator of stress and may either promote or hinder positive adaptation (Markova & Nikitskaya, 2017). When stressors are perceived as uncontrollable, adolescents often turn to distraction, social support, or strategies aimed at reducing emotional distress.

Compas et al. (2017) emphasize that sample characteristics (e.g., sociodemographic risks, type of stress exposure) may shape developmental processes. For example, strategies considered maladaptive in some contexts may show stronger associations with psychopathology in specific populations. Thus, research must consider contextual and demographic variation when examining coping and mental health outcomes.

In care settings, where young people often face instability and trauma, negative coping strategies are associated with emotional and behavioral problems. While youth in care may adopt both active strategies (e.g., seeking help, problem-solving) and

avoidant ones (e.g., denial, distraction, withdrawal, substance use), the latter predict poorer long-term outcomes (Taylor & Stanton, 2007). Perceived social support is a key factor in shaping coping: seeking support and problem-solving lead to more positive outcomes, promote resilience and emotional adaptation (Stapley et al., 2022). Active strategies such as problem-solving, support seeking, and emotional regulation foster control, efficacy, and adaptive functioning (Masten, 2001).

5.4 Coping and adjustment difficulties in care

Coping mediates the effects of stress on adolescents' development. Active strategies – such as problem-solving, seeking social support, and cognitive reframing – are associated with resilience, self-esteem, and emotional well-being (Barendregt et al., 2015; Masten, 2001). Conversely, disengagement strategies (e.g., avoidance, denial, withdrawal) are linked to poorer functioning, behavioral problems, and deviance (Compas et al., 2001; Markova & Nikitskaya, 2017).

Studies have shown negative associations between adaptive coping (both problem- and emotion-focused) and emotional/behavioral problems, whereas maladaptive coping and perceived stress are positively related to adjustment problems (Hampel & Petermann, 2006; Vallejo-Slocker et al., 2022). Emotion-focused coping has been associated with fewer symptoms of anxiety, depression, and aggression (Wadsworth & Compas, 2002), while problem-focused coping predicts fewer adjustment problems, confirming its protective role (Hampel & Petermann, 2006; Vallejo-Slocker et al., 2022).

Adolescents with deviant behavior tend to rely on disengagement strategies such as avoidance and distancing, including distractions like video games, TV, or smoking (Markova & Nikitskaya, 2017). In contexts of economic hardship, avoidance, denial and wishful thinking are more common than engagement strategies like active coping or seeking support (Compas et al., 2001).

Youth who predominantly use avoidance are at greater risk for emotional and behavioral difficulties, whereas those who use support seeking and cognitive restructuring display better emotional outcomes and a greater ability to adapt to the demands of care (Antoniazzi et al., 1998). Although avoidance may provide temporary relief, it often worsens well-being in the long term (Markova & Nikitskaya, 2017).

According to Lazarus (1993), certain coping strategies tend to be more stable across different stressful situations, while others are more situation specific. In this sense, seeking social support varies considerably and is heavily influenced by the social environment. Strategies labelled maladaptive (e.g., avoidance) may be particularly harmful in populations exposed to chronic stress or trauma (Compas et al., 2017). Specifically, in RCS, avoidant coping is linked with higher rates of adjustment problems, while active coping fosters resilience and personal efficacy (Stapley et al., 2022; Taylor & Stanton, 2007).

Adolescents in psychiatric residential care who rely on passive coping report lower self-esteem and reduced well-being (Barendregt et al., 2015).

5.5 How age and gender shape coping strategies

Findings on gender differences in coping are mixed (see Antonazzi et al., 1998; Shrestha, 2021; Viñas Poch et al., 2015). Some studies suggest that girls favor emotion-focused strategies (e.g., expressing emotions, seeking support), while boys more often use problem-focused strategies (Antonazzi et al., 1998; Myers & Thompson, 2000; Ptacek et al., 1992). Other research highlights the influence of socialization (Ptacek et al., 1992) and gender role expectations (Rosario et al., 1988) on these differences. For instance, Rosario et al. (1988) found that higher psychological disturbance among women could not be attributed to coping styles independent of social roles. Girls generally report greater use of coping strategies, particularly relational ones, which may buffer against internalizing difficulties (Borges et al., 2008; Hampel & Petermann, 2006). Interpersonal stress has a strong effect on girls' emotional and behavioral problems, whereas boys show effects mainly on emotional problems. Boys' reliance on disengagement strategies (e.g., helplessness, passivity, avoidance, and opposition) is associated with poorer functioning and greater aggression (Compas et al., 2001).

Age differences are also evident with research showing that older adolescents employ a wider range of strategies than younger ones, reflecting developmental gains (Borges et al., 2008). By adolescence, coping expands to include metacognitive approaches, allowing youth to regulate coping behaviors with consideration of long-term goals and broader consequences (Skinner & Zimmer-Gembeck, 2007).

In sum, coping in adolescence is a complex and evolving process shaped by individual, contextual, and developmental factors. While active coping strategies generally promote resilience and adaptation, disengagement strategies are consistently associated with poorer outcomes, particularly in vulnerable populations such as youth in residential care. Gender and age influence the use and effectiveness of coping, but these differences are often mediated by socialization and contextual variables. Overall, the literature highlights the importance of fostering flexible, adaptive coping repertoires to support adolescents' psychological adjustment and well-being.

CHAPTER 6 | “Too much love will kill you” – Emotional regulation

“They say I have anxiety, they say I have problems, hey to diagnose me
They like to put me on a medicine, they like to say something’s wrong with me
I’m not angry, I’m just upset, I don’t think I’d deserved it
But unfortunately, it’s life. Do I accept it? No!
But do I have to accept it? Unfortunately I do
(…) You think everyone is against you, so could you just tell us why?
Have you ever had a mother and you slowly watched her die?
And you want to talk about it ‘cause it’s eating you a sad
I’m alone up in this world, I ain’t got a shoulder to lay on and cry in
My whole life change when I heard my mamma passed
I was screaming, I was shouting, I was breaking every glass
Child services was called, they broken down the door
Don’t be nervous and shaking while you’re seated on the floor
You attracted me to be calm
Watch while you take a snap from my brother and my home
When he lefted me he was all I ever had, I’m looking for my dad
Do you ever think somebody cared for me?
Do you ever think somebody’s here for me?
Keep your eyes on me, keep your eyes on me Lord”

(“Foster care” – ScarLip)

6.1 Understanding emotional regulation

Any psychological explanation of child development is incomplete without recognizing the crucial role of emotions as motivators (Cole et al., 2004). Emotional regulation (ER) has been defined inconsistently across the literature, with ongoing debate over whether both intrinsic and extrinsic processes should be included in a single definition (Eisenberg et al., 2010). The most widely accepted definition describes ER as the processes of monitoring, evaluating, and modifying emotional responses using cognitive and behavioral strategies (Cole et al., 2004). These processes involve initiating, delaying, stopping, or adjusting the intensity of emotional, behavioral, or physiological responses to promote adaptive functioning (Compas et al., 2001; Eisenberg et al., 2010).

Gratz and Roemer (2004), conceptualized ER as a multidimensional construct, encompassing: awareness and understanding of emotions, acceptance of emotions, control over impulsive behaviors, engagement in goal-directed behaviors under stress, and flexible use of strategies to adjust responses to situational demands.

ER reflects the integration of emotional and cognitive systems. Dysregulation arises when these systems fail to coordinate effectively, producing maladaptive responses (Cicchetti et al., 1995).

The literature frequently conceptualizes coping and ER as related yet distinct constructs. Coping is defined as a set of regulatory responses that are specifically mobilized in the presence of stressors, whereas ER encompasses regulatory processes that occur across both stressful and non-stressful contexts (Compas et al., 2017).

6.2 Development of emotional regulation skills

ER develops largely through interactions with primary caregivers. Youth in residential care often have fewer opportunities to acquire adaptive skills and may rely on maladaptive strategies, particularly when caregivers minimize or punish emotional expression (Waizman et al., 2020). Effective indicators of regulation include empathy, emotional self-awareness, context-appropriate expression, and recovery from distress (Cole et al., 2004). The accumulation of stressors can impair regulatory mechanisms that would help the child cope with environmental demands (Evans & Kim, 2013). Since individuals are not always aware of their self-regulation processes, it is useful to

differentiate and specifically label behavioral responses separately from cognitive and attentional ones (Cicchetti et al., 1995; Eisenberg et al., 2010). ER strategies change during mid-adolescence, but these changes do not completely align with a shift towards utilizing more adaptive and less maladaptive ER strategies (Park et al., 2020).

From middle childhood onward, peers also play a key role in shaping ER through social learning and reinforcement of norms. As adolescents develop executive function skills, they can utilize more cognitive strategies for regulating emotions and exhibit greater control over their emotional expressions (Compas et al., 2017).

6.3 Everybody hurts: when emotions overwhelm

ER shapes academic achievement, social functioning, and physical health (Aldao et al., 2010), and can have long-term consequences (Dahl, 2001). Its role extends beyond typical development since regulation difficulties are central in depressive disorders (Ahmed et al., 2015; Liu & Thompson, 2017) and personality traits such as the Dark Triad (Zeigler-Hill & Vonk, 2015). For example, Mojsa-Kaja et al. (2021) demonstrated that dysfunctional cognitive regulation strategies mediated the relationship between Dark Triad traits and stress, anxiety, and depression.

Emotional dysregulation increases vulnerability to psychopathology and disrupts the capacity to sustain healthy interpersonal relationships (Ahmed et al., 2015; Schore, 2001). Dysregulation is strongly linked to both internalizing symptoms (e.g., depression, anxiety) and externalizing problems (Eisenberg et al., 2010), meaning that higher levels of ER were linked to lower levels of symptoms (Compas et al, 2017).

Children with strong self-regulation skills demonstrate better adaptive functioning, including reduced anxiety and depression, even in adverse environments (Buckner et al., 2009). Conversely, deficits in self-regulation contribute to maladjustment, different types of externalizing behaviors, and are shaped by interacting social, genetic, and environmental factors (Ahmed et al., 2015; Aldao et al., 2010; Costa et al., 2022). Externalizing behaviors often stem from poor effortful control, undercontrol, and impulsivity, and children with high negative emotionality are especially vulnerable to aggression and delinquency (Eisenberg et al., 2010). Thus, poor response inhibition predicts externalizing problems and those with high levels of negative emotional intensity – especially those prone to anger or frustration rather

than sadness or fear – appear to be more vulnerable. Internalizing problems, in contrast, may be linked to overcontrol – appearing overly inhibited or rigid – yet they also involve difficulties in regulating negative affect and attentional biases toward threatening stimuli (Eisenberg et al., 2010).

Research shows that maladaptive strategies such as avoidance, suppression and rumination are consistently associated with greater psychopathology, whereas adaptive strategies such as acceptance, reappraisal, and problem-solving are linked to fewer symptoms (Aldao et al., 2010; Schäfer et al., 2017).

6.4 Emotional regulation in residential care

Residential care environments often lack stability due to staff turnover and frequent youth placements, which limits opportunities to form emotional bonds and develop regulation skills (Gaskell, 2010). These adolescents are more likely to show emotion dysregulation due to histories of maltreatment, neglect, or early stress (Cook et al., 2005; Kim & Cicchetti, 2010). Research shows that adolescents in the child welfare system often present severe psychological difficulties and risk-taking behaviors that disrupt regulatory processes across affective, behavioral, and physiological domains (Auslander et al., 2018; Papalia et al., 2021).

The quality of caregiver relationships plays a protective role: supportive, emotionally available caregivers are associated with fewer emotional problems and greater regulation capacities (Assouline & Attar-Schwartz, 2020; Costa et al., 2022).

Lino and Nobre-Lima (2017) findings with a Portuguese sample showed that adolescents in care demonstrated greater affective than behavioral dysregulation.

6.5 Boys don’t cry: individual differences in emotional regulation

ER is influenced by gender, age, genetic predispositions (Kaur et al., 2022; Zalar et al., 2018), socialization experiences, and environmental factors (Costa et al., 2022; Eisenberg et al., 2010). Findings regarding adolescents in residential care are mixed: some studies show that females report greater difficulties accessing adaptive strategies (Costa et al., 2022), while others find they employ more effective strategies overall (Kaur et al., 2022; Park et al., 2020). Contrarily, boys present higher levels of non-

acceptance of emotional response and avoidance of negative emotions (Kaur et al., 2022). Recently, Fernández-García et al. (2023) demonstrated that adolescents in child welfare present difficulties in understanding emotions and a particularly high use of maladaptive strategies such as avoidance and suppression.

In sum, ER is a core developmental process essential for psychological adjustment, and well-being. Adaptive strategies foster positive outcomes, while dysregulation heightens vulnerability to internalizing and externalizing disorders. Youth in residential care face particular risks due to unstable caregiving environments and early adversities, yet supportive caregiver relationships can buffer these effects. Individual and contextual differences – including gender, age, socialization, and genetics – moderate regulatory capacities. Overall, fostering flexible and adaptive ER skills is critical to reducing maladjustment and promoting healthy adolescents' development.

This work began with a theoretical framework grounded in the United Nations Convention on the Rights of the Child, the Portuguese Law for the Protection of Children and Youth at Risk, and the legal framework of residential care in Portugal. Concerning numbers were presented, positioning Portugal negatively within the international context.

Evidence shows that adolescents living in institutional care experience greater psychological adjustment difficulties than peers living with biological families or in alternative care settings. Across six chapters, we examined the factors influencing their adjustment and described the main challenges linked to institutionalization, which confirm that these youth constitute a vulnerable group whose development is marked by early traumatic experiences, neglect, and abandonment.

We highlighted that the DT of personality is associated with both externalizing and internalizing problems and, although little is known about how these traits operate within vulnerable adolescent populations, particularly in RCS, the literature underscores their role in maladjustment. Furthermore, we stressed the relevance of high-quality caregiving environments, placement stability, and the presence of consistent attachment figures as protective factors capable of mitigating the risks associated with institutionalization and OoH care. Regarding social support, research consistently emphasizes that the stability and quality of relationships with family, institutional caregivers, and peers are crucial, serving as a strong predictor of positive developmental outcomes. Finally, the literature points to the importance of promoting flexible and adaptive coping and ER strategies to support adolescents' psychological adjustment and well-being.

Building on the theoretical framework, the last chapter presents the research questions and objectives that guided the empirical studies included in this thesis. These questions were designed to translate the conceptual foundations into specific objectives, allowing for the systematic examination of adolescents' psychological adjustment, DT traits, attachment styles, coping strategies, ER skills, and integration within the RCS.

CHAPTER 7 | Research questions and objectives

"Na vida, não existe nada a temer, mas a entender."

(Marie Curie)

The purpose of this thesis is to advance scientific knowledge on the determinants of the psychological adjustment among adolescents living in Portuguese RCS, with the aim of contributing to the generalizability of findings that may also be applicable to young people of other nationalities. Through rigorous research, the intention is to produce evidence that can be translated into intervention strategies capable of strengthening social, institutional, and policy responses aimed at improving the living conditions of young people in care. Such evidence may also contribute to the development of structured interventions with their families, ultimately leading to fewer placements and greater implementation of measures that promote integration within the young person's natural living environment.

Building on the theoretical review presented in the preceding chapters, which examined the influence of multiple variables on the psychological adjustment of institutionalized youth, this thesis focuses on understanding the role that individual, social, and environmental factors play in this process. Figure 1 illustrates the conceptual framework guiding this thesis, developed to examine the interrelationships among variables, and to identify those exerting the most substantial influence on the psychological adjustment of adolescents in residential care.

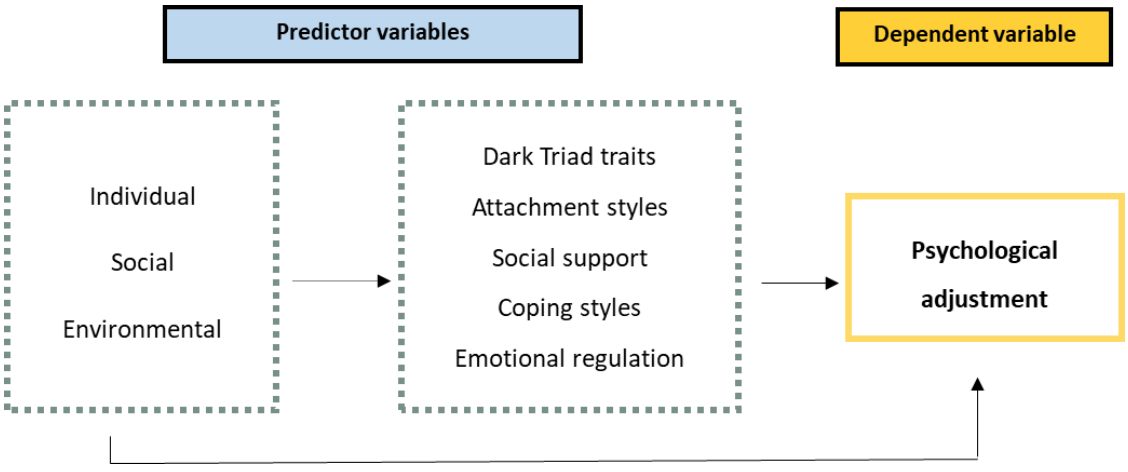

Figure 1. *Proposed conceptual model for the present investigation.* Dashed boxes represent groups of predictor variables (individual, social, and environmental characteristics, and psychological variables). Arrows indicate hypothesized predictive pathways, with predictor variables expected to influence the dependent variable. The model also considers reciprocal influences between variables within each group.

Adolescents' psychological adjustment is intrinsically related to their prior histories and the issues they bring into care. Although this differentiation is not always possible, however, it remains essential to carefully assess whether the problems they present improve, worsen, or remain unchanged after entering in institutional care. Additionally, as highlighted previously, caregivers play a crucial role in the intervention process with adolescents in RCS. Responsible for the youths' daily care and supervision, they constitute valuable sources of information regarding adolescents' functioning. Guided by these considerations, we formulated general research questions to direct the present work:

1) To what extent do certain variables differ in their predictive power regarding the psychological adjustment of adolescents living in RCS?
2) How do individual, social, and environmental characteristics influence the psychological adjustment of adolescents in residential care institutions?
3) To what extent can institutional caregivers serve as key informants of adolescents' psychological adjustment?

As previously demonstrated, psychological adjustment in adolescence involves adapting to one's environment using emotional, cognitive, and social resources, and poor psychological adjustment is associated with a range of negative outcomes. Institutionalization has the potential to influence adolescents' adjustment, and existing research in this area has predominantly examined personal factors, both risk and protective. However, ecological theory underscores the importance of contextual experiences, emphasizing the interconnected environmental systems that shape individual's development, including personal characteristics, contextual influences, and developmental outcomes. In this context, we conducted a systematic literature review **(Article 1)** with the following objectives:

1) To identify the predictors of psychological adjustment of institutionalized adolescents;

2) To organize the factors into different categories;

3) To contribute to the development of research that promotes interventions for adolescents in residential care.

To meaningfully address the concept of positive adjustment, it is essential to consider that young people placed in residential care enter an environment with new caregivers, rules, procedures, dynamics, and pre-established routines. Understanding their perspectives regarding the institution to which they have been assigned provides a valuable basis for analyzing their integration and adaptation to the institutional context. Given the importance of fostering close relationships between young people and caregivers, encouraging adherence to institutional rules, and promoting active participation in shaping their life plans, it is notable that, in the Portuguese context, no instrument currently exists that is designed to briefly assess young people's perceptions of their experiences in residential care institutions. For this reason, and informed by a review of existing validated instruments, we sought to adapt and validate a self-assessment scale for young people in residential care within the Portuguese population **(Article 2)**. The objectives of this work were:

1) To adapt and validate the Positive Home Integration scale for the Portuguese residential care context;

2) To present results on the scale's dimensionality, reliability, and discriminant validity with external variables.

Research on DT traits and psychological adjustment has increasingly emphasized their links to aggression and behavioral dysregulation in youth, underscoring the need to consider both externalizing and internalizing outcomes when assessing the psychological impact of socially aversive traits during adolescence. With the aim to examine how the DT traits contribute to understanding psychological adjustment in institutionalized adolescents we developed **Article 3** with the following objectives:

1) To explore the presence of DT traits in at-risk youth and examine the relationship with adolescents' psychological adjustment;

2) To investigate potential gender and age differences in both psychological adjustment and the expression of DT traits.

Knowing that adolescents in institutional care are at heightened risk for attachment insecurity and psychological difficulties that compromise their overall functioning, we aimed to identify a self-report measure capable of detecting the risk of

maladjustment in RCS. In the Portuguese context, existing measures evaluate attachment styles separately, focusing primarily on relationships with primary caregivers, thereby highlighting the need for instruments that accurately assess vulnerable attachment and identify adolescents at risk of psychopathology, including depression. Considering this, **Article 4** presents the Vulnerable Attachment Style Questionnaire, a self-report measure that can support the assessment of intervention effectiveness while strengthening evidence-based practices in social work. The objectives were:

1) To establish the VASQ as a self-report instrument capable of identifying adolescents at risk for maladjustment;
2) To examine VASQ factor structure, assessing its reliability, evaluating discriminant validity with external variables, and exploring its relationship with psychological adjustment.

The literature highlights the need for a holistic and comprehensive perspective on mental health in studies with at-risk young people – such as those living in RCS – encompassing both positive and negative indicators. Furthermore, research has demonstrated that adolescents in RCS are often overlooked in coping studies, which is concerning given their heightened risk for maladjustment. Since adolescents in RCS are exposed to more childhood adversities than their peers, understanding their coping strategies and social support as protective factors for mental health is crucial. To examine these influences, **Article 5** presents the following objectives:

1) To examine the influence of coping strategies, perceived social support, and DT traits on the psychological adjustment of adolescents in residential care;

2) To investigate whether each DT trait is associated with distinct coping profiles;

3) To explore whether coping strategies and social support act as protective factors that enhance psychological adjustment and mitigate the negative effects of DT traits;

4) To examine sex differences in the relationship among these variables.

Using the validated version of VASQ, we aimed to examine the relationships between attachment styles and adolescents' ER abilities, as well as their potential

influence the expression of DT traits and overall psychological adjustment **(Article 6)**. The four main objectives of this study were as follows:

1) To know the attachment styles and ER strategies used by adolescents in RCS;

2) To determine if the DT traits are linked to different attachment styles and dysfunctional ER strategies;

3) To analyse if there are sociodemographic differences in attachment, ER strategies, DT traits, and psychological adjustment difficulties;

4) To investigate the relationship between attachment, dimensions of ER and psychological adjustment.

Building on the variables previously examined, and with the aim of identifying profiles among adolescents in residential care, we conducted an integrative analysis of all psychological dimensions under study. Our goal was to characterize these profiles across multiple domains, thereby providing a comprehensive understanding of the adolescents' adjustment **(Article 7)**. To achieve this aim, we defined the following specific objectives:

1) To identify distinct profiles of youth in RCS based on psychosocial, behavioral, and relational characteristics;

2) To explore differences between the identified groups in terms of risk and protective factors;

3) To assess the presence of behavioral and relational patterns that may influence adolescents' adaptation within the institutional context.

Finally, to obtain a comprehensive understanding of adolescents' psychological adjustment and to examine potential discrepancies between adolescents' and caregivers' reports, we assessed perceptions from both informant groups **(Article 8)**. The present study had four main objectives:

1) To examine whether differences are observed between adolescents' and caregivers' reports of psychological adjustment, considering sex and age group;

2) To compare adolescents' and caregivers' perceptions across the subscales of the Strengths and Difficulties Questionnaire;

3) To assess the degree of agreement between adolescents and caregivers, and to investigate whether disagreement varies according to the severity of reported problems;

4) To explore whether a systematic discrepancy pattern exists between adolescents' and caregivers' reports.

In the following section, we present the eight studies developed to address the research objectives outlined above. For each study, the methodology is described in detail, including sampling procedures, participant characteristics, the measures employed, data collection protocols, and the analytical strategies adopted.

In all seven empirical studies, data were collected between October 2023 and October 2024. In a random selection, half of the institutions received a version of the protocol with questionnaires arranged in a predefined selected order, while the other half received the questionnaires in a modified order. Within each institution, all participants completed the questionnaires in the same sequence. This procedure was implemented to account for the length of the protocol and to minimize random responding by adolescents due to fatigue, which could bias the results.

Appended to this thesis are the following documents: the formal approval issued by the General Data Protection Regulation (Appendix B), the favorable decision of the Ethics Committee authorizing the conduct of the research (Appendix C), information on data privacy requirements and informed consent for minors (Appendix D), and the informed consent forms provided to the professionals from the institutions (Appendix E).

PART II – PUBLICATIONS

ARTICLE 1 | Determinants of psychological adjustment of institutionalized adolescents: a systematic review

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Determinants of psychological adjustment of institutionalized adolescents: A systematic review

ABSTRACT

BACKGROUND: Adolescents in residential care present a greater risk of developing various problems in several domains compared to adolescents residing with their biological families. Psychological adjustment is an emerging area of investigation among this particularly vulnerable population, aiming to understand the factors underlying the difficulties that youth experience in this context. OBJECTIVE: The present study aimed to contribute to recognizing these factors through a systematic literature review following the PRISMA guidelines. METHODS: A search was conducted in seven databases (Academic Search Complete, MEDLINE, Psychology and Behavioral Sciences Collection, PsycINFO, Web of Science, PsycArticles, Scopus), and quantitative studies from the last thirty years were included. RESULTS: Of the initial 8,174 articles identified, 64 were included, and all the studies were qualitatively assessed with the Mixed Methods Appraisal Tool. Four categories of factors influencing psychological adjustment were identified: personal characteristics, social characteristics, caregiving, and adjustment problems. Most of the studies were cross-sectional and published in European countries. CONCLUSIONS: The present review contributes to the research on the psychological adjustment of adolescents in residential care by providing an update and supplementing the previous systematic reviews. The proposed organization of the different factors and domains found in publications allowed us to analyze in detail what most impacted these youths' psychological adjustment. Practical and institutional implications for professionals working with this population are discussed, as well as the limitations to overcome in future studies.

Keywords: Adolescents; Residential care; Psychological adjustment; Systematic review

1. INTRODUCTION

Adolescence encompasses physical, cognitive, and emotional changes (WHO, 2024), increasing the risk of disorders for youth in residential care settings (RCS) (Singstad et al., 2022). These adolescents often present greater psychological issues (Mota et al., 2017) than peers in biological families (McGuire et al., 2023; Molano et al., 2024). With around 2.7 million children globally in institutional care and 456,000 in Europe and Central Asia (Petrowski et al., 2017), this review centers on studies concerning youth living in RCS, highlighting challenges to their psychological adjustment (Lemos et al., 2021; Magalhães & Calheiros, 2020).

Psychological adjustment in adolescence involves adapting to one's environment using emotional, cognitive, and social resources (Schoeps et al., 2019). It can be conceptualized as the extent of internalizing (Dwight et al., 2024) and externalizing problems that individuals exhibit, which often co-occur (Keil & Price, 2006). Poor psychological adjustment may lead to emotional, somatic, and behavioral issues (Ordóñez et al., 2015; Mayorga-Sierra et al., 2020). Institutionalization may impact adolescents' adjustment, due to new social dynamics and caregivers (Font & Kim, 2022). Research into adjustment difficulties in youth has primarily focused on personal factors like age, gender, and trauma (e.g., Akin et al., 2021; Farley et al., 2022) but ecological theory (Bronfenbrenner, 1974, 1977) highlights the importance of contextual experiences. It considers the various interconnected environmental systems that influence an individual's development, ranging from immediate surroundings to broad societal structures. This theory posits the need to focus on the person, context, and developmental outcome, as these processes affect people differently. Risk factors influence placement stability and psychological adjustment (Rau et al., 2020) and are often found in adverse home, school, or community environments (Greeno et al., 2019), whereas protective factors encompass individual traits and external support that facilitate positive adaptation (Sölva et al., 2023).

Studies on youth in alternative care show diverse results across different ages and care settings, necessitating careful filtering and integration. To address this gap, the present study aims to provide a systematic and critical review of research analyzing the determinants of psychological adjustment of adolescents living in RCS. Costa et al. (2022) conducted a systematic literature review (SLR) on the predictors of

psychological adjustment of adolescents in residential care. Through an analysis of 25 articles, they identified social and contextual risk and protective factors, with few individual factors linked to psychosocial adjustment. However, their review overlooked other significant predictors. The current study seeks to update Costa et al. (2022) findings by incorporating additional determinants affecting the psychological adjustment of institutionalized youth. This approach follows Pinchover and Attar-Schwartz's (2014) recommendations regarding the theoretical importance of understanding factors influencing the adjustment of institutionalized youth. Studying adolescents' adjustment to RCS and its determinants is crucial given the long-term consequences and the need for protective support. This research will contribute to a more comprehensive understanding of the factors influencing psychological adjustment in RCS.

The Cochrane Collaboration provides clear guidelines and recommendations for the appropriate frequency for updating SLRs. An approximate period of 2 years is suggested (Higgins et al., 2023) to incorporate relevant new studies in a previously completed systematic review (Moher et al., 2008). Given the limitations noted in Costa et al. (2022) and our review's data collection period exceeding two years, we provide an updated SLR on psychological adjustment determinants in institutionalized adolescents, encompassing various influences beyond mere risk or protective factors compared to Costa et al. (2022). This study aimed to (1) identify the predictors of psychological adjustment of institutionalized adolescents; (2) organize the factors into different categories; and (3) contribute to the development of research that promotes interventions for adolescents in residential care. Based on Ecological Systems Theory (Bronfenbrenner, 1974, 1977) and examples of diverse predictors influencing adolescents' adjustment to RCS [e.g., Guibord et al., (2011) categorization of predictors affecting youth exposed to adverse events, Habersaat et al. (2018) highlights on predictors for externalizing problems in adolescence, Rau et al. (2020) predictors for unplanned termination of residential care stays, Sölva et al. (2023) indicators of adaptation to residential care, and Woods et al. (2013) findings] we hypothesized that: H1) predictors beyond risk or protective factors influence the psychological adjustment of institutionalized adolescents; H2) the predictors may be grouped into different types and levels of influence on psychological adjustment (individual, institutional,

social); H3) there would be specific variables of influence (external, personal, social, emotional, and contextual); H4) key areas for intervention and support may be identified to improve psychological well-being of institutionalized adolescents. A thorough understanding of these factors will enhance outcomes in out-of-home (OoH) care (Mishra et al., 2020).

2. METHOD

Research design

The present study aimed to synthesize published research in the field of psychological adjustment among institutionalized adolescents, specifically focusing on the predictors of internalizing and externalizing behaviors. By considering the methodological characteristics and advantages of SLRs, we sought to contribute to the understanding of factors influencing the psychological adjustment of adolescents in RCS and to outline implications for practice and institutional policies.

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) recommendations (Page et al., 2021). The guiding question for this study was: Which variables influence or predict the psychological adjustment of adolescents living in RCS?

The research protocol was defined a priori to minimize potential errors and ensure an objective approach to the study. Subsequently, on July 4, 2023, the study was registered on PROSPERO, an international prospective register of systematic reviews in health and social work (ID: CRD42023437453). Registering the protocol enhances the transparency of the review, increases its visibility, and prevents duplication of the work by other researchers (Donato & Donato, 2019).

Eligibility Criteria

The present SLR only included original quantitative research reported in Portuguese, English, Spanish, or French, published from January 1993 until March 2024. We have chosen to focus on studies carried out in the last three decades, as this is the period in which research in this area has become more significant. We used the following inclusion criteria: a) the term institution and residential care referred to a multiple-caregiver rearing context *versus* a biological, foster, or adoptive family

environment; b) the studies explored individual, social, and context factors regarding the adjustment of adolescents in residential care; c) the adolescents were 11 to 21 years old; d) quantitative, empirical studies; and e) studies published in peer-reviewed journals. Exclusion criteria included a) adolescents involved in an experimental intervention program; b) adolescents not living in an institution during the data collection; c) the term institution or residential care referring to corrective situations, psychiatric hospitals, or other mental health facilities; d) studies without predictors; e) literature reviews; f) case studies; g) qualitative studies; h) books; i) book chapters; j) letters; k) commentaries; l) expert opinions; m) non-original studies; n) unpublished articles; o) doctoral theses; p) young people with disabilities; q) master's theses; r) gray literature; s) clinical trials; t) single case studies; u) participants aged below 11 or older than 21 years; v) studies focused on a topic other than psychological adjustment; and x) studies published before 1993.

After considering all the inclusion criteria, we obtained studies that simultaneously included participants living in foster care, foster families, or with their biological families. Only studies whose analysis of the results clearly distinguished between the different contexts were considered. Consequently, we only analyzed the results relating to young people in residential care, as congregate settings with multiple caregivers.

Information sources and search strategy

This systematic review/search was conducted in April 2024 and carried out in the following international scientific electronic databases: Academic Search Complete (ASC); MEDLINE (ML); Psychology and Behavioral Sciences Collection (PBSC); PsycINFO (PINF); Web of Science (WoS); PsycArticles; and Scopus. The selection process then occurred between April and May 2024, following an adaptation of the PRISMA statement diagram (Page et al., 2021).

The terms chosen to use in the electronic databases resulted from preliminary research of studies related to the same topic, grouping synonyms for the following terms: residential care, adolescents, and mental health. The research was accomplished with a truncated search strategy across all topics (subject, title, abstract, and keywords of the articles). Systematic reviews and publications in languages other than English, Spanish, French, or Portuguese were excluded. No geographical

constraints were placed to minimize publication bias. Detailed information about truncated search strategy is available upon request to the authors.

Data collection

The studies were obtained from peer-reviewed scientific journals. The initial total of 8,174 results was exported to a Microsoft Excel spreadsheet and Rayyan QCRI (Ouzzani et al., 2016). Rayyan is a free online application developed by the Qatar Computing Research Institute, specifically aimed at facilitating inter-judge agreement in SLRs (Camilo & Garrido, 2019; Ouzzani et al., 2016).

Following PRISMA recommendations (Page et al., 2021), the selection process began by removing 1,955 duplicated articles and 55 without full texts available. The relevance of the studies was determined first by screening the titles and subsequently the abstracts of the obtained results. After the title and abstract screening, 133 potentially relevant studies met the eligibility criteria and were submitted for full-text review. All 73 studies that did not meet the eligibility criteria were excluded. The final step involved searching through the reference lists of the 60 included articles. The selection process concluded with a total of 64 studies for analysis and qualitative assessment scoring. The qualitative assessment was conducted with the Mixed Methods Appraisal Tool (MMAT; Version 2018 criteria by Hong et al., 2018), which is a critical appraisal tool designed for the appraisal stage of systematic mixed-studies reviews. The search and identification of articles, selection, screening, and collection were performed by the first author. In cases of doubt, the opinions of the second and last authors were considered.

Quality of Measurements

Quality assessment uses tools that enable transparency and replicability of SLRs and is fundamental to guarantee the transparency of the process. In the present SLR, the methodological quality of the included studies was assessed and documented using criteria from the MMAT (Hong et al., 2018). The MMAT enables the assessment of systematic reviews that include qualitative, quantitative, and mixed-methods studies, although the present SLR only included quantitative studies.

To use the MMAT, for each study the researcher first responded to two screening questions (“Are there clear research questions?” and “Do the collected data

allow one to address the research questions?"). If the researcher responded "No" or "Can't tell" to one or both screening questions, further appraisal was not deemed feasible or appropriate. After responding to the two screening questions, the researcher chose the appropriate category, and the description of the methods used was analyzed (Hong et al., 2018). We considered five types of studies, and for each type, we used five criteria to evaluate and grade as "Yes" (corresponding to 1 point), "No," or "Can't tell" (graded with 0 points each). Thus, the assessment score ranged from 0 to 5 points, and the final score was presented as a percentage: 0 = 0%, 1 = 20%, 2 = 40%, 3 = 60%, 4 = 80%, and 5 = 100%. The MMAT does not define cutoff values, so the characterization of the studies was performed by the researchers. In the present study, the adopted criteria for the selection of the included studies were: (1) studies of low quality were those with a score below 50%; (2) studies of medium quality had a score between 50% and 80%; and (3) high-quality studies had a score equal to or higher than 80%. Only one study scored 60% and the majority were graded between 80% and 100%.

Data extraction

The screened records, based on eligibility criteria, were included in a qualitative synthesis that extracted the following information from each study: author(s) and year of publication, aim(s), age range, settings of care, main findings, limitations (and strengths when presented), and the result of the qualitative assessment (Table 1). The results afforded a narrative synthesis of the main findings of the included studies.

Table 1.

Author and publication year, aim, age range, settings of care, main findings, limitations/strengths, and qualitative assessment (Qual. Ass) of the 64 included studies.

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Aguilar-Vafaie et al. (2011)	To investigate the relationship between risk and protective factors and adolescent psychopathology and adjustment.	11-18	Foster home centers	Risk and protective factors influenced by individual, foster home, peers, community; indirect pathways between them and gender. Three main patterns, protective, protective and enhancing, and protective but reactive seemed to characterize most of the risk by protective factor interactions.	Is still necessary to investigate the role of attachment and the assessment of religiosity and religious coping. Findings can be useful for designing curriculum and supporting protection parameters	100%
Aguilar-Vafaie et al. (2014)	To investigate a broad array of putative protective factors associated with psychopathological symptoms and prosocial behavior.	11-18	Foster home centers	A high degree of association specificity based on the type of psychopathology and depending on gender. Theoretically derived individual protective factor scale associations were obtained mainly for conduct problems and emotional symptoms only with girls.	The small urban sample raises validity concerns, with translation issues affecting risk measures and varying correlations in psychopathology factors. Risk and protective factors show direct and moderating effects at different levels.	100%
Almas et al. (2020)	To examine disruptions in caregiving, as well as the association of these disruptions, with cognitive, behavioral, and social outcomes.	12	Foster care, Res. care	Early childhood factors showed no link to caregiving disruptions; age influenced disruptions but gender did not. Increased behavior problems by age 12.	Effect sizes were small; authors did not consider whether each disruption in care led to a positive or negative change in the caregiving environment	80%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Bederian-Gardner et al. (2018)	To examine the links between instability, mental health problems, and attachment insecurities in foster and at-risk non-foster youth.	17	Foster youth, non-foster	Instability in foster youth increases PTSD symptoms more than in non-foster youth, highlighting disruptions' impact beyond foster care status. Structural equation models show a better fit with instability than foster care status.	Data on mental health and attachment were collected from a subsample of foster youth and can result in a self-selected bias of youth with better outcomes	80%
Campos et al. (2019)	To compare adolescents in residential care to a national normative sample regarding mental health problems and psychosocial skills. To explore gender differences and the relationships between mental health problems and psychosocial competencies.	11-18	Res. care, Com.	Residential care adolescents showed more mental health issues, lower academics, and less support, yet greater sports engagement; gender differences were noted. Psychosocial skills were negatively correlated with mental health problems.	Self-report measures may bias results. Cross-sectional design. Characterizes adolescents in residential care in terms of their emotional and behavioral problems as well as their skills and opportunities.	100%
Camuñas et al. (2020)	To explore the executive, emotional, and behavioral profile of minors aged between 13 and 17 who were living in residential care homes.	13-17	Res. care	Executive functions, age, and gender impact children's emotional regulation issues.	Moderate sample; limited background on children's family history. Study design.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Carrasco Ortiz et al. (2001)	To analyze the consequences of mistreatment and the relationship with behavioral problems in a sample of minors sheltered in a protection center.	11-19	Res. care, Com.	Maltreated youth display more behavior issues than comparison groups. Victims of corruption or emotional abuse show more psychopathological problems.	Sample size and social desirability bias. Limited comparisons of maltreatment and control group characteristics.	100%
Conn et al. (2014)	To assess the relationship between activity participation (structured and unstructured) and social, academic, and mental health measures.	11-17.5	Foster home, kin care, Res. care	Structured activities enhance social skills and mental health; youth in care engage less. Lack of structured activities associated with loneliness and drug abuse.	No data exists on youth participation in structured activities; longitudinal data only at 18 months. Nationally representative sample showing prevalence of activities in adolescents in OoH care.	100%
Costa et al. (2020)	To analyze the adolescents' well-being over time. To test the moderating effect of adolescents' perception of their relationship with caregivers on well-being.	12-18	Res. care	Emotional closeness influenced adolescents' well-being initially, but not after one year; caregiver relationships influence psychological functioning.	Highlights gender imbalance, social desirability bias, unvalidated measures, and caregiver-adolescent relationships in care.	80%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Cotton et al. (2020)	To examine sex differences in self-reported psychological distress, emotional and behavioral problems, and substance use in young people living in OOH care.	12-17	Foster homes, Res. care, kinship care	Half of the girls scored clinically significant on SDQ subscales, facing emotional and behavioral issues, placement instability, and higher difficulties, unlike boys who reported more substance use.	Study nature and self-reports affect results; sample balance regarding placement type needed for sex differences analysis. Lack of normative data and information about adverse childhood experiences or attachment problems.	100%
de Abreu et al. (2023)	To explore positive and negative dimensions of mental health and their links to risk and protective factors in children who have experienced early adversity and trauma.	11-18	Res. care	More than half of children exhibit significant psychopathological symptoms; subjective well-being and internalizing/externalizing problems are interconnected aspects of mental health. Individual, contextual, and psychosocial predictors influence mental health. 'Child participation' associated with mental health outcomes.	Study nature cannot infer causality; care workers influence children's responses. Historical data is missing, and caregiver reports on children's histories are unclear. The national sample utilized and high response rates.	100%
Debnath et al. (2023)	To investigate the impact of early psychosocial deprivation and a foster care intervention on error monitoring and its association with internalizing and externalizing behavioral problems in adolescence.	16	Res. care, foster care, Com.	Group status influenced the relationship between brain activity related to errors and externalizing ADHD behaviors. Children in residential care showed deficits in error monitoring, which correlated with externalizing behavior issues. Longer care impacts error monitoring; foster youth with similar error monitoring than non-institutionalized peers.	Not restricting the analyses only to error trials.	80%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Edmond et al. (2003)	To examine the differences between sexually abused and non-sexually abused adolescent females in the foster care system regarding education, mental health and substance abuse.	15-19	Res. care, family, foster home	Sexually abused girls exhibit more behavioral issues than non-abused peers. Foster care youth struggle with mental health, substance use, and education, showing significantly higher trauma scores.	Some variables to compare groups were not assessed; sexual abuse definitions need clarification. Sample may not represent population, and study design impacts results.	100%
Erol et al. (2010)	To examine the prevalence of emotional and behavioral problems, and associated risk and protective factors among representative samples of institutionally reared and similarly aged community-based adolescents brought up in their natural homes. To define mental health service needs and utilization.	11-18	Res. care, family care	Institutionalized youth face high rates of various problems, especially when lacking parent or relative contact. Key predictors of emotional and behavioral problems include fatalistic beliefs, inadequate caregiving, and poor problem-solving skills. An unmet need for mental health services.	Study design. The authors found prevalence rates and explored predictors of mental health among institutionalized adolescents. Sample size, good response rates, and multiple informants.	100%
Farineau and McWey (2011)	To examine the relationships between involvement in extracurricular activities and delinquency for adolescents in foster care.	13-16	Foster care, kinship care, group home	Youth in group homes engaging in activities thrice weekly and lacking caregiver closeness showed the highest delinquency mean scores.	No causal link between activity involvement and delinquency. Small sample size Unable to assess adolescents' activities.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Fernández García et al. (2023)	To explore the mediating role of multiple facets of emotional regulation in the relationship between sexual victimization and psychological well-being.	11-19	Res. care	Gender and age affect emotion regulation. Sexual victimization leads to poor psychological well-being via emotional regulation challenges, emotional clarity issues, limited access to emotional regulation strategies, and non-acceptance of feelings.	The use of inferential analysis with observational data.	80%
Fischer et al. (2016)	To assess the relationship between interpersonal traumatic experiences and psychopathological symptoms in a high-risk population of girls and boys living in youth welfare institutions in residential care. To examine the influence of the identity of the perpetrator on psychopathology.	11-18	Res. care	80.3% reported traumatic experiences. Gender differences in psychopathology related to interpersonal trauma: substance use in males, attention disorders, more thought and internalizing problems in females. Multiple traumas linked to symptoms. Known perpetrators heightening trauma and psychopathology correlations. Trauma-sensitive care and psychiatric services are needed for institutionalized adolescents.	Differences in adolescents' data quality limit findings' validity; sample size and design influence conclusions.	100%
Gearing et al. (2013)	To establish the prevalence rates of mental health and behavioral problems among adolescents residing in institutional care centers. To examine how mental health functioning varies by youth characteristics and placement history.	11-18	Res. care	Institutionalized youths face elevated mental health issues, with adolescent characteristics and case histories linked to greater difficulties. Conduct and social problems had the highest scores, with males scoring worse. Maltreatment, transfers between care centers, and length of stay correlated with increased challenges.	Highlights the importance of standardized assessments for effective child intervention screening.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Gearing et al. (2015)	To examine the patterns of agreement between adolescent self-reports and staff caregiver reports on mental health. To examine associations between adolescent-staff agreement, demographic characteristics, and characteristics of the child-caregiver relationship.	11-18	Res. care	Adolescents report higher severity of problems than staff caregivers. Caregivers recognize more overall issues. Secure attachment style is associated with agreement on total problems and several internalizing problems. Associations across the four characteristics of the child-caregiver relationship: relationship duration was associated with problem frequency difference scores. Adolescents endorsing high perceived closeness to staff showed less agreement on the problem frequency anxious/depressed sub-scale scores.	The study's nature and sample size limit conclusions. Lacking clinical assessments affects the analysis of discrepancies between informants. Staff caregivers can be good informants on adolescents' psychopathology.	100%
Go et al. (2017)	To examine the role of strengths (having talents/interests, family relationships, educational support), the recognition and application of these strengths, and the role of multi-type maltreatment on anger control and conduct problems.	13-19	Res. care	Recognizing and applying personal strengths is crucial for healthy development and problem-solving in maltreated adolescents, reducing anger and conduct problems through a strength-based intervention approach. Strengths are inversely linked to conduct problems.	Retrospective data overlooked confounders. Did not include school factors, community support, ethnicity, and maladaptive cognitive processes in anger regulation.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Greger et al. (2015)	To explore the impact of self-reported maltreatment on the prevalence and comorbidity of psychiatric disorders in a high-risk adolescent population in residential care units. To study the cumulative effect of poly-victimization.	12-20	Res. care	Childhood maltreatment and poly-victimization elevate psychiatric disorder risks and comorbidity between behavior and emotional disorders in adolescents.	Despite a large nationwide sample and good response rate, the study lacks details on neglect, emotional/verbal abuse, maltreatment frequency/types, and does not include parents as informants.	100%
Gundogdu and Eroglu (2023)	To compare female adolescents in institutional care diagnosed with major depression or substance use disorder with those who were not. To examine the protective effects of coping styles, resilience, and social support on depression and substance use.	11-18	Res. care, family	Female institutionalized adolescents showed greater psychopathologies; resilience, social support, and coping strategies linked to lower depression and substance use. AICs are more vulnerable to psychiatric illness.	Small sample size and the absence of male participants.	100%
Hoffnung Assouline and Attar-Schwartz (2020)	To examine the link between perceived staff social support and emotional and behavioral adjustment difficulties of adolescents in educational RCS. To examine the moderating role of adolescents' length of stay in the RCS in the link between staff support and adolescent adjustment.	12-18	Res. care	Adolescents reported medium to high staff support, which correlated positively with being female, Israeli-born, and perceived parental support. Staff support negatively affected adjustment difficulties, especially for those in RCS for longer periods.	Results rely only on adolescent's reports. Study and sample nature. Highlights the importance of residential care staff in adolescents' adjustment. Positive correlations exist between perceived support from parents and staff. Need to consider adolescents' gender and culture when training staff.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Huffhines et al. (2020)	To examine how maltreatment chronicity and coping style were associated with internalizing, externalizing, and psychiatric hospitalization. To examine whether coping style moderated the relation between maltreatment chronicity and mental health in a sample of foster adolescents.	12-19	Foster care, Res. care	Youths facing more maltreatment exhibited higher internalizing issues and psychiatric hospitalizations. Direct problem-solving correlated with lower caregiver-reported issues; avoidance was linked to fewer hospitalizations.	Did not assess time since maltreatment. Study design limits inferences and statistic values should be interpreted with caution. Used multiple informants to analyze maltreatment frequency and types, exploring coping impacts on psychiatric hospitalization.	100%
Iglehart (1993)	To investigate the behavior adjustment of adolescents in foster care using entry-level characteristics and structural characteristics.	16	Foster care, Res. care	White adolescents and those in group homes exhibited higher internal and external maladjustment scores compared to those in foster care. Significant variables explained 14% of the variance in external scores, with age, placement duration, and various child and organization-related factors affecting foster care adjustment.	Caretakers are crucial for aiding providers and adolescent behavior reporting.	80%
Kang et al. (2018)	To investigate whether physical health problems in Korean adolescents in care influence their psychosocial adaptations by increasing the level of bullying victimization experiences.	11-14	Res. care, group homes, foster care	Adolescents' physical health issues lower self-esteem, raise depression and anxiety, and heighten bullying victimization, affecting their psychosocial adaptations negatively.	Physical health and bullying data depend solely on adolescents' reports; time-varying variables are ignored. Statistical methods overlook time-varying variables. Study design and inclusion of all main placement types.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Khoury-Kassabri and Attar-Schwartz (2014)	To examine levels of victimization among children belonging to the same ethnic group.	11-19	Res. care	Adolescents in RCS face high peer victimization, especially in settings lacking familial elements. Victimization rates by staff are high. Social self-efficacy influences victimization, with gender affecting adjustment difficulties. Individual traits and social context explain 32.85% of victimization variance. RCS with a high percentage of children with adjustment difficulties have higher levels of physical victimization.	Study design. Authors didn't consider reasons or the number of previous placements, nor other institutional variables. Is the largest study investigating physical victimization by peers in RCS.	100%
Kim and Chun (2016)	To examine the impact of placement characteristics on aggressive behaviors among children in OOH care by placement type. To examine how children's characteristics affect aggressive behaviors.	11-13	Res. care, group homes, foster care	Children in group homes displayed the highest levels of aggression, peer delinquency, and victimization. Significant predictors of aggressive behavior included gender and family contact. Foster care children experienced lower aggression and better relationships, while stigma affected behaviors in both institutional and foster care settings.	Limited ability to analyze the impact of the number of placements on behavioral problems. Highlights the need for diverse data sources and placement characteristics in care.	100%
Lemos et al. (2021)	To investigate differences in psychological distress symptoms and resilience assets in institutionalized and non-institutionalized adolescents.	12-19	Res. care, family	Adolescents in residential care perceive lower resilience, self-efficacy, and empathy, exhibit fewer aspirations, and experience higher psychological distress than those living with families. Institutionalized girls report higher BSI values.	Absence of qualitative assessment on resilience; sample size limits conclusions; child-caregiver interactions and residential climate unexamined.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Lemoust de Lafosse and Blanc (2016)	To show the existence of a link between behavioral and social skills among teenagers placed in care with a failure of attachment with their attachment figures.	12-15	Res. care	Young people's secure parental attachment correlated with behavioral issues, social adaptation problems, and school difficulties. Maternal attachment linked to antisocial personality disorders; peer attachment affected social adaptation.	The LCE scale's "social skills" part wasn't adapted. Each educator assessed several children overlooking important parameters.	80%
Magalhães et al. (2016)	To explore how young people in residential care perceive their rights and the relationship with their adjustment, through the role of group identification.	11-18	Res. care	Mediation effects reveal that higher rights perceptions lessen psychological issues through group identification., influencing participation and protection, system practices, emotional distress, anger control, and antisocial behavior.	Study design lacks longitudinal progressions, self-report measures, and sampling methods are limited. Authors offer insights into adolescents' perceived rights and psychological functioning. Data from multiple contexts of RCS with national coverage.	80%
Magalhães and Calheiros (2017)	To test the suitability of a dual-factor model with youth in care. To explore how different mental health groups may differ on social support dimensions from different sources.	11-18	Res. care	Different associations between psychopathology and well-being; groups varied in placement length and perceived social support.	The nature of the study, sampling method, and only self-report measures may bias the results.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Magalhães et al. (2021)	To explore the moderating role of social support from educators in residential care and the association between perceived rights and psychological difficulties.	11-18	Res. care	Greater perceptions of autonomy, family contact, and social support are linked to reduced psychological difficulties. Social support moderates the impact of autonomy and family contact on these difficulties. Educators' supportive roles enhance positive functioning and moderate the effects of perceived rights on youth psychological well-being.	Self-reported measures and cross-sectional design implies caution in interpreting results. Educators' protective roles positively support adolescents. Highlights the protective role and supportive care of educators in RCS.	100%
Mayorga-Sierra et al. (2020)	To determine if individual, social, and psychological adjustment differs between juvenile offenders, foster care adolescents, and normal adolescents.	14-19	Corr., Res. care, family	Foster-care adolescents with higher personal maladjustment, and juvenile offenders with greater social maladjustment. Both groups faced psychological harm and higher severity in global symptoms and distress.	Study assumes direct effects of variables on delinquency, but other factors may influence outcomes. Results may not be generalized to other populations.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
McGinnis (2021)	To examine the extent adolescents in institutional care have cognitions and feelings of birth parent loss. To investigate if birth parent loss appraisal (negative cognitions and affect) is a predictor of mental health and behavior problems.	11-18	Res. care	Most youth reported secure attachment and lacked negative feelings towards birth parents. Poor appraisal of birth parent loss correlated with mental health issues. Insecure attachment and negative perceptions were linked to depression, while social support decreased internalizing and externalizing problems. Externalizing issues were predicted by the number of trauma types and school bullying. Girls with more internalizing problems, negative appraisal of birthparent loss, trauma types, and discrimination for being in an orphanage.	Cross-sectional design and convenience sample may bias results. Need to test the validity of the scale.	100%
McWey et al. (2010)	To examine changes in externalizing and internalizing problems of adolescents in foster care. To determine whether type of maltreatment, gender, and age influenced trajectories.	13-16	Res. care	Correlations between externalizing and internalizing problems were significant across 3 waves. While both problems decreased over time, boys in foster care showed higher initial levels but faster decreases. Maltreatment type predicts externalizing change rates. Externalizing and internalizing problems remain stable across time as a function of age.	A small sample focused on ages 13-16; broader variables are needed for understanding youth maladaptive functioning. Authors examined the type of abuse experienced.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
McWey et al. (2023)	To test the interactive association between current caregiver involvement and contact with biological parents on youths' externalizing symptoms among youth in OOH placements.	11-17	Foster care, kinship, Res. care	High caregiver involvement buffers youth's externalizing symptoms, especially with increased biological parent contact frequency.	Study design and statistical significance. Doesn't examine how placement change impacts mental health outcomes and family relationships.	100%
Molano et al. (2024)	To describe the psychological adjustment of the children and adolescents participating in the Collaborating Families Program comparing information from different sources. To analyze the self-perception of psychological adjustment in relation to some variables and dimensions related to the experience of family collaboration.	11-18	Res. care	Differences in psychological adjustment across informants. Children with fewer peer and conduct issues perceived more acceptance and fairness from collaborating families, showing better psychological adjustment, unrelated to age, gender, or child protection trajectory.	The sample size, despite its representativeness. Study design limits predictive capacity about relationship directionality. Novel results lack comparative studies. Innovative nature of the findings regarding studying minors in residential care who have access to live in a family environment.	100%
Moreno-Manso et al. (2017)	To analyze the level of psychosocial adaptation among young victims of physical neglect who were in residential care centers. To determine the relationship between the different levels of competence and/or functionality in various areas of adaptation.	12-14	Res. care	12- to 14-year-olds show limited global behavioral adaptation, experiencing issues in social, personal, and school contexts. Family adaptation is adequate; females exhibit lower adaption overall, with males showing more depressive states. Young victims of physical neglect face challenges in psychosocial adaptation.	Cross-sectional design influences the study of psychosocial adaptation. No comparison of abuse types.	

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Moreno Manso et al. (2021)	To study the executive processes of youths under protective measures, together with the emotional and behavioral problems they may present, as well as problems related to emotional regulation. To determine the extent to which difficulties in the executive processes can predict emotional and behavioral problems.	13-18	Res. care	Deficits in executive processes predict emotional and behavioral issues, including difficulties in response inhibition, attention control, and cognitive flexibility, low adaptation to cognitive stress, low capacity to take decisions and resolve problems. Higher emotional problem scores (anxiety, somatic problems, hyperactivity, and regulating emotions). Females exhibit more emotional symptoms, while males show increased externalizing difficulties, highlighting gender differences in these problems and in global performance.	Study design limits understanding of symptomatology's onset, lacks a control group, and tests aimed to reduce contextual influences.	100%
Moreno-Manso et al. (2023)	To analyze the presence of internalizing and externalizing symptoms and its relationship with the coping strategies of young victims of abuse living in residential care. To determine the predictive value that the internalizing and externalizing issues has for the coping style.	12-17	Res. care	Adolescents with above-average scores in internalizing and externalizing symptoms, contextual issues, and antisocial behavior. High motor activity, impulsiveness, and attention difficulties. Unproductive coping styles score highest, while productive strategies are below average. There's a link between coping styles, symptoms, and contextual problems. Inadequate psychological resources fail to provide protection.	Authors overlooked the length of stay and abuse type, highlighting vulnerabilities affecting adolescents' psychosocial functioning.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Mota et al. (2017)	To analyze to what extent the quality of sibling relationships protects against the development of psychopathology among adolescents from traditional families and institutionalized ones. To analyze differences in sibling relationship quality and psychopathology based on family structures, gender, and age of the youth.	12-18	Res. care, family	Institutionalized adolescents exhibit higher psychopathological symptoms, with females scoring higher across all areas. Sibling relationships show greater prosocial behavior in institutionalized youth. Support dimensions vary by gender and age. Institutionalized youth are more prone to emotional issues and psychopathology, influenced by sibling dynamics affecting somatization, anxiety, depression, and interpersonal sensitivity.	Use of self-report measures and study design. Sociodemographic differences between samples should be considered. Authors did not apply the full dimensions of the Sibling Relationship Questionnaire	100%
Mota and Oliveira (2020)	To analyze the predictive effect of social support and personality on psychological well-being testing the moderating effect of relational context on the previous association.	13-18	Res. care, family	Psychological well-being is predicted through social support and personality, with the moderating role of relational context.	Sample size and the use of only self-report measures.	100%
Musa et al. (2019)	To analyze the differences of family values, psychological distress, and its association with adolescents living in long-term residential care as compared to adolescents in an ordinary school.	13-17	Res. care, family	Depression, anxiety, and stress levels varied between groups. Family values and dynamics influence adolescent mental health beyond socioeconomic factors, affecting psychological distress. Adolescents in long-term care present lower family values and higher stress.	Recall bias and unmeasured confounders.	80%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Pascuzzo et al. (2021)	To investigate whether professional carers' interest and curiosity in adolescents' mental states mitigates the negative association between professional carers' insecure attachment and adolescents' behavioral and emotional adaptation.	12-17	Res. care	Adolescents with female carers show more externalizing issues. Carer's reflective functioning moderates the association between attachment and youth problems; training programs can improve outcomes. IC reflective functioning acts as a protective factor.	Measures assessed simultaneously hindered prediction of youth adaptation. Possible social desirability bias. Findings clarify the link between carer dispositions and adolescent adaptation.	80%
Perry (2006)	To explore relationships between psychological distress, network disruption, and network strength.	15-18	Foster care, kinship, Res. care	Youth in care experience supportive relationships within foster care and among peers, and biological family networks are weaker. At least two robust network domains are essential for mental health protection. Strong new connections significantly mitigate psychological distress, while network disruptions can worsen mental health outcomes. Gender differences. OoH placement impacts social networks and psychological distress.	Small sample size risks Type I error in foster care. Limited scope on internalizing psychological distress outcomes in foster care.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Pinchover and Attar-Schwartz (2014)	To examine a mediation model exploring the role of exposure to physical violence by peers in the relationship between the RCS social climate and adolescents' overall adjustment difficulties.	11-19	Res. care	Adolescents had an average adjustment difficulties score of 14. 56% experienced peer violence. Positive social climate promotes adjustment and safety, affects peer victimization, and can reduce peer violence occurrences. RCS staff need training to manage aggression.	Cross-sectional design. Studying stay experience aspects explains children's functioning variance.	100%
Pumariega et al. (1995)	To provide an initial estimate of the frequency of emotional disturbance and substance abuse in youth served by residential group homes.	12-17	Res. care	Many youths had CES-D scores above cutoff levels. 67.6% used two or more illegal substances, 18.1% used four or more. Runaway behavior correlated significantly with previous placements.	Limited range of the sample. Data exclusively from screening instruments.	100%
Pumariega et al. (1996)	To examine racial and gender differences in depressive and substance abuse symptomatology in a high-risk population of adolescents living in residential group homes.	12-17	Res. care	Many youths had elevated CES-D scores; runaway episodes predicted impulsiveness. Gender and age influenced depression more than race, with poverty linked to substance use.	Highlights the importance of gathering symptoms and functioning information from multiple informants.	100%
Rayburn et al. (2018)	To test the degree to which specific aspects of current foster caregiver-adolescent relationship quality, namely emotional security, involvement, and structure, mediated the association between in-home violence exposure and mental health symptoms.	11-16	Foster care, Res. care	Exposure to violence affects foster caregiver relationship quality, correlating with trauma, internalizing, and externalizing symptoms. Current caregiver involvement significantly mediates adolescent mental health symptoms, with emotional connection and security potentially disrupting links between violence exposure and adverse mental health outcomes.	Marginal reliability for the measure of the current foster caregiver-adolescent relationship quality. Missing data on type of placement, findings based exclusively on adolescent reports, and cross-sectional design affect analysis.	100%

Table 1. ***Cont***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Salazar et al. (2011)	To investigate whether complex maltreatment experiences predicted higher levels of depressive symptomatology and examine the role of social support in that association.	17-21	Res. care	Pre- and during-care maltreatment were significant predictors of depression, influenced by gender. Lower social support linked to maltreatment; higher social support correlated with fewer depressive symptoms, highlighting its mediating and moderating role in depressive symptom development.	Data collection methods were suboptimal. Diagnostic interviews employed skip patterns, maltreatment questions were asked only at time 2, and study suffered from participant attrition across time points.	100%
Santos and Salvador (2017)	To compare institutionalized and non-institutionalized adolescents in variables related to psychopathology and well-being.	13-18	Res. care, family	Institutionalized adolescents experienced more shame, self-criticism, compassion fears, depression, and had fewer early memories of warmth and security.	Small and not completely random sample. Interviews could provide a more comprehensive view of variable impacts.	80%
Santos and Salvador (2021)	To study variables that contribute to depression in institutionalized adolescents. To explore the mediating role of external shame and self-criticism in the relationship between EMWS and depression in this population.	13-18	Res. care	Childhood memories of warmth influence perceptions of external shame, affecting depression through self-criticism. EMWS relates to gender, with external shame fully mediating its impact, while self-criticism mediates external shame's effect on depression in institutionalized adolescents.	Sampling method, cross-sectional design, and language in some instruments have implications for the results.	100%
Segura et al. (2016)	To analyze the effect of poly-victimization on symptom severity among adolescents being cared for by the child welfare system	12-17	Res. care	Poly-victimization in adolescents in residential care predicts severe psychological symptoms, with thought problems as potential coping mechanisms for multiple victimizations. Sexual and electronic victimization are linked to specific behavioral problems. Identifying highly victimized adolescents in care is crucial for policy.	Cross-sectional design. Self-reported measures, low number of subjects in groups, and age of participants may introduce bias. Relationship between victimization and psychopathology studied in only one direction. All types of victimization were considered equally instead of weighted.	80%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Segura et al. (2017)	To examine the role of several resilience resources in the relationship between lifetime victimization and mental health problems among adolescents in care.	12-17	Res. care	Greater lifetime victimization correlates with increased internalizing and externalizing symptoms, influenced by community support and individual protective factors. Poly-victimized youths experience clinical symptoms regardless of resources, with self-resources moderating the impact on mental health. Gender affects resilience and victimization.	At-risk sample may have experienced other adversities and protective variables may operate differently according to the contexts. Self-reports, sample size, and cross-sectional design limit interpretations. Dropout rate and lack of statistical power affect generalizability.	80%
Singstad et al. (2022)	To investigate associations between the symptom load of four psychiatric disorders and perceived social support among adolescents in residential youth care facilities.	12-20	Res. care	Gender differences exist in psychiatric symptoms, with social support enhancing mental health. For girls, parental support can be substituted by friends and RYC staff. Higher support correlates with reduced emotional disorders. Boys show behavioral symptoms with father support but lower from staff. Strong connections improve adolescent emotional and behavioral outcomes.	Cross-sectional design. Adolescent self-reports may bias results. More social support sources needed and the number of supportive figures; health problem information previously of placement is limited.	100%
Soriano-Diaz et al. (2023)	To study the emotional and behavioral problems and the personal well-being of adolescents under protective measures.	11-17	Res. care	Adolescents facing emotional and behavioral challenges risk externalizing and internalizing issues and report better social skills. Those with more difficulties perceive lower well-being. Reasons for being in care influence prosocial behavior, which may protect against emotional and behavioral problems. Females with more emotional and global difficulties.	Cross-sectional design. Limited details on adverse conditions and psychological functioning before youth institutionalization.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Stone and Jackson (2021)	To examine whether characteristics of the foster care environment across various placement types could help explain the link between previous maltreatment exposure and mental health problems.	11-18	Foster care, Res. care, group homes	Caregiver reports, rather than family cohesion, linked negatively to youth's internalizing issues; family conflict mediated the relationship between maltreatment and internalizing/externalizing symptoms.	Cross-sectional design. The framework overlooks diverse foster care settings. Some characteristics of the FES measure may difficult interpretation. Sampling limits result generalizability, and previous placement duration and externalizing or internalizing symptoms were unmeasured.	100%
Stone et al. (2021)	To examine how qualities of the foster environment and types of placements are associated with the mental health outcomes of youth in foster care.	11-16	Foster care, Res. care	Youth conflict correlates with internalizing issues; higher family cohesion reduces symptoms in youth in traditional foster care homes.	Cross-sectional design. Sampling method, statistical fragilities, and measures bias interpretation. Authors overlooked the duration in current placements and the number of previous placements that can affect adolescents' perceptions. Findings inform foster family aspects relevant to youth mental health. Study used multiple informants and assessed how placement type impacts youth outcomes.	100%
Thompson et al. (2016)	To investigate if self-esteem can mediate the association between peer relationships and various problematic behaviors of adolescents in foster care.	11-16	Foster care, kinship, Res. care	Adolescents in residential homes with poor peer relationships exhibit negative behaviors. Stronger peer relationships enhance self-esteem, mediating the effects of internalizing, externalizing, and delinquent behaviors in foster care youths. Age also influences outcomes.	Sample size representing foster care adolescents and study's nature. A longitudinal study could be beneficial. Discrepancies between informants.	80%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Troller-Renfree et al. (2016)	To investigate the impact of psychosocial deprivation on behavioral and neural responses to a Flanker task assessing error monitoring and the relations between these measures and psychopathology.	12	Res. care, foster care, Com.	Institutionalized children exhibited impaired behavior, accuracy, and processing speed. Extended care linked to reduced neural correlates of error monitoring, influencing externalizing and ADHD behaviors, suggesting early institutional exposure may affect brain circuitry related to error monitoring and increase risk for these problems. Perturbations in this neural circuitry in combination with psychosocial deprivation may be a risk pathway for the development of externalizing and ADHD problems.	Analyses used an intent-to-treat framework regardless of current placement, but the lack of accuracy on task completion reduced sample sizes and statistical power.	60%
Valdez et al. (2014)	To explore the trajectory of depressive symptoms in foster youth using a piecewise linear growth model. To examine the effects of PTSD and emotion dysregulation on youth's depressive symptoms over time.	17-19	Res. care	Females show higher depressive symptoms than males; PTSD and emotion dysregulation predict symptoms in foster youth, affecting trajectories. Sex differences influence baseline depressive symptoms and severity trajectories.	Secondary data analysis restricts follow-up of depressive symptoms. A limited, asymptomatic sample and underexplored emotion regulation possibly impact conclusions. Linear growth modeling predicts symptom changes over time.	100%

Table 1. ***Cont.***

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
Valdez et al. (2015)	To examine components of positive change with depression severity from age 17 to 18 in foster youth as they prepared to exit foster care.	17-19	Res. care	Foster youth showed a non-linear decrease in depressive symptoms over time, influenced by severity of abuse. Increased self-efficacy predicted symptom reduction, while compassion for others did not impact depression levels.	Secondary data analysis restricts variable study; inconsistent links found between positive change and mental health outcomes due to design and self-report bias. Generalizability of the results only possible for one American state.	100%
Yoon et al. (2019)	To investigate the role of self-esteem as a mediator in the association between different types of child maltreatment and depressive symptomatology among a sample of adolescents in OOH care.	17-19	Res. care	Greater depressive symptoms correlated with physical abuse, neglect, emotional abuse, and low self-esteem; males and non-family placements experienced increased symptoms.	Authors overlooked various child maltreatment types from the Trauma Questionnaire. Potentially recall bias in self-reports. There may be low agreement on abuse definitions, and placement-related variables associated with depressive symptomatology were not addressed.	100%

Note. Res. care = Residential care; Corr = Correctional centers; Com. = Community.

3. RESULTS

Search results

The search through seven electronic databases for articles published from January 1993 until March 2024 resulted in a total of 8,174 manuscripts, with 1,955 being duplicated and 55 not having the full text available, resulting in a total of 6,164 articles that were further screened based on their title and, in a second step, on their abstract. After this analysis stage, 6,031 records were excluded and 133 were selected for full-text review. Of the latter, 73 studies were excluded because they did not meet the inclusion criteria due to: a) the age of the participants (*n* = 32); b) not all participants living in institutions (*n* = 18); c) studies being about topics other than psychological adjustment (*n* = 11); d) a study not having predictors (*n* = 1); e) incomplete/unavailable studies or those written in languages other than Portuguese, English, Spanish, or French (*n* = 4); or f) the participants being involved in treatment or intervention programs (*n* = 7).

A total of 60 articles were selected for the final sample, and the reference list of each was analyzed to identify other possible studies for inclusion. Four studies were added during this final stage, making the corpus of analysis for this SLR comprised of 64 quantitative studies (Figure 1). The selected studies were published across the entire spectrum of research (between 1993 and 2024), as shown in Figure 2. When analyzing the publications per decade, it's evident that the great majority of research in psychological adjustment of institutionalized adolescents was conducted in the last decade, with growing interest from 2014 onwards.

Regarding the countries where the selected studies took place, it's possible to observe that they were conducted in 18 different countries, with 44% in Europe, 33% in America, 22% in Asia, and 1% in Australia. Regarding the type of study, the vast majority (*n* = 54) had a cross-sectional design, two were experimental studies, and eight had a longitudinal design. The study samples were categorized according to their size, resulting in three types: small samples had up to 150 participants; medium samples had 150–300 participants; and large samples had more than 300 participants (Table 2).

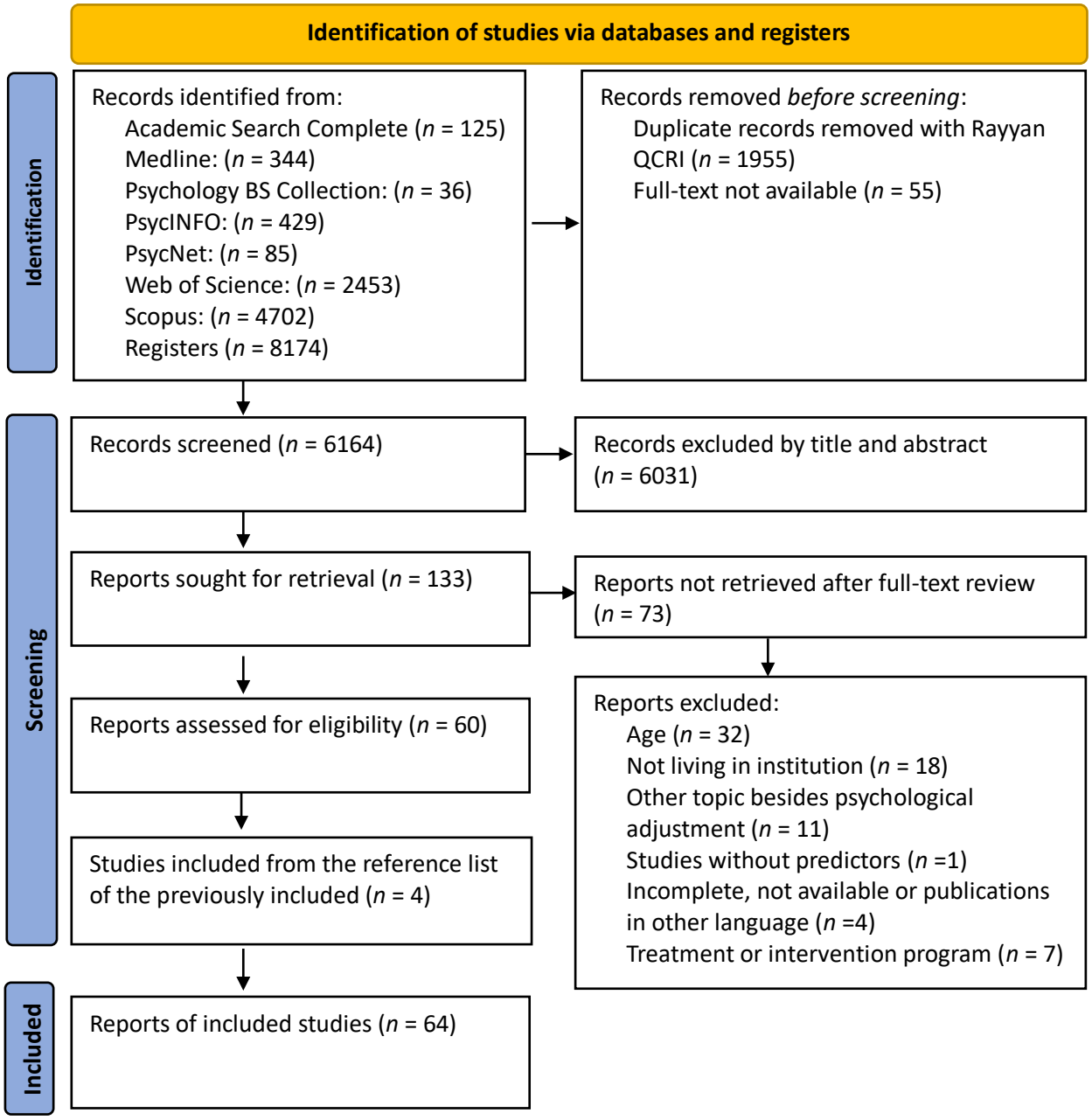

Figure 1. *Flowchart of the systematic literature review research and selection process adapted from Page et al. (2021)*

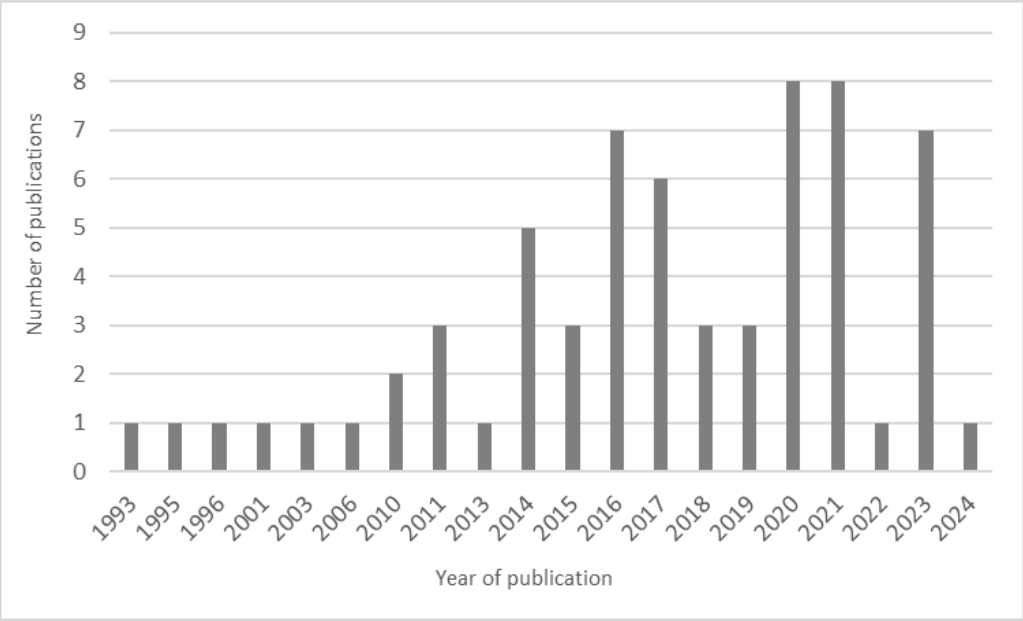

Figure 2. *Number of included studies by year of publication*

A qualitative assessment of the included studies was performed using criteria from the MMAT (Hong et al., 2018). Of the 64 selected studies, one study scored 60%, 14 studies achieved 80%, and 49 studies scored 100%, resulting in high-quality studies included in this SLR (see Table 1).

All selected studies were categorized into one of four themes that emerged from the publications. For each category, some subtopics were better described and were more specific concerning the area of interest of each publication. The main themes were organized as exploring: 1) personal characteristics; 2) social characteristics; 3) caregiving; and 4) adjustment problems.

Personal characteristics

In the present review, 28 studies focused on variables related to personal characteristics that influenced institutionalized adolescents' psychological adjustment, such as gender (e.g., Aguilar-Vafaie et al., 2014), age (e.g., Almas et al., 2020), or history of being sexually abused (e.g., Edmond et al., 2003).

Risk and protective factors

It is well established that youths in institutional care tend to have a high rate and diverse range of problems in all domains, and Kang et al. (2018) showed that these

problems directly increase levels of depression, anxiety, and social withdrawal. This topic includes 11 studies that investigated in more detail some characteristics that act as risk or protective factors for adolescents' behavior. Some authors showed that experience of victimization increases the risk of developing mental illness (e.g., Greger et al., 2015), and how gender or coping styles can influence vulnerability to psychiatric illness (e.g., Gundogdu & Eroglu, 2023). Other investigations showed that several risk and protective factors acted as significant predictors of total problem scores (e.g., Erol et al., 2010).

Placement characteristics

The psychological adjustment of adolescents living in OoH care is influenced by placement characteristics. One study, (Kim & Chun, 2016), showed that children in foster care had lower levels of aggressive behavior problems, better peer relationships, and experienced less peer victimization than children in institutional care or group homes.

Individual characteristics

On this topic, 14 studies were included that detailed the influence of individual characteristics on the psychological adjustment of young people living in OOH care. Some authors found that age and gender are significant predictors (e.g., Yoon et al., 2019), with minors aged 13–15 years and females showing more emotional problems (e.g., Camuñas et al., 2020), while others demonstrated that brain activity associated with error monitoring was associated with externalizing behavior problems (e.g., Debnath et al., 2023). Another publication addressed the role of resilience in psychological distress (e.g., Lemos et al., 2021).

Rights perception

Two included studies showed the importance of perceptions of personal rights in mediating psychological problems (Magalhães et al., 2016, 2021) and demonstrated that the existence and recognition of respectful system practices influence adolescents' behaviors, emotional distress, anger control, and antisocial behavior (Magalhães et al., 2016).

Social characteristics

Several studies emphasized the importance of social relationships in the adjustment and behavior of young people in residential care. In this category, 12

studies reinforced the importance of social networks and highlighted how disruptions in these networks affect mental and behavioral problems. These studies recommended maintaining and developing social networks and improving residential staff relational skills (Singstad et al., 2022).

Social support, staff support, length of stay, and social climate

The publications included in this topic reported differences in adolescents' mental health when considering dimensions of perceived social support (e.g., Magalhães & Calheiros, 2017). They also found that youths in contact with collaborating families showed a better profile of psychological adjustment (e.g., Molano et al., 2024), demonstrating that perceived social support from several sources is associated with better mental health (Singstad et al., 2022). Another interesting aspect was that beneficial effects of parental support can be replaced by social support from friends and residential youth care staff (Singstad et al., 2022). Researchers found that when this support was present, adolescents experienced fewer adjustment difficulties. Other important characteristics for psychological adjustment were the time that adolescents spent living in residential settings and the existence of a positive social climate. Some publications showed a link between longer periods in residential care, social support, and fewer adjustment difficulties, as well as a connection between a positive social climate and better adjustment (e.g., Hoffnung Assouline & Attar-Schwartz, 2020; Pinchover & Attar-Schwartz, 2014).

Peer relations and peer violence

Young people in OoH care often experience violence from peers or residential staff. Some investigations have shown that victimization by peers can be explained simultaneously by adolescents' characteristics, such as gender and age, as well as by the social context. Research has also shown that RCS with a high percentage of children experiencing adjustment difficulties tend to report higher levels of physical victimization (e.g., Khoury-Kassabri & Attar-Schwartz, 2014). Additionally, some researchers (e.g., Thompson et al., 2016) have demonstrated that foster care youths' peer relationships significantly impact self-esteem and behaviors. Specifically, more positive and strong peer relationships have been associated with fewer negative behaviors.

Structured group activities

Research has further indicated that involvement in structured activities benefits the development of social skills and mental health. One study found that some youths in OoH care as less engaged in structured activities compared to the general population, a disparity that has been linked to loneliness, drug abuse, and depression (Conn et al., 2014).

Sibling relationships

Siblings also play a significant role in development, and the potential lack of daily contact due to institutionalization can serve as an important vulnerability factor. Mota et al. (2017) identified a significant effect of dominance and company/intimacy in sibling relationships on adolescents facing somatic, anxiety, and depression symptoms, as well as heightened interpersonal sensitivity.

Network disruptions

OoH placement impacts social networks and often disrupts connections with family and friends. Research shows that at least two strong network domains are necessary for a protective effect on mental health, and that many youths in OoH settings have close and supportive relationships within their placements as well as in peer networks (Perry, 2006). In this context, biological family networks tend to be weaker, but the existence of strong and supportive ties with new network members can compensate for weak or absent ties within older network domains, serving as a protective factor against negative outcomes. OoH placement affects psychological distress; however, the presence of strong, supportive ties with new network members can mitigate negative psychological effects (Perry, 2006).

Caregiving

Becoming institutionalized involves changes in social networks but, above all, provides new caregivers and new reference figures. Aspects of the caregiver–adolescent relationship may serve as important mechanisms of change, as emotional connection and a sense of security with foster caregivers can weaken the link between exposure to violence, trauma, and adverse mental health outcomes (Rayburn et al., 2018).

For this review, nine studies were selected that examined the links between instability, mental health problems, and attachment insecurities in institutionalized

adolescents. These studies also explored the relationship between behavioral and social skills among teenagers because of attachment failures with their attachment figures. Findings revealed that adolescents under the care of women reported greater externalizing problems, and carers' reflective functioning moderated the association between attachment and youths' behavioral issues (Bederian-Gardner et al., 2018; Pascuzzo et al., 2021).

Attachment

Research on attachment has shown that foster youths' instability increases PTSD symptomology because of the type of disruptions they experience. Young people's representations of their parental attachment figures tended to be secure, although they had both externalized and internalized behavioral problems, poor social adaptation, and experienced difficulties at school. Some authors found a link between maternal attachment and antisocial personality disorder and argued that social adaptation is connected to attachment to peers (e.g., Lemoust de Lafosse & Blanc, 2016).

Relationships with caregivers

Since the change of caregivers plays a central role in institutionalization, adolescents in residential care must establish a positive bond with these new adults, which can enhance their adjustment. However, in many cases, adolescents maintain contact with their biological families. In this respect, some researchers pointed out the role of the relationship with caregivers in the positive psychological functioning of adolescents living in residential care and showed that emotional closeness to caregivers, as perceived by the adolescents, moderated the development of their well-being in the first 6 months of institutionalization (e.g., Costa et al., 2020). Other selected publications showed influences on youths' externalizing symptoms depending on their contact with biological parents (e.g., McWey et al., 2023) and reinforced the mediating role of current caregiver involvement in adolescent internalizing and externalizing symptoms (Rayburn et al., 2018).

Family characteristics

Alternative care means young people moving away from their families, but in many cases, they still maintain regular contact and retain their family values. The selected studies on this topic (e.g., Musa et al., 2019) showed that, apart from

socioeconomic factors, family values were associated with adolescent mental health, with family dynamics impacting psychological distress. Moreover, adolescents in long-term care reported lower family values and higher stress. In terms of family conflict, youth reports showed a link between self-reported maltreatment and internalizing symptoms (Stone & Jackson, 2021), and conversely, higher family cohesion was associated with lower levels of internalizing symptoms (Stone et al., 2021).

Adjustment problems

As mentioned before, the process of institutionalization can have a significant impact on the psychological adjustment of adolescents, and it is one of the areas in which young people in residential care have shown greater difficulties compared to their community counterparts. These difficulties may be expressed in terms of behavioral problems (including high levels of aggression or deficits in impulse control), but also through emotional symptoms such as mood and anxiety disorders, anger, or irritability. Frequently, this population also has difficulties related to hyperactivity and attention deficit issues. In this category, we included 15 studies from the total selected publications, regarding emotional and behavioral problems and substance use.

Emotional and behavioral problems

This topic has been widely studied in understanding the differences between adolescents in residential care and young people living with biological families, as well as to determine and understand the predictors that might explain or underlie the differences. The selected publications confirmed that residential care adolescents had higher levels of mental health problems, lower academic achievement, a poorer social support network compared to the normative samples (e.g., Campos et al., 2019; Soriano-Díaz et al., 2023), and a greater risk of suffering from future externalizing and internalizing problems. There is a consensus regarding the existence of gender and age differences in emotional and behavioral problems, and in global performance being below normative groups in various areas (e.g., Moreno-Manso et al., 2021) and regarding emotion regulation abilities (e.g., Campos et al., 2019; Fernández-García et al., 2023). There are also well-documented significant differences in behavior problems among maltreated youths as well as more psychological problems among victims of various types (e.g., Carrasco-Ortiz et al., 2001). In general, studies have shown that females show more emotional symptomatology and males have more externalizing

difficulties (e.g., Cotton et al., 2020). Also, deficits in executive processes have acted as predictors of emotional and behavioral problems (Moreno-Manso et al., 2021). Specifically, this population struggles to inhibit or control automatic responses and shows less inhibitory attention control, less cognitive flexibility, low adaptation to cognitive stress, and a limited capacity to make decisions and resolve problems. Authors have emphasized that the reasons for being in care affect prosocial behavior in adolescents. This ability can act as a protective factor for future emotional and behavioral problems (Soriano-Díaz et al., 2023).

Regarding substance use, gender differences were found: boys were significantly more likely to report lifetime use of tobacco and cannabis, and girls were more likely to have self-reported sedative abuse in Cotton et al. (2020). However, a large percentage of youths had a history of using two or more illegal substances, with a significant prevalence of a coexisting risk of internalizing disorders and multiple substance use among adolescents (Pumariega et al., 1995, 1996).

A descriptive summary table was created with information from each study, namely author(s) and year of publication, country, type of study, analysis plan, sample size, and its inclusion in one of the four categories structured according to the themes that emerged from the studies (Table 2).

Table 2.

Country, type of study, sample size, and themes from the 64 included studies.

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social						Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Aguilar-Vafaie et al. (2011)	IR	+	+		Hierarchical multiple, regressions, Exploratory factor analysis	+			+													
Aguilar-Vafaie et al. (2014)	IR		+		Hierarchical regression	+			+													
Almas et al. (2020)	RO		+		T-test, Correlations, Linear regressions	+			+													
Bederian-Gardner et al. (2018)	USA		+		SEM, Multiple group analyses, Correlations, Chi-square analyses		+												+			
Campos et al. (2019)	PT		+		Student t-tests, Pearson correlations			+														+
Camuñas et al. (2020)	ES		+		Correlations, Linear regression	+					+											

Table 2. *Cont*.

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Carrasco-Ortiz et al. (2001)	ES		+		T-tests, ANOVA, Scheffé test, Kruskal-Wallis	+															+
Conn et al. (2014)	USA		+		Bivariate analysis, t-tests, Multivariate linear regression	+									+						
Costa et al. (2020)	PT			+	T-test and chi-square tests, Confirmatory factor analysis, Path analysis, Intraclass correlation			+											+		
Cotton et al. (2020)	AU		+		T-test and Chi-square, Wald statistic, Multivariate logistic regression, Point biserial correlations		+														+
de Abreu et al. (2023)	LU		+		SEM, Chi-square, multiple causes model, Multivariate logistic regression		+		+												

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Debnath et al. (2023)	RO			+	Repeated measures ANOVA, Moderation analyses, Pearson correlations	+					+										
Edmond et al. (2003)	USA		+		Chi-square, T-test, Logistic regression, Wald chi-square		+		+												
Erol et al. (2010)	TR		+		Chi-squares, T-tests, Bivariate correlations, Multiple regression models, Durbin-Watson analysis, Linear models			+	+												
Farineau and McWey (2011)	USA		+		Linear regression, Multiple regression analyses, ANOVA	+															+
Fernández-García et al. (2023)	ES		+		Pearson correlations, T-tests, Chi-square, Mediation models			+													+

Table 2. *Cont*.

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Fischer et al. (2016)	CHE		+		Pearson's chi-square tests, ANOVA, Mann-Whitney-U-test			+													+
Gearing et al. (2013)	JOR		+		Ordinary least-squares regression	+															+
Gearing et al. (2015)	JOR		+		Pearson correlation, Kappa coefficients, T-tests, ANOVA	+															+
Go et al. (2017)	SG		+		T-tests, Logistic regressions, Moderated regressions	+			+												
Greger et al. (2015)	NO		+		Pearson´s chi square test, T-test, Logistic regression, Confirmatory factor analysis			+	+												
Gundogdu and Eroglu (2023)	TR		+		Mann-Whitney U, MANOVA, Linear regression	+			+												

Table 2. *Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Hoffnung Assouline and Attar-Schwartz (2020)	IL		+		Bivariate analysis, PROCESS analysis using bootstrapping			+					+								
Huffhines et al. (2020)	USA		+		Multiple regression analyses, Hierarchical approach, Linear regression, Poisson regression		+		+												
Iglehart (1993)	USA		+		Forward stepwise regression		+														+
Kang et al. (2018)	KR			+	Hierarchical multiple regressions, Repeated measures ANOVA, Chi-square test			+	+												
Khoury-Kassabri and Attar-Schwartz (2014)	IL		+		Hierarchical linear modeling			+						+							

Table 2. *Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Kim and Chun (2016)	KR		+		Bivariate analyses, Hierarchical multiple regression			+		+											
Lemos et al. (2021)	PT		+		Snedecor's F test, Chi-square test, MANOVA, Univariate ANOVA		+				+										
Lemoust de Lafosse and Blanc (2016)	FR		+		Linear correlations	+												+			
Magalhães et al. (2016)	PT		+		Correlation analysis, Mediation model			+				+									
Magalhães and Calheiros (2017)	PT		+		Correlation, Confirmatory factor analysis			+					+								
Magalhães et al. (2021)	PT		+		Bivariate associations, PROCESS macro with bootstrapping, Moderating effects			+				+									

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Mayorga et al. (2020)	COL	+			MANOVA			+			+										
McGinnis (2021)	KR		+		Chi-square, Intraclass correlations, Multivariate regression, Markov Chain, Monte Carlo simulation		+				+										
McWey et al. (2010)	USA			+	Growth-curve analyses	+					+										
McWey et al. (2023)	USA		+		Regression			+											+		
Molano et al. (2024)	ES		+		Pearson correlation, t-tests, Chi-square, Mann-Whitney U, Spearman correlations		+						+								
Moreno-Manso et al. (2017)	ES		+		T-test, Correlational analysis		+				+										

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Moreno-Manso et al. (2021)	ES		+		Mann-Whitney U test, Spearman's correlation, Linear regression	+															+
Moreno-Manso et al. (2023)	ES		+		Spearman's correlation, Linear regression	+					+										
Mota et al. (2017)	PT		+		ANOVA, T-test, Multiple hierarchical regressions			+								+					
Mota and Oliveira (2020)	PT		+		Multiple hierarchical regression, Moderation analysis			+					+								
Musa et al. (2019)	MY		+		Chi-square test	+														+	
Pascuzzo et al. (2021)	CA		+		Mann-Whitney test, Correlations, Regression-based moderation models, Hierarchical multiple regression	+												+			

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Perry (2006)	USA		+		Pearson's chi-square, Ordinary least squares regression		+										+				
Pinchover and Attar-Schwartz (2014)	IL		+		Correlation, Mediation analyses			+					+								
Pumariega et al. (1995)	USA		+		Chi-square, Logistic regression		+														+
Pumariega et al. (1996)	USA		+		ANOVA, Logistic regression		+														+
Rayburn et al. (2018)	USA		+		One-way ANOVA, Pearson correlation, Multiple regression, Mediation with bootstrapping		+												+		
Salazar et al. (2011)	USA			+	Correlations, Negative binomial regression			+					+								
Santos and Salvador (2017)	PT		+		T-tests, Chi-square			+			+										

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Santos and Salvador (2021)	PT		+		T-tests, Chi-square, Pearson's parametric test, mediation model		+				+										
Segura et al. (2016)	ES		+		Mann-Whitney U, Chi-square, Fisher's test, Kruskal–Wallis, Logistic regression, Hosmer and Lemeshow test	+					+										
Segura et al. (2017)	ES		+		Pearson's and point-biserial correlations, Phi coefficients, Hierarchical multiple regression, Mediation with bootstrapping	+					+										
Singstad et al. (2022)	NO		+		Imputation model, Linear regression, T-test			+					+								

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Soriano-Diaz et al. (2023)	ES		+		Inferential analysis, Welch test, Pearson's correlation, Linear regression		+														+
Stone and Jackson (2021)	USA		+		T-test, Correlations, Path analysis		+													+	
Stone et al. (2021)	USA		+		Correlations, T-test, Path analyses, Simple slopes analysis			+												+	
Thompson et al. (2016)	USA		+		Correlations, Regressions, ANOVA, Mediation analyses		+							+							
Troller-Renfree et al. (2016)	RO		+		ANOVA, Linear regression, Moderation analyses	+															+

Table 2.*Cont.*

Author(s)/ Year	Country	Type of study			Analysis Plan	Sample size			Personal				Social					Caregiving			Adjust
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net	Att	Rel	Fam	E/B
Valdez et al. (2014)	USA			+	Linear growth model, Estimation method, Homogeneity of regression			+													+
Valdez et al. (2015)	USA			+	Longitudinal mean and covariance structures analysis, Multiple indicator latent growth modelling, Confirmatory analysis			+			+										
Yoon et al. (2019)	USA			+	Bivariate correlations			+			+										

Note. IR = Iran; IL = Israel; USA = United States of America; GER = Germany; PT = Portugal; ES = Spain; AU = Australia; LU = Luxembourg; RO = Romania; FR = France; TR = Turkey; CHE = Switzerland; JOR = Jordania; SG = Singapore; NO = Norway; KR = Korea; COL = Colombia; MY = Malaysia; CA = Canada; Exp = experimental; Tran = transversal; Lon = longitudinal; S = small; M = medium; L = large; Risk = risk and protective factors; Plac = placement characteristics; Ind = individual characteristics; Rig = rights perception ; Sup = Social support, staff support, length of stay and social climate; Peer = Peer relations and violence by peers; Act = Structured group activities; Sib = Sibling relationships; Net = Network disruptions; Att = attachment; Rel = Relationship with caregivers; Fam = Family characteristics; Adjust = adjustment problems ; E/B = emotional and behavioral problems. Sample size: small = until 150 participants; medium = between 150 and 300 participants; large = more than 300 participants.

4. DISCUSSION

The present research aimed to provide a systematic and critical review of studies that analyzed the determinants of psychological adjustment of adolescents living in RCS, seeking to overcome the limitations of Costa et al.'s (2022) SLR. Although it was difficult to accurately compare studies and generalize, the current research took a new and relevant approach to predicting the psychological adjustment of adolescents in residential care by organizing the selected studies into four categories without prior conceptualization or categorization. All the findings presented support our four hypotheses, demonstrating that: 1) there are predictors other than risk or protective factors influencing the psychological adjustment of institutionalized adolescents; 2) these predictors can be grouped into different types and levels of influence on psychological adjustment (personal, social, caregiving and adjustment problems); 3) there are specific variables of influence. Key areas for intervention and support were identified, and intervention strategies will be discussed later to improve the psychological well-being of these adolescents.

A search through seven online science databases for eligible articles published over 30 years identified 8,174 results, of which 64 met the defined eligibility criteria. Although the search returned a high number of results regarding psychological adjustment, the number of studies specifically focused on adolescents living in residential care that met inclusion criteria was relatively low, consistent with Costa et al. (2022). However, the current review included a larger number of studies (*n* = 64) than Costa et al.'s (2022) review (*n* = 25) and included studies from a greater number of countries, namely, Australia, Luxembourg, Turkey, Switzerland, Jordania, Singapore, Norway, Colombia, Malaysia, and Canada. The selected studies were synthesized into a different format, offering a new, suitable, and comprehensive categorization, with more information about each study and a qualitative assessment.

The great majority of the studies included in the current review (73%) were conducted in the last decade, with growing interest from 2014 onwards, with a significant number of publications per year since that period, mostly in European countries (44%) and then in American countries (33%). These data evidenced a growing interest in the scientific research community regarding adolescents in residential care, particularly concerning their psychological adjustment, affirming it as

a critical developing topic in psychological research and thus justifying the relevance of the present review.

All the included articles were quantitative and mostly used a cross-sectional design (*n* = 54). A possible explanation for the preferential use of this methodology could be the difficulty in accessing this specific population and thus ensuring that data collection takes place with maximum possible adherence. In some cases, authors offered compensation to participants to recognize the importance of their contribution to research. When the research was longitudinal, the authors faced problems related to the attrition of the samples, with significant reductions in the sample size between different stages of data collection (e.g., Costa et al., 2020). While cross-sectional designs allow for the identification of relationships between variables, these designs do not reveal causality between those relations, which can be a limitation to the in-depth study of the relationships between variables. This understanding is fundamental for theoretical progress in this area.

Regarding sample sizes, the numbers of small, medium, and large samples were equivalent, with studies having large samples (more than 300 participants) mostly in European countries. A significant number of authors of studies with large samples (*n* = 25) commented on the importance of professionals in care institutions recognizing the value of research with this specific population, which favors the generalization of those results. Concerning the composition of studies, the importance ascribed to multiple informants' reports instead of collecting only adolescents' reports seemed noteworthy, thereby enriching the results enhancing their comprehension, and integrating both perspectives. Studies also compared young people living in residential care with community samples or with adolescents living in other types of arrangements (e.g., kinship care or foster families), which allowed for a better understanding of the differences and factors characterizing those differences. Most studies included samples involving child protection professionals, agencies, or caregivers without specifying concrete professions, which represents a limitation of the research. Future researchers should provide a more detailed characterization of their samples to facilitate greater generalization of results. Additionally, by ensuring the quality of the included studies through individual qualitative assessment, the

results are likely to be more reliable. This approach ensures that the included studies were of average (*n* = 15) or high quality (*n* = 49).

From the studies included, four main areas related to the psychological adjustment of adolescents in residential care were highlighted. First, publications regarding personal characteristics (*n* = 28) emphasized risk and protective factors, placement characteristics, individual adolescent traits, and youths' perceptions of rights as crucial factors for ensuring their safety. Research on institutionalized young people consistently found that this population has high rates of mental health problems stemming from experiences of vulnerability, trauma, or family disruption. These experiences directly increased levels of depression, anxiety, and social withdrawal—factors influenced by certain characteristics acting as risk or protective factors for adolescents' behavior. Experiences of victimization or sexual abuse increased the risk of developing mental illnesses (Greger et al., 2015). However, investigations also found that gender and coping styles can influence vulnerability to developing psychiatric illnesses (e.g., Gundogdu & Eroglu, 2023). These risk and protective factors act as significant predictors of total problem scores for this population. Furthermore, placement characteristics played an important role in psychological adjustment as they influenced levels of aggression and anger. Researchers showed that youths in institutional care or group homes exhibited higher levels of aggressive behavior problems, worse peer relationships, and more peer victimization compared to children living in foster families (Kim & Chun, 2016).

Regarding individual characteristics, some research showed that age and gender are significant predictors (e.g., Yoon et al., 2019), with younger individuals and females showing more emotional problems (e.g., Camuñas et al., 2020) and boys showing more externalizing problems. Another important issue is the relevance of the perceptions of personal rights in mediating psychological problems (Magalhães et al., 2016, 2021), demonstrating that the existence and recognition of respectful system practices influence adolescents' behaviors and emotional distress, anger control, and antisocial behavior (Magalhães et al., 2016). Also noteworthy was the role that resilience played in psychological distress (e.g., Lemos et al., 2021). From a neuropsychological perspective, some authors demonstrated that brain activity related

to error monitoring was associated with externalizing behavior problems (e.g., Debnath et al., 2023).

A second cluster of studies (12 publications) on social characteristics included topics about peer relations and violence by peers, social support, staff support, length of stay, social climate, structured group activities, sibling relationships, and network disruptions. The literature was consistent in showing that OoH placement impacts social networks and usually disrupts connections with family and friends. Many studies emphasized the importance of social relationships in the adjustment and behavior of young people in residential care, reinforcing the importance of social networks and subsequent disruptions in mental and behavioral health. Therefore, it was recommended to maintain these networks and improve the relational skills of residential staff (Singstad et al., 2022). Some differences in adolescents' mental health were found when considering dimensions of perceived social support (e.g., Magalhães & Calheiros, 2017), but researchers also found that youths in contact with collaborating families had a better psychological profile (e.g., Molano et al., 2024), underlining that perceived social support from several sources has been associated with better mental health (Singstad et al., 2022). Publications reinforced that at least two strong network domains are necessary for a protective effect on mental health and that many youths in OOH settings have close and supportive relationships within placements but within peer networks, too (Perry, 2006), with a positive impact on self-esteem associated with less negative behaviors (e.g., Thompson et al., 2016).

Since entering residential care is associated with disruptions in family bonds for young people, some authors found that social support from friends and residential youth care staff can replace parental support with beneficial effects (Singstad et al., 2022) and fewer adjustment difficulties. Perry (2006) demonstrated that the presence of strong and supportive ties with new network members can mitigate psychological problems. Some authors showed a connection between permanency in residential care, the existence of a positive social climate, and fewer adjustment difficulties (e.g., Hoffnung Assouline & Attar-Schwartz, 2020; Pinchover & Attar-Schwartz, 2014). Other investigators confirmed that siblings play a significant role in youth functioning, and a lack of daily contact can be an important vulnerability factor. When adolescents experience somatic, anxiety, and depression symptoms, as well as higher interpersonal

sensitivity, sibling relationships have a significant effect on dominance and company/intimacy (Mota et al., 2017).

RCS with a high percentage of children with adjustment difficulties tend to have higher levels of physical victimization (e.g., Khoury-Kassabri & Attar-Schwartz, 2014). Research has shown that victimization by peers might be explained by both the adolescents' characteristics like gender and age and by the social context.

To conclude the discussion of the topic of social domain characteristics, this review showed that adolescents' involvement in structured activities (e.g., organizations, clubs, teams) promotes the development of social skills and benefits mental health. A study was included that showed a sample of youths in OoH care to be less engaged in structured activities than the general population, and this fact was associated with loneliness, drug abuse, and depression (Conn et al., 2014).

The third main set of studies provided findings on the caregiving topic (*n* = 9) and included publications concerning attachment and relationships with caregivers and family characteristics, relating that to the impact on psychological adjustment. Investigations have demonstrated the caregiver–adolescent relationship is an important mechanism of change, since emotional connection and the perception of security felt by foster caregivers can disrupt the link between exposure to violence, trauma, and adverse mental health outcomes (Rayburn et al., 2018). Selected studies found links between instability, mental health problems, and attachment insecurities in institutionalized adolescents, but also a link between behavioral and social skills among teenagers as a failure of attachment with their primary attachment figures. Adolescents being cared for by women reported greater externalizing problems, and female carers' reflective functioning moderated the association between attachment and youths' problems (Bederian-Gardner et al., 2018; Pascuzzo et al., 2021). Among foster youths, instability increased PTSD symptomology because of the type of disruptions they experienced. Adolescents' representation of their parental attachment figures tended to be secure, although they manifested both externalized and internalized behavioral problems, weak social adaptation, and academic difficulties (Bederian-Gardner et al., 2018). Research has documented a link between maternal attachment and antisocial personality disorder, suggesting that social adaptation may relate to attachment to peers (Lemoust de Lafosse & Blanc, 2016).

The stability or lack of change among caregivers appeared crucial for adolescents to create positive bonds and increase their adjustment, and research showed that emotional closeness to caregivers moderated the development of adolescents' well-being (Costa et al., 2020). On the other hand, the research found influences on youths' externalizing symptoms that depended on their contact with their biological families (McWey et al., 2023), reinforcing the mediating role of current caregiver involvement in youth adjustment problems (Rayburn et al., 2018). In line with this body of thought, Musa et al. (2019) found family values associated with adolescent mental health and family dynamics impacting psychological distress. Regarding family conflict, analyses of youth reports showed a link between self-reported maltreatment and internalizing symptoms (Stone & Jackson, 2021). Conversely, when higher family cohesion was present, adolescents showed lower levels of internalizing symptoms (Stone et al., 2021).

Finally, the category of adjustment problems (*n* = 15) included studies focused on emotional and behavioral problems and substance use. Studies showed a great number of difficulties in young people in residential care compared to community samples. Residential care problems were expressed in terms of behavioral issues, and emotional symptoms like mood and anxiety disorders, but also in terms of anger, irritability, hyperactivity, and attention deficit issues.

Publications showed that residential care adolescents had higher levels of mental health problems, lower academic achievement, and a poorer social support network than normative samples (e.g., Campos et al., 2019; Soriano-Díaz et al., 2023), and a greater likelihood of suffering from future externalizing and internalizing problems. The existence of age and gender differences in global performance and adjustment problems appeared well documented and below community samples in several areas (Moreno-Manso et al., 2021) and in emotion regulation abilities (Campos et al., 2019; Fernández-García et al., 2023).

Generally, studies showed that females tended to present more emotional symptoms and males more externalizing problems (Cotton et al., 2020). Also, deficits in executive functions can act as predictors of maladjustment problems (Moreno-Manso et al., 2021), reflected in difficulties in inhibiting or controlling automatic responses, poor cognitive flexibility, or a weak capacity for making sound decisions and

solving problems. Of particular importance was how reasons for being in care affected prosocial behavior, and how the adolescents' abilities could act as protective factors against future adjustment problems (Soriano-Díaz et al., 2023).

Regarding substance use, we discovered gender differences, with boys showing a significantly greater likelihood of reporting the use of tobacco and cannabis, and girls self-reporting sedative abuse (Cotton et al., 2020). Additionally, a large percentage of youths had a history of using two or more illegal substances, with a significant prevalence of coexisting risk of internalizing disorders and multiple substance use among adolescents (Pumariega et al., 1995, 1996).

The studies included in the current review were largely related to personal characteristics (*n* = 28) or emotional and behavioral problems (*n* = 15). The findings coincided with the literature, and our results appeared to reflect the general recognition of the importance that psychological adjustment plays in adolescence, particularly for those who live in OoH placements. The importance of the key characteristics identified in the 64 studies aligns with the significant attention this topic has received in research over the last decade. This allowed us to formulate a comprehensive picture of the needs and challenges faced by adolescents living in residential care. We also recognized the clear need for developing training or educational programs for professionals working with this specific population in this context. These programs should focus on personal and social skills and address key issues to enhance the adjustment of all youths in such environments. Although our results generally cohere with literature, readers should analyze and interpret them with caution due to the studies' methodological differences and various limitations. For example, some sample characteristics appeared to be reported poorly and inconsistently; different studies had different goals; studies used different sample sizes or were of different types; and studies used different assessments or measures that greatly limited possible standardization and generalization.

While this study involved a thorough and comprehensive search of all potentially relevant articles, it was not exempt from limitations. We used replicable and explicit criteria, and our search was conducted in seven relevant electronic databases of recognized quality. However, it is possible we missed relevant articles for inclusion. Also, only peer-reviewed scientific studies with full texts available were

included, which may have excluded relevant articles. Moreover, although this review was about adolescents in residential care, we eliminated studies that included adolescents and minors below the defined age, as well as adolescents living in other residential settings when the results were not presented independently. This study aimed to identify the most relevant characteristics of psychological adjustment of adolescents, but in some publications, they were not explored independently, which could have led to the generation of a different organization of the domains. Despite the present study including publications in four languages, potentially relevant studies might have been left out due to being written in a different language, and these studies might have complemented or led to a reorganization of our insights and findings. Finally, although our qualitative assessment could be considered a strength of this study for allowing a differentiation in terms of quality levels and the inclusion of only those considered of medium and high quality, the MMAT (Hong et al., 2018) does not define categories for evaluating studies, and this could have introduced additional subjectivity regarding the researchers' choices.

Notwithstanding this study's limitations, we consider this study to have had some important strengths. Including studies only with adolescents added value for assessing this specific stage of development. Children of a younger age have other characteristics that might have biased our analysis of the results and therefore should not be compared or mixed in the samples, an idea reinforced by the fact that some authors distinguished age ranges even during adolescence, which reveals the great influence of this stage on young people's development. Also, distinguishing young people in residential care from other types of care was important for enhancing our understanding of existing differences, for example in terms of social support, attachment, internalizing or externalizing problems, security, stability, or the young person-to-caregiver ratio. These recurring themes in the research are relevant to understanding and improving the adjustment of this population. Finally, including studies with multiple informants helped to contextualize and understand the young people's difficulties.

5. CONCLUSIONS AND PRACTICAL IMPLICATIONS

The number of recent scientific publications on the topic of psychological adjustment and the research community's increasing interest in institutionalized adolescents justified the need for the present SLR. The social, legal, and health impacts of this issue, as well as the massive number of children and adolescents placed in residential care worldwide as a first placement option, made our review of this topic essential. The proposed organization of the different factors and domains found in publications allowed us to take a closer look at what most impacted these youths and hopefully help professionals in this field apply the results. Additionally, the proposed organizational framework might be a starting point for testing a model that explains psychological adjustment in this specific population. The four main categories emphasize the centrality of personal characteristics and emotional and behavioral factors. The results highlight the need to pay attention to age and gender differences, as well as the need for training and developing programs that help professionals working in this field better understand and embrace the needs of these young people. Regarding practical implications, the importance of promoting the development of interventions or adapting existing programs according to the main themes found to improve the well-being of these young people should be clear. The findings hopefully help inform policymakers and practitioners tasked with creating safer, more stable, and inclusive foster care environments for adolescents in residential care.

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ARTICLE 2 | Positive Residential Care Integration scale: Portuguese adaptation and validation

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Positive Residential Care Integration scale: Portuguese adaptation and validation

ABSTRACT

Children and adolescents living in residential care settings have preferences regarding their relationships with key adults, such as caseworkers or caregivers. However, their perspectives are not always consistently assessed or effectively integrated into case plans**.** This study aimed to adapt an existing measure for adolescents living in residential care institutions and provide evidence of its validity and reliability. Self-report questionnaires – the Positive Home Integration scale and Strengths and Difficulties Questionnaire – were used to collect primary data from a sample of 511 youth (279 girls and 232 boys) aged 12 to 24 years, living in 46 Portuguese residential care institutions. The face validity, discriminant validity, and reliability of the Positive Residential Care Integration scale (PRCI) were evaluated. A Confirmatory Factor Analysis of the PRCI revealed good fit values, supporting a unidimensional model comprising six items. Correlation analysis demonstrated associations with psychological adjustment and sociodemographic variables. The satisfactory psychometric characteristics of the PRCI reinforced its reliability in measuring adolescents' integration into residential care settings. Furthermore, the findings highlighted the relevance and validity of this instrument for evaluating integration in residential care, offering valuable support to caregivers, institutional professionals, and caseworkers in child welfare services.

Keywords: Adolescents; Positive Home Integration; Psychometric properties; Residential care.

1. INTRODUCTION

Residential care is a measure designed to promote the rights and protection of children and young people at risk, as provided for in the Portuguese Law for the Protection of Children and Young People in Danger (Law 142/2015). The purpose of these institutions is to fulfill the life plans of children and young people, protect them, and promote their rights through the adoption of individualized intervention

methodologies that consider the specific needs of each young person. These includes the provision of appropriate care tailored to their age and particular characteristics. These residential care settings (RCS) must ensure maximum well-being, effective equality of opportunity, and the satisfaction of specific needs, including the development of autonomy skills and the effective promotion and exercise of the rights of children and young people, without any distinction based on their characteristics (e.g., age or religion). Currently, there are no standardized methods for evaluating these parameters, with each institution having its own autonomy to carry out these functions. Institutions employ permanent staff who consist of teams of suitably qualified professionals (Ordinance n. º 450/2023) that provide specialized support in children's daily life.

Despite existing legislation and protection services, children and adolescents in RCS face a higher risk of displaying emotional, behavioral, and social difficulties compared to other youth living in alternative arrangements (Assouline & Attar-Schwartz, 2020; Simkiss et al., 2013). In Portugal, by the end of 2023, more than 6,400 children and adolescents were under the care of the welfare system, with 84% placed in residential care institutions. Children can be placed in these institutions from birth and may remain there until the age of 24 (Instituto da Segurança Social [ISS], 2024).

From an ecosystemic perspective - such as the conceptual framework proposed by James and Meezan (2002) – examining children in Out-of-Home (OoH) placements requires consideration of relationships across several ecological levels. This begins with the child's characteristics in interaction with features of their environment, such as adults, other youth, and the systems responsible for their care. This perspective enables a deeper understanding of outcomes related to changes in health as well as youth's psychological, behavioral, and emotional functioning (Aguilar-Vafaie et al., 2011).

Relationship with institutional caregivers and other youth

Research has emphasized the importance of a consistent and nurturing caregiving environment for child development, as it facilitates the establishment of secure and supportive relationships with caregivers (Attar-Schwartz, 2014). When a change in caregiving placement occurs (e.g., institutionalization), it involves not only a change in the caregiving environment but also a disruption of caregiving relationships,

which can have potential negative effects on the child's development (Almas et al., 2020). This is because the new relationship established does not involve a continuous emotional bond with new caregivers, unlike the natural bonds that a child typically develops with biological parents (Cahill et al., 2016).

RCS staff are crucial in creating a positive environment for children and youth in care by building strong, positive relationships. They oversee approximately 95% of the time that a young person spends in residential care, making their role highly impactful (Anglin, 2019; Cahill et al., 2016; Assouline & Attar-Schwartz, 2020). The role of residential caregivers integrates parental functions – such as feeding, hygiene, household chores, discipline, counselling, teaching individual life skills and guidance – and social functions, such as such as playing with children and young people and talking to them. The technical team is responsible for diagnosing the situation of the child or young person in care and defining and implementing their promotion and protection project in accordance with the court decision or child and youth protection commission (Law 142/2015; Ordinance n. º 450/2023).

Some of the most important experiences for these adolescents take place in their daily interactions, and residential caregivers play a crucial role in fostering meaningful everyday connections with the youth. These interactions help them develop a sense of security and well-being, enabling them to form alternative, positive, and secure attachment figures (Assouline & Attar-Schwartz, 2020; Harder et al., 2013). In this sense, young people in RCS need to form constructive and supportive relationships with their RCS caregivers (Cahill et al., 2016); however, high turnover rates among caregivers and unfavorable caregiver-to-youth ratios can make this process difficult. RCS should strive to cultivate a positive and comprehensible environment for those who live there while providing opportunities to build networks of trustful social relationships (Anglin, 2019).

Social support – particularly support from adults from extrafamilial contexts (e.g., teachers, institutional staff) – plays an important role in school performance, personal and social adaptation, as well as psychological adjustment (Assouline & Attar-Schwartz, 2020). The importance placed by youth on this support is an indicator of the quality of the institution (Attar-Schwartz, 2011; Martín, 2011). In this sense, caregivers need to provide the support and affection that these youth require since research has

shown that having a strong attachment to a significant adult serves as a protective factor for adolescents transitioning out of the welfare system (Martín, 2011; Martín & Dávila, 2008).

It is also essential to ensure that residential care institutions function effectively and prioritize the best interests of the children and youth they aim to serve (Anglin, 2019). Research has shown that mistreatment by staff (e.g., abusive behaviors) is linked to serious consequences for youth. However, it is important to consider environmental factors – such as care setting characteristics, ethnic and religious affiliation of the institution, and institutional policies – to fully understand the context (Attar-Schwartz, 2011). Additionally, peer violence is a prevalent phenomenon among youth in care that has negative consequences for their adjustment (Attar-Schwartz, 2014).

Residential Care Institutions

According to the Report on the Transition from Institutional Care to Community-Based Services in 27 EU Member States (Šiška & Beadle-Brown, 2020) institutionalisation remains, for various countries from the European Union, the primary form of care provision for raising youth without parental care or in psychosocial danger. In Portugal, there is an over-reliance on institutional care for children in alternative care. According to the most recent official data reported by the Portuguese Social Security Institute (ISS, 2024), in 2023, almost 70% of young people living in institutions were aged 12 to 20.

Although several measures exist to evaluate different variables concerning contextual, environmental, or social characteristics of adolescents in OoH placements (e.g., Emotional Climate in Residential Care Scale for Youth, Santos et al., 2023; Foster Home Integration, Leathers, 2006; Place Attachment Scale, Magalhães & Calheiros, 2015b; Rights Perception Scale, Magalhães, 2015, as cited in Magalhães & Calheiros, 2020; Group Climate Instrument for Children, Strijbosch et al., 2014; Group Identification Scale, Magalhães & Calheiros, 2015a; Revised Social Climate Scale, Colton, 1989), it seems crucial to develop short self-report measures for youth living in RCS. These tools should assess their perspective on integration and their views on how their needs are understood and satisfied by different stakeholders involved in their care. The length of such scales is particularly important; they should be brief and

focused to reduce completion times and avoid missing data due to lack of motivation, which can result in higher refusal rates (Stanton et al., 2002).

According to a report from the Eurochild network (UNICEF & Eurochild, 2021), there is a complete absence of Portuguese children's perspectives on the care they receive within the current set of available data on children and young people living in OoH settings. Increasing attention in the field of residential care is being given to the concept of "child participation", attributed to the ratification of the United Nations Convention on the Rights of the Child (United Nations, 1989), specifically Article 12, which explicitly addresses children's rights to have their views heard and acted upon. Child participation refers to how children are involved in decisions that affect their lives. Research suggests a link between reduced child participation and negative mental health outcomes (Engel de Abreu et al., 2023).

Measuring youth integration in OoH placements

There are many constructs in the literature related to the integration of children and young people in OoH placements. Consequently, there are different instruments to measure them. However, when considering the variety of settings, it is important to note that in RCS, the relationship between youth and their caregivers is crucial for positive adjustment, placement stability, and fewer placement disruptions (Leathers, 2006; Rauktis et al., 2011).

Place attachment is commonly defined as a multidimensional concept that characterizes the emotional bond between people and places (Friesinger et al., 2022; Lewicka, 2011). It involves a symbolic, emotional, and functional connection established with a place, encompassing physical and social dimensions (Raymond et al., 2010; Williams & Vaske, 2003), in addition to psychological processes (e.g., feelings of affection, belongingness) (Scannell & Gifford, 2010). Connections to a place can be based on social or environmental attributes as well as personal perspectives and their reflection on the self. Place attachment has been positively associated with individual well-being (Junot et al., 2018; Rollero & De Piccoli, 2010), quality of life (Azevedo et al., 2013; Friesinger et al., 2022), and positive social relationships. Both social and material dimensions can be understood as predictors of the emotional bonds formed by people with places (Friesinger et al., 2022). In this regard, a positive bond with a place can help self-regulation processes for managing negative emotions (Scannell & Gifford, 2010).

Therefore, it is essential to prioritize well-being over psychopathology and examine the significance of an individual's relationship with a place, as it is vital for their well-being and adjustment (Magalhães & Calheiros, 2020). Research also suggests that young people's perceptions of their rights within the welfare system predict lower levels of maladjustment problems (Magalhães et al., 2016).

The quality of RCS involves the ability to provide opportunities for youth to participate in decision-making processes, respect their privacy and identity, and promote their autonomy (Del Valle et al., 2012). Thus, we hypothesize that the relationship with residential facilities and integration into the institutional context may play a crucial role in adolescents' well-being and adjustment. These adolescents have experienced the loss of their family home and often undergo multiple moves within the child welfare system, resulting in different placements. Therefore, their attachment to a new place is particularly important.

Few brief assessment measures exist to specifically examine youth's home integration experiences. Research has primarily focused on instruments related to foster home placements and foster families. In this regard, there are different approaches to operationalizing some of the constructs for this specific population. Authors have studied foster home adjustment and adaptation (Affronti et al., 2015; Jones et al., 2016), foster home integration (Leathers, 2006), child-caregiver alliance (Rauktis et al., 2011), or other important dimensions of child welfare practice, including child behavior (Leathers, 2002) or placement stability (Waid et al., 2016; Leathers, 2006). The Youth Connections Scale (Jones & LaLiberte, 2013) is a lengthier measure with 43 items developed to assess the connectedness of youth to their OoH placement. It is used by social workers to identify a youth's social support networks, quantify the number of supportive relationships they have with adults, and assess the quality of those relationships. Although a few brief and reliable measures designed to assess the relational experiences of youth in care exist (Jones & LaLiberte, 2013; Leathers, 2006), they focus primarily on caseworkers' or caregiver perspectives. Furthermore, many studies did not test measurement invariance by sex due to reduced sample sizes (Waid et al., 2017; Santos et al., 2023).

To the best of our knowledge, only one youth-reported measure designed to assess children's foster home integration has been empirically validated: the Positive

Home Integration (PHI) scale (Kothari et al., 2018). The PHI scale is a nine-item measure that asks youth to rate the quality of relationships with their primary foster caregiver and the extent to which they feel integrated into the foster family home. This measure evaluates young people's experiences in residential care by assessing their sense of belonging within the institution and their thoughts about relationships with new caregivers. It considers the impact of integration on mental health and well-being, as well as the importance of feeling understood and supported while having their needs met (Kothari et al., 2018). In validation tests, the PHI scale was significantly correlated at baseline with established youth-reported measures of well-being as well as caregiver-reported measures (Waid et al., 2017). The authors demonstrated that preadolescent and adolescent youth can reliably report on their perceptions of integration within foster homes using a short scale. Thus, the PHI scale is a brief, psychometrically validated youth-reported measure designed to tap multiple dimensions of the foster care experience from the youth's perspective (Kothari et al., 2018). The PHI Items [e.g., To what extent/how much do you feel included in your (foster) family?; How well do you get along with your (foster) parent?] are positively valued on a 10-point Likert scale, with higher values suggesting more positive relationships with foster caregivers and a stronger sense of integration into the foster household (Waid et al., 2017). The scale demonstrated strong internal consistency, with Cronbach's alpha values ranging between 0.82 and 0.91, as well as good test-retest reliability indicators. It may be useful for practitioners and researchers who work to promote the relational well-being of youth in care as well as professionals working within these contexts (Kothari et al., 2018).

Current Study

To date, to the best of our knowledge, no measure has been adapted for the Portuguese population that captures, in a few items, the perspectives and experiences of youth in residential care and their relationships with caregivers and important adults in critical domains of their lives (e.g., feeling respected, being heard). Furthermore, there is a need for a brief assessment instrument with strong psychometric properties that centers on youth's perspectives of RCS integration – defined as their sense of belonging, their thoughts about relationships with professionals working there, and

responses to their needs. This can be particularly important because of the different roles that the various adults play in the institutional environment.

The current study aimed to adapt and validate the Positive Home Integration scale (PHI; Kothari et al., 2018) for the residential care context and present results on the scale's dimensionality, reliability, and discriminant validity with external variables. This study is highly relevant as it aims to provide researchers and professionals in this field with a tool to assess young people's perceptions regarding their experiences in residential care institutions.

We expect that our version - the Positive Residential Care Integration (PRCI) scale – will demonstrate a single-factor structure, good internal consistency, discriminant validity, and associations with adolescents' psychological adjustment in RCS. Average ratings of positive integration are expected to be high when youth report good relationships with caregivers and low levels of internalizing and externalizing symptoms. Conversely, individuals who rate items very low (typically 1–4 on the 10-point response scale) are expected to reflect poor outcomes in domains such as mental health.

2. METHOD

Participants

Participants were 511 youth from 46 Portuguese residential care institutions, including 232 boys (45.4%) and 279 girls, aged between 12 and 24 years (*M* = 15.87, *SD* = 2.25). The age distribution was as follows: 12-15 years: *n*= 226 (44.2%); 16-18 years: *n*= 227 (44.4%); 19-24 years: *n*= 58 (11.4%). The 12-24 age group is the most prevalent in residential care in Portugal (ISS, 2024). On average, the youth had been living in their current RCH for 41 months (*SD* = 43; *Range* = 1-204). Although many youths presented more than one reason for being removed from their families, the main reasons to the current protection measures were neglect and abuse (38%), absenteeism from school (30%), financial problems (29%), and domestic violence (25%). Regarding educational level, most participants (75%) were attending middle school. The majority of the youth (93%) had siblings, but only 31% were living in the same institution.

Measures

Positive Residential Care Integration Scale (PRCI)

The PRCI scale is an adaptation of the PHI scale (Kothari et al., 2018), a self-report 9-item Likert-type rating scale (10-point response format) that captures the perceptions of youth regarding the extent to which they feel included in the foster home and the quality of their relationship with the primary foster caregiver.

Authorization to translate and validate a Portuguese version of the PHI scale was obtained from the authors of the scale. The standard back-translation procedure was employed (van de Vijver, 2016). The translation from English into Portuguese was completed by the first and last authors of the study, taking into consideration that youth should report on caregivers instead of parents (e.g., How well does institution's technicians respond to your needs?) and no the institution instead of a foster home/family (e.g., To what extent/how much do you feel included in the institution?). Care was taken to ensure that young people would be able to properly understand the meaning of the items. During the translation, appropriate procedures were followed (e.g., avoiding item bias or differential item functioning) (Hambleton et al., 2004). Discrepancies between the two authors were reviewed until a consensus was reached, ensuring no semantic differences existed between the English version and the Portuguese version of the PRCI. This translated version was pilot-tested on a small group of 15 youths, with different ages and educational levels who were not included in the main study. This step ensured that young people could properly understand the meaning of the items. Through this procedure, we confirmed that the wording of the items was appropriate for participants' comprehension and reading levels, and that the youth referred precisely to the adult the question mentioned (caregivers or technicians). The results section will include an analysis of the psychometric properties of the PRCI scale.

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report scale designed to assess socio-emotional problems. Items are rated using a three-point Likert-type scale (0 = "Not true", 1 = "Somewhat true", 2 = "Certainly true") and are organized into five subscales: emotional problems, behavioral problems, hyperactivity/inattention difficulties, peer relationship

problems, and prosocial behaviors (Goodman, 1997). The SDQ total difficulties score (i.e., the sum of all subscales except prosocial behaviors) is a psychometrically sound measure of overall child mental health problems (Goodman et al., 2010). Cronbach's alphas in the original version ranged between 0.41 and 0.80 (Goodman, 2001), indicating good internal reliability. In the Portuguese adaptation by Pechorro et al. (2011), Cronbach's alphas ranged from 0.43 to 0.61. For the present study, the reliability values obtained for each subscale and the total scale of the SDQ were as follows: emotional problems $\alpha = 0.68$, behavioral problems $\alpha = 0.57$, hyperactivity/inattention difficulties $\alpha = 0.66$, peer relationship problems $\alpha = 0.51$, prosocial behaviors $\alpha = 0.78$, and total scale $\alpha = 0.78$.

Regarding the reliability of the SDQ, Cronbach's alpha values for some subscales were below the conventional .70 threshold (Hair et al., 2016; Kline, 2016). This outcome is not unexpected given the brevity of the subscales (five items each), as alpha tends to underestimate reliability in short scales. To provide a complementary indicator of internal consistency, we computed the average inter-item correlations, as recommended by Clark and Watson (1995). The mean inter-item correlations ranged from .18 to .41 across the five subscales (emotional problems = 0.30, behavioral problems = 0.22, hyperactivity/inattention difficulties = 0.27, peer relationship problems = 0.18, prosocial behaviors = 0.41), all within the recommended range of .15 to .50. These values indicate that, despite modest alpha coefficients, the SDQ subscales demonstrate adequate internal consistency for research use.

Procedures

Ethical approval was obtained from the Ethics Committee of the University of Algarve (CEUAlg Pn° 110/2023). All procedures performed in the study were in accordance with the ethical standards of the 1964 Helsinki Declaration, its later amendments, or comparable ethical standards. Authors from the original PHI Scale also agreed to use this measure with these youths from RCS and authorized its adaptation and validation for the Portuguese residential care context.

Using a convenience sampling method, 46 residential care institutions from mainland Portugal and the Azores and Madeira archipelagos were contacted by phone and email. They were informed about the study's goals and procedures, and all of them agreed to collaborate. The data was collected in person by the first author at 16

institutions. Due to geographical distance that prevented in-person collection, the data from the other institutions were sent by post and collected by a professional from the RCS. All instructions for completion and clarifications about the research were sent by email at the time of obtaining authorization and were reinforced in writing when the questionnaires were sent out. The first author was available to answer any questions that arose during the process.

The inclusion criteria for participants were: aged 12 or older, proficient in Portuguese, and not having any medical condition that would affect their participation in the study. Youths identified by institution professionals as having cognitive impairment were excluded. Eligible participants were informed about the study's purpose by the first author and were invited to participate voluntarily. They were also told that they could withdraw from the survey without facing any consequences. Participants aged 16 or older who agreed to participate provided written informed consent. For participants under 16, the legal guardian or the technical directors of each institution provided written informed consent that was sent in advance.

Adolescents provided information through an anonymous, structured, self-report questionnaire at the residential care institution. The forms were completed in one-on-one format, or at the same time in small groups, depending on the decision of the institutions' directors and the available time of the youths. Directors of RCS were asked to fill out anonymous, structured, self-report questionnaires to provide details about the organizational characteristics and religious affiliation of each institution.

The sample obtained was collected from October 2023 to October 2024.

Data Analysis

Data analyses were performed using IBM SPSS 29.0 (IBM Corp., 2020) and Jamovi (Gallucci & Jentschke, 2021). Confirmatory Factor Analysis (CFA) was conducted using Maximum Likelihood Estimation (Epskamp et al., 2019; Epskamp, 2022) to analyze the PRCI. The fit of the model was assessed by goodness-of-fit indices, namely Comparative Fit Index (CFI), chi-square/degrees of freedom (χ^2/df), Tucker-Lewis Index (TLI), Akaike Information Criterion (AIC), Basic Information Criterium (BIC), and Root Mean Square Error of Approximation (RMSEA) (R Core Team, 2023; Rosseel, 2019). Values were considered acceptable when CFI and TLI exceeded .90, and RMSEA was ≤ .10. Regarding the Akaike Information Criterion (AIC), the model with the smallest AIC

should be selected (Rosseel et al., 2023). The CFA was performed on the original scale items using a categorical correlation matrix. Items with standardized loading above .50 were retained because factor loadings must be considered significant when they are higher than this value (Pituch & Stevens, 2016). No modification indexes were considered to improve the measurement model. Item kurtosis (*K*) and Skewness (*S*) were assessed and values higher than 8.0 for *K* and 3.0 for *A* were considered serious violations (Marôco, 2021).

Pearson correlations were used to analyze associations between variables. Correlations were considered low if below .20, moderate if between .20 and .50, and high if above .50 (Marôco, 2021). Mean inter-item correlations were considered good if between .15 and .50 (Clark & Watson, 1995). Corrected item-total correlations were deemed adequate if they exceeded .20, and Cronbach's alphas were considered adequate if they exceeded .70 (Marôco, 2021).

3. RESULTS

Descriptive Statistics

Table 1 presents the descriptive statistics for the nine items of the PRCI scale, including skewness and kurtosis for each. Skewness and kurtosis values for all items were within acceptable ranges, suggesting approximate normality. Mean scores were relatively high (M_{Range} = 6.65 – 8.09).

Table 1. Descriptive statistics of PRCI items.

PRCI Items	*M*	*SD*	*S*	*K*
Item 1: To what extent/how much do you feel included in the institution?	7.49	2.42	-0.85	0.06
Item 2: To what extent do you feel that you are treated with kindness in the institution?	7.42	2.40	-0.84	-0.03
Item 3: To what extent do you feel that you are treated with respect in the institution?	7.50	2.32	-0.79	-0.10
Item 4: To what extent do you feel that you are involved in decision making in the institution?	6.65	2.64	-0.47	-0.64
Item 5: On a scale of 1-10, how good is your relationship with institution's technicians?	8.02	2.27	-1.22	0.79
Item 6: How well do you get along with the institution's care workers?	8.09	2.14	-1.21	0.95
Item 7: On a scale of 1-10, how well does institution's technicians listen to you?	7.73	2.30	-0.95	0.26
Item 8: How well does institution's technicians respond to your needs?	7.74	2.29	-0.97	0.26
Item 9: When you have a problem, how well does institution's technicians respond to you?	7.86	2.31	-1.07	0.41

**M* = Mean; *SD* = Standard deviation; *S* = Skewness; *K* = Kurtosis

Confirmatory Factor Analysis

Our first step in examining the psychometric properties of the PRCI was to attempt to replicate the presumed unidimensional factor structure of the original PHI scale through CFA using the Maximum Likelihood Estimation.

The goodness-of-fit indexes for the total sample, based on a nine-item solution and the final proposed six-item model, were computed (Table 2). Adequate support was found in terms of the goodness-of-fit indexes, with the proposed one-factor model containing six items achieving the best fit [$\chi^2(9) = 58.6$, CFI = .97, TLI = .95, RMSEA = .10].

Table 2. Goodness-of-Fit Indices for tested Model of PRCI with CFA.

Models/Indices	χ^2/df	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	AIC
1-Factor 9-items	401/27	.89	.85	.17	.15 - .18	.06	18014
1-Factor 6-items (without item 5,7, and 9)	58.6/9	.97	.95	.10	.08 - .13	.03	12497

χ^2/df = Chi-square/degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Fit Index; RMSEA = Root Mean Square Error of Approximation; CI = Confidence interval; SRMR = Standardized Root Mean Square Residual; AIC = Akaike Information Criterion.

Table 3 displays the item loadings for the one-factor model estimated with the ML-Robust method with the total sample. Items 5, 7, and 9 were removed from the model after analyzing their face validity and due to loadings below .40. These eliminations did not pose conceptual problems for the scale. The standardized factor loadings indicate all items were positively associated with the latent factor (β_{Range} = .61 -.87). Cronbach's alphas coefficients if an item is deleted and corrected item-total correlations for the PRCI were also computed, with values considered good (α_{Range} = .84 – .88) and reflecting positive moderate associations between items and the integration construct ($CITC_{Range}$ = .57 – .79).

Table 3. Items loadings, alpha if item deleted, and corrected item-total correlation.

Items	β	Alpha if Item deleted	CITC
Item 01	.61	.88	.57
Item 02	.87	.84	.79
Item 03	.85	.85	.77
Item 04	.67	.87	.64
Item 06	.73	.86	.68
Item 08	.75	.86	.71

Note: β = standardize item loadings; CITC = corrected item-total correlation.

Internal consistency of the PRCI was evaluated using Cronbach's alpha (α = 0.87) and McDonald's omega (ω = 0.88), which is considered a more robust indicator of reliability for latent constructs. Values indicated good reliability.

The PRCI scale was found to be unifactorial, with its items explaining more than 60% of the variance in the construct under analysis. Each item's variance explained by the common factor exceeded 60%, which is a strong indicator of how well each item contributes to the factor solution obtained.

Figure 1 illustrates the path diagram obtained through the CFA. It demonstrates that positive integration in residential care is associated with six items (8, 6, 4, 3, 2, and 1) from the final solution. The numbers on the paths represent the estimated factor loadings, indicating strong relationships between each item and the latent factor, with item 1 showing the weakest association. This diagram provides evidence supporting the underlying measurement model in the CFA.

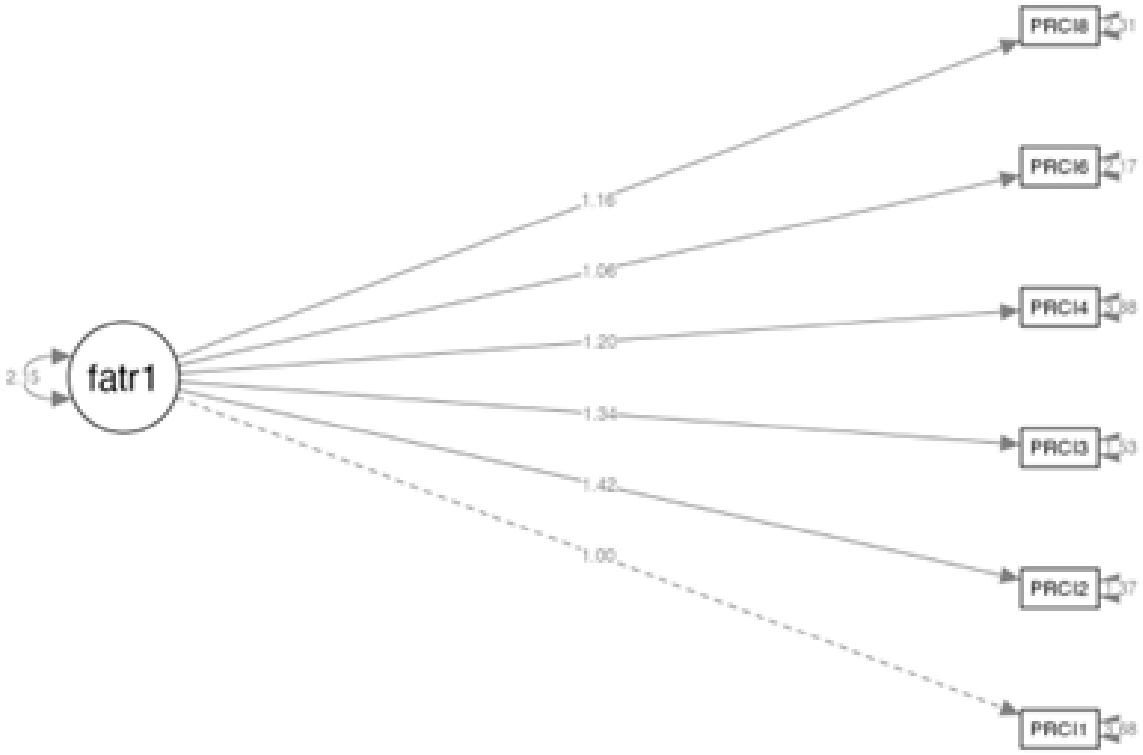

Figure 1. *Path diagram of the confirmatory factor analysis*

Discriminant validity with external variables and scale reliability

The SDQ is a measure of psychological adjustment that reflects internalizing and externalizing behaviors through various subscales and a total score of the difficulties. The correlation matrix (Table 4) showed that the PRCI scale exhibited negative correlations with behavior problems (r = -.26, p < .001), hyperactivity/inattention (r = -.16, p < .001), peer problems (r = -.27, p < .001), and the SDQ total score (r = -.26, p < .001). Additionally, it showed a positive correlation with the prosocial behavior subscale (r = .38, p < .001). These results demonstrate that the discriminant validity of the psychological adjustment measure revealed the expected negative correlations.

Regarding convergent validity, results showed negative correlations in the expected direction concerning prosocial behaviors and total difficulties on the SDQ.

Table 4. Descriptive statistics and correlations between PRCI and SDQ (N = 511).

	1	2	3	4	5	6	7
1. SDQ total score	-	.74***	.71***	.72***	.63***	-.15***	-.26***
2. Emotional problems		-	.27***	.38***	.36***	.22***	-.07
3. Behavior problems			-	.44***	.33***	-.31***	-.26***
4. Hyperactivity/ Inattention				-	.15***	-.15***	-.16***
5. Peer problems					-	-.21***	-.27***
6. Prosocial behaviors						-	.38***
7. PRCI							-
M (*SD*)	15.55 (6.24)	4.61 (2.42)	2.92 (2.03)	4.48 (2.38)	3.34 (2.04)	7.37 (2.31)	68.49 (16.63)

*** $p < .001$

4. DISCUSSION

Attar-Schwartz (2014) argued that the children's perceptions of their experiences while in care and the perceived quality of their relationships with residential care staff have not been sufficiently examined. The participants in this study are part of a socially vulnerable and at-risk group; thus, assessing their integration into a context they did not choose can provide important indicators of their adjustment and well-being.

The primary aim of the present study was to assess the psychometric properties of the PRCI scale among a Portuguese sample of 511 institutionalized youth. We sought to validate this 9-item measure, which evaluates youth perceptions regarding their integration into RCS and their relationships with caregivers. We hypothesized that the proposed one-factor structure of the original PHI scale would be replicated in the Portuguese sample, demonstrating discriminant validity with a measure of psychological adjustment.

Our findings strongly supported the proposed one-factor model among the analyzed sample of 511 adolescents, consistent with the PHI scale. A six-item solution showed good reliability values and adequate fit indices. All factor loadings were relatively high, and three items with lower face validity and factor loadings below the recommended threshold were removed. These removed items appeared difficult to interpret and were related to institutional technicians. This may be explained by the fact that youth have more contact with caregivers than technicians, as caregivers

primarily handle daily interactions while technicians focus on more administrative functions. Since caregivers spend most of their time with youths, it is likely that integration is more influenced by relationships with them rather than by interactions with technicians who can be seen by young people as a link to the court or to important decisions in their lives.

As demonstrated by the Kothari et al. (2018) study, which validated a single-dimension measure with reliable and discriminant validity, our proposal of the PRCI scale also showed good discriminant validity with measures of psychological adjustment. The internal consistency for the PRCI, reflected in the Cronbach alpha, indicated that participants were consistent in their evaluations (Marôco, 2021). Additionally, for the SDQ, the current work presented higher alpha coefficients than those reported in its validation study (Pechorro et al., 2011) across all subscales, with some subscales exceeding the results from Goodman's (2001) study.

Regarding convergent validity, we found negative correlations in the expected direction concerning prosocial behaviors and total difficulties on the SDQ, consistent with previous studies (e.g., Rodrigues et al, 2019; Soriano-Díaz et al., 2023). Our sample of institutionalized adolescents reported their institutional experience to be very positive on average (with mean values above 7 on a 10-point scale), similar to findings by Kothari et al. (2018). The bivariate correlations with various variables and measures demonstrated that the PRCI scale was associated with outcomes in the expected direction and showed significant associations with mental health outcomes (e.g., internalizing and externalizing problems), suggesting that improved institutional integration may be linked to better psychological adjustment.

A positive group climate in RCS – characterized by responsiveness from professionals, opportunities for adolescents' development, and a safe and structured environment where adolescents and group workers treat each other with respect – is essential for establishing warm and nurturing caregiver relationships (Pinheiro et al., 2024; Strijbosch et al., 2014). When mental health problems arise, they can trigger a chain of negative consequences leading to adverse outcomes, such as strained relationships with peers and adults, along with an unfavorable perception of group climate quality (Lanctôt et al., 2016; Leipoldt et al., 2019). Studies on residential care environment have shown that placement quality significantly impacts youth

adjustment both during and after their placement, underscoring the importance of examining how youth perceive the social climate within their residential context (Hyde & Kammerer, 2009).

Given that perceptions of an open and positive group climate are significant predictors of intervention effectiveness and positive outcomes (Leipoldt et al., 2019), understanding the barriers and facilitators contributing to a favorable residential environment can help identify mental health needs and align youth with effective practices that promote well-being, psychological adjustment, and satisfaction within residential care contexts (Pinheiro et al., 2024). We argue that positive integration in RCS can be characterized by mutual respect, kindness, adolescents' feelings of inclusion within the institution, and active participation in decisions related to their care process (Waid et al., 2017). Furthermore, positive integration into a new residential environment occurs when adolescents do not exhibit emotional or behavioral symptoms at a clinical level, feel treated with respect, have opportunities to voice their opinions, and have their needs adequately met.

Previous findings indicate that preadolescent and adolescent youth can reliably report their perceptions of integration within foster homes (Kothari et al., 2018) or group identification in RCS (Magalhães & Calheiros, 2015a) using self-report scales. The current results confirm these findings with the PRCI scale. The outcomes presented in this study provide additional evidence regarding the scale's psychometric properties in terms of both validity and reliability. As Kadzin (2021) emphasized, construct validity reflects the connection between the underlying concept behind a resource and the studies conducted to test its usefulness in explaining observed outcomes. Therefore, we consider adolescent perceptions of institutional integration are assessed by the PRCI scale to be both relevant and valid. The results presented here highlight the importance of the PRCI scale as a reliable tool for evaluating youth integration within RCS. The primary contribution of this study lies in offering an assessment method tailored to a specific sample of adolescents while providing new evidence supporting the validity and reliability of the construct's dimensional structure.

Limitations and implications for practice

The present study demonstrated many strengths, but some limitations should be acknowledged. We only examined adolescents' reports of their integration into the

institutional environment. Although youth perspectives are crucial and underutilized in child welfare services, caregiver reports on adolescent's integration might add significant value. Additionally, we consider that social desirability bias may have influenced the data, as adolescents answered the questionnaires within the residential care context, and mean responses were high. An important portion of the data was also collected by the directors of the institutions, which may have further induced social desirability bias. Another limitation is that a test-retest should have been conducted, and invariance across sexes should have been tested. Furthermore, the cross-sectional nature of the study limits its ability to capture changes over time. Longitudinal studies are needed to understand how youths rate their integration in RCS over time, explore factors that may influence their integration in these contexts, and evaluate relationships with caregivers. This suggestion is particularly relevant given upcoming legal modifications expected to be implemented in Portugal, which will bring changes to how institutions operate.

Despite these limitations, the current study presents several important strengths. These include the use of a national sampling frame, the incorporation of individual perspectives from youth on a subject crucial to their development, and high response rates from a hard-to-reach and under-researched population. While the national representativity of this study is a clear strength, it is important to note that RCS and the context of child protection systems vary across countries. Therefore, our findings should be interpreted with caution when generalizing to young people in care outside Portugal. Nonetheless, institutionalization remains the primary form of care provision for raising youth without parental care in various European countries, suggesting that the PCRI measure may have utility beyond Portugal.

Beyond the limitations, it is important to highlight that the results presented here – particularly the scale's strong psychometric characteristics – indicate the potential of the PRCI scale for measuring adolescents' integration into residential care institutions. The PRCI scale proved to be a short self-report measure that enables adolescents to express their perspectives on their integration into institutions, their relationships with the caregivers, and their opinion regarding how they are heard in important decisions. This is especially relevant since most adolescents enter institutions due to external factors and often against their will. The PRCI scale can thus

serve as an important tool for preventing placement disruptions and promoting placement stability by assessing factors that might contribute to poorer integration.

Understanding how youth rate their integration and relationships with caregivers may provide essential information for developing relationship-based child welfare interventions. As the results indicate that youth can reliably and efficiently report on their relationships with caregivers and their institutional environment, the PRCI scale may be used in practice settings by professionals involved in child welfare processes. The scale allows practitioners to distinguish between youth in residential care who are thriving *versus* those who may need additional support. Moreover, because it is a short measure, professionals can analyze individual item responses to identify youths who rate specific items very low and address those challenges effectively.

5. CONCLUSIONS

Literature suggests a lack of sufficient research on youths' perceptions of their experiences in care and, consequently, the quality of their relationships with caregivers (Attar-Schwartz, 2014). Therefore, the PRCI measure is expected to advance research on the integration of youth in RCS, which has been the focus of growing interest over the past decade. Additionally, this scale provides valuable information about adolescents' perception of the places they live, contributing to the assessment of approaches and facilitating individualized interventions in RCS. It also promotes the professional development of those working with this specific population. Exploring the role of integration may enhance our understanding of the factors underlying this construct and optimize the individual experience of being in care after removal from their biological families.

This study aimed to adapt and validate a short self-report measure for the Portuguese residential care context and to investigate the factor structure of the PRCI among a sample of youths living in residential care institutions. Overall, we demonstrated good psychometric properties that support the use of the PRCI scale in child welfare contexts.

Findings indicate that using the PRCI scale can provide insights into how integration affects youths' psychological adjustment, impacts their experiences in

residential care, and informs individualized intervention strategies. This knowledge can help professionals better recognize and address adolescents' specific needs, supporting their overall well-being and fostering a sense of belonging within the institution. In summary, the PRCI scale is a brief and efficient youth-led assessment tool with significant utility for future child welfare research.

The present study reinforces the idea that youths in residential care can reliably report on their experiences and their relationships with new caregivers. Future research could examine the PRCI Scale as a predictor of overall adjustment and well-being among youth in care.

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APPENDIX

Table 5. Portuguese version of the PRCI with 9 items.

Items	
1	Quanto é que te sentes integrado/a na instituição?
2	Em que medida sentes que és tratado/a com gentileza na instituição?
3	Em que medida sentes que és tratado/a com respeito na instituição?
4	Em que medida sentes que na instituição te incluem nas decisões?
5	Numa escala de 1 a 10, como é a tua relação com os técnicos da instituição?
6	Como é a tua relação com os auxiliares da instituição?
7	Numa escala de 1 a 10, como achas que os técnicos da instituição te ouvem?
8	Como achas que os técnicos da instituição respondem às tuas necessidades?
9	Quando tens um problema, quão bem é que os técnicos da instituição te respondem?

ARTICLE 3 | Psychological adjustment and Dark Triad traits in adolescents living in residential care: a comparative study between boys and girls

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Psychological adjustment and Dark Triad traits in adolescents living in residential care: a comparative study between boys and girls

ABSTRACT

Children and adolescents in residential care settings tend to present a heightened risk of emotional and behavioral problems. The study intended to explore connections between Dark Triad personality traits and psychological adjustment and to investigate potential sex and age differences in psychological adjustment and the expression of Dark Triad traits. Primary data were collected from a sample of 511 adolescents (279 girls and 232 boys) aged between 12-24 years, living in 46 Portuguese residential care institutions. Self-report questionnaires (Strengths and Difficulties Questionnaire, Short Dark Triad) were used to collect the primary data. Statistical methods were used such as analysis of variance, multivariate analysis of variance, and hierarchical regression analysis. Results showed that boys scored higher in all Dark Triad traits and in behavioral problems. Younger participants scored higher in Machiavellianism and Psychopathy, in emotional and behavioral problems, and in hyperactivity/inattention difficulties. These results could help institutional professionals and social policies assess and delineate individual programs.

Keywords: Psychological adjustment; Dark Triad personality; Residential care; Sex differences

1. INTRODUCTION

Young people typically have their basic needs met within their families; however, some experience violence or neglect, necessitating intervention by child welfare services. In Portugal, more than 5,400 youths were placed in residential care institutions in 2023 (Instituto da Segurança Social [ISS], 2024). Residential care has been identified as a potential risk factor, negatively impacting children's psychological development, behavior, academic performance, and mental health (Rutter, 2000).

There is consistent evidence that children and adolescents who are unable to grow up with their biological parents represent a particularly vulnerable population, more likely to experience emotional, behavioral, and social difficulties than those living with their families (Campos et al., 2019; Rutter, 2000). The physical and emotional deprivation often experienced in substitute care settings is associated with elevated rates of psychosocial, internalization, and externalization problems.

As a protection measure within the Child Protection System, residential care involves placing a child in an institution equipped with adequate facilities and permanent professional staff, responsible for ensuring the safety, care, education, and overall development of children with emotional and behavioral difficulties (Law 142/2015).

Psychological adjustment of adolescents in residential care

Adolescents in residential care settings (RCS) often experience loss and loneliness, which can lead to psychological difficulties rooted in early childhood trauma, such as abuse and neglect (Molano et al., 2024). Separation from their families tends to exacerbate emotional and behavioral challenges, making adjustment more difficult compared to peers raised in family environments (McGuire et al., 2018).

Psychological adjustment in adolescence refers to the ability to adapt to environmental demands using emotional, cognitive and social resources. Youth in residential care often show greater difficulties in this area than their peers (Molano et al., 2024), increasing their risk for emotional symptoms, somatic complaints, and behavioral issues (Hayden, 2010; Mayorga-Sierra et al., 2020). Common concerns include impulse control, mood instability, hyperactivity, low self-esteem, and negative self-image (Campos et al., 2019; Molano et al., 2024), as well as higher risk of placement instability (Keil & Price, 2006). Adjustment is often assessed through internalizing (e.g., anxiety, depression, withdrawal) and externalizing (e.g., aggression) symptoms, which frequently co-occur, underscoring the need to address both domains (Keil & Price, 2006).

Several factors are associated with adolescents' psychological adjustment in RCS (Simão et al., 2025). Gender differences in behavioral adjustment have been well documented, with boys tending to report more externalizing behaviors – such as aggression and rule-breaking – while girls report higher levels of internalizing

problems, including depression and anxiety (Campos et al., 2019; Cotton et al., 2020). Age-related variations in psychological adjustment have also been reported, although findings remain inconsistent. While some studies indicate that internalizing and externalizing problems tend to decrease over time (McWey et al., 2010), others suggest an increase in depressive symptoms during late adolescence. Similarly, research on the impact of time spent in residential care yields mixed results. Some studies associate a longer stays with improvements in various developmental domains, while others report no significant differences (Costa et al., 2022) or even suggest that extended institutionalization may increase maladaptive behaviors.

Despite some inconsistencies, research generally agrees that placement stability is crucial for adolescent mental health (McGuire et al., 2018). Youth exposed to repeated disruptions after removal from harmful environments face increased psychological and developmental risks (Almas et al., 2020). Residential care, in particular, poses greater risks than other out-of-home placements due to high caregiver turnover and limited individual attention (Barone et al., 2016), which hinder stable, supportive relationships. In contrast, foster and kinship care often provide more consistent environments that support emotional and psychological development.

Dark Triad personality traits in adolescents in RCS

Personality is a biologically influenced set of traits shaped by environmental factors, which together reflect consistent patterns of behavior. Empirical evidence supports the concept of personality plasticity, indicating that personality traits can change across the lifespan (Götz et al., 2020). Understanding personality traits helps to explain individual differences in perception and behavior, which vary across social contexts and exist along a continuum that includes both clinical and nonclinical manifestations (Muris et al., 2017).

Research on normative samples has traditionally focused on broad personality traits such as the Big Five (McCrae & Costa, 1987). While these traits effectively account for variability in personality, including at the dysfunctional end of the spectrum, maladaptive behaviors often arise from complex interactions among multiple traits and their underlying facets. In response, several alternative models have been developed to better capture dysfunctional personality patterns within general population samples (Klimstra et al., 2014). Among these models, the Dark Triad –

comprising Machiavellianism, narcissism, and psychopathy – has received significant empirical attention. “Dark traits” refer to subclinical personality characteristics associated with ethically, morally, and socially aversive behavior (Muris et al., 2017). Although considered aversive or undesirable, these traits fall within the normal range of personality functioning and do not, in themselves, imply clinical pathology (Paulhus & Williams, 2002). Therefore, the more precise terms are Machiavellianism, subclinical narcissism, and subclinical psychopathy. The term Dark Triad refers to the constellation of these three interrelated and socially damaging personality traits (Muris et al., 2017; Paulhus & Williams, 2002). Because of their relevance to norm-violating behaviors, Paulhus and Williams (2002) labelled them the “Dark Triad of personality”.

Despite their distinct conceptual foundations, these traits share several core characteristics. All three are associated with a socially malevolent orientation, marked by self-promotion, emotional detachment, manipulation, and, to varying degrees, aggressiveness (Muris et al., 2017; Paulhus & Williams, 2002). Machiavellianism involves strategic manipulation, emotional apathy, and utilitarian social tactics aimed at exploiting others (Götz et al., 2020; Klimstra et al., 2014). Subclinical narcissism is characterized by grandiosity, dominance, and self-enhancing strategies used to preserve inflated self-views (Klimstra et al., 2014). Subclinical psychopathy is defined by high impulsivity, thrill-seeking behavior, and low empathy (Paulhus & Williams, 2002).

These traits are commonly regarded as reflecting the malevolent dimension of human personality and are generally considered maladaptive. Research has shown that all three are linked to negative psychosocial outcomes (Muris et al., 2017), including aggressive, unethical, and antisocial behavior (Sijtsema et al., 2019), as well as demographic and psychological correlates such as age, gender, and depressive symptoms (Shen, 2023).

Interest in dark personality traits has grown in interest in recent years, reflecting their relevance across a wide range of behaviors (Moshagen et al., 2018). However, as noted Hu and Lan (2022), relatively few studies have examined the impact of malevolent traits – such as those comprising the Dark triad – on the mental health of adolescents. Existing research suggests that Dark Triad traits can predict psychological outcomes beyond what is accounted for by the Big Five, highlighting their incremental validity and the need for further investigations, particularly among youth in RCS.

Exploring the role of the Dark Triad in this population may help address the current imbalance in the literature, which has largely focused on adult samples or positive psychological outcomes. Studying adolescents in RCS can provide a more nuanced understanding of the maladaptive behaviors that often emerge before or during institutional placement. This is especially important given that these youths face a variety of challenges and transitions that may intensify the expression of malevolent personality traits.

Notably, distinctive patterns of behavior linked to the Dark Triad can be observed in individuals as young as 11 years old (Lau & Marsee, 2013). Although the traits are conceptually interrelated, they remain distinct constructs; thus, as adolescents mature, they are expected to provide more differentiated self-assessments of each trait.

Recent research on Dark Triad traits and psychological adjustment has increasingly emphasized their links to aggression and behavioral dysregulation in youth (Lau & Marsee, 2013). In children and adolescents, these traits are associated with antisocial behavior, delinquency, and aggression, often showing gender differences (Götz et al., 2020; Muris et al., 2013, 2017; Pechorro et al., 2022). Typically, males score higher on narcissism and psychopathy, while females report more depression and anxiety, especially during adolescence (Chiorri et al., 2019; Klimstra et al., 2014). Muris et al. (2022) identified psychopathy as the strongest predictor of externalizing problems, with boys scoring higher on both Dark Triad traits and externalizing behaviors, and girls on emotionality.

Although most studies have focused on externalizing symptoms, recent evidence highlights the relevance of internalizing problems. For example, Wang et al. (2023) and Li et al. (2024) found significant associations between Dark Triad traits and symptoms of depression and anxiety in adolescents. These findings underscore the need to consider both externalizing and internalizing outcomes when assessing the psychological impact of socially aversive traits during adolescence.

A meta-analytic review by Muris et al. (2017) found positive correlations between all three Dark Triad traits and indices of aggression and delinquency. Shen (2023) notes that most studies investigating the relationship between the Dark Triad and depression have focused on adults, with fewer examining adolescents – a critical

period for depression onset. Therefore, exploring this association in adolescence is vital to identify potential risk factors.

Research indicates that adolescents with higher levels of Dark Triad traits are more likely to exhibit depression symptoms (Paknejad & Mazandarani, 2024; Shen, 2023), suggesting a detrimental effect of these traits on mental health. Moreover, the literature shows that younger individuals tend to display higher levels of Dark Triad characteristics compared to older adults, potentially due to lower self-control during adolescence (Jonason and Tost, 2010).

Muris et al. (2013) were pioneers in using multi-informant data to simultaneously examine all Dark Triad traits in relation to adolescent aggression and delinquency. However, their relatively small sample size highlighted the need for further research on the links between adolescent adjustment and the Dark Triad.

Given the limited research examining the entire Dark Triad within adolescent samples, studying these traits in the context of RCS offers a valuable opportunity to advance the literature. Adolescents in RCS often exhibit pronounced socially aversive traits, making this population particularly relevant for such investigation. Notably, in Portugal, youth aged 12 to 17 constitute 50% of those in the child welfare system, with 25% entering due to behavior problems, and a 25% increase in diagnosed mental health issues among children and adolescents within the system has been reported in recent years (ISS, 2024).

To contribute to the growing research on Dark Triad traits and adolescent outcomes, this study aims to examine how these traits may influence behavioral strengths and difficulties, as well as overall psychological adjustment, among youth living in RCS.

Current Study

There is substantial evidence supporting the validity and reliability of adolescent self-reports on the Big Five personality traits. Research indicates that self-reports begin to show reasonable validity and reliability from around age ten, with adolescents' perceptions of their own personality becoming increasingly differentiated as they mature. Understanding this differentiation is crucial for assessing whether the nature of the Dark Triad remains stable or evolves throughout adolescence (Klimstra et al., 2014).

The primary aim of the present study is to examine how the Dark Triad traits contribute to understanding psychological adjustment in institutionalized adolescents. To the best of our knowledge, this is the first study to link self-reports of psychological adjustment in institutionalized youth with their Dark Triad personality traits, while also considering the interrelationships among these three traits. Given that all three Dark Triad traits fall within the maladaptive personality spectrum and reflect antisocial tendencies, we hypothesize that they will be associated with maladaptive behaviors. Moreover, because each Dark Triad trait represents distinct antisocial tendencies, we expect them to differentially relate to internalizing problems (a composite of emotional symptoms and peer difficulties) and externalizing problems (a composite of behavior problems and hyperactivity).

The objectives of this study are threefold: 1) to explore the relationship between Machiavellianism, narcissism, and psychopathy and psychological adjustment in adolescents; 2) to investigate potential gender and age differences in both psychological adjustment and the expression of Dark Triad traits; 3) to examine the presence of Dark Triad characteristics in at-risk youth and determine their associations with behavioral problems.

Based on existing literature, we formulated the following hypotheses: H1) younger participants will exhibit higher scores on the subscales of the Short Dark Triad (SD3); H2) Boys will score higher than girls on the SD3 measures; H3) Boys will report more behavior problems, whereas girls will report more emotional difficulties; H4) younger adolescents will display more adjustment problems than older peers; H5) Dark Triad traits will significantly explain variance in psychological adjustment, with higher levels of these traits associated with poorer psychological adjustment.

2. METHOD

Participants

The sample consisted of 511 adolescents (232 boys, 45%; 279 girls, 55%) aged between 12 and 24 years (*M* = 15.87; *SD* = 2.25) residing in 46 Portuguese RCS. The age distribution was balanced, with 226 participants aged 12-15 years, 227 aged 16-18 years, and 58 aged 19-24 years. On average, adolescents had been living in their current institution for 41 months (*SD* = 43). Participants reported multiple reasons for

placement, including neglect and abuse (38%), school absenteeism (33%), financial difficulties (28%), and exposure to domestic violence (26%). More than 40% reported going home on weekends or during school holidays. Additionally, 10% were orphans of at least one parent, and 10% reported no contact with their biological family. While 93% of adolescents had siblings, only 32% were living in the same institution.

The sample size was determined using the GPower 3.1.9.7* (Faul et al., 2020) to ensure sufficient statistical power (≥ .80) for detecting medium effect sizes. Medium effect sizes were defined as $r = .30$ or $d = 0.50$ for correlational analyses, $f^2(V) = 0.15$ for MANOVA, and $f^2 = 0.15$ for multiple regression analyses. In cases of uncertainty regarding the expected effect size, conservative estimates (e.g., $r = 0.20$) were prioritized to reduce the risk of underpowered analyses and Type II errors (Hair et al., 2010). The minimum required sample sized were as follows: 84 participants for Pearson's *r*, 92 for MANOVA (two groups, five dependent variables), and 77 for multiple regression (three predictors). The final sample of 511 adolescents therefore exceeded these requirements, ensuring sufficient statistical power for the planned analyses.

Measures

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report measure to evaluate socio-emotional issues through a three-point Likert scale. Items are organized into five subscales relating to emotional problems (e. g., "I am often unhappy, down-hearted or tearful"), behavioral problems (e. g., "I get very angry and often lose my temper"), hyperactivity/inattention difficulties (e. g., "I am restless, I cannot stay still for long"), peer relationship problems (e. g., "I am usually on my own. I generally play alone or keep to myself"), and prosocial behaviors (e. g., "I try to be nice to other people. I care about their feelings") and a total difficulties score assesses the overall child's mental health (Goodman, 1997). Original Cronbach's alphas ranged from 0.65 to 0.85, while the Portuguese adaptation (Pechorro et al., 2011) showed values between 0.43 and 0.61. For the present study, reliability values obtained were: emotional problems $\alpha = 0.68$, behavioral problems $\alpha = 0.57$, hyperactivity/inattention difficulties $\alpha = 0.66$, peer relationship problems $\alpha = 0.51$, prosocial behaviors $\alpha = 0.78$, and total scale $\alpha = 0.78$.

Short Dark Triad (SD3, Jones & Paulhus, 2014; Portuguese version by Pechorro et al., 2018)

The Portuguese version assesses the Dark Triad traits with 21 items divided into three subscales: Machiavellianism (e. g., "Avoid direct conflict with others because they may be useful in the future"), narcissism (e. g., "I have been compared to famous people"), and psychopathy (e. g., "It's true that I can be mean to others").Participants rate their agreement on a 5-point Likert scale, with higher scores reflecting greater DT traits. Cronbach's alpha in the original version was above 0.80; reliability values for the present study were: Machiavellianism $\alpha = 0.78$, narcissism $\alpha = 0.58$, and psychopathy $\alpha = 0.69$.

An additional *ad-hoc* questionnaire collected participants' sociodemographic data, including age, sex, and length of stay in RCS.

Procedures

Data collection

Ethical approval for this study was obtained from the Ethics Committee of the University of Algarve (CEUAlg No. 110/2023). All procedures complied with the ethical standards outlined in the 1964 Declaration of Helsinki and its subsequent amendments. Permission to use the Portuguese version of the SD3 with youth from RCS was granted by the original authors of the instrument.

A convenience sampling strategy was used to recruit participants from 46 RCS across mainland Portugal and the Azores and Madeira archipelagos. Institutions were contacted via telephone and email, informed of the study's objectives and procedures, and all agreed to participate. Data collection was conducted in person by the first author when possible. In cases where on-site administration was not feasible due to geographic constraints, questionnaires were sent by post and administered by institutional staff. Detailed written instructions and clarifications were provided during the authorization process and again upon delivery of the materials. The first author remained available throughout the data collection period to respond to any questions or concerns from staff or participants.

Inclusion criteria required participants to be at least 12 years old, fluent in Portuguese, and free from medical conditions that could impair their ability to

participate. Adolescents identified by institutional staff as having cognitive impairments were excluded. All eligible participants were informed about the study's aims, the voluntary nature of participation, and their right to withdraw at any point without consequence. Written informed consent was obtained from participants aged 16 and older. For those under 16, written consent was secured from a legal guardian or the institution's technical director, in accordance with ethical guidelines.

Data were collected using anonymous, structured, self-report questionnaires administered within each institution. Additionally, institutional directors completed anonymous surveys providing information on organizational characteristics and religious affiliation.

Data collection took place between October 2023 and October 2024. Incomplete responses were excluded from the final dataset.

Data analysis

All descriptive and inferential statistical analyses were conducted using IBM SPSS Statistics for Windows software, Version 29 (IBM Corp., 2020). Statistical significance was set at $p \leq .05$. Incomplete questionnaires were excluded from analyses, and missing data were handled through pairwise deletion.

To evaluate the study hypotheses, a range of analytical methods was employed, including correlation analysis, analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), and multiple hierarchical regression (enter method). These analyses aimed to examine psychological adjustment as predicted by the Dark Triad traits and key demographic variables – namely, sex, age, and duration of institutionalization.

Age was categorized into three groups rather than treated as a continuous variable to better capture potential nonlinear developmental effects and enhance interpretability. This grouping strategy aligns with prior research in developmental psychology, which frequently uses age brackets to represent key stages of maturation (e.g., early *versus* late adolescence).

Differences in psychological adjustment and the three dimensions of the SD3 across sex and age groups were analyzed using a multivariate analysis of variance (MANOVA), after confirming the assumptions of multivariate normality and homogeneity of variance-covariance matrices. Since SPSS Statistics does not directly

assess multivariate normality, this assumption was verified using univariate Shapiro-Wilk tests ($p \geq .05$ for all groups). No multivariate outliers were identified based on Mahalanobis distance. The assumption of no multicollinearity was supported by the absence of strong correlations among dependent variables. Homogeneity of the variance-covariance matrices was assessed via Box's M test, which yielded a statistically significant result [M = 30,950; F(15, 971225.707) = 2.041; p = .010].

Despite the significance of Box's M, Pillai's Trace was selected as the primary multivariate test statistic, given its robustness to violations of MANOVA assumptions, including heterogeneity of covariance matrices and deviations from multivariate normality (Olson, 1976; Tabachnick & Fidell, 2013). Pillai's Trace is also preferred in cases of unequal group sizes or smaller sample due to its higher statistical power compared to Wilks' Lambda. When the MANOVA indicated statistically significant effects, follow-up univariate ANOVAs were conducted for each dependent variable, followed by Tukey's HSD post hoc tests. A significance level of $\alpha = .05$ was considered (Field, 2024).

3. RESULTS

We examined associations between the Strengths and Difficulties Questionnaire (SDQ) total score, prosocial behavior, length of time in residential care, and participant age. Among females, older age was associated with fewer adjustment problems (r = -.26, p < .001), as was longer duration in institutional care (r = -.26, p < .001). For both sexes, age was positively correlated with prosocial behavior (females: r = .19, p < .01; males: r = .17, p < .01). Additionally, higher levels of prosocial behavior were associated with fewer adjustment problems across the sample (r = -.18, p < .01).

As shown in Table 1, significant sex differences were observed across all Dark Triad dimensions, with boys scoring higher than girls on each trait.

Analysis of Table 1 indicates that, among girls, all correlations were significant except for the relationship between the SDQ total score and narcissism. For boys, the exceptions were the correlations between Machiavellianism and narcissism, and between the SDQ total score and prosocial behavior.

Weak negative correlations were found, for both sexes, between the SDQ total score and prosocial behavior, as well as between prosocial behavior and psychopathy.

These findings suggest that higher levels of prosocial behavior are associated with fewer adjustment problems and lower levels of psychopathy.

Table 1. Descriptive statistics and correlations between Dark Triad traits and psychological adjustment by sex (N_{girls} = 279, N_{boys} = 232).

	1	2	3	4	5
1. SDQ total score	-	-.18**	.40***	.06	.49***
2. Prosocial behavior	-.18**	-	-.20***	.22***	-.23***
3. Machiavellianism	.12	-.10	-	.31***	.63***
4. Narcissism	.08	.15*	.49***	-	.33***
5. Psychopathy	.42***	-.22***	.56***	.44***	-
$M_{females}$ ($SD_{females}$)	16.35	7.79	2.71	3.03	2.39
	(6.46)	(2.13)	(0.79)	(0.63)	(0.76)
M_{males} (SD_{males})	14.59	6.87	2.92	3.09	2.62
	(5.82)	(2.42)	(0.86)	(0.67)	(0.74)

Note. r values for girls on the upper-right section and boys score on the lower-left section.

* $p < .05$; ** $p < .01$; *** $p < .001$

Moderate positive correlations between narcissism and psychopathy, and between Machiavellianism and psychopathy, were observed in both sexes. These results support the notion that the three Dark Triad traits are interrelated and share some common features – particularly among boys – and further suggest that higher levels of psychopathy are associated with more adjustment difficulties.

Among girls, a weak positive correlation was found between Machiavellianism and prosocial behavior (r = 0.20, N = 279, $p < .01$), and a moderate positive correlation between Machiavellianism and the SDQ total score (r = 0.40, N = 279, $p < .01$). These findings suggest that, in girls, higher levels of Machiavellianism are associated with increased psychological adjustment difficulties.

Table 2 presents the results of a multivariate analysis of variance (MANOVA), conducted to examine the effect of sex while controlling for age group.

The MANOVA revealed a significant effect of sex on psychological adjustment and the presence of Dark Triad traits, Pillai's Trace = 0.11, $F(5, 504) = 12.17$, $p < .001$, $\eta^2 = .11$. Follow-up univariate ANOVAs indicated significant sex differences in prosocial behavior, $F(1, 509) = 20.92$, $p < .001$, and SDQ total score, $F(1, 509) = 10.34$, $p < .001$.

Regarding Dark Triad traits, significant effects of sex were found for Machiavellianism, $F(1, 509) = 8.11$, $p = .005$, and psychopathy, $F(1,509) = 11.18$, $p < .001$. In addition, there was a significant effect of age on psychological adjustment and the presence of Dark Triad traits, Pillai's Trace = 0.08, $F(5, 504) = 8.54$, $p < .001$; $\eta^2 = .08$.

Table 2. Multivariate comparison between sex and age group.

	F	**Partial η^2**
Control variable		
Age	8.54***	.08
Independent variable		
Sex (females/males)	12.17***	.11
SDQ Total	10.34***	.02
Prosocial behavior	20.92***	.04
Machiavellianism	8.11***	.02
Narcissism	1.14	.00
Psychopathy	11.18***	.02

Note. $p < .001$ ***.

Following the significant effects identified in the MANOVA, pairwise comparisons of group means were conducted using Tukey's post hoc test. The comparisons revealed statistically significant differences across age groups for all dependent variables except narcissism. These findings suggest that age-related differences are evident in most socio-emotional and personality-related measures, with narcissism appearing relatively stable across the examined age range.

Regarding prosocial behavior, participants aged 12-15 ($M = 6.93$, $SD = 2.32$) scored significantly lower than those aged 19-24 ($M = 8.33$, $SD = 2.24$, $p < .001$). For the SDQ total score, participants aged 12-15 ($M = 16.50$, $SD = 6.47$) and those aged 16-18 ($M = 15.46$, $SD = 5.87$) scored significantly higher than participants aged 19-24 ($M = 12.19$, $SD = 5.58$), both $p < .001$, indicating fewer adjustment problems among older adolescents and young adults.

Significant age-related differences were also observed for Machiavellianism. Participants aged 12-15 (*M* = 2.95, *SD* = 0.80) scored higher than both those aged 16-18 (*M* = 2.70, *SD* = 0.82), *p* = .004, and those aged 19-24 (*M* = 2.62, *SD* = 0.88), *p* = .017. For psychopathy, participants aged 12-15 (*M* = 2.60, *SD* = 0.76) scored higher than those aged 19-24 (*M* = 2.13, *SD* = 0.64), *p* < .001, as did those aged 16-18 (*M* = 2.48, *SD* = 0.75) compared to the 19-24 age group, *p* = .003. No other significant differences were found across conditions (p > .05).

A hierarchical multiple regression analysis was conducted to identify predictors of psychological adjustment (Table 3).

Table 3. Regression analysis of psychological adjustment (N = 511).

	Psychological Adjustment			
	ΔR^2	*F* change	β	*t*
Step 1: Sociodemographic variables	.06	9.83***		
Age			-.16	-3.33***
Sex			-.20	-5.08***
Time in institution			-.05	-1.20
Step 2: SD3 dimensions	.20	43.61***		
Machiavellianism			.03	0.62
Narcissism			-.12	-2.68*
Psychopathy			.47	9.38***

* *p* < .05; ** *p* < .01; *** *p* < .001

In Step 1, the sociodemographic variables – age, sex, and time spent in the institution – were entered. Both age (β = –.16, *t* = –3.33, *p* < .001) and sex (β = –.20, *t* = –5.08, *p* < .001) were significant predictors, indicating that older age and being female were associated with fewer adjustment problems. Time spent in the institution was not a significant predictor (β = –.05, *t* = –1.20, *p* = .229).

In Step 2, the three Dark Triad traits were added to the model, which significantly improved its predictive power. Psychopathy emerged as a strong positive predictor of poorer psychological adjustment (β = .47, *t* = 9.38, *p* < .001), while

narcissism showed a small but significant negative association (β = –.12, t = –2.68, p = .008), suggesting a potential protective effect. Machiavellianism was not a significant predictor (β = .03, t = 0.62, p = .536).

The final model was statistically significant, $F(6, 504) = 27.956$, $p < .001$, $R^2 = .25$, indicating that both sociodemographic characteristics and Dark Triad traits predict psychological adjustment, with personality traits – particularly psychopathy – being stronger predictors.

4. DISCUSSION

The Dark Triad has been recognized as relevant in explaining delinquent behavior and in elucidating the psychological and emotional factors underlying the development of antisocial behavior in adolescents. It also contributes to understanding psychological adjustment in this population, with adolescent self-reports of personality shown to be valid and reliable. However, research on the Dark Triad in individuals under the age of 18 remains limited (Pechorro et al., 2021), and to the best of our knowledge, these traits have not been previously examined in adolescents residing in RCS.

The present study examined the associations between Dark Triad traits and psychological adjustment in institutionalized adolescents, while also exploring sex and age differences in both domains. Consistent with prior literature, the findings support the conceptualization of Machiavellianism, narcissism, and psychopathy as distinct yet interrelated constructs in adolescence. The relatively large sample enabled a more detailed analysis of developmental and sex-based variations.

In line with our first hypothesis, younger adolescents exhibited higher levels of Machiavellianism and psychopathy, whereas older participants scored lowest across all three traits. This aligns with research suggesting that the structure and expression of Dark Triad traits may change throughout adolescence (Klimstra et al., 2014, 2020). Sex differences were also observed, with males scoring significantly higher in Machiavellianism and psychopathy, confirming our second hypothesis and echoing previous findings on gendered patterns of affective and behavioral expression (Klimstra et al., 2020).

These developmental patterns may reflect the maturation of empathy and moral reasoning during adolescence (Hoffman, 2000; Sijtsema et al., 2019). Increases in perspective-taking and empathic concern are associated with the internalization of moral norms (Hoffman, 2000), which may mitigate socially aversive traits. Given that moral disengagement and psychopathy are still forming during this period, institutional environments could play a critical role in shaping their developmental trajectories.

These findings support the view that adolescence is a critical developmental period for the emergence and consolidation of dark personality traits. This aligns with prior research indicating that mean levels of Dark Triad traits often increase during adolescence (Klimstra et al., 2020), emphasizing the importance of examining these traits within developmental and environmental contexts.

Muris et al. (2022) suggested that individuals high in Dark Triad traits – often linked to manipulative behaviors – may attempt to present themselves more favorably, potentially underreporting traits perceived as socially undesirable. Despite this tendency, the observed age and sex differences in self-reports align with prior research, reinforcing their validity.

Consistent with existing literature, our results confirm the high prevalence of emotional and behavioral problems among youth in child welfare systems (Keil & Price, 2006; Molano et al., 2024). Externalizing difficulties were particularly prominent among boys, reflecting broader trends reported across various placements, demographic groups, and assessment tools (Keil & Price, 2006).

Regarding psychological adjustment, sex differences emerged across internalizing and externalizing domains. Males reported more behavioral problems, while females scored higher on emotional difficulties, prosocial behavior, and overall psychological difficulties. These findings are consistent with prior studies (Campos et al., 2019; Cotton et al., 2020) and lend support to our third hypothesis, underscoring the importance of considering sex-specific patterns in mental health assessments.

In terms of age-related differences, the literature presents mixed results. In our sample, younger participants exhibited higher levels of emotional problems, behavioral difficulties, hyperactivity/inattention, and overall psychological maladjustment. In contrast, those aged 16-18 scored higher on the peer relationship problems subscale. The older participants reported the highest levels of prosocial behaviors. These

patterns align with prior research indicating that both externalizing and internalizing problems tend to decrease with age (McWey et al., 2010), thereby confirming our fourth hypothesis.

The high prevalence of externalizing behavior disorders among youth in child welfare settings is a well-established finding. Some researchers have identified these disorders as the most predominant and challenging among children in alternative care (Keil & Price, 2006). In the Portuguese context, approximately one-quarter of youth entering RCS present with behavioral problems (ISS, 2024).

According to Molano et al. (2024), some studies have identified a significant negative impact of long-term institutionalization on psychological adjustment. However, our findings indicate a positive association between the length of time spent in residential care and young people's adjustment. This aligns with previous research showing improvements across various developmental dimensions as the duration in foster care increases.

These outcomes may be explained by the fact that residential care is often initiated in response to experiences of abuse or inadequate parental care, offering a more structured and secure environment than the family setting. This context can thus be more conducive to positive development.

Furthermore, these findings can be interpreted through the lens of grief theory (Kübler-Ross & Kessler, 2005), as young people often perceive separation from their families as a form of loss. Grief involves a complex emotional adaptation process encompassing physiological, cognitive, and behavioral components. Consequently, those who have spent less time in care may exhibit greater difficulty adjusting due to the ongoing grieving process. This suggests that the duration of time in care is not inherently beneficial or detrimental but must be considered in relation to each individual’s specific circumstances and goals.

For youth struggling with emotional adaptation following placement, fostering acceptance of their situation is critical for achieving greater emotional stability. Additionally, age at the time of placement and the level of social integration are important factors, as adjustment within RCS tends to improve over time.

Although personality is a key individual factor in predicting adolescents’ behavioral adjustment, Zhao and Jin (2023) noted that research has predominantly

focused on the “bright side” of personality, often overlooking darker traits. Prior studies have shown that individuals exhibiting high levels of dark personality traits are more likely to engage in maladaptive behaviors, with psychopathy demonstrating the strongest correlation with misconduct.

Klimstra et al. (2014) emphasized the importance of examining the Dark Triad traits collectively, accounting for their shared variance. They also advocated for more extensive research on these traits in adolescents, as they may not only help explain individual differences in aggression but also offer broader insight into adolescent functioning.

The present study builds on this line of research by investigating Dark Triad traits in a specific population – youth residing in RCS – and examining their relationship with psychological adjustment, thereby contributing novel insights to the existing literature.

Although some inconsistencies exist across studies, males generally score higher than females on all three Dark Triad traits (Furnham et al., 2013). This trend was confirmed in our sample of institutionalized youth, aligning with previous findings from both collective examinations of the Dark Triad and some focusing individually on Machiavellianism, narcissism, and psychopathy, in adolescents.

A wide range of unpleasant emotions, such as sadness and depression, can elicit anger and aggression. Exposure to adverse environmental events often triggers negative emotional states, which may, in turn, activate maladaptive behaviors associated with Dark Triad traits. Previous research has emphasized the value of examining these traits within the context of externalizing problems in youth, highlighting their relevance in the development of disruptive behavior and antisocial conduct (Pechorro et al., 2022). Such investigations help clarify the relative contribution of each trait to the developmental psychopathology of disruptive behavior (Muris et al., 2013).

In the present study, our findings indicate that both sociodemographic variables and Dark Triad traits predict psychological adjustment among adolescents living in RCS, with the Dark Triad traits emerging as stronger predictors. These results support our fifth hypothesis.

Consistent with prior studies involving children and adolescents, our findings also suggest that higher levels of psychopathy are particularly associated with increased tendencies toward delinquency and behavioral problems (e.g., Pechorro et al., 2022). This may be attributed to the fact that individuals with elevated psychopathic traits tend to show limited concern for the consequences of their actions and a reduced fear of being apprehended (Lau & Marsee, 2013).

Adolescents residing in RCS often experience multiple forms of adversity, including separation, abuse, neglect, and violence – factors that may help explain the predictive strength of Dark Triad traits in relation to aggressive and delinquent behavior. On one hand, research emphasizes environmental influences as a source of aggression, particularly among individuals who have not learned to adhere to social norms due to limited exposure or opportunities to internalize such values. On the other hand, evidence also points to genetic predispositions for antisocial behavior, which may be exacerbated under adverse conditions (Muris et al., 2017).

While all three Dark Triad traits are associated with negative psychosocial outcomes, the literature suggests that Machiavellianism and especially psychopathy are more robustly linked to maladaptive behaviors than narcissism. Muris et al. (2013) found that both Machiavellianism and psychopathy significantly accounted for the relationship between Dark Triad traits and symptoms of aggression and delinquency in adolescents. These findings are consistent with our results, which underscore psychopathy as a particularly salient marker in the development of disruptive behaviors among youth (Zhao & Jin, 2023).

Furthermore, our results point to Machiavellianism as another potentially important trait warranting deeper exploration in this context. As Furnham et al. (2013) noted, relying on raw correlations is insufficient for distinguishing among the Dark Triad traits; at a minimum, multiple regression analyses should be employed. This is particularly important given that these traits often lead to similar behaviors, likely due to shared core characteristics such as self-centeredness, emotional coldness, and a propensity for aggression – patterns our findings also support.

Limitations and strengths

Although the study yielded important findings, several limitations should be acknowledged. First, the reliance on self-reported data to assess Dark Triad traits may

raise concerns, particularly given the manipulative tendencies associated with high levels of Machiavellianism. One might expect self-representation biases to influence responses; however, previous research, along with findings from the present study, suggests that self-reports on the Dark Triad can yield valid results. Second, the cross-sectional design precludes causal inference. While Dark Triad traits have been linked to problematic behaviors in prior research, longitudinal studies are needed to clarify the directionality of these associations. Notably, existing longitudinal evidence indicates that the relationship between personality traits and problem behaviors may be bidirectional, with changes in personality potentially both influencing and resulting from maladaptive behavior. Third, the study focused exclusively on subclinical levels of Dark Triad traits. Consequently, the findings cannot be generalized to clinical populations such as individuals diagnosed with narcissistic personality disorder or psychopathy. Nevertheless, given the continuum between normative personality traits and personality pathology, there is no theoretical basis to assume substantially different patterns of association in clinical populations. Future research should examine these associations in clinical samples and among youth in specialized settings such as residential care or therapeutic communities for addiction.

Fourth, the study relied on single-informant measures, which is a limitation particularly relevant to youth in RCS, who often have multiple caregivers. Future research should incorporate multi-informant assessments of the SDQ and SD3 to enhance the validity of findings. Multi-informant data may also help determine whether caregivers report SDQ scores within clinical e clinical ranges, as suggested in prior literature. Additionally, assessing social desirability bias could clarify potential distortions in adolescents' self-reports.

Despite these limitations, the study has several notable strengths. These include the use of a national sampling frame, high response rates, and self-reports collected directly from a hard-to-reach and under-researched population. While the national scope of the sample is a significant strength, it is important to note that the structure and functioning of residential care and child welfare systems differ across countries. Thus, caution is warranted when generalizing findings beyond the Portuguese context.

5. CONCLUSION AND IMPLICATIONS FOR PRACTICE

The findings of this study have important implications for practice. Given the high prevalence of socioemotional difficulties among children and adolescents in residential care, the early identification of youth at risk for mental health problems is critical. Routine psychological screening, timely access to appropriate services, and the implementation of individualized interventions are essential to support the developmental needs of these vulnerable individuals.

Extensive research has documented the detrimental effects of institutional care on psychological and emotional functioning. Consequently, transitioning from institutional care to foster family systems is vital to ensure greater stability and continuity of care. Enhancing the quality of parental support and implementing preventive interventions as early as possible may also reduce the need for institutional placements (Giraldi et al., 2022).

Additionally, social workers working in RCS require targeted training to manage the personality-related challenges present by youth, including traits associated with the Dark Triad. Such training can help prevent the escalation of psychological symptoms and promote healthier developmental outcomes.

Gender-sensitive approaches should also be prioritized. Research consistently shows that girls are more prone to internalizing problems, while boys are more likely to exhibit externalizing behaviors. Tailored interventions, such as caregiver training, gender-specific support programs, and awareness of gender-related needs and biases, can improve care effectiveness. Strategies like mentoring and structured group activities may further support the psychosocial well-being of all youth in institutional settings.

These findings pertain specifically to adolescents residing in Portuguese RCS, and thus, generalizations to other cultural or child welfare contexts should be made with caution. Future research should investigate how cultural norms, institutional environments, and systemic care practices interact with personality traits to influence psychosocial outcomes. Additionally, factors such as contact with biological family, trauma history, and attachment patterns warrant further exploration, as they may moderate or mediate the relationship between personality traits and psychological adjustment in youth across different care systems.

Given the complex mental health and social care needs of at-risk youth, the assessment of psychological adjustment should be incorporated into a comprehensive battery of tools for both research and clinical purposes. Such assessments can serve to identify educational needs, provide baseline clinical information, and inform individualized care planning. Additionally, evaluating Dark Triad traits in adolescents may help identify those at heightened risk, facilitating early detection and targeted mental health interventions. This information can support tailored approaches by institutional professionals and enhance the support provided to both biological and foster families.

Externalizing problems in youth are heterogeneous in nature, encompassing behaviors such as aggression, defiance, and delinquency, which may manifest reactively in response to emotional triggers or proactively in the absence of emotional arousal. Assessing personality traits can aid in distinguishing among these behavioral patterns and inform more precise intervention strategies. These findings are particularly relevant for professionals working in RCS, as treatment approaches for externalizing behaviors may depend significantly on the individual's underlying personality characteristics.

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ARTICLE 4 | Vulnerable Attachment Style Questionnaire: adaptation, validation, and psychometric properties for a sample of institutionalized youths

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Vulnerable Attachment Style Questionnaire: Adaptation, validation, and psychometric properties for a sample of institutionalized youths

ABSTRACT

The attachment framework has been used to understand individuals' development and the emergence of difficulties in specific contexts and developmental stages. The Vulnerable Attachment Style Questionnaire (VASQ) is a brief self-report measure initially designed to assess adult attachment as a vulnerability factor for the development of depression. The present study aimed to confirm and validate the VASQ's factor structure using a sample of adolescents living in 46 Portuguese residential care institutions. A total of 438 youths, aged between 12 and 18 years (M=15.34), completed the questionnaire. The data were randomly split to conduct both independent exploratory and confirmatory factor analyses. A three-factor model, consisting of two types of insecurity (ambivalent and avoidant), and a proximity-seeking pattern of attachment, emerged as the best-fitting model. Despite similarities with the original measure, the new factor structure led to the elimination of nine items without compromising construct validity. Discriminant validity was also assessed by examining youth psychological adjustment, with positive correlations emerging as expected. The findings highlight important implications for using this tool in screening or intervention contexts, as well as the need for training institutional workers to develop competencies tailored to this specific population.

Keywords: Adolescents; Attachment; Psychological adjustment; Psychometric properties; Residential care.

1. INTRODUCTION

Identity is shaped by early parental interactions, but disruptions like placement in residential care settings (RCS), can hinder development and lead to behavioral issues (Zhang et al., 2019). Youth in child protection often experience instability from inadequate care and frequent changes in placements and schools, worsening mental health challenges (Keil & Price, 2006; Moreno-Manso et al., 2023). Although RCS in

Portugal, as established by Law 142/2015, aims to protect at-risk children, those in these settings face higher risks of emotional, behavioral, and social difficulties than peers elsewhere (Hoffnung Assouline & Attar-Schwartz, 2020; Zhang et al., 2019). By the end of 2023, over 6,400 children were under state care in Portugal, 84% in RCS, with 25% placed due to behavioral problems (ISS, 2024).

Attachment bonds are crucial for emotional security and the development of emotional regulation (Bowlby, 1977). Attachment behavior refers to actions aimed at maintaining proximity to a preferred individual, most evident in children but present throughout life, especially under stress (Bowlby, 1977).

Ainsworth (1985) emphasized the role of parental attachment in understanding psychopathology and stress responses. According to attachment theory, disrupted attachment can contribute to psychiatric disorders, highlighting the influence of early experiences on thought and behavior (Bowlby, 1977). Waters et al. (2000) found that attachment security can be stable from infancy to adulthood, raising questions about the effects of early disruptions, particularly in youth residing in residential care.

In 1978, Ainsworth identified three infant attachment patterns – secure, avoidant, and ambivalent – using the "Strange Situation Procedure" (Ainsworth et al., 2015), with the latter two being insecure attachment styles. Later, in 1986, Main and Solomon added a fourth pattern – disorganized attachment. These attachment styles influence behavior and shape adult relational bonds through a representational model derived from early caregivers but modified by life experiences (Ainsworth, 1985; Hazan & Shaver, 1987). Longitudinal studies illustrate the crucial role of attachment in maladaptive trajectories (e.g., Sroufe, 2005; Waters et al., 2000). Individuals with secure histories develop positive self and interpersonal representations, while those with insecure backgrounds view themselves and their environment as unpredictable. The quality of attachment experiences impacts socio-emotional development, relational navigation, and the behavioral strategies that characterize their functioning (Bowlby, 1977; Paquette et al., 2025; Sroufe, 2005). Consistent, nurturing caregiving is vital for positive child development; disruptions, like institutionalization, can hinder emotional bonds crucial for development (Cahill et al., 2016).

Lionetti et al. (2015) highlight that children in institutions often lack a stable caregiving figure, compromising attachment formation due to high turnover of

untrained professional caregivers (Barone et al., 2016). RCS staff are essential in fostering a positive environment, responsible for around 95% of a young person's time in care, thereby making a significant impact (Anglin, 2019; Cahill et al., 2016; Hoffnung Assouline & Attar-Schwartz, 2020). Caregivers help establish secure attachments, promoting security and well-being (Harder et al., 2013; Hoffnung Assouline & Attar-Schwartz, 2020).

Measuring attachment in Out-of-Home youths

The foundational work of attachment theory (Ainsworth et al., 2015; Bowlby, 1977) has informed the creation of various assessment tools for attachment patterns, classified into interview-based and self-report formats. These tools fall into two main categories: observational procedures assessing attachment at a behavioral level, and representational procedures evaluating internal representations of attachment relationships (Lionetti et al., 2015). Research on adolescents has investigated factors tied to different attachment patterns (Sroufe et al., 1999). In Portuguese studies, interviews have targeted the quality of attachment representation during parental separation (e.g., Separation Anxiety Test; SAT, Klagsbrun & Bowlby, 1976) and perceptions of parental availability (e.g., Friends and Family Interview; FFI, Steele & Steele, 2005). Questionnaires measure either one-dimensional aspects (e.g., Parental Attachment Questionnaire; Kenny, 1987) or categorical aspects of attachment (e.g., Adult Attachment Styles; Hazan & Shaver, 1987). Secure attachment has been assessed using the Inventory of Peer and Parent Attachment (IPPA; Armsden & Greenberg, 1987), while insecure attachment is typically evaluated using the Avoidant and Preoccupied Coping Scales (Finnegan et al., 1996). Disorganized attachment, on the other hand, is commonly assessed with the Adolescent Unresolved Attachment Questionnaire (West et al., 2000). Despite adequate psychometric properties, research on self-assessment reliability and correlations with other measures is limited, highlighting the need for further study on attachment in institutionalized youth. Developing reliable, concise assessment methods is essential to better establish its discriminant validity. Some of these measures are neither brief in their application nor straightforward in their interpretation, and they are not specifically designed for use with institutionalized youth. Further research is needed to validate relevant and

reliable assessment methods for evaluating attachment in institutionalized children (Lionetti et al., 2015).

The Relationship with Significant Figures Questionnaire, developed by Mota and Matos (2005), assesses adolescents' relationships with significant figures, comprising 28 items across two dimensions (teachers/school staff and institutional staff) using a 6-point Likert scale, showing adequate reliability (α = .88) (Mota & Matos, 2012). However, it overlooks behavioral factors and the link between attachment vulnerabilities and adolescent depression (Rodrigues et al., 2024) which is prevalent among this population (Santos & do Céu Salvador, 2021).

Current Study

Current measures evaluate attachment styles separately, focusing mainly on relationships with primary caregivers like biological or adoptive parents (Lionetti et al., 2015). Some researchers, including Bifulco et al. (2003), advocate for tools that accurately assess vulnerable attachment and identify those at risk of psychopathology, such as depression (Rodrigues et al., 2024). However, studies reveal that child protection workers often neglect systematic assessments regarding children's attachment, relying instead on unsupported methods (Hammarlund et al., 2022). A systematic review by Ravitz et al. (2010) identified the Vulnerable Attachment Style Questionnaire (VASQ) as a brief, valid, and reliable 22-item scale with consistent results shown through Cronbach's alphas and test-retest reliability metrics, suggesting it is a promising tool. The VASQ is used to compute a total score reflecting vulnerable attachment, and two separate subscales indicating "Insecure" and "Proximity-seeking" attachment patterns. Cronbach's alphas for the original version (Bifulco et al., 2003) were .82 for the insecurity subscale and .67 for the proximity-seeking subscale. The test–retest reliability was .73 for the insecurity dimension and .65 for the proximity-seeking dimension. The VASQ was shown to have high concurrent validity with the Relationship Questionnaire; associations were found with correlations between r = -.14 and r = 0.53 (Bifulco et al., 2003).

To date, and to the best of our knowledge, only one study has systematically evaluated the psychometric properties of the VASQ in a large and diverse sample, while also considering sex differences (Kupeli et al., 2015). In this investigation, both exploratory and confirmatory factor analyses were conducted, resulting in the

proposal of a 14-item, four-factor model (Chi^2/df = 212/74; *CFI* = .93; *TLI* = .92; RMSEA = .05), as well as an alternative solution in which the two main attachment subscales are further divided into two subscales each. This factorial structure preserves the established relationships between the VASQ, psychopathology, and sex (Kupeli et al., 2015). The internal consistency of the total scale and the insecurity and proximity-seeking subscales, as measured by Cronbach's alpha, were .79, .82, and .83, respectively. Significant associations were also identified between VASQ dimensions and indicators of mood, eating disorders, and perceived stress. Although the VASQ was not originally developed for use with institutionalized youth, it has demonstrated promising results in this population (Bifulco et al., 2016). In Portugal, several studies have utilized the VASQ with institutionalized adolescents (Babo et al., 2024; Lemos & Silva, 2019; Morais et al., 2024), however, there remains a need for its formal validation within the Portuguese context, particularly among youth in residential care. Furthermore, a comprehensive and consistent examination of the scale's factorial structure in this population is warranted.

This measure is designed to evaluate behaviors, emotions, and attitudes related to attachment and may serve as a valuable tool for assessing differences within the residential care process (Bifulco et al., 2016). The present study aims to adapt and validate the VASQ for use with adolescents residing in RCS. The primary objective is to establish the VASQ as a self-report instrument capable of identifying adolescents at risk for maladjustment by examining its factor structure, assessing its reliability, evaluating discriminant validity with external variables, and exploring its relationship with psychological adjustment. Furthermore, this research seeks to extend previous findings (Bifulco et al., 2016) by including a broader cohort, thereby enhancing the understanding of attachment dimensions among at-risk populations in residential care.

Utilizing data from a large sample of adolescents living in Portuguese RCS, it is hypothesized that the VASQ will: 1) confirm the two-factor structure identified in the original study (Bifulco et al., 2003); 2) demonstrate adequate internal consistency; and 3) exhibit discriminant validity in relation to measures of psychological adjustment.

2. METHOD

Participants

The sample consisted of 438 youths from 46 Portuguese RCS, including 195 boys (44.5%) and 243 girls (55.5%) aged between 12 and 18 years [*M* = 15.34; *SD* = 1.76; 12-15 years: n = 217 (49.5%); 16-18 years: n = 221 (50.5%)]. The 12-24 age group is the most prevalent in Portuguese residential care institutions (ISS, 2024). On average, the youths had been living in their current RCS for 41 months (SD = 43; range = 1-204). Regarding educational level, most of the youths (57%) were attending middle school. Most of the youths (93%) had siblings, but only 31% were in the same institution.

Measures

Vulnerable Attachment Style Questionnaire (VASQ, Bifulco et al., 2003; Portuguese translation from Lemos & Silva, 2019)

The VASQ is a brief self-reporting instrument created to assess adult attachment styles as a vulnerability factor for depression. It consists of 22 items assessing behaviors, emotions, and attitudes toward attachment, validated against the Attachment Style Interview (ASI, Bifulco et al., 2002a; Bifulco et al., 2002b). Participants rate items on a 5-point Likert scale based on how they generally feel rather than their current emotional state. Items 14 and 15 are positively worded and require reverse scoring to maintain consistency. The scale yields a total score for vulnerable attachment and two subscales for “Insecure” and “Proximity-seeking” attachment styles; higher scores indicate more vulnerable attachment when using the total score, and greater insecurity or proximity-seeking when considering the subscales. Scoring can also identify disorganized attachment patterns, with published cutoffs determining dysfunctional levels. A low score on either mistrustful avoidance or anxious-proximity-seeking denotes a secure attachment style (Bifulco et al., 2016). The Portuguese version of the VASQ was developed using a forward-backward translation method involving two translators with experience in psychological research. Cultural adaptation was carefully considered, focusing on clarity, commonly used language, and conceptual equivalence of the scale (Lemos & Silva, 2019).

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report scale assessing socio-emotional issues, using a three-point Likert-type scale to rate items. It consists of five subscales, with the total difficulties score reflecting overall child mental health (Goodman, 1997; Goodman et al., 2010). Reliability in the original version varied from 0.41 to 0.80 (Goodman, 2001), while the Portuguese adaptation showed alphas from 0.43 to 0.61 (Pechorro et al., 2011). In this study, reliability values were: emotional problems $\alpha = 0.68$, behavioral problems $\alpha = 0.57$, hyperactivity/inattention difficulties $\alpha = 0.66$, peer relationship problems $\alpha = 0.51$, prosocial behaviors $\alpha = 0.78$, and total scale $\alpha = 0.78$.

Procedures

Data collection

Ethical approval was obtained from the Ethics Committee of the University of Algarve (CEUAlg Pn° 110 /2023). All procedures performed in the study adhered to the ethical standards of the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The authors of the original VASQ scale and its Portuguese translation also authorized its adaptation and validation for the Portuguese residential care context.

A translation version of the study was piloted with a small group of youths from varying ages and educational backgrounds to ensure clarity and comprehension for the target population. Convenience sampling engaged 46 RCS across mainland Portugal, the Azores and Madeira archipelagos, all of whom consented to participate. Data collection was primarily conducted in person by the first author whenever feasible. In cases where geographical distance prevented in-person collection, data was sent by post and collected by a professional from the institution. Instructions and clarifications were communicated via email and reiterated in writing when the questionnaires were distributed. Participants aged 12 to 18, fluent in Portuguese, and free from medical conditions affecting participation were included, while those with cognitive impairments identified by institutional professionals were excluded. Eligible participants were informed about the study's purpose and invited to participate voluntarily. They were also assured that they could withdraw from the survey without

any consequences. Those who agreed to participate provided written informed consent. For participants under 16 years old, written informed consent was also obtained from their legal guardians or the technical directors of each RCS.

Adolescents completed an anonymous, structured, self-report questionnaire at the residential care institution. Directors of RCS were asked to complete anonymous, structured self-report questionnaires to provide details about their institution's organizational characteristics. The obtained sample was collected between October 2023 and October 2024.

Data Analysis

Data analyses were performed using IBM SPSS 30.0 (IBM Corp., 2024) and Jamovi v. 2.6 (Gallucci & Jentschke, 2021; The jamovi project, 2024; R Core Team, 2024). Data from 150 participants were randomly selected for Exploratory Factor Analysis (EFA). Varimax rotation was employed due to the expected theoretical independence between the factors and the need to maximize interpretative clarity, following the recommendations from Hair et al. (2019) and Marôco (2021a). Item kurtosis (*K*) and Skewness (S) were assessed, with values higher than 8.0 for *K* and 3.0 for *A* considered serious violations (Marôco, 2021b).

The retention of factors was based on the convergence between a visual inspection of the scree plot and parallel analysis via Monte Carlo simulation (2.000 replicates), specifically to observe eigenvalues greater than 1. The KMO criterion was used to assess the validity of the EFA. All variable commonalities were analyzed, and items were removed from the EFA if their factor loadings were non-significant or if they loaded significantly but weakly (i.e., <.40) onto more than one factor.

The best-fitting models identified from the EFA were subsequently selected for Confirmatory Factor Analysis (CFA) using the second half of the dataset (*n* = 288). CFA analyses were computed with the Maximum Likelihood Estimation (Epskamp et al., 2019; Epskamp, 2022) to analyze the Portuguese version of the VASQ (Bifulco et al., 2003). The fit of the model was assessed by goodness-of-fit indices, namely chi-square/degrees of freedom (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) (R Core Team, 2024; Rosseel, 2019). The goodness-of-fit was assessed by the factor weights and the individual reliability of the items. Values were considered acceptable when CFI and TLI

exceeded .90, and RMSEA was ≤ .10. The Chi^2 was used as a measure of fit between the sample covariance and fitted covariance matrices. A non-significant χ^2 is desirable, and due to the large sample size of the present study, a significant value is expected to show that the factors are perfectly correlated (Marôco, 2021b).

The CFA was performed on the original scale items using a categorical correlation matrix. Items with standardized loading below .40 were removed because factor loadings were considered significant if higher than this value. No modification indices were considered to improve the measurement model.

Pearson correlations were used to analyze associations between variables. Correlations were considered low if below .20, moderate if between .20 and .50, and high if above .50 (Marôco, 2021b). Mean inter-item correlations were considered good if between .15 and .50. Corrected item-total correlations were considered adequate if above .20, and Cronbach's alphas were considered adequate if above .70 (Marôco, 2021b).

Further analyses were conducted to examine the associations between VASQ dimensions and psychological adjustment. Receiver operating characteristic curve analysis (ROC) and cross-tabulations were performed to assess the accuracy of model predictions. By plotting sensitivity against (1-specificity) and calculating the area under the curve (AUC), cutoff values were determined for each dimension of the VASQ. χ^2 values, Cramers' V, and *odds ratios* are presented for each dimension of the VASQ in relation to SDQ subscales and the total scale to assess the strength of associations and the likelihood of observed differences (Field, 2024; Howell, 2013).

3. RESULTS

Exploratory Factor Analysis of the VASQ

Table 1 presents the means, standard deviations, skewness and kurtosis for the VASQ items. Most items show skewness and kurtosis within acceptable ranges; no serious violations of kurtosis or asymmetry were observed, suggesting approximate normality. Mean scores showed a certain amplitude (M_{Range} = 2.35 – 4.05).

Table 1. Descriptive Statistics of VASQ items, item-total correlation and alpha if item deleted.

VASQ Items	M	SD	S	K	Item-total correlation	α if item deleted
1	3.31	1.18	-0.34	-0.77	.31	.83
2	3.06	1.09	-0.23	-0.66	.13	.83
3	3.32	1.10	-0.28	-0.47	.51	.82
4	3.27	1.21	-0.28	-0.81	.38	.82
5	3.40	1.15	-0.36	-0.60	.50	.82
6	3.13	1.22	-0.23	-0.82	.36	.82
7	3.15	0.98	-0.34	-0.15	.26	.83
8	3.03	1.18	-0.02	-0.81	.51	.82
9	2.80	1.19	0.10	-0.85	.43	.82
10	2.74	1.22	0.19	-0.82	.57	.81
11	4.05	1.08	-1.02	0.29	.33	.83
12	2.45	1.19	0.48	-0.59	.28	.83
13	2.97	1.27	0.07	-1.01	.46	.82
14	2.93	1.18	0.04	-0.74	.34	.82
15	3.85	1.07	-0.77	0.14	.18	.83
16	3.47	1.22	-0.35	-0.81	.44	.82
17	2.35	1.19	0.54	-0.66	.30	.83
18	3.47	1.16	-0.46	-0.47	.47	.82
19	3.09	1.22	-0.07	-0.92	.52	.82
20	2.85	1.24	0.14	-0.87	.54	.82
21	3.52	1.12	-0.50	-0.28	.18	.83
22	3.57	1.19	-0.49	-0.64	.46	.82

Note. *M* = Mean; *SD* = Standard deviation; *S* = Skewness; *K* = Kurtosis.

Item-total correlations for the Portuguese version of the VASQ showed acceptable results, except for items 2, 15, and 21, suggesting that these items did not contribute meaningfully to the construct of attachment. Alpha values, if items were deleted, did not varied significantly.

Models extracting between two and four factors were considered. This decision was informed by converging evidence from three sources: visual inspection of the scree plot, which indicated an inflection point at the third component; examination of patterns in the component matrix; and results from parallel analysis using Monte Carlo simulation.

Eigenvalues greater than one were observed, and the Kaiser criterion was satisfied (KMO = .78). The three-factor model revealed the anticipated insecurity and proximity-seeking structure. However, items 3, 5, and 19 (originally from the insecurity scale), as well as items 11, 13, and 16 (from the proximity-seeking scale), exhibited cross-loadings, despite loading above .40. This pattern limited the interpretability of these items, which were subsequently removed from the analysis.

Table 2 presents the EFA solution for the VASQ scale, including factor loadings, communalities, and the variance explained by each factor.

After the exclusion of problematic items, the reliability coefficients for the final three factors were as follows: insecurity-ambivalent $\alpha = .75$ (accounting for 23% of variance), insecurity-avoidant $\alpha = .61$ (12% of variance), and proximity-seeking $\alpha = .67$ (9% of variance). All items demonstrated satisfactory commonalities, with factor loadings exceeding 0.40 on their respective factors, indicating a structurally stable solution.

The three-factor model was selected for further analysis due to its superior fit to the data, its alignment with theoretical expectations, and corroboration from both parallel analysis and comparative data methods. This model also demonstrated acceptable reliability: factor 1 was characterized by high loadings and explained 23% of the total variance; factor 2 exhibited loadings ranging from .49 to .74, accounting for 12% of the variance; and factor 3 showed loadings ranging from .56 to .72, explaining 9% of the variance.

All retained factors exhibited reasonable commonalities, confirming their suitability for describing the latent correlational structure among the items.

Table 2. EFA solution of the VASQ with three factors.

No	Item	Factor			Communalities
		1	2	3	
10	I feel people are against me	.75			.62
12	I often get into arguments	.71			.55
9	People close to me often get on my nerves	.67			.45
20	I feel people haven't done enough for me	.63			.47
17	I feel uneasy when others confide in me	.54			.42
8	I feel uncomfortable when people get too close to me	.51			.40
14	I look forward to spending time on my own	.43			.26
22	I find it difficult to confide in people		.74		.57
15	I like making decisions on my own		.61		.42
18	I find it hard to trust others		.58		.43
1	I take my time getting to know people		.49		.25
4	I miss the company of others when I am alone			.72	.54
21	It's important to have people around me			.64	.41
7	I usually rely on advice from others when I've got a problem			.61	.45
6	I worry a lot if people I live with arrive back later than expected			.58	.37
2	I rely on others to help me make decisions			.56	.39
Explained variance		23%	12%	9%	

Factor labels: 1 = Insecure-ambivalent; 2 = Insecure-avoidant; 3 = Proximity-seeking

Confirmatory Factor Analysis of the VASQ

The initial step in examining the psychometric properties of the Portuguese version of the VASQ involved an attempt to replicate its presumed bidimensional factor structure (Bifulco et al., 2003). However, this structure demonstrated a poor fit to the data, with all fit indices falling outside the recommended cutoff values. Following the exclusion of several items based on the EFA results, a three-factor model

was subsequently evaluated using CFA with the Maximum Likelihood Estimation. goodness-of-fit indices were calculated for a sample of 288 participants, employing a sixteen-item solution. Items 12, 15, and 21 were removed due to weak factor loadings (i.e., < .40), resulting in adequate support for a thirteen-item model solution for the VASQ (see Table 3).

The factor loadings and commonalities observed support the adequacy of the obtained structure, as further corroborated by favorable fit indices (*CFI* = .92; *TLI* = .90; *RMSEA* = .06). Table 3 also presents fit indices from two previous studies evaluating the VASQ structure – Bifulco et al. (2003) and Kupeli et al. (2015) – demonstrating that the current model provides a superior fit compared to both earlier proposals.

Table 3. Goodness-of-Fit Indices for tested Model of VASQ with CFA and comparison with previous studies.

Models/Indices	χ^2/df	p value	CFI	TLI	RMSEA	RMSEA 90% CI
Present study: 3 factors, 13 items	131/62	<.001	.92	.90	.06	.05 - .08
Bifulco et al. (2003): 2 factors, 22 items	837/208	<.001	.74	.71	.08	.08 - .09
Kupeli et al. (2015): 4 factors, 14 items	225/71	<.001	.89	.85	.07	.06 - .08

χ2/df = Chi-square/degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Fit Index; RMSEA = Root Mean Square Error of Approximation; CI = Confidence interval.

Table 4 reports the internal consistency (Cronbach's alphas) for the three VASQ subscales, as well as the mean inter-item correlations and the ranges of corrected item-total correlations. The results indicate adequate reliability, with all items within each subscale contributing item-total correlations above .36.

Table 4. Cronbach's alphas, mean inter-item correlations, and corrected item-total correlation ranges.

VASQ dimensions	Alpha	MIIC	CITCR
Insecure-ambivalent	.78	.37	.36 – .62
Insecure-avoidant	.66	.40	.37 – .54
Proximity-seeking	.67	.34	.38 – .50

Note. Alpha: Cronbach's alpha; MIIC: mean inter-item correlation; CITCR: corrected item-total correlation range.

Figure 1 presents the path diagram, illustrating the factorial weights for each of the thirteen items as well as the covariances between the subscales.

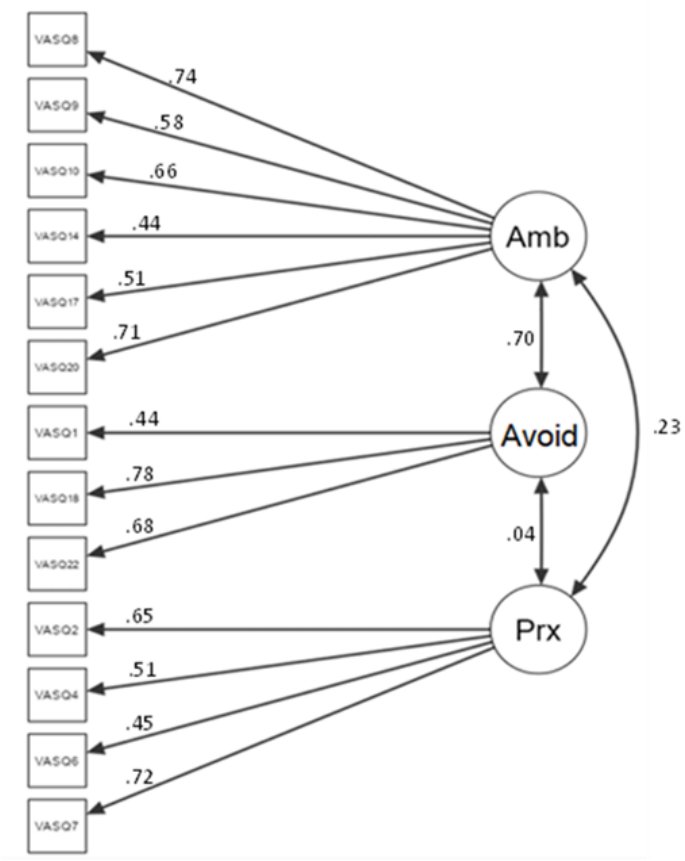

Figure 1. *Path diagram of the confirmatory factor analysis*

Discriminant validity with external variables

The Strengths and Difficulties Questionnaire (SDQ) is a measure of psychological adjustment that assesses internalizing and externalizing behaviors through various subscales, as well as a total difficulties score. Table 5 presents the Pearson correlation coefficients between all VASQ dimensions and psychological adjustment. As anticipated, statistically significant positive correlations were observed: r = .53, $p \leq .001$ for insecure-ambivalent dimension; r = .26, $p \leq .01$ for the insecure-avoidant dimension; and r = .14, $p \leq .01$ for the proximity-seeking dimension. These findings demonstrate low-to-moderate positive significant correlations, thereby supporting the discriminant validity of the VASQ.

Table 5. Descriptive statistics and correlations between VASQ dimensions and psychological adjustment (N = 438).

	1	2	3	4	5	6	7	8	9
1. Insecure-ambivalent	-	.44***	.15**	.53***	.41***	.35***	.31***	.40***	-.11*
2. Insecure-avoidant		-	.07	.26**	.34**	.04	.09	.23**	.15*
3. Proximity-seeking			-	.14**	.28***	.02	.09	-.04	.27***
4. SDQ total				-	.75***	.70***	.70***	.63***	-.14**
5. Emotional problems					-	.27***	.37***	.37***	.21***
6. Behavioral problems						-	.42***	.33***	-.31***
7. Hyperactivity difficulties							-	.12*	-.15**
8. Peer relationship problems								-	-.19***
9. Prosocial behaviors									-
M(*SD*)	16.69 (4.83)	10.34 (2.69)	12.61 (3.15)	15.95 (6.18)	4.63 (2.43)	3.09 (2.05)	4.82 (2.31)	3.41 (2.06)	7.21 (2.30)

* $p < .05$; ** $p < .01$; *** $p < .001$

To facilitate interpretation of these correlations, cutoff points were established for the three VASQ factors and cross-tabulated with SDQ subscales and the total difficulties score. Optimal cutoffs for predicting emotional and behavioral disorders were identified, with particular attention to the proximity-seeking scale given its weaker correlation with SDQ outcomes. Receiver Operating Characteristic (ROC) curve analysis indicated that, for the proximity-seeking subscale in relation to emotional problems, the area under the curve (AUC) was .62, with a cutoff of 15 and a Youden index (J) of .20 (sensitivity = 78%, specificity = 42%). For behavioral problems, the AUC was .52, with a cutoff of 18 and J = .62 (sensitivity = 10%, specificity = 52%).

Table 6 summarizes the cutoff points and associated statistical parameters for each VASQ dimension in relation to the SDQ total score. These findings are consistent with established SDQ practice, where cutoff points are used to categorize risk levels and facilitate the identification of clinical cases. The results further support the utility of the VASQ as a screening tool for psychological adjustment in at-risk adolescent populations.

Table 6. Coordinates of the ROC Curve and cutoff values for the association of VASQ dimensions and SDQ.

	Insecure-ambivalent	Insecure-avoidant	Proximity-seeking
Cutoff value	18	12	15
AUC	.79	.62	.57
Sensitivity	.71	.47	.34
1-specificity	.73	.72	.77

Table 7 presents the results of the χ^2 tests, Cramérs' V and *odds ratios* for each VASQ dimension in relation to the SDQ subscales and total score. These statistics were used to assess the strength of associations and the likelihood of observed differences between variables.

Table 7. Associations between VASQ dimensions and SDQ subscales and total score.

		Emotional	Behavioral	Hyperactivity	Peer	Prosocial	SDQ Total
Insecure-ambivalent	**χ^2 (*df* = 1) / *p***	23.87 / < .001	26.41 / < .001	12.81 / < .001	5.75 / .017	.20 / .655	72.10 / < .001
	Cramer's V / *p*	.23 / < .001	.25 / < .001	.17 / < .001	.12 / .017	.02 / .655	.41 / < .001
	OR	3.10	3.22	2.30	1.94	1.14	6.33
	95% CI	[1.95 – 4.94]	[2.04 – 5.08]	[1.45 – 3.65]	[1.12 – 3.36]	[.64 – 2.02]	[4.05 – 9.90]
Insecure-avoidant	**χ^2 (*df* = 1) / *p***	16.75 / < .001	.20 / < .001	1.44 / .230	11.87 / < .001	1.95 / .162	15.52 / < .001
	Cramer's V / *p*	.20 / < .001	.20 / < .001	.06 / .230	.17 / < .001	.07 / .162	.19 / < .001
	OR	2.57	1.11	1.33	2.58	.64	2.31
	95% CI	[1.62 – 4.08]	[.70 – 1,76]	[.83 – 2.13]	[1.49 – 4.48]	[.33 – 1.21]	[1.52 – 3.51]
Proximity-seeking	**χ^2 (*df* = 1) / *p***	15.28 / < .001	.14 / .711	5.40 / .020	.12 / .727	7.84 / .005	5.46 / .019
	Cramer's V / *p*	.19 / < .001	.02 / .711	.11 / .020	.02 / .727	.13 / .005	.11 / .019
	OR	2.54	1.10	1.77	1.11	.30	1.69
	95% CI	[1.58 – 4.09]	[.67 – 1.80]	[1.09 – 2.89]	[.61 – 2.04]	[.13 - .73]	[1.09 – 2.64]

Note. Emotional = emotional problems; Behavioral = behavioral problems; Hyperactivity = Hyperactivity/Inattention difficulties; Peer = peer relationship problems; Prosocial = prosocial behaviors; SDQ Total = SDQ total score; df = degrees of freedom; OR = *Odds Ratios*; CI = confidence interval.

Table 7 indicates that the insecure-ambivalent attachment style demonstrates moderate and statistically significant associations with both emotional problems (χ^2 =

23.87, $p < .001$, OR = 3.10) and behavioral problems ($\chi^2 = 26.41$, $p < .001$ OR = 3.22), as well as a strong association with the total SDQ score ($\chi^2 = 72.10$, $p < .001$, OR = 6.33). The insecure-avoidant style is primarily associated with emotional difficulties ($\chi^2 = 16.75$, $p < .001$, OR = 2.57) and peer relationship problems ($\chi^2 = 11.87$, $p < .001$, OR = 2.58). Its association with the total SDQ score is also significant ($\chi^2 = 15.52$, OR = 2.31), though less pronounced than that observed for the insecure-ambivalent style. The proximity-seeking dimension exhibits significant albeit weaker, associations with emotional problems ($\chi^2 = 15.28$, $p < .001$, OR = 2.54), hyperactivity ($\chi^2 = 5.40$, $p = .02$, OR = 1.77), and prosocial behavior ($\chi^2 = 7.84$, $p = .005$, OR = 0.30). The association with the total SDQ score is moderate ($\chi^2 = 5.46$, $p = .019$, OR = 1.69).

Odds ratios (ORs) greater than 1 indicate an increased risk of adjustment difficulties associated with the respective attachment style, while ORs below 1 suggest a potential protective effect. The insecure-ambivalent style is notable for its elevated ORs, particularly in relation to the total SDQ score. In contrast, the proximity-seeking style demonstrates an OR below 1 for the prosocial dimension, indicating a possible protective influence in this area.

Figure 2 displays *odds ratios* with 95% confidence intervals for the associations between VASQ dimensions (insecure-ambivalent, insecure-avoidant, and proximity-seeking) and SDQ subscales (emotional, behavioral, hyperactivity, peer problems, prosocial behaviors), as well as total difficulties. ORs greater than 1 reflect an increased likelihood of adjustment difficulties associated with the attachment style, whereas ORs below 1 indicate a potential protective effect. The insecure-ambivalent style shows the strongest associations, particularly with total SDQ difficulties. The proximity-seeking style is associated with increased emotional and hyperactivity problems, but reduced odds of prosocial difficulties, suggesting a mixed or potentially adaptive profile.

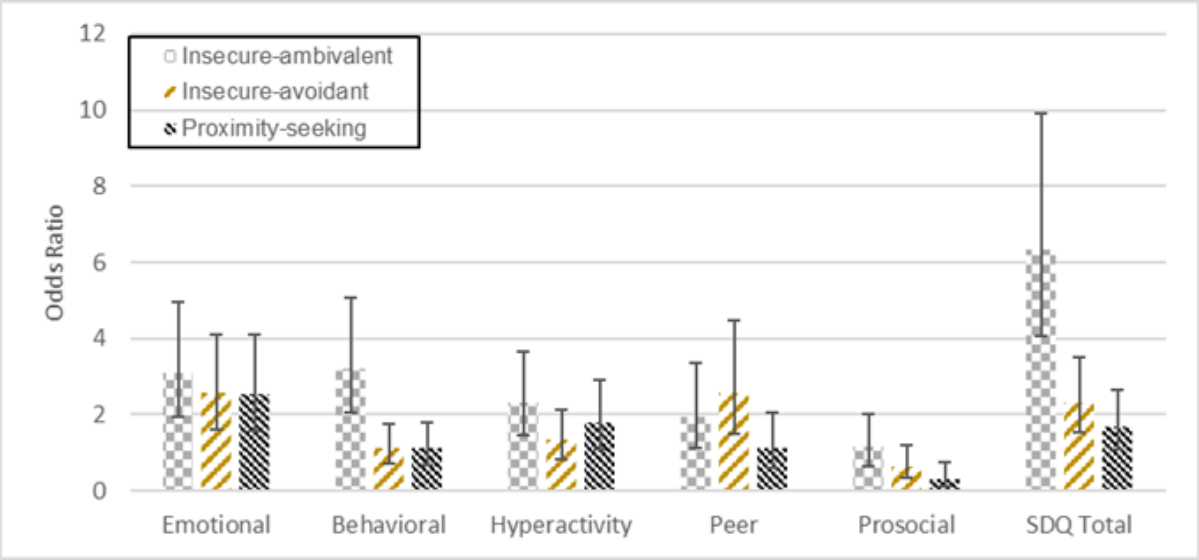

Figure 2. *Odds ratios and 95% confidence intervals for the association between VASQ dimensions and SDQ subscales and total scale*

4. DISCUSSION

Exploratory and confirmatory factor analyses were conducted to investigate the factor structure of the VASQ in a sample of adolescents residing in residential care. The results indicate that the VASQ assesses three distinct factors: one related to proximity, which retains the original designation of proximity-seeking, and two reflecting attachment insecurity, herein referred to as insecurity-ambivalent and insecurity-avoidant.

The insecurity-ambivalent dimension involves expectations of attachment interactions, marked by heightened need for closeness and anxiety about separation. In contrast, insecurity-avoidant reflects a need for independence and emotional distance, indicating barriers to intimacy. Both forms are linked to perceptions of inadequate support and increased reluctance to seek help (Bifulco et al., 2003). The proximity-seeking factor captures tendencies toward seeking company and separation anxiety, reflecting interpersonal style differences.

Our proposed factor structure for the VASQ retains certain similarities with that of Bifulco et al. (2003), but two notable differences emerged. First, item 14 – originally included in the proximity-seeking subscale by Bifulco et al. (2003) – loaded onto the insecurity domain in our study. Second, eight items were removed from the total scale

to achieve a good model fit, due to either weak or cross-loadings. The resulting three-factor solution demonstrated optimal psychometric properties, including adequate composite reliability. These findings indicate that the proposed factor structure is appropriate for the present sample, as evidenced by satisfactory fit and reliability indices. While this outcome did not confirm our initial hypothesis, it is consistent with our second hypothesis.

Although each of the three subscales now contains fewer items than in previous versions (Bifulco et al., 2003; Kupeli et al., 2015), the present study achieved adequate reliability for all subscales. This suggests that the removal of eight items did not compromise the psychometric quality or construct validity of the adapted VASQ. The proposed solution also performed well in terms of intercorrelations between the insecurity and proximity-seeking dimensions, demonstrating high construct validity and strong alignment with the attachment literature.

The analysis of the relationship between these measures and the construct of attachment in adolescents represents a research avenue that remains to be fully explored (Soares, 2009). Furthermore, the association between these constructs and psychopathology in specific youth populations continues to be of considerable interest. In this context, we examined the discriminant validity of the VASQ using measures of psychological adjustment and found support for our third hypothesis. Results indicated that higher insecurity scores were positively correlated with psychological adjustment difficulties, confirming that greater insecurity is associated with poorer mental health outcomes. Previous research has suggested that trauma exposure may impact child well-being through mechanisms involving insecure attachment. Studies with foster youth have also demonstrated that psychological adjustment is linked to the quality of caregiver relationships (Zhang et al., 2019).

Adolescents living in RCS are exposed to adverse life circumstances that can increase the likelihood of reporting insecure or disorganized attachment styles (Costa et al., 2022) and are closely linked to psychological adjustment difficulties (Shechory & Sommerfeld, 2007; Sroufe et al., 1999). Research consistently shows that these adolescents are more likely to display insecure and, in particular, disorganized attachments compared to their peers in community or family-based settings, which in turn leads to greater challenges in emotion regulation and interpersonal relationships

(Costa et al., 2022; Morais et al., 2022). The quality of relationships with caregivers in RCS is a critical factor, as sensitive and responsive caregiving can help mitigate some of these risks and foster emotional security (Babo et al., 2024; Costa et al., 2022).

Adolescence itself is a developmental stage associated with heightened biological and psychological vulnerability, and youth in RCS tend to exhibit higher rates of adjustment problems than their peers in the general population (Campos et al., 2019). Those with a history of secure attachments are generally better equipped to adapt to new environments, whereas individuals with insecure attachments histories are at greater risk for adjustment difficulties and poorer mental health outcomes (Shechory & Sommerfeld, 2007; Tucker & MacKenzie, 2012).

Attachment theory posits that adolescents in residential care develop internal working models based on early adverse experiences or neglect, often perceiving the world as unsafe and others as untrustworthy (Bowlby, 1977). This can result in more distant relationships with new caregivers, as well as emotional and behavioral problems, including anger, hurt, and difficulties forming new bonds (Babo et al., 2024; Costa et al., 2022). Frequent changes in placement and the disruption of emotional bonds further undermine socioemotional development (Sala Roca et al., 2009).

Analysis of the present sample revealed distinct associations between attachment styles and psychological difficulties. The insecure-ambivalent style, in particular, demonstrated a significant and moderate association with all negative dimensions of psychological adjustment, as measured by the SDQ, with especially strong *odds ratios* for overall psychological health difficulties the total SDQ (OR = 6.33, 95% CI [4.05 – 9.90], $p < .001$). This style is strongly linked to increased emotional and behavioral problems, indicating a substantial elevation in risk for psychological maladjustment among adolescents in RCS (Cramer's V = .41, $p < .001$) (Morais et al., 2024). These findings underscore the importance of assessing attachment styles in RCS and highlight the need for interventions focused on strengthening caregiver-adolescent relationships to support better emotional regulation and psychological adjustment.

The insecure-avoidant style, on the other hand, showed statistically significant relationships with the emotional and peer relationship domains, although with a lower overall magnitude (total OR = 2.31, 95% CI [1.52 – 3.51], $p < .001$). The proximity-

seeking style revealed a mixed profile and appears to be more linked to intense emotional reactions and difficulties in regulation, exerting a moderate impact on the general functioning of young people. This attachment style demonstrates positive associations with emotional difficulties and hyperactivity, as well as significant associations with prosocial behaviors; however, in this case, the relationship is inverse, indicating that this style may be linked to greater prosocial skills. This suggests an insecure attachment pattern that nonetheless presents some adaptive and resilient characteristics. The association with the total SDQ score is moderate, suggesting some influence, but less than that observed for both insecure styles.

Taken together, the data suggest that insecure styles, especially the ambivalent type, are relevant risk factors for emotional and behavioral difficulties in adolescents living in residential care. An OR below 1 indicates that such difficulties are less likely to occur in these young people (Field, 2024; Howell, 2013). Thus, participants with a proximity-seeking attachment style, with an OR of .30 in relation to prosocial behaviors, are 70% less likely to have prosocial difficulties compared to their peers. In this context, this attachment style could be interpreted as a protective factor that reduces the risk of adjustment problems and may be considered a dimension related to interpersonal sensitivity. The desire for connection may act as a buffer against social isolation, which is associated with better emotional regulation in group settings and enhanced resilience (Sagone et al., 2023; Simpson & Rholes, 2017).

Although it cannot be considered a completely secure attachment style, the proximity-seeking style tends to exhibit less insecurity than the other two, allows for some degree of autonomy, and appears to exert potential protective effects on adolescents' psychological adjustment. Furthermore, the proximity-seeking attachment style demonstrates both positive and negative associations (see Table 5 and 7), although the latter was not significant – likely reflecting the complex interplay between adaptive social behaviors and underlying emotional insecurity. Proximity-seeking originates from the attachment system's evolutionary function of reducing distress by seeking closeness to caregivers in times of danger or stress (Simpson & Rholes, 2017). While this behavior is biologically adaptive, its outcomes are contingent upon the consistency of caregiver responsiveness during development. In RCS, adolescents often experience inconsistent caregiver responsiveness due to high child-

caregiver ratios and caregiver turnover, which can hinder their ability to adjust to or cope with stress. Individuals with this attachment style frequently develop strong social engagement traits, as proximity-seeking encourages increased opportunities for interaction, a tendency to seek support during distress, and a higher likelihood of collaborative problem-solving (Sagone et al., 2023; Simpson & Rholes, 2017).

Proximity-seeking can also coexist with insecure attachment patterns, resulting in hypervigilance regarding relational threats (Lawrence et al., 2022), intense emotional reactions when proximity needs are unmet, and difficulties in self-soothing, which may contribute to hyperactivity or emotional outbursts (Lavy et al., 2010). Our findings indicate a correlation between the proximity-seeking dimension and the insecure-ambivalent attachment style (see Figure 1), as well as between proximity-seeking and emotional problems.

If caregivers inconsistently meet a child's needs, proximity-seeking may become associated with a fear of abandonment despite the desire for closeness, resulting in a paradoxical "autonomy-proximity imbalance" (Lavy et al., 2010) characterized by craving connection while doubting its reliability. Thus, proximity-seeking can reflect secure attachment when caregivers respond consistently – leading to healthy social skills – or insecure attachment when responses are erratic, thereby triggering anxiety and emotional volatility (Sagone et al., 2023). In supportive environments, this style promotes collaboration (Lawrence et al., 2022; Simpson & Rholes, 2017); however, in unstable settings such as RCS, it can exacerbate distress due to unmet expectations.

Regarding the positive and significant correlation between the proximity-seeking dimension and psychological adjustment, it is noteworthy that this association was weaker than those observed for the other two dimensions. This may be attributed to the tendency of adolescents in these contexts to report more insecure attachments. Additionally, those who experience security may attribute it to being removed from situations of neglect or deprivation, thus providing an opportunity to establish secure connections with new significant others. This context enables them to perceive their new environment as enhancing feelings of safety (Mota & Matos, 2015) and fostering proximity-seeking behaviors. In this sense, secure base relationships may facilitate proximity-seeking, which in turn promotes psychosocial adaptation by providing

opportunities for care within this particular setting. Similarly, individuals with secure base relationships tend to exhibit fewer mental health issues and more positive relational experiences (Costa et al., 2022), thereby reducing barriers to help-seeking.

In addition to introducing a new self-report assessment and scoring method that may benefit researchers, institutional professionals, and clinicians, the VASQ supports a model of attachment style and disorder (Bifulco et al., 2003) that appears particularly relevant in institutional contexts. The VASQ may also prove useful for social workers and managers in child welfare services who need to identify and distinguish between risk factors, protective factors, or resilience factors. It represents a structured measure that can support professional practice (Bifulco et al., 2016) without requiring specific training for administration. The VASQ is likely to be a valuable resource for understanding the vulnerabilities faced by young people in the care system and for measuring variations in attachment over time. Such variations may result from within-person fluctuations in attachment security in response to major stressors or significant life transitions – such as when youth encounter stressful or negative life events (Girme et al., 2018) – or as influenced by contextual patterns (Lai & Carr, 2020).

Limitations

The present study yielded positive results but also acknowledges several limitations. Primarily, the cross-sectional design precluded the assessment of the VASQ's test-retest reliability. Additionally, the convergent validity of the VASQ could not be evaluated against instruments measuring similar constructs. Although youth perspectives are essential and often underutilized in child welfare services for assessing attachment, the VASQ does not specifically address attachment to preferred caregivers, raising concerns regarding its validity in institutional contexts. Another limitation is that attachment data were obtained solely from youth, without triangulation from caregivers' reports. Furthermore, some item phrasing may induce desirability bias (e.g., item 14: "I look forward to spending time on my own", item 15: "I like making decisions on my own", and item 21: "It's important to have people around me"), as young individuals in RCS often lack opportunities to make decisions or have individual space.

Future research should address these limitations and compare findings with youth from biological families to determine whether the proximity-seeking dimension is indicative of secure attachment, characterized by autonomy, competence, and interpersonal sensitivity, as part of the development and identity-seeking processes characteristic of adolescence.

Despite these limitations, the study has several strengths, including a national sampling frame and the inclusion of youth perspectives on critical developmental issues, with high response rates from a hard-to-reach and under-researched population. Additionally, the observed cutoffs may be useful for other users of the VASQ who choose to adopt the current factor structure. However, given the variability of RCS and welfare systems globally, findings should be generalized with caution to populations outside Portugal, to different care settings, or when comparing the VASQ with other attachment measures. The shorter version of the VASQ remains advantageous, focusing on social aspects and interpersonal approaches to attachment that can be utilized by institutional staff for intervention monitoring. Because the items are not directed toward a particular person, they can be answered by technicians or institutional staff to monitor the effectiveness of interventions (Bifulco et al., 2016).

Implications for practice

The psychometric characteristics of the VASQ demonstrate promise for assessing attachment in adolescents residing in residential care, as evidenced by Bifulco et al. (2016). A nuanced understanding of youth's relationship dynamics can inform relationship-based interventions and referrals within child welfare services (Ruff et al., 2025). The VASQ facilitates the identification of vulnerabilities among young people in care and supports the evaluation of intervention effectiveness, thereby strengthening evidence-based practices in social work for those in out-of-home placements. Moreover, the establishment of quality relationships with care workers can serve as a protective factor (Costa et al., 2022), enabling youths to process previous insecure attachment experiences. Consequently, it is essential to provide caregivers with training to develop the competencies and attitudes necessary to address the unique challenges of working with this population. It is important to recognize that attachment behaviors are developed through interaction with a

nurturing caregiving environment (Ainsworth et al., 2015) and are not inherently positive or negative; rather, their impact is shaped by developmental experiences and current relational dynamics (Simpson & Rholes, 2017).

5. CONCLUSIONS

The VASQ is a brief self-report tool that allows adolescents to express their views on attachment relationships with significant others, both inside and outside RCS. This is vital, as involuntary institutionalization can disrupt relationships and cause psychological harm. By identifying vulnerable attachment patterns, the VASQ aids in understanding relationship development and supports placement stability through assessing youth's relational perceptions.

Findings indicate that insecure-ambivalent attachment is linked to poorer overall psychological health, while insecure-avoidant style mainly impairs emotional and social functioning. The proximity-seeking styles, though insecure, is associated with increased prosocial behaviors, suggesting some adaptive benefits. The scale has strong psychometric properties, supporting its use in residential care contexts. These findings highlight the importance of fostering positive relationships to improve youth adjustment in care, consistent with evidence that quality caregiver bonds can reduce attachment insecurities (Costa et al., 2022) and build resilience trough supportive relationships (Simpson & Rholes, 2017).

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ARTICLE 5 | The role of coping strategies, social support, and Dark Triad traits in the psychological adjustment of adolescents in residential care

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The role of coping strategies, social support and Dark Triad traits in the psychological adjustment of adolescents in residential care

ABSTRACT

Dark Triad traits have been increasingly studied due to their relevance for understanding emotional and behavioral adjustment. However, little is known about how these traits operate within vulnerable youth populations, such as those living in residential care. This study aimed to examine the direct and indirect effects of Dark Triad traits on psychological adjustment among institutionalized adolescents, considering the influence of coping strategies and social support dimensions. A total of 433 adolescents between 12 and 18 years (M = 15.33, 45% boys and 55% girls) from 46 Portuguese residential care institutions participated in the study. Participants completed self-report measures assessing Dark Triad traits, coping strategies, social support, and psychological adjustment. Correlations and path analysis were used to test the relationship between variables. Differences by sex were also explored. Results showed that psychopathy had the strongest association with psychological adjustment, mainly through avoidant coping, while Machiavellianism and narcissism showed weaker effects. Problem-focused coping and social support were linked to better adjustment, while avoidant strategies were consistently associated with greater difficulties. Patterns varied by sex. The findings underscore the need to strengthen coping strategies and to account for the role of institutional environments when addressing psychological outcomes in at-risk youth. This study contributes novel insights into the manifestation of Dark Triad traits within residential care settings and informs the development of interventions aimed at mitigating the adverse effects of institutionalization.

Keywords: Adolescents; Coping strategies; Dark Triad traits; Psychological adjustment; Residential care; Social support.

1. INTRODUCTION

Adolescence is a critical phase for developing psychological problems, often leading to significant mental health conditions. Anxiety and depression prevail during this stage (Polanczyk et al., 2015), with adolescents in residential care settings (RCS) often facing heightened problems (Pronk et al., 2021; Santos & do Céu Salvador, 2021). Youth in RCS struggle with a loss of belonging and identity due to family separation and unstable placements, which can lead to potential negative consequences for both the young individuals and society (Lemos et al., 2021). However, some maltreated children show few mental health issues, indicating the influence of other factors. Positive peer relationships and social support play essential roles in psychological adjustment for in those in out-of-home care (Simão et al., 2025). Social support is widely recognized as a critical resource for managing stressful situations, and individuals' social network is crucial for their mental health (Drageset, 2021).

Social support and psychological adjustment of adolescents in RCS

Social support is defined as the presence or availability of reliable individuals who care for us (Sarason et al., 1983). It encompasses emotional, informational, and tangible components and is characterized by both structure (size and connectivity of social networks) and functionality (individual evaluation of support) (Drageset, 2021; Taylor, 2011). Social support can be informal, like from family and friends, or formal, from professionals. Researchers differentiate between perceived and received support (Taylor, 2011), with a consensus that perceived support – believing help is available if needed – links more strongly to positive health outcomes (Drageset, 2021).

Social support is a crucial protective factor in child development, protecting from psychopathology, promoting psychological adjustment to chronically stressful conditions, and decreasing internalizing and externalizing problems (Gundogdu & Eroglu, 2023; Weber et al., 2010). It serves as a buffer against negative psychological outcomes (Tandon et al., 2013). Positive and secure relationships are particularly protective for at-risk youth in the child protection system, helping them navigate significant changes like family separation and placement disruptions. Adolescents increasingly rely on social support from peers during early adolescence (Gundogdu & Eroglu, 2023), with males typically having larger social networks compared to females.

Although girls report more informal support and available helpers, they also face greater psychological stress from these networks (Taylor, 2011).

Research with adolescents in RCS showed associations between both staff and parental support and reduced psychological difficulties. These adolescents identify both peers and educators as key support sources (Emond, 2003; Ferreira et al., 2020; Hoffnung Assouline & Attar-Schwartz, 2020; Magalhães et al., 2018), with educators being recognized as important sources of trust and help, for providing essential emotional, instrumental, and informational support (Bravo & del Valle, 2003; Ferreira et al., 2020) while moderating negative feelings about rules in the residential care context (Rauktis et al., 2011). Supportive staff are linked to fewer adjustment problems (Pinchover & Attar-Schwartz, 2014), while strong peer and family relationships can significantly protect adolescents' mental health (Erol et al., 2010).

Coping strategies and psychological adjustment of adolescents in RCS

Coping can be defined as an individual's cognitive, emotional, and behavioral response to manage internal and external demands arising from daily problems (Folkman, 1984). It serves two functions: emotion-focused coping, which regulates distress, and problem-focused coping, which addresses the source of distress (Folkman, 1984; Gundogdu & Eroglu, 2023). Coping strategies can be categorized as either negative avoidant or active approaches, with active strategies being linked to better health outcomes (Frydenberg & Lewis, 2009). Individuals select coping methods based on their perceived control over stressors, adjusting responses accordingly to avoid maladjustment (Lazarus & Folkman, 1984). Lazarus and Folkman's (1984) transactional model of coping emphasizes problem-focused and emotion-focused strategies, highlighting the role of personal beliefs and evaluations. Emotion-focused coping regulates distressing emotions like fear or anger but can be maladaptive if overused. Problem-focused coping involves defining problems and applying solutions, fostering control and positive outcomes. Later extensions of the model include avoidance strategies, which distract attention from stress. In sum, coping can target the stressor (problem-focused), regulate emotions (emotion-focused), or divert attention (avoidance).

Youth in RCS frequently experience maltreatment and chronic stress, which contribute to poorer mental health. Its impact varies by type, severity, duration, and

frequency. Coping opportunities influence differences in internalizing and externalizing problems (Huffhines et al., 2020). Thus, coping styles may help explain mental health disparities among these adolescents. Beyond maltreatment itself, how youth regulate emotions and behaviors, along with perceived support, also shapes psychological adjustment. Effective coping not only supports adaptation to social contexts and group integration difficulties (Frydenberg & Lewis, 2009), but also mediates the link between adverse life experiences, available personal and social resources, and resulting mental health outcomes. Research further shows that coping strategies differ by sex, with variations in how individuals manage stress and its consequences (Eschenbeck et al., 2007; Tamres et al., 2002).

Starting in mid-adolescence, individuals gain a wider variety of coping strategies, becoming more independent in their approaches. Cognitive strategies advance, the use of behavioral strategies like escape and avoidance is expected, support seeking becomes more complex, and the ability to adapt to others' perspectives and recognize that various situations may demand different coping mechanisms develops. Peer support remains important, yet adolescents primarily rely on personal coping efforts, seeking social connections only when necessary (Compas et al., 2017).

According to Clarke (2006) and Compas et al. (2017), active coping strategies, like seeking social support and problem-solving, enhance social competence and functioning. Maladaptive coping leads to increased internalizing symptoms, whereas adaptive coping reduces externalizing symptoms. In typical populations, approach coping is associated with improved mental health, however, this association seems less clear in studies with maltreated youth. Notably, Huffhines et al. (2020) suggested that avoidance may protect those with chronic abuse and neglect experiences. On the other hand, youth who dealt with stressors alone had higher self-reported internalizing and externalizing symptoms.

Dark Triad traits and psychological adjustment of adolescents in RCS

The Dark Triad (DT) framework encompasses malevolent traits: Machiavellianism, subclinical psychopathy, and subclinical narcissism. Though these are interrelated personality constructs that share traits, each represents a distinct aspect of dark personality (Furnham et al., 2013; Paulhus & Williams, 2002). Research

indicates that such maladaptive traits may influence coping strategies and psychological health (Birkás et al., 2016), with consistent sex differences (Muris et al., 2017). Maladaptive personality traits were associated with avoidant and emotional coping and psychological distress (Ireland et al., 2006) suggesting that maladaptive or socially negative personality traits associated with specific coping strategies influence psychological adjustment (Pechorro et al., 2022a; Tandon et al., 2013).

All three DT traits exhibit significant genetic influences. However, Machiavellianism is more affected by environmental factors (Vernon et al., 2008). Each trait elicits distinct stress responses: Machiavellianism is linked to a hostile-submissive approach and low self-control, while narcissism features a friendly dominant style and higher self-control. Psychopathy, conversely, aligns with a hostile dominant style and low self-control (Birkás et al., 2016; Yang et al., 2024). These differences in self-control, dominance, and hostility are associated with distinctive coping strategies (Birkás et al., 2016, 2020), resulting in distinct coping preferences and defense mechanisms (Richardson & Boag, 2016). Research shows that maladaptive coping strategies mediate the link between DT traits and negative health outcomes, with high scores in narcissism and Machiavellianism correlating with increased stress, anxiety, and depression (Mojsa-Kaja et al., 2021). Grandiose narcissism may enhance life satisfaction by fostering adaptive coping, whereas Machiavellianism views stress negatively, preferring emotional coping strategies (Rim, 1992). Narcissism relates positively to problem-solving coping, unlike psychopathy, which shows no correlation with stress perception or adaptive coping (Richardson & Boag, 2016). Birkás et al. (2020) linked early-life adversities to perceived lack of coping abilities. They also found that DT traits can contribute to predicting higher levels of perceived stress and lower levels of coping ability.

Current study

Adolescents in RCS are often overlooked in coping research, raising concerns due to their heightened risk for maladjustment (Huffhines et al., 2020). Varying levels of acute stressors may influence coping and support patterns (Tandon et al., 2013), therefore is crucial to understand adolescents coping strategies and social support as protective factors for mental health given that they face more childhood adversities than their peers (Maneiro et al., 2023).

Previous studies highlight the potential influence of DT traits on coping strategies (Birkás et al., 2016), yet specific coping characteristics associated with each trait in adolescents remain unclear. Existing research has either focused on individual personality traits (e.g., Fernie et al., 2016) or coping styles (e.g., Yang et al., 2024). Magalhães et al. (2021) argued that studies about social support in RCS are qualitative and focused on the association with psychopathology, lacking research focusing on the moderating role of supportive relationships. Ferreira et al. (2020) states that in studies with at-risk youth there's a need for a holistic and comprehensive picture of mental health, including positive and negative indicators simultaneously. Notably, there is a lack of investigation into how coping strategies vary among the DT traits in adolescents from RCS and their connections to perceived social support and psychological adjustment. By providing a holistic view of mental health, the present study addresses a gap in the literature, as no prior research has directly linked institutionalized adolescents' self-reports of psychological adjustment to their coping strategies and perceptions of social support, while also considering the predictive role of DT personality traits (Figure 1).

This study has the following objectives: 1) to examine the influence of coping strategies, perceived social support, and DT traits on the psychological adjustment of institutionalized adolescents; 2) to investigate whether each of the three DT traits is associated with distinct coping profiles; 3) to explore whether coping strategies and social support function as protective factors, promoting better psychological adjustment and buffering the negative impact of DT traits; 4) to examine sex differences in the relationship among these variables.

Based on previous literature, the following hypotheses will be tested: H1) DT traits will have direct effects on psychological adjustment, such that higher levels of these traits will be negatively associated with psychological adjustment; H2) DT traits will have indirect effects on psychological adjustment through coping strategies and perceived social support; H3) emotion- and problem-focused coping will be associated with better psychological adjustment, whereas avoidant coping will be related to poorer adjustment; H4) higher satisfaction with social support will be associated with better psychological adjustment, while a great perceived need for social activities will be associated with poorer adjustment; H5) adolescents high in Machiavellianism and

psychopathy are expected to report greater satisfaction with social support than those scoring high in narcissism; H6) DT traits will be associated with distinct coping strategies; H7) the effects of coping strategies and social support on the relationship between DT traits and psychological adjustment will differ according to sex.

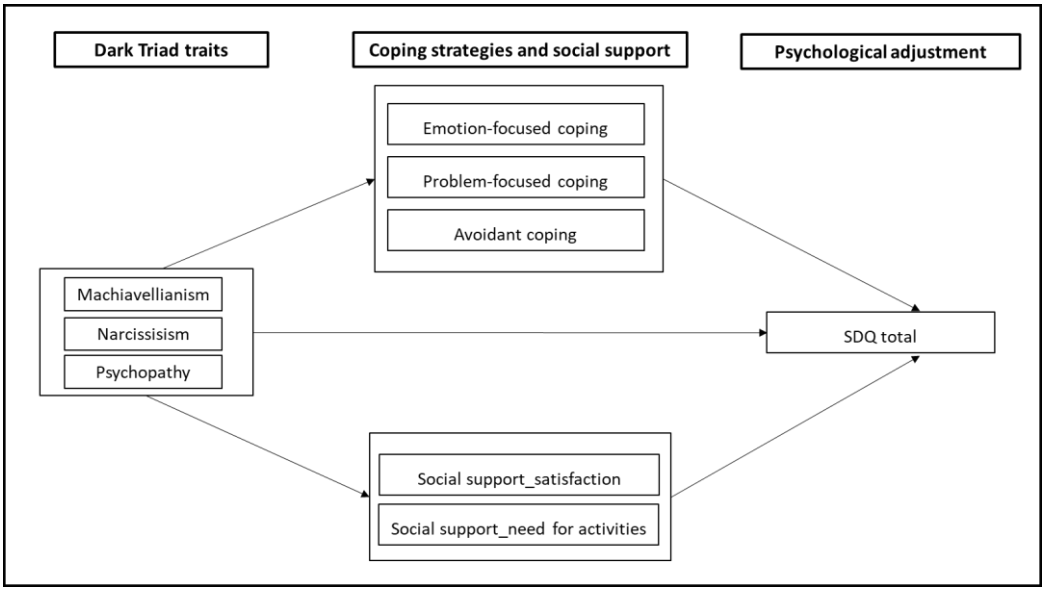

Figure 1. *Proposed model for investigation*

2. METHOD

Participants

Participants were 433 adolescents (196 boys, 45%; 237 girls, 55%) aged between 12 and 18 years (*M* = 15.33; *SD* = 1.74) residing in 46 Portuguese RCS. The age distribution was balanced, with 217 participants aged 12-15 years and 216 aged 16-18 years. This distribution reflects national trends, as youth aged 12-24 represent the most prevalent age group in residential care in Portugal (Instituto Segurança Social [ISS], 2024). On average, adolescents had been living in their current institution for 41 months (*SD* = 43) with durations ranging from 1 to 204 months. Although multiple reasons were often reported for placement, the most frequently cited primary reasons for the current protective measure were neglect and abuse (38%), school absenteeism (33%), financial difficulties (28%), and exposure to domestic violence (26%).

Measures

Scale of Satisfaction with Social Support for children and adolescents (Gaspar et al., 2009)

The Scale of Satisfaction with Social Support for children and adolescents (Gaspar et al., 2009) measures satisfaction with social support, considering it to be an essential dimension for the cognitive and emotional processes associated with well-being and quality of life. It is a self-completion instrument made up of 12 items divided into two dimensions: one positive including 7 items – "satisfaction with social support" (SSS, such as "I'm satisfied with the number of friends I have") – and one negative including 5 items "need for activities related to social support" (NASS, such as "I miss social activities that satisfy me"). The answers are given on a 5-point Likert scale ranging from 1 "Strongly disagree" to 5 "Strongly agree". We followed authors recommendation and eliminated item 5, so the satisfaction with social support dimension showed an internal consistency value of .70, and the need for activities related to social support dimension achieved a value of .69.

Brief COPE (Carver, 1997; Portuguese version by Nunes et al., 2021)

Brief COPE (Carver, 1997) is a reduced version of the original COPE to assess individual's coping strategies in a stressful situation. It is a self-completion instrument made up of 14 subscales with 2 items each, and the 28 items are written in terms of the action that people implement. The answers are given on a 4-point scale (from 0 = "I never do this" to 3 = "I do it almost all the time"). Cronbach's alphas in the original version (Carver, 1997) were between 0.50 and 0.90 indicating good internal reliability; in the Portuguese adaptation from Nunes et al. (2021) Cronbach's alphas varied between .37 and .88. For the present study, coping strategies were grouped into three dimensions with the following reliability values and subscales: problem-focused $\alpha = .79$ (active coping, planning, using instrumental support – e.g., "I've been doing things to try to improve the situation"), emotion-focused $\alpha = .78$ (acceptance, humor, religion, using emotional support, positive reframing, expression of feelings – e.g., "I've been learning to live with it"), and avoidance-oriented $\alpha = .78$ (self-blame, self-distraction, denial, substance use, behavioral disengagement – e.g., "I've been blaming myself for the things that have happened").

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report scale aiming to assess socio-emotional problems. Items are rated using a three-point Likert-type scale (0 = "Not true", 1 = "Somewhat true", 2 = "Certainly true") and are organized into five subscales relating to emotional problems (e.g., "I am often unhappy, down-hearted or tearful"), behavioral problems (e.g., "I get very angry and often lose my temper"), hyperactivity/inattention difficulties (e.g., "I am restless, I cannot stay still for long"), peer relationship problems (e.g., "I am usually on my own. I generally play alone or keep to myself"), and prosocial behaviors (e.g., "I try to be nice to other people. I care about their feelings") (Goodman, 1997). The SDQ total difficulties score is the sum of all subscales except the prosocial behaviors and is a psychometrically relevant measure of overall child mental health issues. SDQ scores correlate substantially with other validated measures of psychopathology and discriminate well between children with and without psychopathological symptoms (Goodman, 2001). Cronbach's alphas in the original version were between .41 and .80 (Goodman, 2001). For the present study, the reliability values obtained for each subscale and the total scale were as follows: emotional problems α = .68, behavioral problems α = .57, hyperactivity/inattention difficulties α = .66, peer relationship problems α = .51, prosocial behaviors α = .78, and the total scale α = .78.

Short Dark Triad (SD3, Jones & Paulhus, 2014; Portuguese version by Pechorro et al., 2018)

SD3 measure was designed to capture the DT as conceptualized by Jones and Paulhus (2011), with a focus on the classic conceptions and the facets of each trait, namely: Machiavellians are strategic manipulators, narcissists promote attention-seeking, and psychopaths are impulsive thrill-seekers. It is a brief 27-item measure that assesses the dimensions of Machiavellianism (e.g., "Avoid direct conflict with others because they may be useful in the future"), narcissism (e.g., "I have been compared to famous people"), and psychopathy (e.g., "It's true that I can be mean to others") with nine items in each of the three subscales. The Portuguese version (Pechorro et al., 2018) excluded some items, culminating in a structure with three factors and seven items each. Participants indicate their level of agreement on a 5-point Likert scale

ranging from 1 "Strongly disagree" to 5 "Strongly agree". Higher scores indicate higher levels of DT traits. Internal consistency was good for the three subscales of the SD3, with Cronbach's alpha and composite reliability values always above 0.80. For the present study, reliability values obtained for each subscale were: Machiavellianism α = .78, narcissism α = .58, and psychopathy α = .69.

In addition to the measures described above, an *ad-hoc* questionnaire was used to gather information about the participants' and institutions' sociodemographic characteristics, namely participants' age, sex, and length of stay in the institution.

Procedures

Data collection

Ethical approval was obtained from the Ethics Committee of the University of Algarve (CEUAlg Pn° 110/2023). All procedures performed in the study were in accordance with the ethical standards from the 1964 Helsinki Declaration and its later amendments. Authors from the Portuguese version of the scales also agreed to use this measure with these youth from RCS.

Using a convenience sampling method, 46 RCS from mainland Portugal and the Azores and Madeira archipelagos were contacted via phone and email. Institutions were informed about the study's aims and procedures, and all agreed to participate. Data collection was conducted in person by the first author whenever possible. In cases where geographic distance made in-person administration unfeasible, questionnaires were sent by post and administered by a professional from the RCS. Detailed written instructions and clarifications about the study were provided both during the authorization process and again when the questionnaires were delivered. The first author remained available throughout the process to address any questions or concerns raised by staff or participants.

Inclusion criteria required participants to be aged 12 or older, fluent in Portuguese, and free from medical conditions that could impair participation. Adolescents identified by institutional staff as having cognitive impairments were excluded from the sample. Eligible participants were informed about the purpose and voluntary nature of the study. They were assured of their right to withdraw at any time without facing any consequences. Adolescents aged 16 or older who agreed to participate provided written informed consent. For those under 16, written consent

was obtained from either the legal guardian or the institution's technical directors, in accordance with ethical standards.

Data were collected using anonymous, structured, self-report questionnaires administered within the institutions. In addition, RCS directors completed anonymous questionnaires providing information about each institution's organizational characteristics and religious affiliation.

Data collection took place between October 2023 and October 2024. Participants with incomplete responses were excluded from the final sample.

Data analysis

Data analyses were performed using IBM SPSS Statistics Version 30.0 (IBM Corp., 2024) and R Studio (RStudio Team, 2020). The aim was to examine the associations among coping strategies, social support, DT traits, and psychological adjustment. Descriptive statistics and Pearson correlations were computed, alongside the path analysis to explore both direct and indirect effects. Differences by sex were also investigated.

Cases with missing data or extreme outliers were excluded from the analyses. Descriptive statistics (means and standard deviations) were used to describe demographic characteristics.

Pearson correlation coefficients were computed to assess bivariate associations among all key variables. Correlations were interpreted as follows: weak if below .20, moderate between .20 and .50, and strong above .50 (Marôco, 2021a).

Path analysis was conducted using RStudio (v4.5.0) with the lavaan package (v0.6-19; Rosseel et al., 2023) to explore the hypothesized mechanisms underlying the relationship between DT traits and psychological adjustment, through the mediating roles of coping strategies and social support dimensions. The analysis was performed using the mean scores of each variable. Robust maximum likelihood estimation was applied. Modification indices were considered to improve the model fit, particularly regarding residuals correlations (Kline, 2023). The measurement models were evaluated prior to testing the structural paths. Direct, indirect, and total effects were estimated using a non-parametric bootstrapping procedure with 1,000 bootstrap samples and 90% bias-corrected confidence intervals.

To examine group differences, multigroup analyses were performed by sex. Configural invariance was tested to determine whether the latent constructs were similarly structured across groups (Vandenberg & Lance, 2000). Configural invariance was assessed by comparing model fit across groups using the same measurement structure. If the same model demonstrated adequate fit across groups, configural invariance was considered supported.

Model fit was evaluated using several goodness-of-fit indices: chi-square divided by degrees of freedom (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardized Root Mean Square Residual (SRMS), and Root Mean Square Error of Approximation (RMSEA) with 90% confidence intervals (Kline, 2023). Model fit was considered acceptable if CFI and TLI were ≥ .90, RMSEA ≤ .10, and SRMR ≤ 0.08 (Hair et al., 2019). While a non-significant chi-square indicates a good fit, a significant result was expected given the large sample size (Marôco, 2021b).

The final hypothesised model included the three DT traits as exogenous variables, three coping strategies and two social support dimensions as mediator, and psychological adjustment as the endogenous dependent variable. Each construct was modelled as a latent factor based on the mean of its constituent items.

3. RESULTS

To investigate sex differences in the study variables, correlational analysis was conducted (Table 1). As shown in Table 1, all the variables show statistically significant correlations with each other, except for Machiavellianism and psychopathy with problem-focused and emotion-focused coping strategies. Satisfaction with social support also showed no significant correlations with psychopathy and problem-focused coping strategies. Finally, narcissism and problem-focused coping also did not show significant correlation values with adolescents' psychological adjustment.

Table 1. Correlations coefficients between the coping strategies, social support subscales, DT traits, and psychological adjustment, and descriptives for each variable (N = 433).

	1	2	3	4	5	6	7	8	9
1. Machiavellianism	-	.376***	.577***	.080	.024	.282***	-.099*	.188***	.259***
2. Narcissism		-	.334***	.354***	.276***	.186***	.098*	.181***	.022
3. Psychopathy			-	.051	.052	.329***	-.054	.161***	.395***
4. Problem-focused				-	.748***	.350***	.094	.138**	-.012
5. Emotion-focused					-	.434***	.113*	.092	.122*
6. Avoidant coping						-	-.125**	.299***	.574***
7. SSS							-	-.207***	-.265***
8. NASS								-	.341***
9. SDQ									-
M	2.83	3.06	2.53	4.64	8.13	5.67	3.60	3.13	15.78
(SD)	(.80)	(.62)	(.73)	(1.99)	(3.16)	(2.78)	(.71)	(.75)	(6.07)

Note. Problem-focused = problem-focused coping; Emotion-focused = emotion-focused coping; SSS = satisfaction with social support; NASS = need for activities related to social support; SDQ = psychological adjustment.

* $p < .05$; ** $p < .01$; *** $p < .001$

Given that the DT traits are conceptually interrelated personality dimensions, a path analysis was conducted to examine the unique contribution of each trait to coping strategies and dimensions of social support. This analytic strategy was employed following the regression analysis, which had previously identified significant predictors of psychological adjustment.

Figure 2 presents the final path model, illustrating the associations between the three DT traits, the three coping strategies, the two dimensions of social support, and psychological adjustment among institutionalized adolescents.

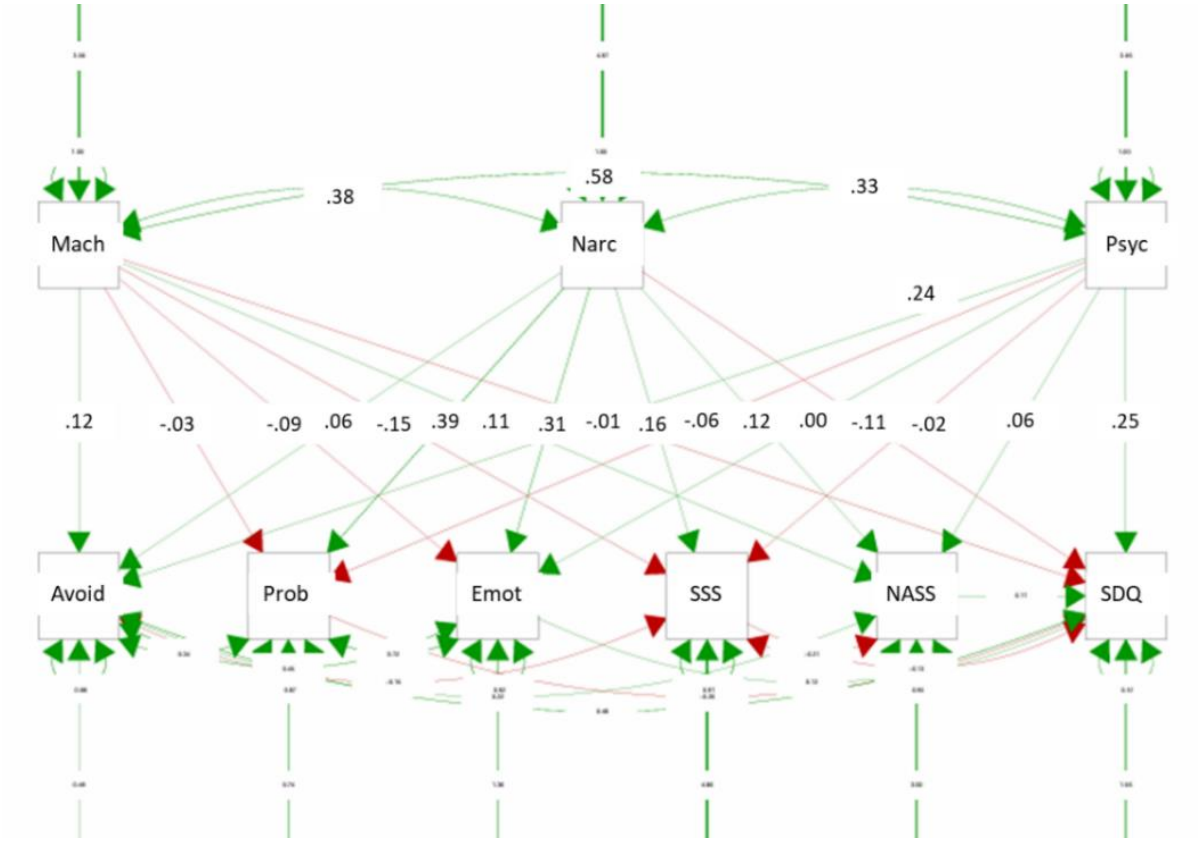

Figure 2. *Final path model with standardized regression coefficients*.

Mach = Machiavellianism, Narc = narcissism, Psyc = psychopathy, Avoid = avoidant coping, Prob = problem-focused coping, Emot = emotion-focused coping, SSS = satisfaction with social support, NASS = need for activities related to social support, SDQ = psychological adjustment.

Subsequently, a multigroup analysis was conducted to examine whether the structure of the proposed model remained invariant across different groups. Specifically, the analysis compared the model across sex (boys *versus* girls) to assess potential differences in the strength and direction of relationships between constructs. Goodness-of-fit indices were computed for the total sample of 433 participants, and the results for each tested model are presented in Table 2. Graphical representations of the obtained models are provided in Appendix.

As shown in Table 2, the overall model demonstrated a good fit to the data, and acceptable fit indices were also obtained for the multigroup comparisons by sex. The partial invariance model showed a satisfactory fit for both boys and girls, indicating that the general structure of associations between variables is equivalent across sexes.

Table 2. Summary of Model Fit Indices for tested models.

Models	χ^2 (df), *p* value	CFI	TLI	SRMR	RMSEA (90% CI)
Overall model	7.54(4), *p* = .110	.997	.973	.02	.05 (.00 – .09)
Multigroup by sex	25.83 (13), *p* = .018	.994	.948	.02	.06 (.00 – .11)

Table 3 presents the standardized path coefficients for the overall model. The analysis of both direct and indirect effects revealed distinct patterns of association among the DT traits, the mediating variables (coping strategies and social support dimensions), and psychological adjustment. A significant negative direct effect was identified between Machiavellianism and satisfaction with social support. Furthermore, Machiavellianism showed a significant indirect effect on psychological adjustment, mediated by satisfaction with social support. This suggests that adolescents with higher levels of Machiavellian traits tend to perceive lower social support satisfaction, which in turn is associated with greater adjustment difficulties.

Narcissism exhibited weak to moderate direct effects on all examined variables, except for avoidant coping strategies, for which no significant association was found. A small but significant negative direct effect was observed between narcissism and psychological adjustment. Additionally, narcissism influenced psychological adjustment indirectly through multiple pathways, including the use of problem-focused and emotion-focused coping strategies, as well as satisfaction with social support; however, these indirect associations were generally weak in magnitude.

Psychopathy demonstrated a robust positive direct effect on both the use of avoidant coping strategies and on psychological adjustment difficulties. Moreover, psychopathy was indirectly associated with greater maladjustment through its strong association with avoidant coping. These findings suggest that psychopathy contributes to poorer psychological adjustment both directly and indirectly via maladaptive coping strategies.

Avoidant coping emerged as the most robust predictor of psychological adjustment difficulties. In addition, problem-focused coping, emotion-focused coping,

satisfaction with social support, and the perceived need for increased social activities were also identified as significant predictors of adjustment outcomes.

Table 3. Path coefficients based on the final model: direct and indirect effects with standardized values of variables entered into the overall model.

Direct effects		Indirect effects		
Paths	**β**	**Paths**	**β**	**90% CI**
Machiavellianism → Avoidant	.121	Machiavellianism → Avoidant → SDQ	.058	-.024 – .923
Machiavellianism → Problem	-.030	Machiavellianism → Problem → SDQ	.008	-.183 – .310
Machiavellianism → Emotion	-.094	Machiavellianism → Emotion → SDQ	-.011	-.279 – .029
Machiavellianism → SSS	-.147*	Machiavellianism → SSS → SDQ	.020*	.018 – .314
Machiavellianism → NASS	.109	Machiavellianism → NASS → SDQ	.019	-.025 – .345
Machiavellianism → SDQ	-.009			
Narcissism → Avoidant	.060	Narcissism → Avoidant → SDQ	.029	-.189 – .788
Narcissism → Problem	.385***	Narcissism → Problem → SDQ	-.099***	-1.513 – -.549
Narcissism → Emotion	.311***	Narcissism → Emotion → SDQ	.038*	.062 – .752
Narcissism → SSS	.161**	Narcissism → SSS → SDQ	-.022*	-.450 – -.038
Narcissism → NASS	.121*	Narcissism → NASS → SDQ	.021	.026 – .440
Narcissism → SDQ	-.108*			
Psychopathy → Avoidant	.240***	Psychopathy → Avoidant → SDQ	.115**	.428 – 1.547
Psychopathy → Problem	-.061	Psychopathy → Problem → SDQ	.016	-.108 – .424
Psychopathy → Emotion	.002	Psychopathy → Emotion → SDQ	.000	-.147 – .163
Psychopathy → SSS	-.023	Psychopathy → SSS → SDQ	.003	-.115 – .177
Psychopathy → NASS	.057	Psychopathy → NASS → SDQ	.010	-.063 – .256
Psychopathy → SDQ	.248***			
Avoidant → SDQ	.481***			
Problem → SDQ	-.257***			
Emotion → SDQ	.122*			
SSS → SDQ	-.135***			
NASS → SDQ	.174***			

Note. avoidant = Avoidant coping, Problem = problem-focused coping, Emotion = emotion-focused coping, SSS = satisfaction with social support, NASS = need for activities related to social support, SDQ = SDQ total score.

* $p < .05$; ** $p < .01$; *** $p < .001$

The multigroup analysis by sex (Table 4) revealed distinct patterns in the direct and indirect effects of the DT traits on psychological adjustment, highlighting notable differences between boys and girls. Specifically, among girls, Machiavellianism was significantly associated with an avoidant coping style and a heightened perceived need

for social activities. These mediating variables, in turn, exerted significant indirect effects on psychological adjustment.

Table 4. Direct and indirect effects with standardized values of variables entered into the model by sex.

Direct effects		Indirect effects	
Paths	**Boys/Girls**	**Paths**	**Boys/Girls**
	β		**β**
Machiavellianism → Avoidant	.053 / .209**	Machiavellianism → Avoidant → SDQ	.022 / .088*
Machiavellianism → Problem	.034 / -.077	Machiavellianism → Problem → SDQ	-.008 /.018
Machiavellianism → Emotion	.027 / -.177*	Machiavellianism → Emotion → SDQ	.003 / -.022
Machiavellianism → SSS	-.157 /-.144	Machiavellianism → SSS → SDQ	.018 / .017
Machiavellianism → NASS	-.013 / .213**	Machiavellianism → NASS → SDQ	-.002 / .033*
Machiavellianism → SDQ	-.125 / .106		
Narcissism → Avoidant	.025 /.088	Narcissism → Avoidant → SDQ	.010 /.037
Narcissism → Problem	.367**/.382***	Narcissism → Problem → SDQ	-.086*** /-.090***
Narcissism → Emotion	.225* / .352***	Narcissism → Emotion → SDQ	.028 /.044*
Narcissism → SSS	.132 / .187*	Narcissism → SSS → SDQ	-.015 /-.022*
Narcissism → NASS	.270*** / .004	Narcissism → NASS → SDQ	.042*** / .001
Narcissism → SDQ	-.130* / -.087		
Psychopathy → Avoidant	.320**/.210*	Psychopathy → Avoidant → SDQ	.135*** /.088*
Psychopathy → Problem	-.042 /-.066	Psychopathy → Problem → SDQ	.010 /.016
Psychopathy → Emotion	.006 / .032	Psychopathy → Emotion → SDQ	.001 /.004
Psychopathy → SSS	-.004 / -.094	Psychopathy → SSS → SDQ	.000 /.011
Psychopathy → NASS	.145 / .017	Psychopathy → NASS → SDQ	.023 /.003
Psychopathy → SDQ	.291***/.251***		
Avoidant → SDQ	.487***/.421***		
Problem → SDQ	-.262***/-.235***		
Emotion → SDQ	.140* /.124*		
SSS → SDQ	-.120***/-.117***		
NASS → SDQ	.182***/ .156***		

Note. Avoidant = avoidant coping, Problem = problem-focused coping, Emotion = emotion-focused coping, SSS = satisfaction with social support, NASS = need for activities related to social support, SDQ = SDQ total score.

* $p < .05$; ** $p < .01$; *** $p < .001$

Narcissism exhibited significant positive direct effects on both problem-focused and emotion-focused coping strategies across sexes. Notably, problem-focused coping strategies were linked to significant negative indirect effects on SDQ scores in both

boys and girls. However, the direct negative effect of narcissism on SDQ was significant only among boys.

For both sexes, psychopathic traits demonstrated a weak but statistically significant positive association with total SDQ scores. Psychopathy exerted a moderate direct effect on the utilization of avoidant coping strategies in both groups, which consequently produced significant indirect effects on psychological adjustment. Furthermore, was a negative direct association was observed in both sexes between problem-focused coping strategies, satisfaction with social support, and psychological adjustment. While all endogenous variables were directly related to adjustment difficulties, the associations were negative for problem-focused coping and satisfaction with social support in both groups.

Avoidant coping emerged as the most robust predictor of SDQ scores across sexes, highlighting its central role in explaining psychological maladjustment among institutionalized adolescents.

4. DISCUSSION

This study was conducted in the Portuguese context, where the alternative care system differs markedly from that of other European countries and non-European contexts, being predominantly based on residential care (ISS, 2024). With more than 5,400 children and adolescents removed from their biological families and placed in care (ISS, 2024), this research sought to examine, through a cross-sectional design, the psychological adjustment challenges faced by adolescents residing in residential care.

The present study investigated the direct and indirect effects of DT traits on psychological adjustment among adolescents living in RCS, with a particular focus on the mediating roles of coping strategies and perceived social support. Coping strategies were categorized into three broad higher-order dimensions, in line with prior empirical work (e.g., Ben-Zur, 2009; Green et al., 2010). Additionally, the study examined potential variations in these relationships across sex. The findings highlight a complex and multifaceted interplay between individual personality characteristics, adaptive and maladaptive coping mechanisms, contextual resources, and psychosocial outcomes. This underscores the importance of considering both dispositional and environmental factors when assessing the psychological adjustment of youth in residential care.

The literature has increasingly focused on whether coping functions as a mediator or moderator in the relationship between personality traits and psychopathology. In the present study, and consistent with previous research, avoidant coping emerged as the strongest predictor of psychological maladjustment (Compas et al., 2017; Thompson et al., 2014; Zimmer-Gembeck & Skinner, 2016), reinforcing its central role in the manifestation of adjustment difficulties among institutionalized youth. Both psychopathy and Machiavellianism were positively associated with avoidant coping, which, in turn, mediated their indirect effects on psychological adjustment. These findings are in line with prior evidence suggesting that youth exhibiting high levels of callous-unemotional traits are more likely to disengage from stressors, thereby increasing their vulnerability to psychological difficulties and maladjustment (Facci et al., 2023; Muratori et al., 2016; Pechorro et al., 2022a), and thus confirm the first hypothesis.

Conversely, problem-focused coping and satisfaction with social support were generally linked to better psychological outcomes, consistent with the literature on adaptive coping mechanisms (Frydenberg & Lewis, 2000; Lazarus & Folkman, 1984). However, their protective influence was modest and appeared to vary across groups, suggesting that their effects may be moderated by individual personality traits or contextual variables. These results provide empirical support for the second hypothesis.

It is also important to consider that reliance on seeking support and guidance – as opposed to other coping strategies – may help mitigate both internalizing and externalizing symptoms during adolescence (Zimmer-Gembeck & Skinner, 2016). In this context, the influence of DT traits may play a critical role in shaping how youth navigate stress. The multigroup analysis by sex revealed meaningful distinctions in the mechanisms underlying psychological adjustment. Among girls, Machiavellianism was significantly associated with both avoidant coping strategies and an increased perceived need for social activities, which mediated its indirect effects on adjustment difficulties. This pattern may reflect socialized conditioned differences in emotional expression and interpersonal functioning (Else-Quest et al., 2006; Meyers-Levy & Loken, 2015), as well as gender-specific expressions of manipulative traits (Efferson & Glenn, 2018; Pechorro et al., 2022b). It is plausible to hypothesize that, among girls,

manipulative tendencies are more likely to be associated with emotional withdrawal and unmet social needs, ultimately contributing to less favorable psychosocial outcomes.

Narcissism exhibited a complex profile, encompassing both adaptive and maladaptive dimensions. Consistent with previous literature, it was positively associated with problem-focused coping in both sexes, which mediated negative indirect effects on maladjustment, suggesting that certain narcissistic traits may serve a self-enhancing and protective function under specific conditions (Papageorgiou et al., 2019). This association implies that goal-oriented behaviors and a heightened self-view may encourage more constructive responses to stress. However, narcissism was also linked to emotion-focused coping, particularly among girls, potentially reflecting a heightened self-focus and difficulties with affective regulation under stress (Mor & Winquist, 2002). These findings underscore the dual nature of narcissism as both a protective and risk factor, depending on the mediating mechanisms and contextual variables.

Although the direct effect of narcissism on SDQ scores was not statistically significant for either sex, significant indirect effects were observed through adaptive coping strategies, especially among boys. This suggests that some narcissistic tendencies may facilitate effective coping responses that buffer against psychological adjustment difficulties. Nevertheless, the association between narcissism and emotion-focused coping, particularly evident among girls, points to a potentially maladaptive pathway when stress levels are high. This dual role aligns with prior research, which also observed sex differences in the expression and effects of DT traits on coping styles and psychological outcomes. For instance, Xia et al. (2023) similarly reported that while narcissism was positively associated with adaptive coping, it also co-occurred with less effective emotion-focused responses under stress.

Psychopathy was consistently associated with greater psychological adjustment difficulties (Mushtaq et al., 2022), both through direct effects and indirectly via avoidant coping strategies, reinforcing its well-established link to emotional detachment, impulsivity, and deficits in self-regulation (Salekin, 2016). These pathways underscore the importance of considering institutional environments as potential moderators in the relationship between personality traits and psychosocial outcomes.

Although not all associations reached statistical significance, the results suggest meaningful trends. Adolescents with higher scores in Machiavellianism or psychopathy tended to exert less effort toward problem-solving and were more likely to rely on avoidant coping strategies. In contrast, adolescents with elevated narcissism scores exhibited a positive association with both problem-focused and emotion-focused coping strategies, indicating a tendency to confront stressors rather than avoid them. These findings align with prior research (e.g., Birkás et al., 2016; Saltoğlu & Irak, 2022) and were consistent across all tested models, in which narcissistic traits were significantly associated with emotion-focused strategies and indirectly related to psychological adjustment. This suggests that narcissistic adolescents may attempt to regulate their emotional responses when faced with stress. These results confirm the third hypothesis. Furthermore, consistent with Birkás et al. (2016), adolescents high in Machiavellianism and psychopathy were negatively associated with social support dimensions, leading to the rejection of the fifth hypothesis.

The sixth hypothesis was partially supported: only narcissism was positively associated with coping strategies aimed at resolving or altering stressful situations, while psychopathy was associated with the use of avoidant strategies. This distinct coping pattern reinforces the ego-enhancing nature of narcissism described by Jones and Paulhus (2011), including greater self-control and an aversion to situations that might threaten the self-concept, prompting these individuals to engage in problem-solving and emotional regulations strategies. Also, these findings align with previous research demonstrating that maladaptive personality traits are associated with distinctive coping strategies (Birkás et al., 2016, 2020).

Additionally, the negative association between narcissism and psychological adjustment through social support may reflect the narcissist's selective use of interpersonal relationships, where support is instrumentalized rather than internalized. The observed association between narcissism and social support may further suggest a preference for leveraging social influence and status within peers in the institutional context due to its constant contact (Jonason & Webster, 2012).

Conversely, the tendency of adolescents with higher psychopathy scores to rely more heavily on avoidant coping aligns with their typical disregard for the consequences of their actions (Lau & Marsee, 2013). Similarly, the positive direct and

indirect effects of both Machiavellianism and psychopathy on the perceived need for more social activities underscore their manipulative and exploitative social orientations (Paulhus & Williams, 2002) which may paradoxically require the presence of others despite limited emotional engagement.

However, while avoidant coping may offer temporary relief by reducing perceived stress, it is generally maladaptive and does not lead to actual improvements in psychological functioning (Saltoğlu & Irak, 2022). Taken together, the findings suggest that problem-focused coping and satisfaction with social support serve as protective factors, while avoidant coping and a heightened need for social activities may constitute risk factors for emotional and behavioral difficulties among institutionalized adolescents. Consistent with Zimmer-Gembeck and Skinner (2016), the use of emotion-focused coping strategies appears to support better adjustment when facing stressful events.

Psychopathy emerged as the most consistent and robust predictor of adjustment difficulties (Mushtaq et al., 2022; Pechorro et al., 2022a, 2022b; Zhao & Jin, 2023), exerting both direct and indirect effects, particularly through avoidant coping. This finding aligns with the view that psychopathic traits are especially harmful in institutionalized settings, where emotional regulation and social support are already compromised (Frick et al., 2014).

Overall, the study highlights the central mediating role of coping strategies and social support in the relationship between personality traits and psychological adjustment. Avoidant coping served as a key pathway linking DT traits to maladjustment, while problem-focused coping and satisfaction with social support functioned as protective factors. These results are consistent with prior research showing stronger associations between negative coping styles and mental health problems (Xia et al., 2023), as well as links between maladaptive personality traits, avoidant and emotional coping, and increased psychological distress (Ireland et al., 2006).

Moreover, a greater perceived need for social activities was linked to increased adjustment difficulties, highlighting perceived social deprivation as a key stressor and unmet social needs as markers of vulnerability. These results underscore the importance of considering adolescents' coping responses, perceptions of control, and

other stress appraisals in their psychological adjustment and risk for psychopathology (Zimmer-Gembeck & Skinner, 2016), thereby confirming the fourth hypothesis.

Furthermore, the findings suggest that coping strategies may function as mediators or moderators of adjustment difficulties, consistent with the third hypothesis. According to existing literature, emotion-focused coping is often reflective of predispositional traits, whereas problem-focused coping tends to be situationally specific (Zimmer-Gembeck & Skinner, 2016). Problem-focused strategies are influenced by contextual constraints and resources and can alter or mitigate stressful circumstances, thereby affecting adolescents' adjustment outcomes.

Several studies have identified avoidant coping as a mediator in the relationship between stress and psychological adjustment (Barker, 2007), while others suggest that avoidant strategies may exert more direct effects on adjustment in certain contexts (Clarke, 2006). A third perspective conceptualizes coping as the mechanism through which protective factors – such as social support – impact psychological outcomes (Zimmer-Gembeck & Skinner, 2016).

Multigroup analysis revealed distinct patterns in how the traits of the DT relate to psychological adjustment as a function of sex, both in terms of variables related to social support and coping strategies, thereby confirming the seventh hypothesis. Overall, psychopathic traits were negatively associated with maladjustment in both sexes, but exerted a stronger indirect effect among boys, primarily through avoidance coping strategies. Narcissism demonstrated divergent pathways: among boys, it operated mainly through the perceived need for social engagement, whereas among girls, its effects were mediated via emotion-focused coping strategies. The effects of Machiavellianism were predominantly observed among girls, negatively impacting adjustment through greater reliance on avoidance strategies and a heightened need for social activities.

Perceived satisfaction with social support emerged as a protective factor for both sexes, consistent with previous findings identifying perceived social support as a buffering factor against stress and psychological maladjustment (Pinheiro et al., 2024; Rueger et al., 2016; Simão et al., 2025). Conversely, the perceived need for increased social support activities appears to reflect a sense of relational deprivation, mediating the effects of Machiavellianism among girls and narcissism among boys. Prior studies

have shown that adolescent girls scored higher on a composite goal index representing the degree to which they valued social goals (Rose & Rudolph, 2006). These findings suggest that while girls with elevated levels of Machiavellianism may employ manipulative strategies to compensate for feelings of exclusion or relational dissatisfaction (Rose & Rudolph, 2006), boys with higher levels of narcissism may seek external social reinforcement as a form of validation.

Thus, the perceived need for social support activities may be interpreted as a sex-specific marker of psychosocial risk, underscoring the importance of tailored approaches that are sensitive to the relational contexts and needs of each group.

Adolescence is a developmental period marked by challenges in emotion regulation, particularly in highly emotional environments. During early adolescence, some youth may rely more heavily on a variety of maladaptive coping strategies and show reluctance to seek help from adults. Institutionalized adolescents, in particular, may demonstrate greater hesitation, with their help-seeking behaviors becoming more selective regarding the types of support they request. However, the literature shows that they seek help from institutional staff when needed, likely reflecting a sense of safety and trust within those relationships (Pinheiro et al., 2024).

Limitations and future research

Despite its contributions, this study has several limitations that should be acknowledged. The correlational cross-sectional design precludes establishing temporal ordering or causal relationships among variables and limits the ability to examine long-term associations. Consequently, the results must be interpreted with caution, as they only reveal direct and indirect associations without confirming causality. To clarify the directionality of effects and investigate potential mediation mechanisms more robustly, future research should adopt longitudinal designs.

Additionally, the findings are specific to institutionalized youth in Portugal, which limits the generalizability to other cultural or care system contexts. Future studies could explore how cultural norms, and institutional climates interact with personality traits, as well as examine potential moderating influences such as age, length of institutionalization, trauma history, and attachment patterns.

Among the strengths of this study are the use of a national sampling frame, the inclusion of youth perspectives on critical developmental issues, a high response rate

from a typically hard-to-reach and under-researched population, and the opportunity to analyse differences across sexes. These factors enhance the relevance and applicability of the findings within the Portuguese residential care context.

Implications for practice

The present study aimed to better understand coping patterns among institutionalized youth to inform the development of interventions that mitigate the negative effects of institutionalization. By focusing on successful coping strategies in relation to psychological adjustment and personality traits, the findings highlight important implications for interventions by psychologists and social workers, as well as for policy.

Promoting adaptive coping strategies is critical to improving psychological outcomes, particularly for youths exhibiting high levels of psychopathic or Machiavellian traits (Compas et al., 2017; Lochman et al., 2017). Tailoring interventions to address the distinct roles of DT traits, while considering the institutional context, is essential for effectiveness. Programs that foster trusting and stable relationships with staff and peers, alongside expanding meaningful social engagement opportunities, may help buffer the impact of manipulative or callous tendencies and reduce feelings of social deprivation (Evans et al., 2025).

Furthermore, monitoring high-risk profiles and providing intensive, relationship-focused interventions is crucial to address deficits in empathy and emotional engagement, which are key contributors to psychological maladjustment.

5. CONCLUSION

This study highlights the significant impact of DT traits on youth psychological adjustment, revealing how maladaptive traits interact with coping strategies and contextual factors to influence psychological adjustment. Each trait appears to operate through distinct mechanisms, suggesting that the DT is not a homogeneous construct in terms of its psychosocial impact. The complexity of the indirect effects – some protective, others risk-enhancing – highlights the importance of considering the variables proposed in the model. Simultaneously, these findings underscore the relevance of sex as a critical variable in understanding the psychosocial implications of DT traits. The findings underscore the need for gender-sensitive interventions,

particularly those that promote adaptive coping and fostering meaningful social connections. Notably, higher levels of psychopathy were linked to poorer mental health, and among boys, psychopathy was associated with reduced use of problem-focused coping, thereby increasing adjustment difficulties. Interventions that address avoidant coping behaviors and unmet social needs may be especially crucial for youths exhibiting high Machiavellian and psychopathic traits.

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APPENDIX

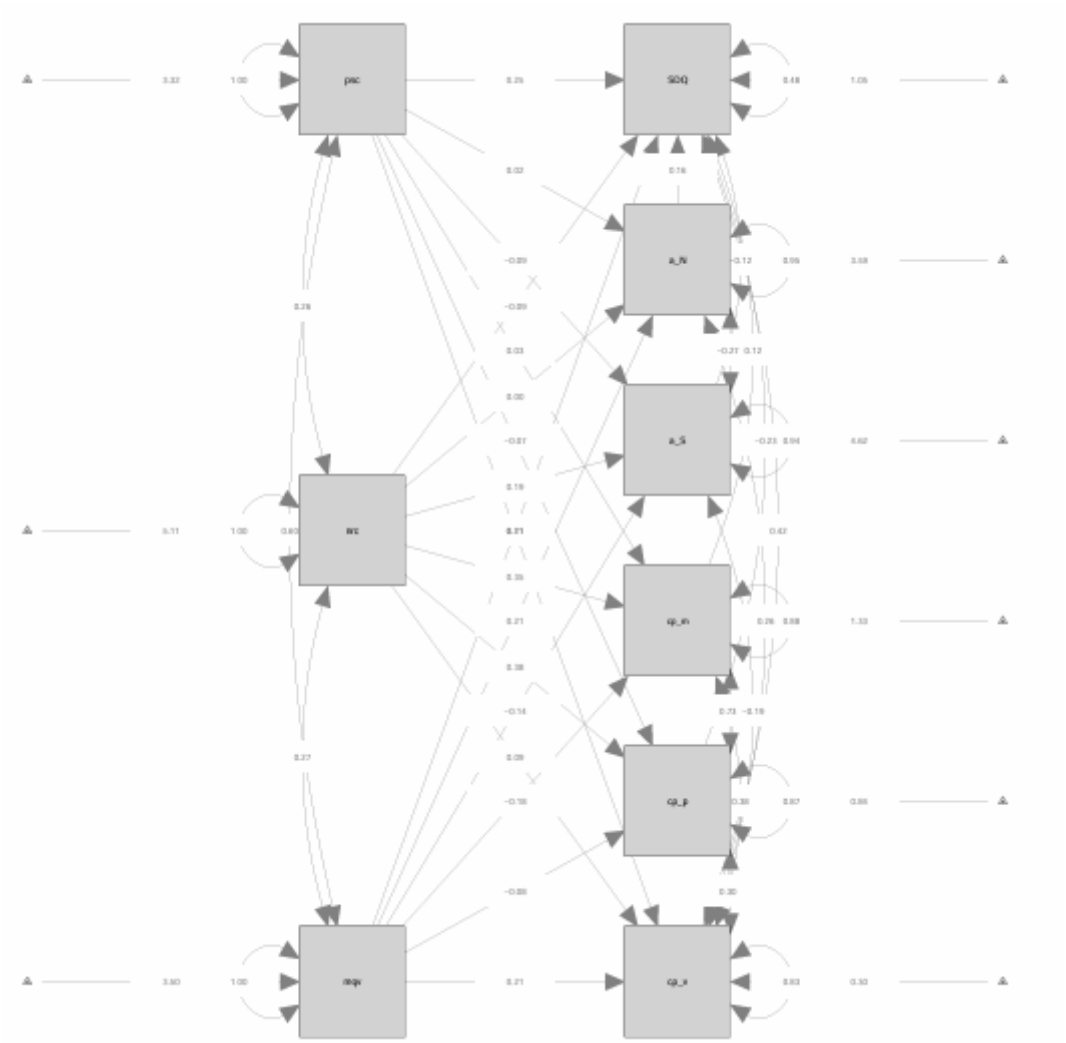

Figure 3. *Path model from multigroup analysis for female adolescents*

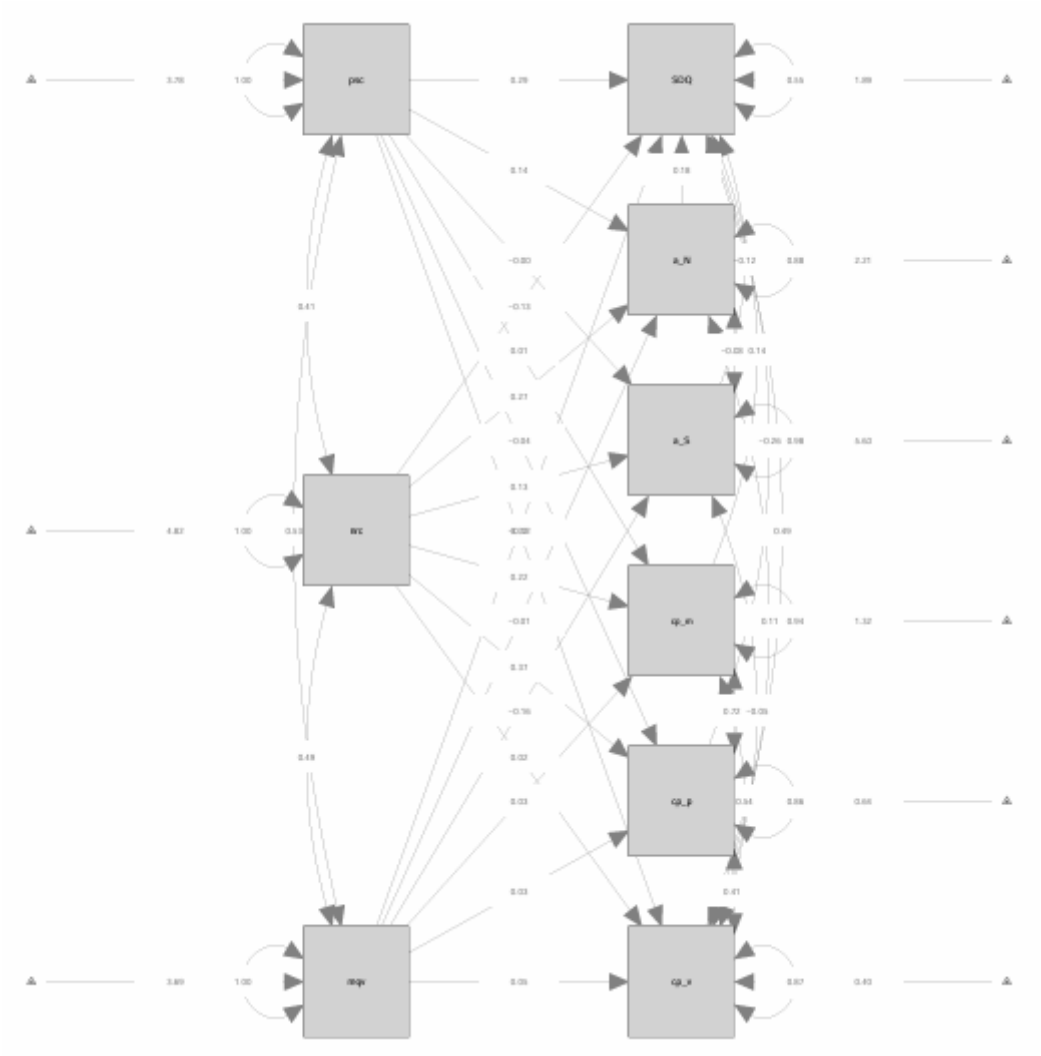

Figure 4. *Path model from multigroup analysis for male adolescents*

ARTICLE 6 | Emotional dysregulation in adolescents in residential care: the role of attachment styles, Dark Triad traits, and psychological adjustment

Ana Simão & Cristina Nunes

Submitted to publication (Under review)

Emotional dysregulation in adolescents in residential care: the role of attachment styles, Dark Triad traits, and psychological adjustment

ABSTRACT

Research consistently highlights the negative impact of residential care settings on adolescents' physical, cognitive, and emotional development. Attachment styles and Dark Triad traits may both influence psychological adjustment and emotional regulation within this vulnerable population. This study explores the associations between attachment styles, Dark Triad traits, and emotional regulation difficulties in a sample of 433 adolescents (196 boys, 237 girls) aged 12 to 18, residing in 46 residential institutions across Portugal. Using self-report questionnaires, correlations and hierarchical regression analyses were conducted to examine associations and differences by sex and age group. Results revealed that insecure-ambivalent attachment emerged as the strongest predictor of behavioral dysregulation. Cognitive regulation was negatively associated with behavioral problems, suggesting its protective value. Dark Triad traits were intercorrelated and associated with emotional dysregulation, particularly among girls, highlighting gender-specific patterns in emotional functioning and behavioral outcomes. Findings are discussed in terms of their developmental and clinical implications for adolescents in institutional care, and some practical implications and interventions strategies are offered.

Keywords: Adolescents; Attachment; Dark triad traits; Emotional regulation; Psychological adjustment; Residential care

1. INTRODUCTION

Youth in the child protection system often face instability due to inadequate care and frequent changes in care placements, negatively impacting their psychological adjustment (Magalhães et al., 2021; Simão et al., 2025). Stable and nurturing caregiving environment fosters secure relationships; disturbances impact attachment,

emotions, cognition, and behaviors, influencing emotional regulation (ER) processes and the development of personality.

Attachment in adolescents living in residential care

Bowlby (1977) defined attachment as behaviors aimed at maintaining proximity to a preferred caregiver during times of threat and described it as the child's capacity to form a secure base through interaction with a responsive caregiving environment.

Attachment develops through early interactions with caregivers and plays a fundamental role in shaping identity, cognition, and emotional regulation (Bowlby, 1977; Dozier et al., 2012). In stable environments, secure relationships with caregivers promote positive developmental outcomes, whereas insecure patterns are linked to behavioral difficulties and social withdrawal (Dozier et al., 2012). Disorganized attachment, in particular, has been associated with early loss, poverty, maltreatment, maternal depression or alcoholism, and repeated caregiver separation (Boris & Zeanah, 1999; van IJzendoorn et al., 1992; Vorria et al., 2003). These risk factors are especially relevant in institutional settings – often marked by inconsistency, multiple caregivers, and frequent transitions – and are associated with a higher prevalence of insecure, especially disorganized, attachment styles (Lionetti et al., 2015; Vorria et al., 2003). The disruptions experienced by adolescents in residential care settings (RCS) negatively affect the development of emotional and behavioral regulation (Boris & Zeanah, 1999; van IJzendoorn et al., 1992). Although institutional settings pose considerable challenges, adherence to structured rules may, for some adolescents, foster a sense of trust and predictability (Rauktis et al., 2011).

Emotional regulation in adolescents living in residential care

ER – defined by Gross (2015) as the ability to manage and modify emotional responses – is shaped in relational contexts, begins with attachment bonds formed in early experiences (Gross, 2015; Kim & Cicchetti, 2010), and is essential for managing stress and promoting psychosocial adjustment (Gross, 2015).

ER evolves across developmental stages. In early childhood, ER may be largely automatic, but during middle childhood and adolescence, increase cognitive capacities enable the use of more deliberate strategies, such as cognitive reappraisal and problem-solving (Gross & John, 2003; Park et al., 2020; Schäfer et al., 2017).

Adaptive strategies, such as cognitive reappraisal, promote psychological well-being, while maladaptive strategies, like suppression and avoidance, are linked to increased psychological distress (Gross & John, 2003; Park et al., 2020; Schäfer et al., 2017).

Adolescents in RCS often struggle with ER due to unstable caregiver relationships and exposure to adverse experiences (Fernández-García et al., 2023; Kim & Cicchetti, 2010), increasing the risk of emotional dysregulation (Fernández-García et al., 2023; Gaskell, 2010).

Attachment, ER and Dark Triad traits: influence on adolescents' psychological adjustment

Difficulties in learning from consistent role models, insecure or disorganized attachment styles, and ER difficulties may increase the presence of Dark Triad (DT) traits in adolescents living in RCS. Attachment insecurity is thought to influence the development of DT traits, while emotional challenges are prevalent among individuals with these personality features (Muris et al., 2017).

The DT is a term used to describe a constellation of three socially damaging and intercorrelated personality traits (Muris et al., 2017; Paulhus & Williams, 2002): Machiavellianism, subclinical narcissism, and subclinical psychopathy. Its impact on youth in RCS is understudied. Research suggests that DT traits can predict psychological outcomes, but more investigation is needed to understand the maladaptive behaviors in this particular group. Insecure and disorganized attachment, combined with poor ER, may contribute to the development or reinforcement of maladaptive personality traits, such as DT (Jones & Paulhus, 2014). These traits are characterized by emotional detachment, manipulativeness, lack of empathy, and impulsivity, and have been linked to both attachment insecurity and dysfunctional ER (Garofalo et al., 2020; Joanson et al., 2014). Adolescents with psychopathic traits often show deficits in emotional awareness and empathy, commonly rooted in early relational trauma and disorganized attachment. Additionally, deficits in impulse control, emotional awareness, and effective ER strategies contribute to heightened DT traits (Jonason & Krause, 2013).

These dynamics have important implications for psychological adjustment. Dark personality traits have been associated with antisocial behaviors (Furnham et al., 2013;

Pechorro et al., 2022), and all these personality traits are related to problem behaviors and aggression in adolescents (Chabrol et al., 2009). Adolescents exhibiting higher levels of DT traits tend to struggle with interpersonal relationships, show reduced emotional insight, and are at greater risk for conduct problems and other forms of maladjustment (Garofalo et al., 2020). Several studies with adolescents found support for an association between Machiavellianism, emotional dysregulation, and delinquency (Chabrol et al., 2009; Klimstra et al., 2014; Lau & Marsee, 2013), and between psychopathy and narcissism and overt aggression (Lau & Marsee, 2013).

Although there is evidence regarding the relationship between DT, attachment, and emotional dysregulation, remains the need to understand how these variables interact and explain adolescents' psychological adjustment. A central inability to regulate one's behavior and emotions seems crucial for understanding psychological adjustment among this specific population.

Adolescence is a critical period for ER development, marked by hormonal, cognitive, and social changes that heighten emotional reactivity and stress sensitivity, potentially leading to dysfunctional ER if appropriate support is lacking (Schäfer et al., 2017). Securely attached adolescents typically manage emotions more effectively and seek support when needed, while those with insecure attachment are more likely to experience heightened emotional reactivity and difficulty in expressing or regulating emotions, interpersonal difficulties, and maladaptive personality traits (Kiel & Kalomiris, 2015). These patterns directly influence psychological adjustment, shaping how adolescents cope with adversity and navigate social contexts, and are linked to lower peer acceptance and increased internalizing symptoms (Kim & Cicchetti, 2010).

Maladaptive ER is associated with antisocial behaviors such as aggression and substance use. Several studies suggested a relationship between difficulties in ER, both internalizing and externalizing behavior, Machiavellianism and psychopathic traits (Falcón et al., 2021; Garofalo et al., 2020). These difficulties in ER can disrupt social, cognitive, or interpersonal functioning (Gratz & Roemer, 2004). Research indicates that individuals high in DT traits may experience negative emotional outcomes, including depression symptoms, with gender differences being noted (Shen, 2023).

Previous studies showed associations between different ER strategies and DT traits: psychopathy was associated with the less use of cognitive reappraisal and more

use of suppression (Akram & Stevenson, 2021; Shen, 2023); Machiavellians use more expression suppression, contrarily to narcissists (Akram & Stevenson, 2021; Shen, 2023).

Attachment is important to predict functioning in adolescence. In RCS, where relational instability is common, risks of psychological maladjustment are amplified (Simão et al., 2025). However, sensitive, consistent and responsive caregiving can foster secure attachments, acting as a protective factor for emotional and social development (Magalhães et al., 2021). Zhang et al. (2025) meta-analysis confirmed positive associations between insecure and avoidant attachment style and Machiavellianism. Previously, Jonason et al. (2014) suggested that mechanisms that influence the development of DT traits differ across and within each trait, differ as a function of the sex of the parent, and are sensitive to context. In this sense, complete deprivation of primary care and emotional support can have a permanent effect on personality development and the ability to form, sustain and enjoy relationships. However, through the relationship with the caregivers in the institution it is possible for adolescents to undergo a reorganization of their internal world (Mota & Matos, 2008).

Current Study

The present study aims to explore how attachment styles are related to the ability of adolescents to regulate their emotions, and how these factors can influence the appearance of DT traits and adolescents' psychological adjustment. To our knowledge, this is the first study to examine how DT traits relate to distinct ER strategies in adolescents in RCS while considering attachment styles and psychological adjustment problems. Since all three DT traits are part of the maladaptive trait space and reflect antisocial tendencies, we anticipate that they will be associated with insecure attachment styles and maladaptive ER strategies.

The present study has four main objectives: 1) to know the attachment styles and ER strategies used by adolescents in RCS; 2) to determine if the DT traits are linked to different attachment styles and dysfunctional ER strategies; 3) to analyse if there are sociodemographic differences in attachment, ER strategies, DT traits, and psychological adjustment difficulties; 4) to investigate the relationship between attachment, dimensions of ER and psychological adjustment. Based on literature, we

have the following hypotheses to address our goals: H1) adolescents will present different ER strategies by sex, age group and time living in institution; H2) higher scores of affective and behavioral dysregulation are associated with higher levels of DT traits; H3) Machiavellianism will be associated with more cognitive strategies while psychopathy will be linked to behavioral strategies; H4) adolescents with insecure attachment styles will present higher levels of DT traits and more difficulties in ER; H5) difficulties in ER will be associated with more psychological adjustment problems.

2. METHOD

Participants

Participants were 433 adolescents (196 boys, 45%; 237 girls, 55%) aged between 12 and 18 years (*M* = 15.33; *SD* = 1.74) residing in 46 Portuguese RCS. The age distribution was balanced, with 217 participants aged 12-15 years and 216 aged 16-18 years. This distribution reflects national trends, as youth aged 12-24 represent the most prevalent age group in residential care in Portugal (Instituto Segurança Social [ISS], 2024). On average, adolescents had been living in their current institution for 41 months (*SD* = 43) with durations ranging from 1 to 204 months. Although multiple reasons were often reported for placement, the most frequently cited primary reasons for the current protective measure were neglect and abuse (38%), school absenteeism (33%), financial difficulties (28%), and exposure to domestic violence (26%). Regarding contact with their biological family, 40% reported no contact, 12% had sporadic contact, and 48% maintained frequent contact. Additionally, 10% of the sample consisted of youth who had lost either their mother or father.

Measures

Abbreviated Dysregulation Inventory (ADI, Mezzich et al., 2001; Portuguese validation by da Motta et al., 2018)

Mezzich et al. (2001) developed and validated the Dysregulation Inventory to test whether emotional, cognitive and/or behavioral dysregulation was useful for predicting substance abuse and other disorders in young people. A 30-item version was created to assess affective (e.g., “My mood goes up and down without reason”), behavioral (e.g., “I am easily distracted”), and cognitive dysregulation (e.g., “Once I have a goal, I make a plan to reach it”) in adolescents. It consists of 10 items for each

subscale and participants rate each item on a 4-point Likert scale (0 = never true; 3 = always true). The cognitive dysregulation subscale refers to the use of action planning strategies or goal-directed thinking and decision-making. Due to the wording of the items pertaining to this subscale, it is important to emphasize that lower scores reflect greater cognitive dysregulation, whereas higher scores on the emotional and behavioral dysregulation subscales indicate greater dysregulation. The validation study found good psychometric properties and adequate internal consistency values: affective dysregulation α = 0.85, behavioral dysregulation α = 0.87, cognitive dysregulation α = 0.88. For the present study, the Cronbach's alphas were respectively, 0.87, 0.86, and 0.85.

Short Dark Triad (SD3, Jones & Paulhus, 2014; Portuguese version by Pechorro et al., 2018)

SD3 measure was designed to capture the DT with 27 items that assess the dimensions of Machiavellianism, narcissism and psychopathy with nine items in each of the three subscales. The Portuguese version (Pechorro et al., 2018) assesses the DT traits with 21 items divided into three subscales: Machiavellianism (e.g., "Most people can be manipulated"), narcissism (e.g., "I am an average person"), and psychopathy (e.g., "It's true that I can be mean to others"). Participants rate their agreement on a 5-point Likert scale ranging from 1 "Strongly disagree" to 5 "Strongly agree", with higher scores indicating higher levels of DT traits. Internal consistency in the original version was above 0.80. Cronbach's alpha for the present study were: Machiavellianism α = 78, narcissism α = 58, and psychopathy α = 69.

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report scale designed to assess socio-emotional problems. Items are rated using a three-point Likert scale (0 = "Not true", 1 = "Somewhat true", 2 = "Certainly true") and are organized into five subscales: emotional problems (e.g., "I am nervous in new situations. I easily lose confidence"), behavioral problems (e.g., "I get very angry and often lose my temper"), hyperactivity/inattention difficulties (e.g., "I am restless, I cannot stay still for long"), peer relationship problems (e.g., "I have one good friend or more"), and prosocial behaviors (e.g., "I try to be nice to other people. I care about their feelings")

(Goodman, 1997). Cronbach's alphas in the original version ranged between 0.41 and 0.80, indicating good internal reliability. In the Portuguese adaptation by Pechorro et al. (2011), Cronbach's alphas ranged from 0.43 to 0.61. For the present study, the reliability values obtained for each subscale and the total scale of the SDQ were as follows: emotional problems α = .68, behavioral problems α = .57, hyperactivity/inattention difficulties α = .66, peer relationship problems α = .51, prosocial behaviors α = .78, and total scale α = .78.

Vulnerable Attachment Style Questionnaire (VASQ, Bifulco et al., 2003; Portuguese version by Simão et al., manuscript submitted for publication)

The VASQ is a brief self-report questionnaire originally developed to assess attachment styles as a vulnerable factor to depression in adults or adolescents. Answers are given on a 5-point Likert scale ranging from 1 = "Strongly disagree", to 5 = "Strongly agree". It uses a total score for insecure attachment style and two subscales that reflect insecurity/distrust and the degree of closeness/distance in the relationship. Items 14 and 15 are phrased positively and must be reverse scored to ensure consistency across the scale. The Portuguese adaptation of the VASQ (Simão et al., manuscript submitted for publication) includes 14 items and provides a total score for vulnerable attachment, along with three subscales: Insecure-ambivalent (e.g., "People close to me often get on my nerves"), Insecure-avoidant (e.g., "I take my time getting to know people"), and Proximity-seeking (e.g., "I usually rely on advice from others when I've got a problem"). The internal consistency coefficients (Cronbach's alpha) for the Portuguese version were: Insecure-ambivalent α = .78, Insecure-avoidant α = .66, and Proximity-seeking = α .67.

In addition to the standardized measures previously described, an ad hoc questionnaire was administered to collect sociodemographic information regarding both the participants and the institutions.

Procedures

Data collection

Ethical approval was obtained from the Ethics Committee of the University of Algarve (CEUAlg Pn° 110/2023). All procedures performed in the study were in accordance with the ethical standards from the 1964 Helsinki Declaration and its later

amendments. Authors from the Portuguese version of the scales also agreed to use this measure with these youth from RCS.

Participants were recruited through a convenience sampling method. A total of 46 RCS across mainland Portugal and the autonomous regions of the Azores and Madeira were contacted via telephone and email. Each institution received comprehensive information about the study's aims and methodology and provided voluntary consent to participate. When feasible, data collection was conducted in person by the first author. In cases where logistical barriers made in-person administration impractical, questionnaires were mailed and administered by a designated institutional staff member. Written instructions were provided both during the recruitment stage and again upon delivery of the questionnaires. Throughout the process, the first author remained available to clarify doubts or provide support to staff and participants.

Eligibility criteria included being aged 12 years or older, fluency in Portuguese, and the absence of medical conditions that could compromise participation. Adolescents identified by institutional staff as having cognitive impairments were excluded. All eligible participants received clear information about the study's purpose, voluntary nature, and their right to withdraw at any time without penalty. Written informed consent was obtained from participants aged 16 and older. For those under 16, consent was secured in writing from either a legal guardian or the institution’s technical director, in accordance with ethical standards.

Data were collected using anonymous, structured self-report questionnaires administered within the RCS facilities. Additionally, RCS directors completed anonymous questionnaires capturing organizational characteristics, including religious affiliation. Data collection occurred between October 2023 and October 2024. Participants who returned incomplete questionnaires were excluded from the final sample.

Data analysis

All descriptive and inferential statistical analyses were carried out using IBM SPSS Statistics for Windows, Version 30 (IBM Corp., 2024). Incomplete questionnaires were excluded from the analyses. The significance level was set at $p \leq .05$. To test the

study's hypotheses, various analytical methods were employed, including correlation analysis and hierarchical multiple regression (enter method).

Three hierarchical linear regression analyses were conducted – one for each subscale of ER (behavioral, cognitive, and affective). In each model, sociodemographic variables (sex, age, and time living in institution) were entered in the first block as control variables. In the second block, attachment style variables were added. Finally, in the third block, the DT traits (Machiavellianism, narcissism, and psychopathy) were included. This approach allowed for the assessment of the incremental contribution of each set of predictors in explaining the different dimensions of ER.

The Durbin-Watson statistic indicated independence of residuals and no evidence of problematic collinearity.

Instead of treating age as a continuous variable, it was divided into two distinct categories to more effectively reflect potential nonlinear patterns of development and improve clarity in interpretation. This method of grouping is consistent with previous studies in developmental psychology, which often utilize age ranges to represent significant phases of maturation (e.g., early vs. late adolescence).

3. RESULTS

We examined associations between the dimensions of the Abbreviated Dysregulation Inventory (ADI), DT traits, and attachment styles by sex (Table 1). Significant sex differences emerged across all domains. Girls scored higher on most ER dimensions, all attachment styles, and the Strengths and Difficulties Questionnaire (SDQ) total score. In contrast, boys scored higher on all DT traits.

Among girls, behavioral dysregulation was strongly correlated with afective dysregulation ($r = .74$, $p < .001$) and moderately correlated with psychopathy traits ($r = .41$, $p < .001$), insecure-ambivalent attachment ($r = .41$, $p < .001$), and Machiavellianism ($r = .38$, $p < .001$). Cognitive dysregulation was positively associated with narcissism ($r = .23$, $p < .001$) and negatively associated with psychopathy ($r = –.19$, $p < .01$). Machiavellianism ($r = .51$, $p < .001$) and narcissism ($r = .19$, $p < .01$) were positively correlated with insecure-ambivalent attachment. Insecure attachment styles were generally associated with affective dysregulation. Psychological adjustment difficulties showed strong correlations with affective dysregulation ($r = .69$, $p < .001$),

behavioral dysregulation (r = .67, p < .001), and insecure-ambivalent attachment (r = .54, p < .001).

Table 1. Descriptive statistics and correlations between emotional regulation dimensions, Dark Triad traits, attachment styles, and psychological adjustment by sex (N_{girls} = 237, N_{boys} = 196).

	1	2	3	4	5	6	7	8	9	10
1. ADI_B	-	-.05	.74***	.38***	.11	.41***	.41***	.18**	.20**	.67***
2. ADI_C	-.08	-	.14*	-.10	.23***	-.19**	-.02	.10	.12	-.13*
3. ADI_A	.71***	.04	-	.41***	.16*	.49***	.48***	.30***	.18**	.69***
4. Mach	.13	.04	.13	-	.27***	.60***	.51***	.23***	.09	.43***
5. Narc	-.03	.29***	.12	.49***	-	.26***	.19**	.13*	.18**	.05
6. Psyc	.25***	-.03	.34***	.53***	.41***	-	.50***	.13*	.07	.49***
7. Ambiv	.34***	.00	.39***	.31***	.22**	.40***	-	.43***	.10	.54***
8. Avoid	.02	.20**	.23***	.23***	.28***	.19**	.36***	-	.05	.25***
9. Prox	.23***	.09	.16*	.18**	.21**	.22**	.15*	.06	-	.09
10. SDQ_T	.60***	-.17*	.64***	.10	.01	.38***	.46***	.18*	.14	-
M_{girls}	1.21	1.70	1.40	2.73	3.04	2.40	16.57	10.57	12.93	16.70
(*SD*)	(.71)	(.62)	(.72)	(.78)	(.60)	(.73)	(4.70)	(2.60)	(2.99)	(6.34)
M_{boys}	1.14	1.78	1.24	2.95	3.09	2.68	16.45	10.09	12.38	14.67
(*SD*)	(.63)	(.58)	(.69)	(.80)	(.64)	(.71)	(4.39)	(2.65)	(3.23)	(5.54)

Note. *r* values for girls on the upper-right section and boys score on the lower-left section.

ADI_B = Behavioral dysregulation, ADI_C = Cognitive dysregulation, ADI_A = Affective dysregulation, Mach = Machiavellianism, Narc = narcissism, Psyc = psychopathy, Ambiv = Insecure-ambivalent, Avoid = Insecure-avoidant, Prox = Proximity-seeking, SDQ_T = SDQ total score.

* p < .05; ** p < .01; *** p < .001

Among boys, a similar pattern emerged, with some notable differences. The correlation between behavioral and affective dysregulation remained high (r = .71, p < .001); however, the association between behavioral dysregulation and psychopathy was only moderate (r = .25, p < .001), and not significant with Machiavellianism. Cognitive dysregulation was positively associated with narcissism (r = .29, p < .001) and with insecure-avoidant attachment style (r = .20, p < .01). The relationship between Machiavellianism and psychopathy remained strong (r = .53, p < .001), and narcissism showed a stronger association with psychopathy among boys than girls (r = .41, p < .001). As observed in the female group, insecure attachment

styles were moderately correlated with each other (ambivalent–avoidant: $r = .36$, $p < .001$) and with affective dysregulation ($r = .39$, $p < .001$). Although the associations between psychological adjustment difficulties and the studied variables were slightly weaker than those found among girls, they remained strong – particularly with affective dysregulation ($r = .64$, $p < .001$), behavioral dysregulation ($r = .60$, $p < .001$), and insecure-ambivalent attachment ($r = .46$, $p < .001$).

Three hierarchical multiple regression analysis were conducted to identify predictors of behavioral, cognitive and affective dysregulation (Tables 2, 3, and 4, respectively).

Table 2. Regression analysis of behavioral dysregulation (N = 433).

	Behavioral dysregulation			
	ΔR^2	*F* change	β	*t*
Step 1: Sociodemographic variables	.02	2.73*		
Sex			-.09	-1.94
Age			-.07	-1.55
Time in institution			.07	1.49
Step 2: Attachment	.17	29.23***		
Insecure-ambivalent			.28	5.22***
Insecure-avoidant			-.02	-.42
Proximity-seeking			.16	3.70***
Step 3: Dark Triad traits	.04	7.53***		
Machiavellianism			.08	1.35
Narcissism			-.13	-2.69**
Psychopathy			.19	3.43***

* $p < .05$; ** $p < .01$; *** $p < .001$

In Step 1, sociodemographic variables – sex, age group, and time spent in the institution – were entered into the model, explaining 1.9% of the variance in behavioral dysregulation, $F(3, 429) = 2.733$, $p = .043$.

In Step 2, attachment styles were added, significantly improving the model's predictive power. Both insecure-ambivalent (β = .28, $t = 5.22$, $p < .001$) and proximity-seeking (β = .16, $t = 3.70$, $p < .001$) attachment styles emerged as strong positive

predictors, suggesting that insecure attachment is associated with greater behavioral dysregulation.

In Step 3, the inclusion of DT traits further increased the explained variance, bringing the total to 22.7%. Narcissism (β = -.13, t = -2.69, p < .01) and psychopathy (β = .19, t = 3.43, p < .001) were both significant predictors. The small but significant negative association with narcissism may suggest a potential protective effect on behavioral regulatory.

The final model was statistically significant, $F(9, 423) = 13.840$, p < .001, R^2 = .23, indicating that sociodemographic factors, attachment styles and DT traits collectively predict behavioral dysregulation, with attachment styles being the strongest contributors.

With cognitive dysregulation as the dependent variable (Table 3), the final model was statistically significant, $F(9, 423) = 9.552$, p < .001, R^2 = .17, indicating that sociodemographic variables, attachment styles, and DT traits significantly predict cognitive dysregulation. The model explained 17% of the variance, with significant improvements at each step.

Table 3. Regression analysis of cognitive dysregulation (N = 433).

	Cognitive dysregulation			
	ΔR^2	F change	β	t
Step 1: Sociodemographic variables	.03	5.05**		
Sex			.14	3.02**
Age			.07	1.44
Time in institution			-.18	-3.83***
Step 2: Attachment	.04	5.43***		
Insecure-ambivalent			-.03	-.47
Insecure-avoidant			.12	2.47*
Proximity-seeking			.08	1.76
Step 3: Dark Triad traits	.10	16.84***		
Machiavellianism			-.07	-1.25
Narcissism			.33	6.53***
Psychopathy			-.21	-3.53***

* p < .05; ** p < .01; *** p < .001

In Step 1, age (β = .14, *t* = 3.02, *p* < .01) and time spent in the institution (β = -.18, *t* = -3.83, *p* < .001) emerged as significant predictors. These results suggest that older adolescent and those with longer institutional stays tend to report better cognitive regulation strategies.

In Step 2, the insecure-avoidant attachment style was a significant predictor (β = .12, *t* = 2.47, *p* < .05), indicating an association with greater cognitive dysregulation difficulties.

In Step 3, the addition of DT traits further improved the model's explanatory power. Narcissism (β = .33, *t* = 6.53, *p* < .001) was a strong positive predictor of cognitive dysregulation, while psychopathy (β = –.21, *t* = -3.53, *p* < .001) was a significant negative predictor. This unexpected inverse association suggests that certain psychopathic traits may, in some contexts, relate to lower cognitive dysregulation.

Although sociodemographic variables explained a small portion of the variance, the inclusion of attachment styles enhanced the model considerably. The most substantial increase in explanatory power occurred with the addition of DT traits, particularly narcissism, highlighting the significant role of personality in cognitive ER difficulties.

For affective dysregulation (Table 4), the initial model including sociodemographic variables explained only 1.4% of the variance, indicating limited predictive utility. However, sex had a significant negative effect (β = –.14, *t* = -3.34, *p* < .05), suggesting that girls reported higher affective dysregulation.

In Step 2, the addition of attachment styles significantly improved the model's explanatory power. All attachment dimensions were positive predictors of affective dysregulation, indicating that greater insecurity in attachment, but also the need for proximity in relationships, are associated with more severe affective regulation difficulties.

In Step 3, the inclusion of DT traits further increased the explained variance. Among the personality traits, only psychopathy was a significant predictor (β = .29, *t* = 5.44, *p* < .001), exerting a strong positive influence on affective dysregulation.

Table 4. Regression analysis of affective dysregulation (N = 433).

	Affective dysregulation			
	ΔR^2	*F* change	β	*t*
Step 1: Sociodemographic variables	.01	1.96		
Sex			-.14	-3.34***
Age			.00	.03
Time in institution			.02	.51
Step 2: Attachment	.21	39.39***		
Insecure-ambivalent			.26	5.08***
Insecure-avoidant			.12	2.68**
Proximity-seeking			.11	2.48*
Step 3: Dark Triad traits	.06	11.58***		
Machiavellianism			-.01	-.18
Narcissism			-.05	-1.17
Psychopathy			.29	5.44***

* $p < .05$; ** $p < .01$; *** $p < .001$

The final model was statistically significant, $F(9, 423) = 18.859$, $p < .001$, $R^2 = .29$, demonstrating that sociodemographic factors, attachment styles, and DT traits collectively predict affective dysregulation, with attachment styles contributing most substantially to the model. Although the initial model lacked predictive strength, subsequent additions revealed that both attachment and personality significantly influence affective regulation in adolescents in residential care.

4. DISCUSSION

This study aimed to examine the associations between attachment styles, ER abilities, DT personality traits, and psychological adjustment among adolescents in residential care. The findings provide important insights into how these interrelated factors contribute to emotional dysregulation within this vulnerable population.

Significant sex differences emerged across all domains. Girls reported greater difficulties in ER – particularly in the affective domain – compared to boys. These results are consistent with previous research, supporting our first hypothesis. Age-related differences also aligned with developmental expectations: younger adolescents exhibited greater affective and behavioral dysregulation than older ones, while older

participants demonstrated stronger cognitive regulatory skills. This pattern is consistent with existing literature indicating that the development of executive functions during middle childhood enhances emotional awareness and regulation, and that adolescence brings increased reliance on cognitive and behavioral strategies (Park et al., 2020; Schäfer et al., 2017).

Across the three regression models analyzed, the inclusion of attachment and personality variables significantly improved the explanatory power of the models, underscoring their relevance in understanding emotional dysregulation among institutionalized adolescents. In particular, the insecure-ambivalent attachment style emerged as the strongest predictor of behavioral dysregulation, followed by proximity-seeking attachment, which contributed positively but to a lesser extent. Although sociodemographic variables accounted for only a small proportion of the variance in cognitive dysregulation, their effects were statistically significant, especially age and time spent in care.

These findings align with prior literature emphasizing the impact of attachment on emotional functioning. For instance, attachment insecurity has been consistently associated with poorer ER capacities (Shaver & Mikulincer, 2002). Avoidant attachment styles are linked to limited emotional awareness (Kim & Cicchetti, 2010), while anxious attachment may restrict access to adaptive ER strategies, thereby impeding internal psychological development (Oriol et al., 2014). Additionally, evidence suggests that deficits in emotional awareness may be stable over time (Costa et al., 2022), highlighting the enduring impact of early relational experiences.

Adolescents in RCS often perceive the world as unsafe and unpredictable (Kim & Cicchetti, 2010), making secure attachment relationships especially critical for their emotional development (Kim & Cicchetti, 2010; Mota & Matos, 2015). Secure relationships may offer a foundation for acquiring and refining self-regulatory abilities, leading to better psychological adjustment. However, given the typically adverse emotional backgrounds of adolescents in RCS, and the lack of consistent, sensitive caregiving, many faced limited opportunities to develop effective ER strategies. This underscores the need for targeted interventions that foster secure attachments and promote regulatory skill-building within institutional contexts.

Effective ER is essential for fostering adaptive behaviors and preventing maladaptive outcomes (Kim & Cicchetti, 2010). It involves deploying various strategies depending on contextual demands (Lougheed & Hollenstein, 2012). From a contextual perspective, ER emerges from dynamic interactions between individual traits, goals, need and environmental factors. Importantly, deficits in ER have been consistently linked to internalizing problems (Lougheed & Hollenstein, 2012). The present findings align with this view, showing that difficulties in ER – particularly affective dysregulation – are strongly correlated with internalizing symptoms, as assessed by the SDQ.

In the behavioral and affective domains, psychopathy emerged as a robust positive predictor of dysregulation, whereas narcissism showed a negative association with behavioral dysregulation. While this may seem counterintuitive, it could reflect the influence of self-enhancing or socially conforming tendencies associated with narcissism, which may act as a buffer against overt behavioral dysregulation. Prior research has identified psychopathy as a stronger predictor of delinquency, externalizing behaviors, and low self-control, compared to narcissism (Pechorro et al., 2022). Although Frick and Morris (2004) suggested that psychopathic traits may not be directly linked to deficits in self-regulation, our findings contradict this assumption – psychopathy emerged as the most consistent personality-based predictor of ER across all models.

It is also important to consider the multifaceted nature of narcissism. Certain aspects of narcissism, such as self-confidence and assertiveness, may facilitate socially desirable behavior and prosocial engagement. In the current study, this was particularly evident among girls, where narcissism was positively correlated with prosocial behavior, potentially accounting for its weaker predictive value in models of dysregulation.

Moderate correlations observed between DT traits and ER difficulties in both sexes support our second hypothesis. Among female participants, Machiavellianism and psychopathy were significantly associated with behavioral dysregulation, and affective dysregulation was positively correlated with all three DT traits. Cognitive dysregulation, conversely, was negatively associated with Machiavellianism and psychopathy. Among males, psychopathy was consistently linked to both behavioral and affective dysregulation, while narcissism was uniquely associated with cognitive

regulation. These sex-specific patterns reinforce our third hypothesis and underscore the differential impact of personality traits on distinct dimensions of ER.

Machiavellianism, psychopathy, and narcissism were significantly and positively intercorrelated across both sexes, confirming prior findings that these traits overlap in youth (Muris et al., 2013, 2017). The overall pattern of correlations was largely convergent across sex and age groups, reinforcing the centrality of emotional dysregulation in this network of psychological variables. However, notable differences emerged between groups. Among girls, psychopathy was the only trait associated with all three dimensions of emotional dysregulation. Interestingly, psychopathy showed a negative relationship with cognitive dysregulation across both sexes, possibly indicating that certain cognitive strategies may coexist with emotional coldness or manipulativeness.

Furthermore, the relationship between narcissism and psychopathy was significantly stronger among boys, and only in girls was behavioral dysregulation significantly associated with Machiavellianism. These distinctions highlight sex-specific pathways through which personality traits may influence emotional processes, aligning with previous research showing a strong link between DT traits and emotional dysregulation as measured by the ADI (Lau & Marsee, 2013). Among girls, the strength and consistency of correlations across all emotional dysregulation dimensions point toward a more cohesive cluster of self-regulatory impairments.

Consistent with Lau and Marsee (2013), Machiavellianism did not significantly account for variance in any of the emotional dysregulation domains. The observed association between narcissism and behavioral dysregulation among girls mirrors findings from earlier studies (Marsee & Frick, 2007), supporting the notion that adolescents high in narcissism often experience intense emotions such as anger or anxiety and struggle with emotional control (Lau et al., 2011). Moreover, both narcissism and Machiavellianism have previously been linked to aggression and externalizing behaviors (Jones & Paulhus, 2010; Klimstra et al., 2014), further supporting the present findings.

The strong correlations observed between DT traits and insecure attachment styles also warrant attention. In line with previous research, it can be assumed that disruptions in caregiving – such as placement in residential care – may constitute a

significant source of stress and negative experience for adolescents. Nonetheless, it is important to acknowledge that changes in caregiving environments can also provide opportunities for improved care, especially when institutional settings offer greater consistency, structure, or emotional safety. Still, how adolescents perceive and respond to these changes may be influenced by underlying personality characteristics. The present study found that adolescents with insecure attachment styles – particularly ambivalent and avoidant – exhibited higher levels of DT traits, with these associations being especially pronounced among girls. Furthermore, insecure attachment styles were associated with increased affective dysregulation, supporting the fourth hypothesis. Notably, avoidant attachment showed a specific link to deficits in cognitive ER strategies among boys, suggesting sex-specific pathways through which attachment dynamics influence regulatory capacities.

Both psychopathy and narcissism emerged as significant predictors of behavioral and cognitive dysregulation, reinforcing the idea that these traits may involve heightened reactivity to stress, characterized by intense emotional outbursts such as anger or rage. However, adolescents with higher levels of narcissism appeared to possess a comparatively greater ability to modulate their behavior and cognitive strategies in stressful contexts, perhaps due to greater investment in self-image regulation and social control.

Consistent with findings from Costa et al. (2022), gender significantly affected ER, with girls reporting greater difficulties in both behavioral and affective domains. While earlier studies have primarily emphasized the role of avoidant attachment in ER deficits (Costa et al., 2022; Muzi & Pace, 2022), the current results underscore that all three attachment styles are meaningfully related to different dimensions of ER. These findings support prior research highlighting the role of attachment relationships in emotional dysregulation (Malik et al., 2015).

Although adolescents in RCS may struggle to establish close and supportive bonds – particularly due to histories of neglect or rejection – our findings suggest that perceived emotional availability and proximity from caregivers may serve as a protective factor. Within the framework of attachment theory, the emotional closeness and reliability of caregiving figures support the development of adolescents' socioemotional competencies and ER strategies (Bowlby, 1977). These results highlight

the potential buffering role of secure relationships in promoting psychosocial adjustment among youth in RCS.

The construct of attachment becomes particularly complex when applied to institutionalized youth. Many children raised in institutional settings lack sustained and consistent contact with primary caregivers, making the development of secure, emotionally supportive attachments difficult. Disorganized attachment patterns among adolescents in residential care – conceptualized as a combination of avoidant and proximity-seeking styles – are strongly associated with adverse mental health outcomes (Bifulco et al., 2016). These findings highlight the critical need for longitudinal research to determine whether attachment-related disturbances stem from early-life neglect, abuse, multiple separations, unstable caregiving arrangements, or biological predispositions.

Further supporting this complexity, Lionetti et al. (2015), found that the attachment distribution among institutionalized youth predominantly follows secure, insecure, and disorganized classifications, with Eastern European countries tending toward higher rates of insecure patterns. The present study aligns with this trend, with insecure-ambivalent attachment style emerging as particularly prominent in our Portuguese sample. This finding underlines the pressing need for institutional care settings to prioritize caregiver sensitivity and attachment-informed practices. When institutions provide consistent caregiving, offer staff training, teach adaptive ER strategies, and monitor maladaptive traits such as those associated with the DT, it becomes plausible to foster positive shifts in attachment security. In fact, as shown by Joseph et al. (2014), adolescents placed in foster care often demonstrate potential for developing secure attachment bonds over time, indicating that positive relational experiences can still have developmental impact during adolescence.

Our findings also confirmed the proposed fifth hypothesis: significant associations were observed between emotional dysregulation domains and SDQ total score. These associations were more pronounced among girls, aligning with previous research linking emotional dysregulation to aggression in detained female adolescents (Marsee & Frick, 2007). Such results underscore the importance of tailoring intervention strategies to address both sex-specific and transdiagnostic pathways, particularly for youth in high-risk environments like residential care. In terms of

psychological adjustment more broadly, the literature typically associates boys with higher levels of externalizing behaviors and girls with greater internalizing symptoms. However, studies conducted in juvenile detention contexts reveal a different pattern: girls tend to report higher levels of mental health problems compared to boys (Teplin et al., 2002). This highlights the need to account for sex-specific expressions of psychological maladjustment, especially within institutionalized settings. Furthermore, factors related to social desirability must also be considered, as boys in Western societies are often discouraged from expressing psychological vulnerability and from displaying emotions or traits culturally associated with girls, such as empathy (Nordin et al., 2024).

ER refers to the strategies individuals employ to influence the experience and expression of emotions to enhance adaptive functioning (Gross, 2015). Considering the interpersonal and affective characteristics associated with DT traits – such as manipulation, self-centeredness, and a lack of empathy – it may be that individuals high in these traits must exert greater effort to maintain a coherent and socially acceptable self-image. This ongoing effort may contribute to the observed moderate correlations between DT traits and difficulties in ER, reflecting a general lack of effective regulatory strategies. Supporting this, Lemos et al. (2021) found that, among children in institutional care, empathy was inversely correlated with psychological distress, suggesting that deficits in empathy may play a central role in emotional maladjustment.

Psychopathic traits were significantly correlated with affective and behavioral dysregulation. These associations are consistent with prior research suggesting that youth exhibiting psychopathic traits tend to be behaviorally impulsive and more prone to engaging in a wide spectrum of aggressive and antisocial behaviors (Marsee & Frick, 2007). In support of this, Vaughn et al. (2008) found that psychopathic traits among juvenile female offenders predicted violent behavior.

Overall, most significant correlations were consistent across sex and age groups, underscoring the robustness of the relationship between emotional dysregulation, DT traits, and psychological adjustment. This supports prior research highlighting the role of maladaptive personality traits in the development of adjustment problems in youth (Kim & Cicchetti, 2010; Lau et al., 2011).

Finally, cognitive dysregulation was negatively associated with SDQ total score. Cognitive regulation – referring to the capacity to plan, anticipate consequences, and flexibly adapt to changing situations – may serve as a protective factor. Moreover, the understanding among many youths that improvements in their protective measure status may depend on behavioral changes can act as a motivator for self-regulation.

Limitations and implications for practice

Despite offering meaningful contributions, this study has several limitations that should be considered. First, due to its cross-sectional design it is not possible to determine the directionality or causality of the observed relationships. Longitudinal research is necessary to explore the temporal dynamics among attachment styles, personality traits, ER, and behavioral outcomes. Second, the constructs of attachment and personality are influenced by a variety of environmental factors, making it challenging to isolate the direction of influence between them. This complexity difficult the interpretation of causal relationships. Third, data collection was carried out within institutional settings, which may have influenced participants' responses due to concerns about social desirability or institutional oversight. Additionally, the exclusive reliance on self-report measures raises the possibility of shared method variance. Incorporating data from multiple informants and external sources would provide a more comprehensive and objective assessment of the variables. National data indicates that approximately 25% of adolescents entering Portuguese residential care institutions do so due to behavioral issues (ISS, 2024). Therefore, while the findings are relevant, they should be interpreted with caution when generalized to broader at-risk youth populations.

This study offers relevant practical implications, particularly concerning the importance of fostering nurturing bonds between caregivers and adolescents in residential care. The findings underscore the significance of relationship quality as a critical factor in modifying maladaptive attachment patterns and creating an emotional climate conducive to positive developmental outcomes, including emotional growth and effective regulation. To this end, it is essential to design and implement structured intervention programs aimed at training caregivers with the interpersonal and emotional competencies required to engage meaningfully with at-risk youth. It is

crucial to provide caregivers with formal training and ongoing supervision that equips them to build emotionally supportive, responsive, and secure relationships with adolescents. Such relationships can help adolescents perceive a sense of safety and nurturance, fostering the development of adaptive ER strategies, reducing emotional dysregulation or outbursts, and significantly improve youths' socio-emotional development and well-being.

Furthermore, interventions targeting adolescents should be tailored to individual psychological profiles, particularly in the presence of dark personality traits. Personalized approaches may increase effectiveness by addressing specific deficits in ER and behavioral self-control. Intervention strategies should prioritize the development of social problem-solving abilities, coping mechanisms for managing negative feedback or perceived threats to self-image, and anger management skills. Reducing the emotional impact of DT traits is essential to improving outcomes for these youth.

From a broader perspective, improving the quality of care in residential contexts should be a priority for researchers, practitioners, and policymakers alike. Strengthening the caregiving environment can play a pivotal role in promoting secure attachments, enhancing ER, and mitigating the long-term adverse effects associated with maladaptive personality traits. While adolescents in RCS are inherently more vulnerable to insecure attachment and emotional dysregulation, consistent and emotionally attuned caregiving within these environments can serve as a protective factor.

5. CONCLUSION

This study contributes to a growing body of literature examining the complex interplay between attachment styles, ER, DT personality traits, and psychological adjustment in adolescents living in residential care. The findings highlight the critical role of attachment styles in predicting difficulties across behavioral, cognitive, and affective regulation domains. Moreover, specific personality traits such as psychopathy and narcissism emerged as significant contributors, with psychopathy consistently associated with poorer ER outcomes, while narcissism showed a more complex and, at times, protective pattern.

Girls and younger participants reported more ER difficulties than boys. While sociodemographic factors played a minimal role, the extended time spent in residential care appeared to support cognitive regulatory development, suggesting that stability and structure within institutions may buffer some emotional vulnerabilities. However, the persistent presence of emotional and behavioral difficulties among these adolescents underscores the pressing need for targeted interventions.

The findings have practical implications for psychological assessment and intervention within RCS. The results emphasize the importance of creating emotionally responsive and consistent caregiving environments, fostering secure attachments, and addressing maladaptive personality traits early. Tailored therapeutic strategies that integrate ER training, attachment-based interventions, and personality-informed approaches could improve psychological adjustment and reduce risk behaviors such as delinquency and substance use. These findings can inform both clinical practice and policy in supporting the developmental needs of institutionalized youth.

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ARTICLE 7 | Psychological profile of adolescents living in residential care: implications for evidence-based interventions

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Psychological profile of adolescents living in residential care: implications for evidence-based interventions

ABSTRACT

Psychological adjustment in adolescents living in residential care settings is a multidetermined process. This study explores the psychological adjustment of adolescents living in residential care, aiming to identify distinct psychosocial profiles. The sample comprised 433 adolescents (196 boys and 237 girls), aged 12 to 18 years, from 46 Portuguese institutions. Participants self-reported on key variables, including social support, coping strategies, emotion regulation, Dark Triad traits, attachment, and institutional integration. Hierarchical cluster analysis revealed three theoretically coherent profiles, differentiated by number of close friends, duration of institutionalization, substance use, and psychiatric medication. These profiles reflect varying levels of psychological, emotional, behavioral, and social adjustment and align with international literature. This study offers a novel contribution by identifying specific adjustment patterns among adolescents in care, providing valuable insights to inform more tailored intervention and prevention strategies aimed at fostering healthier development and well-being in this vulnerable group.

Keywords: Adolescents; Cluster analysis; Psychological adjustment; Psychological profile; Residential care

1. INTRODUCTION

Adolescence is a period of significant biological, psychological, and social transformations, which contribute to increased vulnerability to psychological adjustment problems (Arnett, 1999; Babicka-Wirkus et al., 2023; Dahl, 2001). During mid-adolescence, there is an increase in symptoms of anxiety and depression, with girls being particularly prone to internalizing problems during this developmental stage. Emotions experiences become more intense, highlighting the critical role of emotion regulation in socio-emotional development (Dahl, 2001).

Families characterized by harmful relational dynamics can significantly compromise children's mental, physical, and social well-being both in the short term and long term. Experiences marked by anger, neglect, or emotional disengagement are associated with a range of psychological and physical health problems that often persist into adulthood (Taylor, 2011). Exposure to psychosocial stressors and chronic adversity has been shown to predict higher levels of internalizing and externalizing symptoms throughout childhood and adolescence. These outcomes are influenced by proximal factors, including individual's coping strategies and capacity for emotional regulation in response to distressing experiences (Grant et al., 2004).

Youth in residential care settings (RCS) are at heightened risk for mental health issues, such as depression, anxiety, and posttraumatic stress disorder symptoms. These difficulties are often intensified by prior experiences of child abuse, neglect, and the trauma associated with separation from their families and subsequent placements. In Portugal, most children and adolescents separated from their biological families are placed in residential care institutions; as of 2023, over 5,400 were living in such settings (Instituto da Segurança Social [ISS], 2024).

Determinants of psychological adjustment of adolescents living in RCS

Over the past several decades, the number of children entering child welfare systems has increased significantly worldwide. Adolescents in RCS often face stress associated to institutional routines and demands, which may further elevate their vulnerability to mental health problems. Research shows that psychological distress during adolescence can have long-term consequences, negatively affecting both physical and mental health in later adulthood. Moreover, specific individual and contextual factors play a significant role in shaping the adjustment trajectories of these youth (Simão et al., 2025).

Research on adolescents in RCS consistently indicates the presence of gender and age differences in emotional and behavioral problems, as well as in overall functioning, which is generally lower compared to normative populations (e.g., Moreno-Manso et al., 2021). Girls tend to exhibit higher levels of internalizing symptoms, such as anxiety and depression, whereas boys more frequently report externalizing behaviors, including aggression and rule-breaking (e.g., Cotton et al., 2020).

Findings regarding the impact of time spent in residential care on youth development remain mixed. Some studies suggest that extended stays in residential care can negatively influence development (e.g., Dell'Aglio & Hutz, 2004; Mota et al., 2016; Ringle et al., 2010). For example, Mota et al. (2016) revealed a link between boys' externalizing behaviors and the duration of their institutionalization. In contrast, other research showed that prolonged placements may be associated with fewer adjustment difficulties (e.g., Hoffnung Assouline & Attar-Schwartz, 2020) and greater opportunities to develop meaningful emotional bonds with caregivers (Fernandes & Oliveira-Monteiro, 2016). Additionally, placement instability has been consistently associated with increased risk of mental and behavioral problems (McGuire et al., 2018).

Social support is widely recognized as a critical resource for coping with stress and is essential for psychological health (Drageset, 2021), especially in reducing both internalizing and externalizing symptoms. In the context of residential care, social support has been shown to serve a protective function. For instance, Erol et al. (2010) found that adolescents who perceived strong support and maintain positive relationships with family and peers exhibit better mental health outcomes.

The ability to cope with stress and regulate emotions can greatly contribute to reduce the likelihood of developing psychopathology during childhood and adolescence (Compas et al., 2017). Coping refers to strategies aimed at alleviating stress responses over time, while emotion regulation (ER) involves managing the type, timing, and expression of emotional experiences (Gross, 2015). In a meta-analysis, Compas et al. (2017) found that both adaptive coping and effective ER were significantly correlated with lower levels of psychopathology. Specifically, approach-oriented coping strategies were inversely related to psychological distress, with greater use linked to fewer symptoms. Conversely, poor or insufficient ER has been identified as a risk factor for a range of psychological difficulties (Fernández-García et al., 2023; Lougheed & Hollenstein, 2012). Research also shows that ER strategies are differently associated with levels of psychopathology and can predict various negative outcomes (Gross, 2015). In studies involving maltreated children, deficits in ER have been linked to aggressive and disruptive behaviors, suggesting that limited opportunities to learn

adaptative emotional responses – often due to inadequate primary caregiving – may underlie these difficulties (Kim & Cicchetti, 2010: Paulus et al., 2021).

Studies on adolescence suggest that ER may serve as a key mechanism for underlying individual and developmental differences in socioemotional functioning (e.g., Dahl, 2001; Schäfer et al., 2017). Relying on a very restricted repertoire of ER strategies has been associated with greater vulnerability to internalizing problems (Lougheed & Hollenstein, 2012). Indeed, individuals who report fewer ER strategies tend to exhibit higher levels of emotional distress. Compas et al. (2017) found that age significantly moderated the relationship between specific ER strategies – such as cognitive reappraisal and emotional suppression – and internalizing symptoms, suggesting developmental changes in how these strategies are used and their effectiveness. Additionally, gender differences have been observed, with evidence indicating variation in ER skills between boys and girls (e.g., Campos et al., 2019; Fernández-García et al., 2023).

A substantial body of research has stablished strong links between adolescents' attachment and their psychosocial functioning (Allen et al., 1998; Flykt et al., 2021). Family relationships are central to children's adjustment across contexts (Shirley, 1942), with secure attachment associated with greater sociability and more effective social interactions compared to disorganized attachment styles (Bakermans-Kranenburg et al., 2011). In particular, disorganized or insecure attachment is consistently linked to increased externalizing behaviors, a pattern especially evident among boys in at-risk environments, such as those experiencing unresponsive parenting or live in alternative care (The St. Petersburg-USA Orphanage Research Team, 2008). Disorganized attachment in infancy reflects ineffective strategies for coping with stress and has been shown to predict later social-relational disorders, including both externalizing and internalizing symptoms (Lyons-Ruth & Jacobvitz, 1999). Among adolescents in RCS, the formation of emotionally supportive relationships and secure attachments with caregivers can promote the development of positive internal working models. These secure relational bonds are essential for meeting psychological needs and are foundational to the development of effective ER strategies (Mota et al., 2024).

Considering the unique context of Out-of-Home care, particularly in RCS, the literature could be significantly expanded by examining the presence and implications

of Dark Triad personality traits within this specific population. Paulhus and Williams (2002) coined the term 'Dark Triad' (DT) to characterize a group of personalities with socially aversive traits – Machiavellianism, narcissism, and psychopathy – each of which may encompass both adaptive and maladaptive characteristics. Although these traits are conceptually distinct, their frequent co-occurrence suggests the existence of a subgroup exhibiting high levels of all three traits (Furnham et al., 2013). Research by Hu and Lan (2022) has shown that DT characteristics are generally associated with negative psychosocial outcomes. However, additional research has emphasized potentially adaptative effects of these traits, depending on context (e.g., Szabó et al., 2022). While a growing body of research has highlighted the important role of DT in understanding delinquent and antisocial behavior (e.g., Lau & Marsee, 2013; Pechorro et al., 2022a, 2022b), other studies argue that these traits do not play a significant role in explaining such negative behaviors (e.g., Velimirovic et al., 2022). Furthermore, Bonfá-Araujo et al. (2020) found that the expression and emotional correlated of these traits vary by gender, with important implications for their interpretation and impact on maladaptive outcomes.

Current study

Psychological adjustment in young people in RCS is a multidetermined process (Simão et al., 2025). Adolescents living in RCS frequently experience developmental difficulties across multiple domains. Therefore, it is expected that other factors beyond the residential environment itself contribute to these disparities (van IJzendoorn et al., 2011). Sijtsema et al. (2019) suggests that although many developmental changes are typical of adolescence, some variations may be enhanced by the alternative care context, highlighting the role of contextual influences on adolescents' development. Consistently, a systematic review by Hambrick et al., (2016) reported that 50% to 80% of children in care present significant emotional, behavioral, relational, and interpersonal problems. The present study aims to explore the patterns observed in the Portuguese context and to identify which factors are associated with a more favourable psychological adjustment among youth in residential care.

Few studies have simultaneously examined the developmental trajectories of coping strategies, emotion regulation, and psychopathology symptoms. When exploring developmental variations, research emphasises key transitional process –

such as increased reliance on peers for social support, and the maturation of metacognitive and executive function abilities – which form the basis for more advanced cognitive coping and ER techniques (Compas et al., 2017). Nonetheless, concerning adolescents in residential care, it is crucial to recognize whether these patterns differ. Collectivist settings, such as institutional care, often emphasize group dynamics over individual needs, which may result in smaller variations in DT traits compared to adolescents raised in more individualistic environments. Investigating the natural combinations of DT traits within this populations may reveal group-specific associations between malevolent personality characteristics and psychological adjustment (Hu & Lan, 2022).

We intend to examine how different psychosocial profiles diverge in terms of mental health indicators and related variables. Expanding the literature in this field is not only theoretically important for advancing a model of mental health within the DT framework but also practically beneficial for identifying at-risk youth more effectively. Such insights can enhance the development of targeted intervention and prevention strategies tailored to the specific needs of adolescents living in RCS.

This study aims to offer an innovative contribution to the field, as, to the best of our knowledge, no previous research has examined adolescents in residential care by analysing these specific set of variables to develop a comprehensive profile of this at-risk population. Grounded in existing literature, the present study has the following objectives: 1) to identify distinct profiles of youth in residential care settings based on psychosocial, behavioral, and relational characteristics; 2) to explore differences between the identified groups in terms of risk and protective factors; 3) to examine levels of institutional integration, attachment styles, coping strategies, and emotion regulation as potential distinguishing elements among the identified profiles; 4) to assess the presence of behavioral and relational patterns that may influence adolescents' adaptation within the institutional context.

2. METHOD

Participants

The sample comprised 433 adolescents, including 196 boys (45.3%) and 237 girls (54.7%), aged between 12 and 18 years (M = 15.33, SD = 1.74), residing in 46 RCS

across Portugal. This age group (12–17 years) is the most represented among children and adolescents in residential care nationwide (ISS, 2024).

On average, participants reported had living in their current institution for 34 months (*SD* = 37.00; range = 1–204 months), with some experiencing multiple placements (range = 0–8 different institutions). Approximately 32% were living with at least one sibling in the same institution. Beyond school attendance, 51% of the adolescents engaged in extracurricular activities such as sports, music, and scouting. Regarding educational attainment, 45.7% of the participants had completed the 9th grade.

Parents' educational levels were generally low: 21% of mothers and 15% of fathers had completed the 9th grade, while 36% of mothers and 34% of fathers had completed only lower secondary education (6th grade) or less. Family contact varied, with 48% reporting frequent contact with family members, while 40% reported no contact at all. The most frequently identified reasons for placement in care included school absenteeism (33%), financial hardship (28%), exposure to domestic violence (26%), neglect (19%), physical or emotional maltreatment (19%), and sexual abuse (7%).

In terms of psychological and psychiatric support, 63% of the participants were receiving psychological counselling, and 32% were taking psychiatric medication at the time of data collection. Regarding institutional typology, 37% of adolescents resided in all-girls institutions, 34% in mixed-gender institutions, and 29% in all-boys institutions. Most institutions (64%) followed a religious orientation, and 89% were subject to external supervision.

Measures

Abbreviated Dysregulation Inventory (ADI, Mezzich et al., 2001; Portuguese version by da Motta et al., 2018)

The ADI is a 30-item self-report questionnaire designed to assess affective (e.g. “I lose sleep because I worry”), behavioral (e.g., “I spend money without thinking about it first”), and cognitive dysregulation (e.g., “I think about the future consequences of my actions”) in adolescents. Each subscale comprises 10 items, and participants respond using a 4-point Likert scale. The validation study found good

psychometric properties and adequate consistency values, with Cronbach's alpha values of. 84 for emotional dysregulation, .86 for behavioral dysregulation, and .85 for cognitive dysregulation. In the present study, internal consistency was also adequate, 0.88, 0.87, and 0.85, respectively.

Brief COPE (Carver, 1997; Portuguese version by Nunes et al., 2021)

Brief COPE (Carver, 1997) is a reduced version of the original COPE to assess individual's coping strategies in a stressful situation. This self-report questionnaire is comprised of 14 subscales with 2 items each. Responses are provided on a 4-point scale (from 0 = "I never do this" to 3 = "I do it almost all the time"), with higher scores indicating greater levels on the respective dimension. For the present study, coping strategies were grouped into three dimensions, namely: problem-focused (i.e., active coping, planning, using instrumental support), emotion-focused (i.e., acceptance, humour, religion, using emotional support, positive reframing, expression of feelings), and avoidance-oriented (self-blame, self-distraction, denial, substance use, behavioral disengagement). Cronbach's alphas of the original version (Carver, 1997) were between .50 and .90, indicating good internal reliability. In the Portuguese adaptation from Nunes et al. (2021), the levels of varied between .37 and .88. In the present study internal consistency values were: problem-focused α = .79, emotion-focused α = .78, and avoidance-oriented α = .78.

Positive Residential Care Integration scale (PRCI, Simão et al., manuscript submitted for publication)

PRCI is a 6-items self-report questionnaire adapted from the Positive Home Integration scale (PHI; Kothari et al., 2018) for the Portuguese population (Simão et al., manuscript submitted for publication). It aims to capture the perspectives and experiences of adolescents in residential care, focused on their perceived relationships with caregivers and important adults (e.g., "To what extent/how much do you feel included in the institution?"). The scale assesses youth's perspectives of RCS integration – defined as their sense of belonging, the quality of their relationships with professionals working, and the extent to which their needs are acknowledged and met within the institution. The answers are provided on a 10-point scale, ranging from 1 ("Not at all included") to 10 ("Very included"). Lower scores (typically between 1 and 4)

are indicative of poor outcomes in domains such as mental health. The scale demonstrated good internal consistency, with a Cronbach's alpha of 0.88.

Scale of Satisfaction with Social Support for children and adolescents (Gaspar et al., 2009)

The Scale of Satisfaction with Social Support for children and adolescents (Gaspar et al., 2009) measures satisfaction with social support, a key dimension in the cognitive and emotional processes linked to well-being and quality of life. This self-report questionnaire consists of 12 items divided into two dimensions: one positive dimension – Satisfaction with social support (SSS, includes 7 items: e.g., "I am satisfied with the number of friends I have") – and a negative dimension - Need for activities related to social support (NASS, comprising 5 items: e.g., "I miss having social activities that are fulfilling for me"). Responses are given on a 5-point Likert scale ranging from 1 "Strongly disagree" to 5 "Strongly agree". Following the authors' recommendation, item 5 was excluded from the analysis. Cronbach's alpha in the original version was .84 for the SSS dimension and .69 for the NASS dimension, and the one found in the present study were: SSS α = .70, NASS α = .69.

Short Dark Triad (SD3, Jones & Paulhus, 2014; Portuguese version by Pechorro et al., 2018)

The Portuguese version assesses the DT traits with 21 items divided into three subscales: Machiavellianism (e.g., "It's not wise to tell your secrets"), narcissism (e.g., "I know that I am special because everyone keeps telling me so"), and psychopathy (e.g., "Payback needs to be quick and nasty"). Participants rate their agreement on a 5-point Likert scale, with higher scores reflecting greater DT traits. Cronbach's alpha in the original version was above .80 and the one found in the present study were: Machiavellianism α = .78, narcissism α = .58, and psychopathy α =.69.

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report measure to evaluate socio-emotional functioning through a three-point Likert scale. Items are grouped into five subscales: emotional problems (e.g., "I am nervous in new situations. I easily lose confidence"), behavioral problems (e.g., "I am often accused of lying or cheating"), hyperactivity/inattention difficulties (e.g., "I am easily distracted, I find it difficult to

concentrate"), peer relationship problems (e.g., "I have one good friend or more"), and prosocial behaviors (e.g., "I am helpful if someone is hurt, upset or feeling ill") and a total difficulties score assesses the overall child's mental health (Goodman, 1997). The Portuguese adaptation (Pechorro et al., 2011) showed Cronbach's alphas between 0.43 and 0.61. For the present study, reliability values obtained were: emotional problems α = .68, behavioral problems α = .57, hyperactivity/inattention difficulties α = .66, peer relationship problems α = .51, prosocial behaviors α = .78, and total scale α = .78.

Vulnerable Attachment Style Questionnaire (VASQ, Bifulco et al., 2003; Portuguese version by Simão et al., manuscript submitted for publication)

The VASQ is a brief self-reporting instrument developed to assess adult attachment styles as a vulnerability factor for depression. The original version comprises 22 items that evaluate behaviors, emotions, and attitudes toward attachment (Bifulco et al., 2003). The Portuguese version of the VASQ (Simão et al., manuscript submitted for publication) includes 14 items and yields a total score for vulnerable attachment, along with three subscales: Insecure-ambivalent (e.g., I feel people are against me"), Insecure-avoidant (e.g., "I find it difficult to confide in people"), and Proximity-seeking (e.g., "I rely on others to help me make decisions") attachment styles. Participants rate items on a 5-point Likert scale based on how they generally feel rather than their current emotional state, and higher scores indicate greater levels on the respective dimension. Cronbach's alphas in the Portuguese version were: Insecure-ambivalent α = .78, Insecure-avoidant α = .66, and Proximity-seeking = α .67.

An additional *ad-hoc* questionnaire collected participants' sociodemographic data.

Procedures

Data collection

Ethical approval for this study was granted by the Ethics Committee of the University of Algarve (CEUAlg No. 110/2023). All procedures complied with the ethical standards outlined in the 1964 Declaration of Helsinki and its subsequent amendments. Permission to use the Portuguese versions of the instruments was obtained from the original authors.

A convenience sampling method was employed to recruit participants. A total of 46 RCS from mainland Portugal and the archipelagos of the Azores and Madeira were invited to participate via telephone and email. Each institution received detailed information regarding the study's purpose and procedures and voluntarily agreed to participate. Whenever feasible, data collection was carried out in person by the first author. In cases where geographic constraints made this impossible, the questionnaires were mailed and administered by a designated staff member within the institution. Clear written instructions were provided during both the approval phase and again at the time of questionnaire delivery. Throughout the process, the first author remained available to respond to any questions from staff or participants.

Participants were eligible for inclusion if they were 12 years of age or older, fluent in Portuguese, and did not present any medical conditions that could interfere with their participation. Adolescents identified by institutional staff as having cognitive impairments were excluded. All eligible participants were informed about the study's objectives and their voluntary participation, the voluntary nature of their participation, and their right to withdraw at any time without any negative consequences. Written informed consent was obtained from participants aged 16 or older. For those under the age of 16, written consent was obtained either from a legal guardian or the institution's technical director, in accordance with ethical guidelines.

Data were collected using anonymous, structured self-report questionnaires administered within the residential care institutions. In addition, the directors of each RCS completed separate anonymous questionnaires providing institutional data, including organizational and religious affiliation. Data collection occurred between October 2023 and October 2024. Participants who submitted incomplete responses were excluded from the final sample.

Analysis plan

To identify patterns and group similarities within the dataset, a hierarchical cluster analysis was conducted using IBM SPSS Statistics version 30.0 (IBM Corp., 2024). Prior to the analysis, all continuous variables were standardized (*z*-scores) to ensure comparability and eliminate the influence of different measurement scales (Hair et al., 2019). The clustering procedure employed the agglomerative hierarchical method, specifically Ward's method, which minimizes the total within-cluster variance (Ward,

1963). Squared Euclidean distance was used as the dissimilarity measure, which is appropriate for metric data and commonly recommended for use with Ward's method (Everitt et al., 2011). To determine the optimal number of clusters, both the dendrogram and the agglomeration schedule were examined, focusing on significant increases in the coefficients of the agglomeration schedule, which typically suggest the appropriate number of clusters (Fonseca, 2013). The final solution was chosen based on a combination of statistical indicators and theoretical interpretability.

Following cluster formation, a one-way analysis of variance (ANOVA) was conducted to assess statistically significant differences between clusters across the continuous variables. Where the ANOVA revealed significant effects ($p \leq .05$), *post-hoc* comparisons were performed using Tukey's HSD test, which controls for Type I error in multiple comparisons (Field, 2024). For categorical variables, chi-square tests of independence were employed to examine associations between clusters and categorical attributes. Where significant associations were found, a *post-hoc* analysis of standardized residuals was carried out to identify which specific variables contributed to the overall significance (Sharpe, 2015). This comprehensive analytical approach allowed for a robust identification and interpretation of cluster profiles, supported by statistical validation of intergroup differences.

Each cluster was analysed in terms of psychological domains using descriptive statistics (e.g., means, standard deviations, minimum and maximum values). For categorical variables frequencies (*f*) were analysed and *p*-values from chi-squared tests are reported. For continuous variables, means and significance levels from mean comparisons are presented.

3. RESULTS

Cluster analysis was conducted to examine the extent to which adolescents in residential care grouped together based on selected psychological variables, including Dark Triad personality traits, coping strategies, social support, emotion regulation, and psychological adjustment.

During the exploratory phase, the *k*-means clustering procedure was applied to test two-, three- and four-cluster solutions. The three-cluster solution emerged as the best fit, as it accounted for the greatest proportion of variance in the clustering

variables and best aligned with theoretical expectations. The optimal number of clusters was also supported by dendrogram inspection (Figure 1).

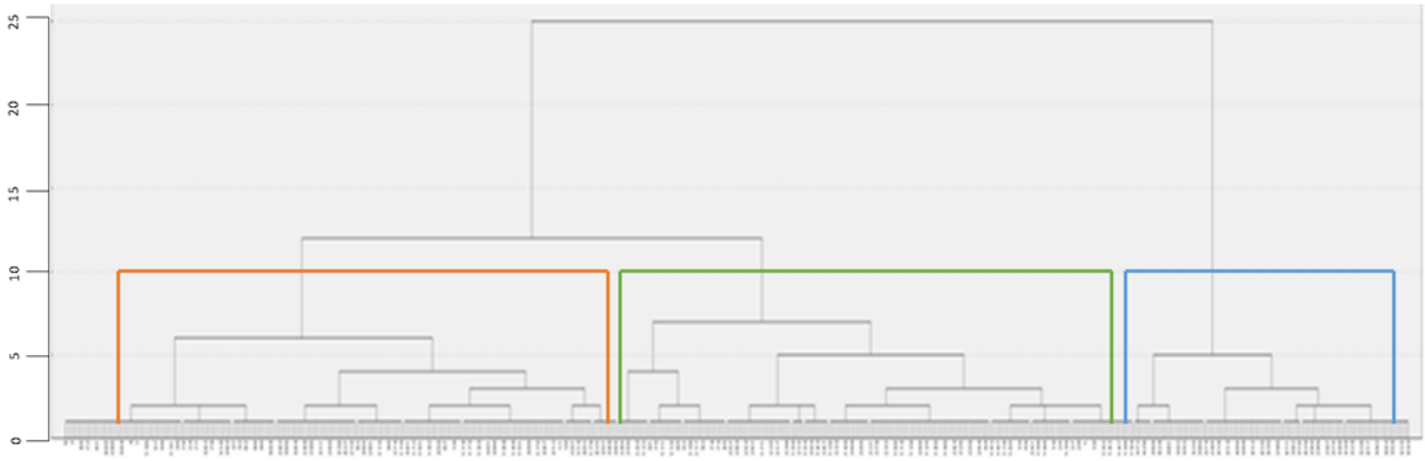

Figure 1. *Dendrogram with the three-cluster solution*

The *k*-means algorithm was applied to 15 continuous variables (*z*-scores), ensuring comparability across different measurement scales. The three-cluster solution is presented graphically in Figure 2, with cluster-specific means for psychological variables reported in Table 1.

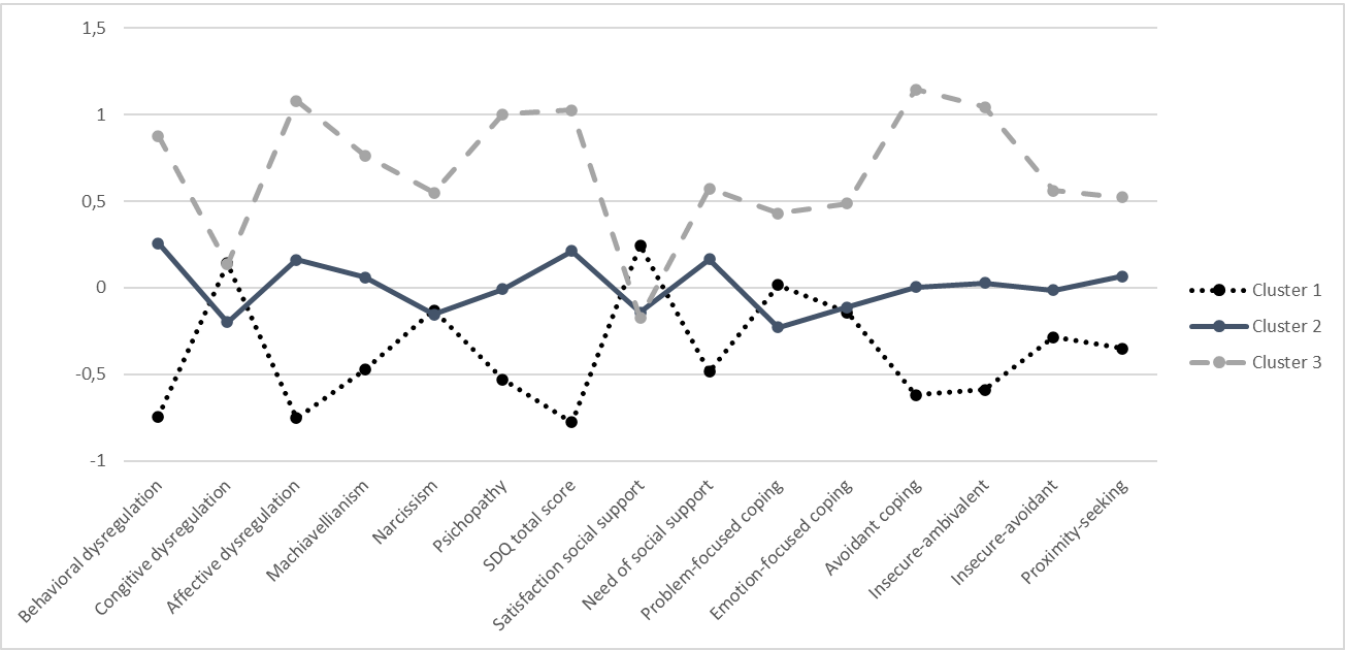

Figure 2. *Average levels of variables characterizing adolescents' psychological profile by cluster*

Table 1. Descriptive statistics of psychological variables by cluster.

Psychological domains	Cluster 1 (*n* = 166)				Cluster 2 (*n* = 178)				Cluster 3 (*n* = 89)			
	M	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*	*M*	*SD*	*Min*	*Max*
Behavioral dysregulation	-0.74	0.71	-1.74	1.36	0.26	0.79	-1.60	2.25	0.88	0.86	-0.71	2.69
Cognitive dysregulation	0.14	1.04	-2.88	2.09	-0.20	0.94	-2.88	1.59	0.14	0.99	-2.05	2.09
Affective dysregulation	-0.75	0.70	-1.86	1.64	0.16	0.75	-1.58	2.34	1.08	0.75	-0.88	2.34
Machiavellianism	-0.47	0.96	-2.29	2.01	0.06	0.85	-2.29	2.55	0.76	0.85	-1.21	2.73
Narcissism	-0.13	1.04	-2.64	2.21	-0.15	0.88	-2.65	1.75	0.55	0.96	-1.26	2.44
Psychopathy	-0.53	0.86	-2.09	2.99	-0.01	0.80	-2.09	1.82	1.00	0.84	-1.89	2.60
SDQ	-0.78	0.76	-2.27	1.85	0.21	0.71	-1.77	2.34	1.03	0.72	-0.46	3.00
SSS	0.24	0.93	.2.72	1.96	-0.14	0.97	-2.95	1.96	-0.17	1.09	-2.95	1.96
NASS	-0.48	1.01	-2.85	2.50	0.17	0.85	-1.78	2.23	0.57	0.85	-1.78	1.97
Cope Problem	0.02	1.07	-2.33	2.20	-0.23	0.85	-2.08	1.95	0.43	1.00	-1.83	2.20
Cope Emotion	-0.14	1.02	-2.57	2.65	-0.11	0.86	-2.26	2.17	0.49	1.07	-1.78	2.65
Cope Avoidant	-0.62	0.75	-2.04	2.10	0.00	0.71	-2.04	2.10	1.15	0.88	-1.32	3.00
Insecure-ambivalent	-0.59	0.84	-2.31	2.08	0.03	0.76	-2.09	2.52	1.04	0.81	-0.99	2.96
Insecure-avoidant	-0.29	1.05	-2.80	1.76	-0.01	0.93	-2.41	1.76	0.56	0.80	-2.41	1.76
Proximity-seeking	-0.35	1.03	-2.79	2.35	0.07	0.90	-2.79	2.35	0.52	0.89	-1.50	2.35

Note. *M* = Mean; *SD* = Standard Deviation; *Min* = Minimum; *Max* = Maximum; SDQ = SDQ total score; SSS = Satisfaction with Social Support; NASS = Need for Activities related to Social Support; Cope Problem = Problem-focused strategies; Cope Emotion = Emotion-focused strategies; Cope Avoidant = Avoidant strategies.

In the second stage, a validation phase was conducted to examine the relationship between cluster membership and outcome variables of interest. Univariate and bivariate statistical analysis were conducted to assess which cluster membership explained variation in demographic and outcome variables. All analyses were based on the full available dataset.

Cluster analysis identified three distinct groups within the sample: Cluster 1 included 166 participants, Cluster 2 consisted of 178 adolescents, and Cluster 3 comprised 89 individuals. Based on the psychological profiles of the clusters, participants were categorized as follows: C1 = Better adjusted, C2 = Moderate adjusted, and C3 = Worst adjusted.

Table 2 presents descriptive statistics for demographic variables across the three clusters, along with *p*-values from the statistical tests used to examine differences across the three groups. Cross-tabulation analysis was conducted to

examine associations between cluster membership and categorical variables, followed by a *post hoc* analysis of standardized adjusted residuals to identify specific cells contributing to the overall significance. Significant differences between clusters were found for the following variables: psychiatric medication use, quality of peer relationships within the institution, history of exposure to domestic violence and marginally, experiences of sexual abuse. Additionally, differences emerged in behavioral indicators inclusion engagement in theft, physical aggression, and substance use or intention to experiment psychoactive substances.

Table 2. *Clusters characterization based on sociodemographic variables*

Domains and response categories		**Better adjusted**	**Moderate adjusted**	**Worst adjusted**			
		f	*f*	*f*	χ^2	*p*	*V*
Siblings in institution	Yes	62	48	27	4.37	.113	0.10
	No	104	130	62			
Sex	Females	88	96	53	1.08	.583	0.05
	Males	78	82	36			
Age group	12-15	81	84	52	3.18	.204	0.09
	16-18	85	94	37			
Institutional typology	Only boys	46	54	25	3.09	.543	0.06
	Only girls	56	71	34			
	Mixed	64	53	30			
Contact with family	None	74	65	34	3.00	.558	0.06
	Occasional	20	20	11			
	Frequent	72	93	44			
Psychiatric medication	Yes	131	122	41	28.74	≤ .001	0.26
	No	35	56	48			
Peer relationships	Yes	156	156	71	11.63	.003	0.16
	No	10	22	18			
Domestic violence	Yes	32	48	32	8.60	.014	0.14
	No	134	130	57			

Table 2. *Cont.*

Domains and response categories		Better adjusted	Moderate adjusted	Worst adjusted			
		f	*f*	*f*	χ^2	*p*	*V*
Sexual abuse	Yes	9	9	11	5.76	.056	0.12
	No	157	169	78			
Theft	Yes	26	41	27	7.65	.022	0.13
	No	140	137	62			
Aggression	Yes	23	31	27	10.68	.005	0.16
	No	143	147	62			
Tobacco	Have tried	43	77	38	25.98	≤ .001	0.17
	Regular use	29	37	25			
	Don't want	93	62	26			
Cannabis	Have tried	22	33	27	19.20	.004	0.15
	Regular use	2	2	5			
	Don't want	140	141	56			
MDMA	Have tried	8	12	4	11.96	.018	0.12
	Regular use	0	0	0			
	Don't want	157	166	81			
LSD	Have tried	1	6	4	15.76	.003	0.14
	Regular use	0	0	0			
	Don't want	165	171	81			
Alcohol	Have tried	81	105	55	16.23	.013	0.14
	Regular use	3	10	5			
	Don't want	79	61	25			
Domains		*M* ± *SD*	*M* ± *SD*	*M* ± *SD*	F	*p*	
Age		15.40 ± 1.77	15.40 ± 1.75	15.08 ± 1.68	1.210	.299	
Integration in institution		8.06 ± 1.59	7.14 ± 1.77	7.10 ± 1.70	15.682	≤ .001	
Close friends		4.39 ± 3.99	3.76 ± 3.49	3.16 ± 3.06	3.546	.030	
Length of stay in institution		38.55 ± 38.36	33.98 ± 37.49	27.51 ± 35.12	2.550	.079	

Note. *f* = frequency, *M* = Mean, *SD* = Standard Deviation, F = Statistic test, *p* = significance level.

Table 2 presents the variables that characterize the three clusters, along with *p*-values indicating statistically significant differences among them. The better adjusted group (Cluster 1) is composed of adolescents who have more siblings living in the same residential care facility, are placed in mixed-type institutions, report positive peer relationships, and have a greater number of close friends they can rely on during times of need. They also demonstrate higher levels of institutional integration and, on

average, spent more time in care. Participants in this cluster tend to be older, report lower use of psychiatric medication, and engage less in risk behaviors such as theft, aggression, and substance use. They are also more likely to actively reject substance use. Additionally, their placement in care is less due to experiences of domestic violence or sexual abuse. Collectively, these characteristics suggest a more emotionally stable and socially integrate profile.

In terms of psychological features, these adolescents report fewer difficulties with behavioral and emotional regulation, exhibit below-average scores across Dark Triad traits, and show the lowest levels of adjustment difficulties, as measured by the total score of the SDQ (Strengths and Difficulties Questionnaire). Consistent with their reports of perceived positive peer relationships within the institution and number of close friends, these adolescents also report the highest levels of satisfaction with received social support and the lowest perceived need for additional support-related activities. In coping with stress, they predominantly use strategies focused on problem-solving or emotional regulation, rather than avoidance. Regarding attachment, they score below the mean on all dimensions of insecure attachment, reinforcing the interpretation of greater psychological stability and interpersonal competence within this cluster.

Adolescents in Cluster 2 do not exhibit significant deviations from the statistical mean across the psychological variables assessed. Demographically, the group is relatively homogeneous in terms of sex and age. Relationally, these adolescents maintain regular contact with their biological families, report generally positive peer relationships within the institution, and have an average number of close friends they can rely on for support. Notably, this cluster reports the highest prevalence of domestic violence as the primary reason for residential placement. In addition, adolescents in this group show greater involvement in aggressive behaviors and theft, along with the highest levels of regular tobacco and alcohol use among the three clusters. From the psychological standpoint, they show mild difficulties in behavioral and emotional regulation, low levels of Dark Triad traits, and relatively few adjustment difficulties. However, satisfaction with perceived social support is slightly below average, suggesting a moderate risk profile despite the overall functional psychological presentation (Table 2).

The worst adjusted group (Cluster 3) is composed predominantly of young female adolescents, who have typically spent less time in residential care and report below-average levels of institutional integration. Many participants in this cluster report no ongoing contact with their biological families. While they report positive relationships with peers in the institution, they also report having a smaller number of close friends for emotional support. This group emerges as the most psychologically vulnerable, displaying statistically significant differences from the other two clusters. Adolescents in this cluster report the highest levels of involvement with psychoactive substances, including both frequent use and increased curiosity or intention to substance experiment. Additionally, they show greater reliance on psychiatric medication, further highlighting their compromised emotional and behavioral adjustment. Regarding risk behaviors, approximately half of the adolescents in Cluster 3 report involvement in theft or physical aggression, with statically significant differences compared to the other clusters. Additionally, more than half of the placements in this group were due to domestic violence or sexual abuse, further distinguishing this cluster from the others in terms of exposure to early adverse experiences (Table 2).

Regarding psychological variables, this group exhibit above-average difficulties in behavioral and affective regulation, elevated levels of Dark Triad traits, and the highest number of adjustment difficulties, as reflected by the total SDQ score. They also report the lowest levels of satisfaction with the social support and the highest perceived need for additional support-related activities. When facing problems, adolescents in this cluster are more likely to adopt avoidance-based coping strategies. Their interpersonal relationships are characterized by an insecure attachment style, suggesting relational instability and heightened emotional vulnerability.

Although the three clusters differed in several characteristics, not all differences reached statistical significance (Table 2). Specially, no significant differences were found between clusters regarding the presence of siblings in the same institution (χ^2 [2] = 4.37, p = .113), sex (χ^2 [2] = 1.08, p = .583), or age group (χ^2 [2] = 3.18, p = .204). Similarly, institutional typology (χ^2 [4] = 3.09, p = .543) and frequency of contact with biological family were not significantly associated with cluster membership (χ^2 [4] = 3.00, p = .558).

However, a significant association was observed between clusters and quality of peer relationships (χ^2 [2] = 11.63, p = .003). Additionally, length of stay in care and history of sexual abuse approached statistical significance.

ANOVA results revealed significant differences among clusters in perceived institutional integration (F [2, 432] = 15.68, p < .001, η^2 = 0.07) and in the average number of close friends adolescents reported being able to rely on in times of need (F [2, 432] = 3.55, p = .030, η^2 = 0.02).

4. DISCUSSION

This study aimed to identify distinct profiles of youth in RCS based on psychosocial, behavioral, and relational characteristics, and to explore intergroup differences in risk and protective factors. Cluster analysis revealed three distinct profiles of adolescents in residential care, each with specific psychological, behavioral, and relational characteristics, and mental health outcomes. These findings are consistent with existing literature that highlights the heterogeneity of institutionalized youth and the need of person-centred approaches in both assessment and intervention (Calheiros & Patrício, 2014; del Valle & Bravo, 2013).

One of the key differentiating factors across clusters was the quality of interpersonal relationships, particularly peer bonds, which appear to influence other areas such as substance use and behavioral risk. Similarly, higher levels of perceived institutional integration were associated with better adaptative functioning and a reduce likelihood of problematic behavior, suggesting that institutional belonging may play a protective role (Mota et al., 2016; Santos et al., 2023).

Exposure to domestic violence, as well as involvement in theft and aggression, helped contextualize the distinct levels of risk and vulnerability observed across the profiles. Notably, substance use emerged as a statistically significant distinguishing factor, suggesting that consumption patterns may be particularly informative in differentiating psychosocial adjustment among institutionalized youth. The uneven distribution of psychiatric medication use among clusters also points to meaningful differences in mental health status. Although sociodemographic variables such as gender, age, or the presence of siblings in the institution did not show statistically

significant differences ($p \geq .05$), their distribution may still offer relevant descriptive insights and warrant further investigation in larger or more diverse samples.

Cluster 1, labelled the *Better adjusted group*, included adolescents who reported high levels of institutional integration, positive peer relationships, and greater access to close social connections. They exhibited the lowest levels of behavioral problems, substance use, and psychiatric medication, as well as below-average scores on Dark Triad traits. Psychologically, they demonstrate stronger affective and behavioral regulation, greater reliance on problem-focused coping strategies, and fewer adjustment difficulties. These youth also presented lower levels of attachment insecurity, suggesting a more secure internal working model (Bowlby, 1977). This profile illustrates how protective factors such as social support and institutional stability may buffer against the adverse effects of early trauma (Lam, 2024; Santos et al., 2023). Human development and self-perception are shaped by interpersonal interactions and environments, and social relationships play a central role in both physiological and psychological health (Bowlby, 1977; Wang et al., 2021). The characteristics of this cluster align with previous studies showing a negative association between adolescents' adjustment difficulties in residential care and their perceived quality of attachment to their mothers (Shalem & Attar-Schwartz, 2022). According to Gross (2015) and Park et al. (2020), individual differences in emotion regulation strategies impact affective functioning, social interactions, and well-being, with adaptive strategies leading to more favourable outcomes.

Huffhines et al. (2020) noted that not all youth exposed to maltreatment, even within the child protection system, developed clinically significant levels of internalizing and externalizing or require psychiatric hospitalization. Maltreatment chronicity and coping styles may be important explanatory factors behind divergent mental health outcomes among youth.

Cluster 2, the *Moderate adjusted*, demonstrated mean scores across most psychosocial indicators. These adolescents maintained regular contact with their biological families, reported functional peer relationships, and showed low to moderate affective and behavioral regulation difficulties. However, they reported higher exposure to domestic violence and higher involvement in theft and physical aggression. Notably, this group exhibited the highest levels of regular tobacco and

alcohol use. The literature emphasizes the importance of mapping the protective factors and designing intervention strategies to prevent behavioral problems and crimes among the youth, taking into consideration all levels of the socioecological model - from individual to community factors (Rooney et al., 2024). Despite vulnerabilities, this group's psychological functioning remained relatively stable. Previous studies reveal that contact with and support from family members are linked to better adjustment (Attar-Schwartz & Fridman-Teutsch, 2018; Shalem & Attar-Schwartz, 2022). Their slightly below-average satisfaction with social support may point to latent relational needs not captured in superficial-level interactions, warranting further exploration (Calheiros & Patrício, 2014). Research on adverse childhood experiences – such as abuse and neglect, family dysfunction and household challenges – has traditionally consistently demonstrate that early adversity is associated with a range of harmful outcomes across lifespan (Campbell et al., 2016; Gilbert et al., 2015), which may help to explain the involvement in delinquent behaviors reported by some individuals in this group.

Cluster 3, the *Worst adjusted group*, was composed mostly of younger girls with shorter durations in care, limited family contact, and low perception of institutional integration. Despite they reported positive peer interactions, they had fewer close confidants and present the highest rates of psychiatric medication use and substance involvement, with statistically significant differences from the other groups. These youth exhibit marked affective and behavioral dysregulation, elevated levels of Dark Triad traits, and the highest scores on adjustment difficulties, as measured by the SDQ. They also relied predominantly on avoidance-based coping strategies and showed elevated levels of attachment insecurity — particularly ambivalent patterns — indicating a maladaptive relational style likely to be shaped by early trauma, maltreatment and various socioeconomic vulnerability (Cyr et al., 2010; del Valle & Bravo, 2013). These findings emphasize the need for trauma-informed care models tailored to the specific vulnerabilities of this population. The profile is consistent with previous studies linking Dark Triad traits and maladaptive emotion regulation strategies and higher levels of stress, anxiety, and depression (Gómez-Leal et al., 2022; Mojsa-Kaja, 2021; Walker et al., 2022). Additionally, there is consistency in this pattern regarding the difficulty of the youth in confiding others, having fewer close friends, and

higher levels of attachment insecurity may explain the reduced sense of institutional integration reported by adolescents in this group.

Individuals' coping efforts are generally motivated by the desire to reduce negative emotions and enhance positive ones in response to environmental stressful conditions. However, coping efforts may also serve instrumental goals related to personal success and achievement (Compas et al., 2017). Individuals with higher levels of Dark Triad traits tend to prioritize self-interest and personal gratification over altruistic behaviors. As such, they are more likely to engage in risk-taking behaviors, substances use, and delinquent behaviors (Gillen et al., 2016; Malesza & Ostaszewski, 2016; Pechorro et al., 2022a, 2022b). Additionally, research suggests that younger adolescents are more likely to exhibit Dark Triad traits (Jonason & Tost, 2010), which reinforces the psychological and behavioral profile observed in Cluster 3.

Mota and Matos (2008) advocate that adolescents with insecure attachment styles often seek support and protection, even if expressed through paradoxical or disruptive ways – such as delinquency – as a means of eliciting attention. These youths frequently experience profound psychological loneliness stemming from parental abandonment, which often may manifest in externalizing symptoms. This dynamic helps explain why approximately 25% of residential care placements in Portugal are attributed to behavioral problems (ISS, 2024), highlighting the complex interplay between emotional insecurity and maladaptive conduct.

In line with Objective 3, factors such as institutional integration, coping strategies, emotion regulation, and attachment style emerged as meaningful differentiators across clusters. Adolescents in Cluster 1 were more likely to report adaptive coping, fewer emotional regulatory difficulties, and indicators of secure attachment, whereas those in Cluster 3 exhibited the inverse pattern. These findings support prior research showing that youth adjustment to institutional life is significantly shaped by interpersonal relationships and internal psychological resources (del Valle & Bravo, 2013). While no association was found between these psychological factors and the length of time in care (Costa et al., 2020), it is plausible that prolonged stability in the same institution may facilitate emotional restructuring by promoting predictability and continuity of care. However, the impact of the duration of institutionalization and the age at admission likely varies based on prior life

experiences, the severity of the circumstances leading to their placement, and the specific environment of the residential care facility. As such, further research is necessary to better understand how these variables interact and affect youth development within institutional settings.

Although the clusters displayed clear differences in multiple domains, not all variables reach statistical significance. For instance, age group, sex, or presence of siblings in the same care institution did not significantly differ across clusters. However, peer relationship quality and length of institutional stay were significantly associated with cluster membership, supporting Objective 4 and the role of relational dynamics in shaping adaptation in residential adjustment (Costa et al., 2020; Simão et al., 2025). In addition, the organizational social context of residential care – including caregiver relationships, institutional rules and norms, youth-to-staff ratios, and institutional typology – may also influence adolescents' psychological well-being and mental health outcomes (Silva et al., 2022). While the present findings do not establish a clear developmental trajectory linking coping and emotion regulation to psychological adjustment, they align with prior evidence indicating that maladjustment tends to decrease with age. These results highlight the importance of understanding developmental differences in coping and emotion regulation in future research. Given the conceptual overlap between coping strategies and emotion regulation processes, findings related to coping may also provide indirect support for emotion regulation patterns.

Smyke et al. (2007) argued that young children are not placed in institutions at random, the circumstances leading to their placement can significantly influence outcomes. Consistently, the present study found cluster differences regarding placement reasons, with exposure to domestic violence, sexual abuse, and behavioral issues being particularly salient in certain groups. Prior literature shows that trauma exposure is a significant predictor of adolescent self-destructive and risky behaviors, and justice system involvement (Green et al., 2005; Kerig 2019). These findings help explain the elevated rates of youths that use substances regularly, are involved in theft or aggression processes, and present behavior difficulties observed in specific clusters, reinforcing the urgent need for trauma-informed care interventions tailored to the unique vulnerabilities of these particular youths in residential care.

Implications for practice

Although the present findings did not reveal statistically significant differences regarding age, based on previous studies, it seems important to highlight the relevance of the age of entry and length of stay in RCS as influential factors in the psychological adjustment of young people. A notable proportion of adolescents enter to RCS during late adolescence and most maintain ongoing relationships with their biological families. In this sample, 48% of the participants reported frequent contact with family members, and 43% express the intention to return home after leaving RCS. These figures the relevance of family-centred interventions, particularly at an early stage, as recommended by Mota et al. (2024). Interventions should aim to strengthen and restore familial bonds, promote responsive and secure caregiving, and enhance relational continuity throughout placement. Additionally, to achieve this it is crucial to simultaneously ensure systematic coordination between RCS and family-oriented services, alongside with ongoing training and supervision for caregivers. This dual focus helps maintain a developmentally supportive environment that attends to both the youths' emotional needs and the complex dynamics of family reintegration.

Adopting a strengths-based framework that emphasizes protective factors offers an effective strategy for professionals working with system-involved youth. Rather than centring solely on their adversities or trauma histories, this approach highlights youths' capabilities, assets, and areas of potential growth. Grounded in a social-ecological model, it accounts for the multiple, interrelated systems – individual, relational, community, and societal – that shape youth outcomes (Couture et al., 2022). Individual behavior change must be supported by corresponding changes in the surrounding environment, and interventions must address various layers of influence. As such, interventions should aim to promote protective factors among various domains: individual (e.g., social and emotional competencies, emotion regulation, coping skills), relational (e.g., positive peer and caregiver relationships, stable attachments), community (e.g., nurturing and structured environments, engagement in social institutions), and societal (e.g., supportive policies and procedures to promote well-being and healthy youth development) (Center for the Study of Social Policy, 2022; Rooney et al., 2024). Additionally, investment in appropriately qualified and well-trained staff, who can attend to the typical difficulties of the adolescents and

simultaneously address severe emotional and behavioral problems and cultural integration challenges faced by youth in care – especially those with trauma histories or social integration barriers (del Valle & Bravo, 2013).

From a practical perspective, these findings support the implementation of tailored, profile-specific interventions. Youth in Cluster 1, who demonstrate better adjustment, may benefit from supportive programming that sustains developmental progress and prepares them for successful transitions to independent living. Cluster 2 adolescents may require preventive programs, targeting substance use and relational risk behaviors, in addition to social skills enhancement. Cluster 3 youth are likely to benefit from intensive, trauma-informed interventions focused on emotional regulation, attachment repair, and the development of adaptive coping strategies (Couture et al., 2022; Leve et al., 2009).

Furthermore, there is a strong consensus on the need of early identification of youth at risk of developing antisocial and delinquent behaviors. Timely referral to evidence-based prevention and intervention programs is critical. These programs should include training in emotional regulation and coping strategies to help youth effectively manage stressful situations and adverse experiences, thereby improving their psychological adjustment and reducing long-term risk trajectories.

Limitations, strengths, and future directions

While these findings contribute to a nuanced understanding of psychological adjustment in residential care, some limitations should be acknowledged. The cross-sectional nature of the study prevents causal inferences, and self-report measures may be influenced by social desirability or recall bias. Despite these limitations, this study also offers several notable strengths, such as the use of a nationally representative sample, the inclusion of adolescents' own perspectives on key issues relevant to their development, and a high participation rate within a typically hard-to-reach and understudied population. While the national scope of the data is a clear advantage, it is important to recognize that residential care systems and child protection frameworks differ between countries. As such, caution is warranted when attempting to generalize these results to youth in care outside of Portugal. Still, given that residential care remains a predominant model for children without parental care in many European

countries, these findings are consistent with previous research and may offer insights that extend beyond the Portuguese context.

Cluster analysis provides a useful exploratory tool, and future studies should validate these profiles longitudinally and add caregivers' reports. Examining how caregiver relationships, institutional practices, and trauma history interact with the identified profiles would further enhance the utility of this framework.

5. CONCLUSION

Incorporating a broad range of individual, social, and contextual factors into research on psychological adjustment provides deeper insight into how personal and environmental influences shape adolescent mental health and development. Developmental contexts play a critical role in the formation of the self and personality, highlighting the dynamic interplay between the individual and their surrounding environment.

The findings of the present study demonstrate that the variables under investigation are particularly relevant for understanding the psychological adjustment of adolescents living in RCS. Three distinct clusters were identified, with the most significant differences observed between Clusters 1 and 3. These differences pertain to levels of institutional integration, number of close friends, duration of institutionalization, substance use, and psychiatric medication. Such distinctions reflect the presence of a more psychologically, emotionally, behaviorally, and socially adjusted profile among adolescents grouped in Cluster 1.

Overall, the results highlight that understanding the correlates of adolescents' mental health can offer valuable insights for developing evidence-based intervention and prevention programs aimed at promoting personal growth and healthier development among youth in residential care.

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ARTICLE 8 | Psychological adjustment of adolescents in residential care: a multi-informant analysis of youth and caregiver reports

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Psychological adjustment of adolescents in residential care: a multi-informant analysis of youth and caregiver reports

ABSTRACT

Scientific evidence shows that adolescents' psychological adjustment in residential care varies depending on the informant. This study examined discrepancies between adolescents' self-reports and caregiver reports of psychological adjustment in 46 residential care institutions across Portugal. Data were collected from a sample of 511 adolescents (aged 12-24) and their institutional caregivers using the Strengths and Difficulties Questionnaire and the Socially Desirable Response Set-5. Descriptive statistics and paired-samples t-tests were conducted to compare mean scores between informants, and intraclass correlation coefficients were calculated to assess agreement. Results revealed significant differences across all subscales and the total difficulties score, with adolescents consistently reporting more emotional, behavioral, and peer-related problems than caregivers, regardless of sex or age. Agreement ranged from poor to moderate, with the lowest concordance for internalizing symptoms. These discrepancies underscore the role of developmental factors in shaping self- and caregiver perceptions and highlight the importance of multi-informant, developmentally sensitive assessments in residential care. Practical implications include incorporating adolescents' perspectives into evaluation and intervention, enhancing caregiver training to recognize internalizing issues, and implementing age- and gender-tailored mental health programs.

Keywords: Adolescents; Multiple informants; Psychological adjustment; Residential care

1. INTRODUCTION

Adolescence involves important biological, psychological, and social changes, making this stage vulnerable to psychological adjustment difficulties (Arnett, 1999; Babicka-Wirkus et al., 2023; Dahl, 2001). Mid-adolescence sees a notable increase in

anxiety and depression symptoms, particularly among girls, who are more prone to internalizing problems.

According to the Report on the Transition from Institutional Care to Community-Based Services in 27 EU Member States (Šiška & Beadle-Brown, 2020), institutionalization remains the predominant care model for children without parental care or exposed to psychosocial risk across several EU countries. In Portugal, reliance on institutional care within the child welfare system persists. In 2023, over 6,400 youths were separated from their families; more than 80% were placed in institutions, nearly 70% of whom were aged 12 to 20 (Instituto Segurança Social [ISS], 2024).

Residential care in Portugal aims to safeguard children's rights and welfare under the Law for the Protection of Children and Young People in Danger (Law 142/2015). The purpose is to support individualized life projects through tailored interventions addressing developmental stages and personal needs. Residential care settings (RCS) must maximize well-being, ensure equal opportunities, foster autonomy, and support children's rights regardless of age or religion.

Despite legal frameworks and protective services, children in RCS face higher risk of emotional, behavioral, and social challenges than peers in other care forms (Assouline & Attar-Schwartz, 2020; Jones & Morris, 2012). Daily interactions within care environments, particularly relationships with residential caregivers, play a vital role in fostering security and well-being. These relationships support positive, stable attachments that can compensate for disrupted bonds (Assouline & Attar-Schwartz, 2020; Harder et al., 2013). Thus, residential care institutions must consistently prioritize children's and adolescents' best interests (Anglin, 2019).

Psychological adjustment during adolescence refers to individuals' effective use of emotional, cognitive, and social resources to adapt to their environment (Schoeps et al., 2019). It is often measured via internalizing and externalizing difficulties, which commonly co-occur (Dwight et al., 2024; Keil & Price, 2006). Poor adjustment may appear as emotional distress, somatic symptoms, or behavioral problems (Mayorga-Sierra et al., 2020; Ordóñez et al., 2015). Institutionalization may affect adjustment, due to new social dynamics and caregivers (Font & Kim, 2022).

Personal adaptation manifests through emotions, behaviors, and cognitions; insufficient adjustment can lead to low self-esteem, anxiety, sadness, somatic

complaints, or guilt, hindering compliance with social norms and residential care rules (Moreno-Manso et al., 2017; Mota et al., 2017). Multiple factors influence psychological adjustment among residential care adolescents, many of whom experience developmental difficulties across various domains (Simão et al., 2025).

Comprehensive assessment of psychological adjustment requires information from multiple informants covering diverse dimensions and contexts. Institutional staff are primary caregivers in RCS and well-positioned to assess youth mental health and behavior. Combining reports from adolescents and caregivers offers complementary perspectives. Adolescents tend to underreport externalizing behaviors yet report higher internalizing symptoms compared to other informants (Gearing et al., 2015). Differences in informant agreement may reflect age, gender, social desirability, or attachment patterns (De Los Reyes & Kazdin, 2005; Gearing et al., 2015).

Current study

In this study, both adolescents and their caregivers completed the questionnaire, reflecting evidence that perceptions of youth psychological adjustment in residential care often differ between the adolescents and their adult caregivers (Molano et al., 2024). Previous research has noted discrepancies in agreement between these informants when assessing internalizing and externalizing difficulties (Erol et al., 2010; Gearing et al., 2015). Additionally, adopting a multi-informant approach helps reduce potential biases related to social desirability common in self-report measures (Campos et al., 2019), and offers a more comprehensive understanding of adjustment difficulties (Klimstra et al., 2014).

The objectives of the present study are fourfold: 1) To examine whether differences exist between the reports of caregivers and adolescents regarding psychological adjustment, considering sex and age group; 2) To compare the perceptions of youths and caregivers across the various subscales of the Strengths and Difficulties Questionnaire; 3) To assess the level of agreement between the two informants and investigate whether disagreement varies according to the severity of reported problems; and 4) To explore whether a systematic pattern of discrepancy exists between adolescent and caregiver reports.

Based on existing literature, we formulated the following hypotheses: H1) There will be significant differences between adolescents' and caregivers' reports of

psychological adjustment, and these differences will vary according to adolescent's sex and age group; H2) Adolescents and caregivers will differ in their perceptions across the SDQ subscales, with caregivers reporting higher levels of difficulties; H3) A systematic pattern of discrepancy will be present, whereby adolescents report higher levels of internalizing symptoms while caregivers report more externalizing behaviors; H4) The agreement between adolescents and caregivers will vary according to the severity of the reported problems, with greater disagreement at higher levels of difficulties; H5) The discrepancy between informants will be greater in the subscales most sensitive to social desirability.

2. METHOD

Participants

The study sample included 511 adolescents (232 males, 45%; 279 females, 55%) aged 12 to 24 years (*M* = 15.87, *SD* = 2.25), all residing in 46 RCS across Portugal. The age groups were relatively evenly distributed: 226 participants were between 12 and 15 years old, 227 were aged 16 to 18, and 58 were between 19 and 24 years. On average, adolescents had been living in their current facility for 41 months (*SD* = 43). Various factors contributed to their placement, with neglect and abuse reported by 38%, school absenteeism by 33%, financial hardship by 28%, and exposure to domestic violence by 26%. Furthermore, 10% of the participants had lost at least one parent, and 10% reported no contact with their biological family. Although 93% had siblings, only 32% resided in the same residential institution.

Measures

Socially Desirable Response Set-5 (SDRS-5, Hays et al., 1989; Portuguese version by Pechorro et al., 2016)

The Socially Desirable Response Set-5 (Hays et al., 1989) is a 5-item self-report measure designed to assess the degree to which self-report responses may be influenced by social desirability, i.e., the tendency to give socially desirable responses. Responses are given in a five-point Likert scale (1 = "Totally true" to 5 = "Totally not true"). In the original study, the internal consistency reliability ranged from 0.66 to 0.68 (Hays et al., 1989), while Pechorro et al. (2016) reported Cronbach's alphas between

0.70 and 0.73 for the Portuguese version. In the present study, the internal consistency was 0.56.

Only adolescents completed this questionnaire.

Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997; Portuguese version by Pechorro et al., 2011)

The SDQ is a 25-item self-report measure to evaluate socio-emotional issues through a three-point Likert scale (0 = “Not true”, 1 = “Somewhat true”, 2 = “Certainly true”). Items are organized into five subscales relating to emotional problems (e.g., “I am nervous in new situations. I easily lose confidence.”), behavioral problems (e.g., “I get very angry and often lose my temper.”), hyperactivity/inattention difficulties (e.g., “I am easily distracted, I find it difficult to concentrate.”), peer relationship problems (e.g., “I am usually on my own. I generally play alone or keep to myself.”), and prosocial behaviors (e.g., “I am helpful if someone is hurt, upset or feeling ill.”) and a total difficulties score assesses the overall child's mental health (Goodman, 1997). The Portuguese adaptation (Pechorro et al., 2011) showed Cronbach’s alphas between 0.43 and 0.61. For the present study, the reliability coefficients (Cronbach’s alpha) obtained for the adolescent sample were as follows: emotional problems $\alpha = 0.68$, behavioral problems $\alpha = 0.57$, hyperactivity/inattention difficulties $\alpha = 0.66$, peer relationship problems $\alpha = 0.51$, prosocial behaviors $\alpha = 0.78$, and total scale $\alpha = 0.78$. For the caregiver sample, the reliability coefficients were: emotional problems $\alpha = 0.74$, behavioral problems $\alpha = 0.76$, hyperactivity/inattention difficulties $\alpha = 0.77$, peer relationship problems $\alpha = 0.58$, prosocial behaviors $\alpha = 0.86$, and total scale $\alpha = 0.82$.

Procedures

Data collection

Ethical approval for this study was obtained from the Ethics Committee of the University of Algarve (CEUAlg No. 110/2023). All study procedures adhered to the ethical principles outlined in the 1964 Declaration of Helsinki and its later amendments. Authorization to use the Portuguese version of the scales was secured from the original authors.

Participants were recruited using a convenience sampling method. A total of 46 RCS facilities from mainland Portugal and the archipelagos of the Azores and Madeira were invited to participate via telephone and email. Each institution received detailed

information about the study's aims and procedures and agreed to participate voluntarily. Whenever possible, data collection was conducted in person by the first author. In cases where in-person administration was not feasible due to geographic limitations, questionnaires were sent by email and completed under the supervision of a designated staff member at the institution. Clear written guidelines were provided both at the time of approval and again upon delivery of the questionnaires. The first author was available throughout the process to address any questions from staff or participants.

Eligibility criteria included being 12 years or older, proficiency in Portuguese, and absence of medical conditions that could hinder participation. Adolescents identified by institutional staff as having cognitive impairments were excluded. All eligible participants received detailed information about the study objectives and their voluntary involvement, including the right to withdraw at any time without any consequences. Written informed consent was obtained from participants aged 16 or older. For those under 16, consent was provided in writing by a legal guardian or, alternatively, by the institution's technical director, in line with ethical standards.

Data were collected using anonymous, structured self-report questionnaires administered within the residential care institutions. Each adolescent completed the self-report version of the SDQ, while a caregiver simultaneously completed the parents' version for the same adolescent. Questionnaires were coded by caregivers using matching numbers to enable pairing while preserving participants' anonymity. Additionally, caregivers completed anonymous questionnaires providing organizational and religious affiliation information about their institutions.

Data collection occurred between October 2023 and October 2024. Participants with incomplete responses were excluded from the final sample.

Analysis plan

All statistical analyses were conducted using IBM SPSS Statistics version 30.0 (IBM Corp., 2024).

Data were entered into SPSS such that each case (dyad) included paired responses: the adolescent's self-report on the SDQ and the corresponding caregiver's report on the adolescent's behavior.

The analysis began by examining differences between informants across SDQ subscales and total score with respect to sex and age group, presenting descriptive statistics for adolescent self-reports and caregiver reports.

To examine agreement between youth and caregiver ratings across the five SDQ subscales and the total difficulties score, paired-samples *t*-tests were first conducted to identify systematic differences in mean scores between informants.

Subsequently, intraclass correlation coefficients (ICCs) were calculated to assess absolute agreement between adolescent and caregiver ratings for each subscale and the total score. The analysis employed a two-way mixed-effects model with single measures and absolute agreement definitions, as recommended by Koo and Li (2016). This model assumes fixed raters and evaluates whether scores from the two informants can be used interchangeably.

ICC values were interpreted following Koo and Li (2016) guidelines: values below .50 indicate poor agreement, between .50 and .75 moderate, between .75 and .90 good, and above .90 excellent agreement. Ninety-five percent confidence intervals were reported for all ICC estimates to indicate the precision of the agreement.

3. RESULTS

The sample average of answers in SDRS-5 was 14, which shows a tendency for participants to take a neutral attitude toward the questions instead of answering in a socially desirable way. Although the level of internal consistency of the scale was unsatisfactory, we conducted the statistical analysis assuming the veracity of the participants' answers because the data still provided valuable insights into the research questions and allowed for exploratory analyses that could inform future studies.

The analysis began with an examination of differences between informants across the five Strengths and Difficulties Questionnaire (SDQ) subscales and the total score, stratified by sex and age group. Table 1 presents descriptive statistics of SDQ scores reported by adolescents and caregivers, disaggregated by sex and age group.

Analysis of Table 1 revealed notable differences between adolescent self-reports and caregiver assessments across all subscales and the total difficulties score. Overall, adolescents reported higher levels of emotional symptoms, behavioral

problems, hyperactivity, peer difficulties, and total difficulties compared to caregivers. This pattern was consistent across sexes and age groups.

Table 1. Means and standard deviations of SDQ dimensions from adolescents' self-reports and caregiver's reports, by sex and age group (N = 511).

	SDQ Domains	Males (*n* = 232) M ± SD	Females (*n* = 279) M ± SD	12-15 Y (*n* = 226) M ± SD	16-18 Y (*n* = 227) M ± SD	19-24 Y (*n* = 58) M ± SD	Total (*n* = 511) M ± SD
Self-report	Emotional	3.80 ± 2.20	5.29 ± 2.39	4.73 ± 2.53	4.58 ± 2.31	4.28 ± 2.41	4.61 ± 2.42
	Behavior	3.08 ± 2.04	2.79 ± 2.01	3.35 ± 2.19	2.82 ± 1.88	1.67 ± 1.21	2.92 ± 2.03
	Hyperactivity	4.37 ± 2.19	4.94 ± 2.50	5.09 ± 2.36	4.59 ± 2.26	3.43 ± 2.46	4.68 ± 2.38
	Peer	3.34 ± 2.05	3.34 ± 2.04	3.34 ± 2.10	3.47 ± 2.02	2.81 ± 1.88	3.34 ± 2.04
	Prosocial	6.87 ± 2.42	7.79 ± 2.13	6.93 ± 2.32	7.56 ± 2.23	8.33 ± 2.24	7.37 ± 2.31
	SDQ Total	14.59 ± 5.82	16.35 ± 6.46	16.50 ± 6.47	15.46 ± 6.87	12.19 ± 5.58	15.55 ± 6.24
Caregiver-report	Emotional	2.57 ± 2.11	3.65 ± 2.38	2.94 ± 2.18	3.38 ± 2.40	3.14 ± 2.52	3.16 ± 2.33
	Behavior	2.66 ± 2.40	2.57 ± 2.26	2.73 ± 2.36	2.84 ± 2.35	1.26 ± 1.55	2.61 ± 2.32
	Hyperactivity	4.02 ± 2.70	4.00 ± 2.36	4.42 ± 2.53	3.90 ± 2.42	2.81 ± 2.45	4.01 ± 2.52
	Peer	2.88 ± 2.05	3.14 ± 2.11	2.98 ± 2.12	3.08 ± 2.04	2.97 ± 2.16	3.02 ± 2.09
	Prosocial	6.33 ± 2.55	6.46 ± 2.65	6.08 ± 2.65	6.47 ± 2.53	7.38 ± 2.49	6.40 ± 2.61
	SDQ Total	12.13 ± 6.40	13.36 ± 6.35	13.07 ± 6.37	13.20 ± 6.33	10.21 ± 6.27	12.80 ± 6.40

Note. Emotional = Emotional problems; Behavior = Behavior problems; Hyperactivity = Hyperactivity/Inattention difficulties; Peer = Peer relationship problems; Prosocial = Prosocial behaviors; SDQ Total = SDQ Total score; Y = Years (age group); *M* = Mean; *SD* = Standard Deviation.

Female adolescents reported greater emotional problems, hyperactivity difficulties and prosocial skills than males, while males reported slightly higher behavioral difficulties. Caregivers also perceived more emotional difficulties in females than males, but these differences were less pronounced than in adolescent reports. Regarding age groups, younger adolescents (12–15 years) exhibited higher self-reported difficulties across most subscales relative to older groups, with the oldest

group (19–24 years) reporting the lowest scores. Caregivers similarly perceived fewer difficulties among the oldest group.

Notably, prosocial behavior scores were consistently higher in adolescent self-reports than caregiver ratings. The discrepancies between adolescent and caregiver reports were most evident in emotional symptoms and total difficulties, particularly among females and younger adolescents.

To examine agreement between youth and caregiver ratings across the five SDQ subscales and the total difficulties score, paired-samples *t*-tests were conducted and differences in mean scores between informants are presented in Table 2.

Table 2. Comparison of adolescent and caregiver ratings on the Strengths and Difficulties Questionnaire (N = 511).

Subscales	Adolescents		Caregivers		*t*(df)	*p*	Cohens *d*	95% CI
	M	*SD*	*M*	*SD*				
Emotional	4.61	2.42	3.16	2.33	11.85(510)	< .001	.52	.43 – .62
Behavior	2.92	2.03	2.61	2.32	3.04(510)	.001	.14	.05 – .22
Hyperactivity	4.68	2.38	4.01	2.52	5.77(510)	< .001	.26	.17 – .34
Peer	3.34	2.04	3.02	2.09	2.78(510)	.003	.12	.04 – .21
Prosocial	7.37	2.31	6.40	2.61	7.47(510)	< .001	.33	.24 – .42
SDQ total	15.55	6.24	12.80	6.40	9.21(510)	< .001	.41	.32 – .50

Note. Emotional = Emotional problems; Behavior = Behavior problems; Hyperactivity = Hyperactivity/Inattention difficulties; Peer = Peer relationship problems; Prosocial = Prosocial behaviors; SDQ Total = SDQ Total score; *M* = Mean; *SD* = Standard Deviation.

Analysis of Table 2 reveals significant differences between adolescent self-reports and caregiver assessments across all SDQ subscales and the total difficulties score (all $p < .01$), indicating that, on average, adolescents and caregivers do not report the same level of difficulties or behaviors. Adolescents scored higher than caregivers on all subscales, showing that youth perceive themselves as more symptomatic than caregivers report. The total SDQ score also showed a significant difference, with adolescents reporting more overall difficulties than caregivers, corresponding to a

moderate effect size (*d* = 0.41). Simultaneously, adolescents rated themselves as more prosocial than caregivers perceived them to be. Clinically meaningful differences were observed particularly in the emotional problems subscale (*d* = 0.52) and the total scale (*d* = 0.41). For the remaining domains, effect sizes ranged from small to moderate.

Finally, to assess the extent to which the different informants provided similar ratings, intraclass correlation coefficients (ICCs) were calculated (Table 3).

Table 3. Descriptives and ICC calculation using absolute-agreement, two-way mixed-effects model (N = 511).

Subscales	*M (SD)*	M (SD)	ICC	95% IC	F Test With True Value 0			
	Adolescent	Caregiver			*Value*	*df1*	*df2*	*Sig*
Emotional problems	4.61 (2.42)	3.16 (2.33)	.27	.12 – .39	1.936	510	510	< .001
Behavioral problems	2.92 (2.03)	2.61 (2.32)	.44	.37 – .51	2.599	510	510	< .001
Hyperactvity /inattention	4.68 (2.38)	4.01 (2.52)	.41	.32 – .48	2.463	510	510	< .001
Peer problems	3.34 (2.04)	3.02 (2.09)	.23	.15 – .31	1.601	510	510	< .001
Prosocial behaviors	7.37 (2.31)	6.40 (2.61)	.27	.17 – .36	1.812	510	510	< .001
SDQ total	15.55 (6.24)	12.80 (6.40)	.39	.27 – .50	2.507	510	510	< .001

Note. *M* = Mean; *SD* = Standard Deviation; ICC = Intraclass Correlation Coefficients.

ICC values for all five SDQ subscales and total SDQ represent a poor to moderate level of agreement according to Koo and Li (2016) guidelines (< .50).

Adolescents and caregivers show low concordance in ratings of emotional symptoms, peer problems and prosocial behaviors, although the ICC is statistically significant, indicating that agreement exists but is weak. Adolescents tend to rate themselves higher prosocially than caregivers perceive them.

On behavioral problems and hyperactivity difficulties, ICC values indicate moderate agreement level suggesting a moderate consistency between adolescent and caregiver reports.

For the SDQ total difficulties score, ICC value falls just below the moderate threshold, indicating poor to moderate overall agreement between adolescents and caregivers.

4. DISCUSSION

In Portugal, a substantial number of adolescents aged 12 to 17 reside in RCS (ISS, 2024). Empirically based assessments of mental health symptomatology are essential, as they inform the development of targeted clinical interventions for this population (Achenbach et al., 2005). Behavior rating scales are particularly valuable in child welfare contexts due to their efficiency and cost-effectiveness. Most can be administered by professionals with minimal assessment training, allowing for early screening and multi-informant data collection, including input from individuals under 18. The Strengths and Difficulties Questionnaire, in particular, offers a brief, low-cost format for identifying behavioral and emotional concerns across multiple informants.

Reports from both adolescents and caregivers provide complementary perspectives on youth adjustment challenges. This study aimed to examine potential discrepancies between caregiver and adolescents reports on psychological adjustment among youth in residential care, with attention to adolescents' sex and age group.

We explored the possibility that adolescents' responses might reflect social desirability; however, scores on the SDRS-5 were generally neutral. This may be due to the broad age range of participants – where younger adolescents may have shown response fatigue – or to the presence of institutional staff during questionnaire completion. As noted by Pechorro et al. (2016), social desirability is influenced both by respondent characteristics and item properties, as some items are more prone to elicit socially desirable responses.

The sample mean on the SDRS-5 was 14, indicating a neutral response tendency rather than a bias toward favorable self-presentation. Moreover, the significant findings in areas such as emotional and behavioral problems align with theoretical expectations, suggesting that social desirability likely did not distort the results. Although the SDRS-5 showed low internal consistency, which limits strong conclusions about the extent of socially desirable responding, the observed differences across

informants, and by adolescents' sex and age, are consistent with prior research and support the validity of adolescents' self-reports in this study.

Significant discrepancies emerged between adolescents' and caregivers' reports of psychological adjustment across all SDQ subscales and the total difficulties score, regardless of the adolescent's sex or age group. These findings partially support our first hypothesis and align with prior research highlighting informant discrepancies (Molano et al., 2024).

Caregivers consistently reported fewer difficulties than adolescents across all SDQ domains, partially supporting our second hypothesis, although this diverges from some existing literature. While Youngstrom et al. (2000) also found that adolescents tend to report more problems than caregivers, other studies indicate that adolescents may underreport externalizing behaviors and overreport internalizing symptoms (Martin et al., 2004).

The discrepancy pattern was stable across all subscales and the total score, lending partial support to our third hypothesis. However, caregivers reported lower levels of difficulties across all SDQ dimensions.

Intraclass correlation coefficients for behavioral problems and hyperactivity suggested moderate agreement, supporting our fourth hypothesis. This moderate consistency reinforces the importance of multi-informant assessment in RCS, where behavioral and peer-related issues can impact the group dynamic in these collectivist environments.

Regarding the potential influence of social desirability on agreement, our results showed that although adolescents self-reported more emotional and behavioral difficulties, they also reported higher levels of prosocial behaviors compared to caregivers. This pattern, consistent with Molano et al. (2024), supports our fifth hypothesis.

Regarding sex differences, self-reported total difficulties (SDQ Total) were higher among girls than boys, suggesting that girls perceive greater emotional and overall adjustment challenges – consistent with findings by Baker et al. (2007) and Campos et al. (2019). This aligns with existing literature indicating that girls tend to report more emotional difficulties, whereas boys are more often associated with behavioral problems (Camuñas et al., 2021; Moussavi et al., 2022; Rescorla et al., 2007).

Similar patterns were observed for age, with younger adolescents reporting more difficulties than older ones (Camuñas et al., 2021; Mota et al., 2017). The greater discrepancies in reports among girls may reflect higher emotional-awareness or the possibility that caregivers underestimate internalizing symptoms. Moreover, the pubertal transition is a critical period for internalizing problems, particularly in girls, and may be exacerbated by trauma histories such as sexual abuse (Mendle et al., 2014).

The decrease in difficulties reported with age – particularly among those aged 19-24 – may indicate better psychosocial adjustment, potentially due to prolonged staff support (Hoffnung Assouline & Attar-Schwartz, 2020), developmental changes in self-perception, more stable interpersonal relationships (Mota et al., 2017) or length of placement (Pinheiro et al., 2024). Future studies should explore whether these improvements are more strongly associated with age at institutional entry or length of institutionalization, as suggested in previous research (Hoffnung Assouline & Attar-Schwartz, 2020).

Caregivers' reports of greater emotional, behavior, peer relationship problems, and overall difficulties in adolescents aged 16-18 may reflect both developmental transitions and the impact of institutionalization on previously formed social bonds. Research indicates that conflict with close friends tends to decrease with age, while peer support increases in early adolescence but declines in mid to late adolescence (Furman & Buhrmester, 1992; Helsen et al., 2000).

Lower levels of support and companionship in close friend have been linked to negative psychosocial outcomes (Kenny et al., 2013; Molano et al., 2024). Additionally, La Greca and Harrison (2005) found that while close relationships offer opportunities to share problems, they may also contribute to maintaining depressive symptoms by reinforcing negative affect. These findings suggest that negative qualities in peer relationships may be more predictive of mental health outcomes than the presence of positive ones.

Despite significant mean differences, intraclass correlation coefficients (ICCs) indicated poor to moderate agreement between adolescents and caregivers. According to Koo and Li (2016), the ICC values suggest weak to moderate agreement; however, lower bounds below 0.50 indicate that assessments may not be equivalent across the

full range of symptom severity. This suggest that agreement may vary depending on the level of symptomatology rather than being uniformly distributed. Nonetheless, the statistically significant correlations suggest that the observed agreement is not merely due to chance.

The total difficulties score indicates limited to moderate agreement, reinforcing that adolescents and caregivers often do not fully concur on the severity or presence of difficulties. These findings underscore the importance of caution when substituting one informant for another and highlight the value of multi-informant assessments (Martin et al., 2020).

While these results are consistent with prior research showing low caregiver-youth agreement for externalizing behaviors and related constructs (Laird & De Los Reys, 2013), they also offer insight into the relational dynamics within RCS. The interaction between informants must be considered, as discrepancies may be informative but are not, on their own, sufficient to confirm the presence of adjustment difficulties or psychopathology. Differences in reports may reflect varying access to information – caregivers, for instance, typically rely on observable behaviors – and may depend on the specific construct being assessed (Laird & De Los Reys, 2013). Therefore, although this study clearly demonstrates the existence of informant discrepancies across SDQ subscales and the total score, caution is warranted in interpreting these results as definitive indicators of adolescents' psychological adjustment. Misinterpretation could lead to inaccurate conclusions, reinforcing the need for integrative assessment approaches that consider both informant perspectives and construct-specific factors (Martin et al., 2020).

The literature shows that studies reporting discrepancies between informants often yield inconsistent results, making it difficult to estimate parameters or the prevalence of mental health problems in this specific population (De Los Reyes, 2011).

Research indicates that when multiple informants independently report on the same psychological constructs, substantial discrepancies often emerge, with significant implications for understanding adolescent development and psychopathology (Achenbach et al., 2005; Laird & De Los Reys, 2013). These differences highlight the importance of interpreting informant discrepancies not merely as measurement error, but as potentially meaningful variations linked to the nature of the construct being

assessed. Such discrepancies may be context-specific, influenced by informant characteristics, or even predictive of external indicators of psychosocial functioning (De Los Reyes & Kazdin, 2005; Laird & De Los Reys, 2013).

Various factors have been associated with cross-informant disagreement, including demographic variables, time spent in care (Gearing et al., 2015), the quality of interpersonal relationships, and caregiver-related factors such as depressive symptoms (Agudelo Hernández et al., 2022). In institutional settings, it is also plausible that a high child-to-caregiver ratio may hinder the development of close relationships and limit caregivers' ability to acquire deep, individualized knowledge of each adolescent.

Limitations and implications for practice

Although these findings contribute meaningfully to the literature in this filed, several limitations should be acknowledged. The cross-sectional design limits causal inferences, and adolescents' self-reports, often completed within institutional settings and sometimes in the presence of staff, may have been influenced by social desirability. Nevertheless, the study has several notable strengths, including the use of a nationally representative sample, the integration of adolescents' own perspectives on key developmental issues, and a high response rate within a typically hard-to-reach population. While the national scope of the data is a clear strength, variations in child protection systems and residential care practices across countries may constrain the generalizability of the findings. Still, given that as residential care remains a common arrangement for children without parental care across many European countries, these results are consistent with prior research and may offer insights beyond the Portuguese context.

From a practical standpoint, the modest – and at times poor – agreement between adolescents and caregivers underscores the limitations of relying on a single informant when assessing psychological adjustment. First, practitioners should routinely integrate both self-reports and caregiver reports to obtain a more comprehensive understanding of adolescents' psychological functioning.

Secondly, the findings underscore the relevance of the age of entry into residential care and the duration of institutionalization as influential factors in youths' adjustment. A substantial number of adolescents enter residential care during late

adolescence – a period in which they reported significantly more emotional, behavioral, and social difficulties than those perceived by caregivers. This gap reinforces the clinical importance of taking adolescents' self-reports seriously to avoid under-identifying internalizing symptoms that may go unnoticed by caregivers.

In this context, enhancing caregiver training to better recognize emotional and internalizing difficulties could improve observational accuracy and reduce future informant discrepancies. Furthermore, the results support the implementation of tailored interventions based on age and sex, as different groups reported distinct patterns of difficulties. Intervention strategies should therefore be developmentally appropriate and gender-sensitive to more effectively address the needs and experiences of youth in care.

Overall, the findings emphasize the need for comprehensive, developmentally informed, and multi-informant assessment practices in RCS. Such approach can enhance the quality of psychological support and inform the design of preventive and mental health promotion programs tailored to this vulnerable population.

5. CONCLUSION

This study contributes to a growing body of research highlighting the complexity of assessing psychological adjustment in adolescents living in residential care. The total score reported by caregivers was lower than adolescents' self-reports for both sexes, with higher overall scores observed among younger participants. Discrepancies were more pronounced in the subscales related to emotional and behavioral symptoms, particularly among girls and younger adolescents. Additionally, in the Prosocial subscale, adolescents rated themselves higher than caregivers did, suggesting that adolescents tend to perceive themselves as more socially skilled.

The observed discrepancies between adolescent and caregiver reports reinforce the importance of using multi-informant approaches, particularly in institutional settings where caregivers may have limited access to the internal experiences of youth. Although caregiver reports remain valuable, adolescents' self-reports offer essential insights – especially regarding emotional and internalizing difficulties that may otherwise go unnoticed.

Developmental and contextual factors – such as age, sex, and timing of entry into care – appear to influence psychological outcomes and should be considered in intervention planning. Although differences were observed in this study, results should be interpreted with caution, as some scores may reflect normative developmental changes during adolescence.

Tailored interventions that account for these variables are essential for effectively supporting adolescents' mental health in residential settings. The findings underscore the need for developmentally sensitive, gender-responsive, and preventive mental health programs. Enhancing assessment practices and intervention strategies can ultimately lead to more accurate identification of needs and improved psychological support for youth in care.

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PART III – GENERAL DISCUSSION AND FINAL CONCLUSIONS

After presenting the eight studies developed for this thesis, we now turn to the general discussion of the main findings. Although each study was discussed in detail in its respective chapter, this section provides an integrative and comprehensive discussion that synthesizes and relates the key results across all studies. This is followed by a presentation of the practical implications derived from the findings, as well as suggestions for future research. The final part of this thesis outlines the overall conclusions informed by the empirical work.

Accordingly, this third and final part is organized as follows:

Comprehensive discussion and integration of findings – An integrative synthesis of the main results across the eight studies, framed within the existing literature, providing a broad perspective on the psychological adjustment of adolescents in residential care.

Limitations, strengths, and future research – A discussion of the methodological limitations and strengths of this work, accompanied by suggestions for future research in this field.

Final conclusions and practical implications– A summary of the main conclusions of this thesis, based on an integration of the empirical findings, followed by practical implications for RCS and interventions with adolescents.

Comprehensive discussion and integration of findings

"It is not the strongest of the species that survive, nor the most intelligent,
but the one most responsive to change."
(*Charles Darwin*)

Psychological adjustment is an emerging area of investigation with vulnerable populations such as adolescents in residential care, and research has increased to understand the factors that underlie the difficulties youths present within this context. Research into adjustment difficulties in youth has primarily focused on personal factors like sociodemographic variables and trauma (e.g. Akin et al., 2021; Farley et al., 2022), however, ecological theory (Bronfenbrenner, 1974, 1977) highlights the importance of contextual experiences, considering the various interconnected environmental systems that influence individual's development. According to this theory, there's a need to focus on the person, context, and developmental outcomes.

Systematic literature review on **Article 1** was designed to address this gap, analyzing the determinants of psychological adjustment of adolescents living in RCS. We analyzed studies from the last thirty years, qualitatively assessing each one of the 64 included studies. From the included articles, four categories of factors influencing psychological adjustment were identified, namely: personal characteristics, social characteristics, caregiving, and adjustment problems. This organization of the different factors and domains allowed us to analyze in detail what most impacted these youths' adjustment. Personal characteristics like gender, age, history of being sexually abused, coping styles or placement characteristics are often included in research on child welfare system, with some inconsistent findings, however, there is certainty regarding the prevalence of more adjustment problems among younger individuals (Almas et al., 2020; Camuñas et al., 2020), and among those with more adverse life events or trauma histories (Edmond et al., 2003). With respect to social characteristics, included articles emphasize the importance of social networks, staff relational skills, peer relationships or length of stay in alternative care, which has also been recently included in the research within this specific population (Molano et al., 2024; Singstad et al., 2022;

Thompson et al., 2016). In third place, caregiving category encompasses studies regarding attachment or relationship with caregivers, highlighting the importance of relationships with primary caregivers, and with new caregivers (Pascuzzo et al., 2021; Rayburn et al., 2018). The fourth domain emphasizes the relevance of emotional and behavioral difficulties, as well as the consequences of substances use or the reasons for being in care (Campos et al., 2019; Cotton et al., 2020; Pumariega et al., 1995, 1996; Soriano-Díaz et al., 2023).

Our systematic literature review contributes to the research on the psychological adjustment of adolescents in residential care by providing an update and supplementing the previous systematic reviews.

After systematizing the evidence on factors influencing psychological adjustment, this doctoral thesis focused on specific variables to examine their impact on adolescents' adjustment in greater depth. The progression moved from a broad perspective to a targeted analysis of individual, social, and environmental factors, with empirical studies exploring each domain in detail and the role each factor plays in adjustment. Across the seven studies, all central variables were treated as predictors of adolescent adjustment, underscoring the relevance of this research for institutionalized youth.

Bakermans-Kranenburg et al. (2011) argue that the caregiving environment where each child develops is more predictive of development than the mere fact of institutionalization. Furthermore, as demonstrated in Article 1, young people's perception of their rights, along with their relationships with institutional caregivers and peers, plays a particularly significant role in their psychological adjustment. For this reason, and in line with the needs identified in the report from the Eurochild network (UNICEF & Eurochild, 2021), it was considered relevant to identify an instrument capable of briefly assessing adolescents' perception of their integration within institutions, their perception of caregivers' availability to address their problems and needs, and their relationships with different institutional actors **(Article 2)**. Given the absence in the literature of an instrument that could be applied both by young people and by professionals to evaluate these domains, we proceeded with the adaptation and validation of a scale previously developed for the foster care context.

The White Paper on Child Participation in Portugal (CNPDPCJ, 2023) emphasizes the importance of all children to actively participate and contribute to decision-making across all areas that affect their lives (CNPDPCJ, 2023). Previous studies have demonstrated the importance of listening to children to foster a sense of belonging, to help them recognize their own resources, and to empower them as social actors in the construction of a development plan grounded in their personal and social well-being (Carvalho & Cruz, 2015; Fournier et al., 2014). It is equally relevant to understand how children's perceptions evolve over the course of institutionalization (Carvalho & Manita, 2010).

The right of the child to participation, as articulated in Article 12 of the United Nations Convention on the Rights of the Child (United Nations, 1989), requires that public and private institutions, in collaboration with civil society, create opportunities for children to express their views on matters affecting them and ensure that these perspectives are considered in decision-making processes.

Research suggests an association between reduced child participation and adverse mental health outcomes (Engel de Abreu et al., 2023). Thus, although institutionalized youth may acknowledge the reasons behind their placement (Carvalho & Manita, 2010), they often feel that the measures applied did not take their opinions into account, which may lead to difficulties in adjustment. For this reason, understanding their perception of integration into these settings may prove beneficial for their adaptation and for improving relationships with multiple stakeholders. After a review of the literature, we identified the Positive Home Integration scale (PHI, Kothari et al., 2018) as the most suitable measure to address the needs observed, and therefore all statistical procedures for its adaptation and validation were conducted. The confirmatory factor analysis yielded a unidimensional structure of six items assessing young people's perceptions of their integration within the institution. The PRCI scale demonstrated good discriminant validity with psychological adjustment variables, reinforcing its utility in the institutional context (Martínez-García & Martínez-Caro, 2009). This study provides an important contribute by offering a brief assessment method tailored to a specific sample of adolescents.

Article 3 addressed the role of personality characteristics in adolescents' adjustment, contributes novelty by being the first study to examine DT traits in

adolescents living in residential care, using a relatively large sample that allowed for detailed analysis of developmental and sex-based differences, and the relationship between DT traits and psychological outcomes.

The literature consistently documents sex differences in adjustment (Campos et al., 2019; Cotton et al., 2020). Findings regarding age-related differences are less consistent. Some studies suggest that internalizing and externalizing problems decrease over time (McWey et al., 2010), while others report an increase in depressive symptoms during late adolescence (Hankin et al., 2015; Schubert et al., 2017).

The DT traits have been linked to negative psychosocial outcomes (Muris et al., 2017), and studies found associations with demographic and psychological correlates such as age, gender, anxiety and depressive symptoms (Götz et al., 2020; Li et al., 2024; Shen, 2023; Wang et al., 2023). Exposure to adverse environmental events often elicits negative emotional states, which may, in turn, activate maladaptive behaviors linked to DT traits. Additionally, adolescence appears to be a critical period for the emergence and consolidation of DT traits, which often increase during this stage (Klimstra et al., 2020).

Findings from Article 3 supported the conceptualization of Machiavellianism, narcissism, and psychopathy as distinct yet interrelated constructs, consistent with prior research. Boys scored higher than girls on all three DT traits, echoing earlier findings on gendered patterns of affective and behavioral expression (Furnham et al., 2013; Klimstra et al., 2020). Age differences also emerged, with older participants scoring lower on DT traits, in line with studies suggesting developmental changes in their structure and expression during adolescence (Klimstra et al., 2014, 2020). Younger participants reported more emotional problems, behavioral difficulties, hyperactivity/inattention, and greater psychological maladjustment, consistent with evidence that both internalizing and externalizing problems decrease with age (McWey et al., 2010).

Although time spent in RCS was not a significant predictor of adjustment, it was associated with fewer problems in both sexes, consistent with research showing developmental improvements with longer stays in care. Boys reported more behavioral problems, while girls scored higher on emotional difficulties, prosocial behavior, and overall psychological difficulties (Campos et al., 2019; Cotton et al., 2020).

Findings highlight important sex- and age-related differences: older adolescents displayed more prosocial behaviors, fewer adjustment problems, and lower levels of DT traits. Both sociodemographic characteristics and DT traits predicted psychological adjustment, with psychopathy emerging as the strongest predictor, consistent with previous studies (Chiorri et al., 2019; Klimstra et al., 2014; Muris et al., 2022). Narcissism, by contrast, showed a small but significant negative association with maladjustment, suggesting a potential protective effect and appearing relatively stable across age.

Another critical factor influencing adolescents' adjustment is attachment style and literature demonstrates that adolescents in institutional care are at a heightened risk for attachment insecurity and psychological difficulties. In this regard, we sought a reliable and concise assessment instrument that could serve as an appropriate self-report measure to identify adolescents at risk of maladjustment in RCS. Following Lionetti et al.'s (2015) call for the validation of reliable instruments to assess attachment in institutionalized young people, in **Article 4** we adapted and validated the Vulnerable Attachment Style Questionnaire (VASQ; Bifulco et al., 2003) for this population.

Exploratory and confirmatory factor analysis were computed in accordance with recommended procedures and supported a three-factor model, 16-item solution with strong psychometric properties. Our Portuguese version of the VASQ also demonstrated discriminant validity with a measure of psychological adjustment. Results indicate that the VASQ captures three distinct factors: proximity-seeking, and two dimensions of insecure attachment – ambivalent and avoidant. Both insecure styles reflect perceptions of inadequate support and reluctance to seek help (Bifulco et al., 2003).

The insecure-ambivalent style showed the strongest links, particularly with total difficulties on the SDQ. Proximity-seeking was associated with greater emotional and hyperactivity problems but fewer prosocial difficulties, suggesting a mixed or potentially adaptive profile, reflecting interpersonal sensitivity. Higher insecurity scores were positively correlated with adjustment difficulties, confirming that attachment insecurity is associated with poorer mental health. Contrarily, secure relationships are associated with fewer mental problems and more positive relational outcomes (Costa

et al., 2022). Prior research suggests that trauma exposure undermines child well-being through insecure attachment, and studies of foster youth also show that adjustment is closely tied to caregiver relationship quality (Zhang et al., 2019). In this sense, adolescents in RCS are more likely to display insecure attachments compared to peers in family-based contexts, which contributes to interpersonal difficulties (Costa et al., 2022; Morais et al., 2024).

Proximity-seeking may coexist with insecure patterns, potentially contributing to hyperactivity or emotional dysregulation (Lavy et al., 2010). Our results revealed correlations between proximity-seeking and the insecure-ambivalent attachment, as well as between proximity-seeking and emotional problems, reinforcing this interpretation. The positive association between proximity-seeking dimension and psychological adjustment may reflect the tendency of adolescents in RCS to report higher levels of insecurity. Those who develop security may attribute it to removal from neglectful environments and the opportunity to build supportive relationships with new caregivers. This shift may foster proximity-seeking behaviors, which in turn enhance adaptation by facilitating access to care and safety (Mota & Matos, 2015). Thus, the findings suggest that secure base relationships promote proximity-seeking, which supports psychosocial adaptation.

The VASQ is a concise self-report measure that enables adolescents to articulate their perspectives on attachment relationships with significant others, both within and beyond RCS. Our results, combined with the cutoff points, support the utility of the adapted VASQ as a screening tool for psychological adjustment in at-risk adolescents. By identifying vulnerable attachment patterns, the VASQ contributes to a deeper understanding of relational development and facilitates placement stability through the assessment of young people's relational perceptions.

Developmental psychology has consistently shown that stable and nurturing caregiving environment foster secure relationships, whereas disruptions negatively affect attachment, cognition, and behavior, shaping both ER and personality development. **Article 6** sought to integrate previously explored variables – attachment styles and DT traits – to examine their influence on adolescents' psychological adjustment and ER.

Lino and Nobre-Lima (2017) found that levels of dysregulation assessed through the ADI (Mezzich et al., 2001) were not high. The authors suggested that youth in RCS often describe their identity negatively but may develop a “false self” as a coping mechanism, enabling them to manage adversity and gain acceptance from significant others (Harter, 1999; Lino & Nobre-Lima, 2017). Results from Article 6 similarly showed that adolescents were more dysregulated in the affective than in the behavioral domain, consistent with Lino and Nobre-Lima (2017) findings. Moreover, the positive correlation observed between affective and behavioral dysregulation suggests that once one domain is affected, difficulties are more likely to emerge in the other.

Research on adolescent brain development indicates that cognitive regulation develops more slowly due to the later maturation of executive functions (Ahmed et al., 2015; Warner et al., 2013). Additionally, for adolescents exposed to childhood adversity, higher-order executive functions are often compromised, reducing the use of these regulatory skills (van der Kolk, 2005). Consequently, correlations between cognitive regulation and the other domains tend to be weak, and cognitive dysregulation is more pronounced than affective or behavioral dysregulation, making these adolescents particularly susceptible to rapid emotional disruptions when facing negative affect.

Developmental research further shows that affective development precedes cognitive and behavioral functioning (Greenberg, 2006). For adolescents in RCS, affective ambivalence rooted in early relational experiences may hinder emotional growth, contributing to heightened affective dysregulation. This vulnerability is compounded by the fact that adolescence is inherently marked by heightened emotional intensity and reactivity (Steinberg, 2005). Furthermore, affective and behavioral regulation, in particular, appear to be the most sensitive domains to the lasting effects of early trauma (Warner et al., 2013).

Evidence indicates that adolescents with higher levels of DT traits struggle with interpersonal relationships, exhibit reduced emotional insight and are at increased risk for maladjustment (Garofalo et al., 2020). Some authors linked Machiavellianism to emotional dysregulation and delinquency (Chabrol et al., 2009; Klimstra et al., 2014; Lau & Marsee, 2013; Loftus & Glenwick, 2001), and psychopathy and narcissism to overt aggression (Lau & Marsee, 2013). Literature shows that securely attached

adolescents regulate emotions more effectively, while those with insecure attachment often experience difficulties in emotional expression and regulation, interpersonal challenges, and maladaptive personality traits (Kiel & Kalomiris, 2015; Mikulincer et al., 2002). These patterns directly influence psychological adjustment.

Gender differences also emerged in Article 6: girls scored higher on most ER dimensions, all attachment styles, and the SDQ total score, whereas boys scored higher on all DT traits, consistent with findings from Article 3. Given the large sample, we further examined associations between ER, delinquent behaviors, and substance use, and found significant results. Across sexes, all three dimensions of ER were significantly associated with psychological adjustment, which in turn correlated with self-reported delinquency and substance use. Age comparisons revealed that younger adolescents reported greater behavioral and affective dysregulation, more adjustment difficulties, and higher substance use (findings consistent with the worst adjusted cluster observed in Article 7). In this group, affective dysregulation was positively related to adjustment problems and delinquent behaviors. Conversely, adolescents aged 16-18 demonstrated stronger cognitive regulation skills and more prosocial behavior. These findings align with Article 3, which showed that younger adolescents experience more adjustment difficulties, reflecting developmental differences.

In Article 3, sex and DT traits were identified as strong predictors of adjustment. In Article 6, we confirm that personality traits, together with attachment styles, are strong predictors of the three domains of emotional dysregulation. Girls' greater difficulty with ER is consistent with their higher prevalence of internalizing symptoms, as widely reported in the literature. Age-related differences also align with theoretical models and empirical findings showing that the development of executive functions during middle childhood enhances emotional awareness and regulation, whereas adolescence increases reliance on cognitive and behavioral strategies (Park et al., 2020; Schäfer et al., 2017). These developmental patterns appear to explain the higher prevalence of prosocial behaviors and the lower prevalence of DT traits among older adolescents (aged 19-24), as reported in Article 3.

Attachment styles and personality traits emerged as the strongest predictors of emotional dysregulation, underscoring both their importance and the novelty of including DT traits in the study of adolescents' psychological adjustment. Promoting

secure attachment relationships is therefore crucial not only for enhancing self-regulatory capacities but also for improving psychological adjustment and preventing maladaptive outcomes (Blake et al., 2024). In article 3, higher prosocial behavior was linked to fewer adjustment problems and lower psychopathy, findings consistent with Article 6, where psychopathy was a strong predictor of all three domains of emotional dysregulation. Prior research has identified psychopathy as a robust predictor of delinquency, externalizing behaviors, and low self-control (Pechorro et al., 2022).

Narcissism showed positive associations with prosocial behaviors (Article 3) and negative associations with behavioral dysregulation (Article 6), suggesting that self-confidence and assertiveness – hallmarks of narcissism – may facilitate socially desirable behavior and prosocial engagement. These effects were stronger among girls, while among boys, psychopathy was consistently associated with behavioral and affective dysregulation, reinforcing the high levels of psychopathy reported in Article 3. Such findings emphasize the need for differentiated interventions. Both studies further support prior evidence that DT traits overlap in adolescents, as in adults, forming a coherent cluster of self-regulatory impairments (Muris et al., 2013, 2017).

Findings from our studies highlight the buffering role of secure relationships in promoting psychological adjustment among adolescents in RCS. **Article 5** specifically examined the role of social support, adolescents' perceptions of its availability, coping strategies and DT traits on adolescents' adjustment. Results revealed that although the different facets of the DT share common features, they employ distinct coping strategies and show divergent needs regarding social support. Article 3 demonstrated a significant association between Machiavellianism and girls' adjustment, while Article 5 found that higher levels of Machiavellianism were linked to adjustment difficulties through reduced satisfaction with social support. Literature suggests that the need for increased social support predicts internalizing symptoms (Walsh et al., 2023), which may indicate that the Machiavellian tendency to manipulate others and pursue self-oriented goals (Aldousari & Ickes, 2021) can serve as a protective mechanism against the development of internalizing difficulties (Geng et al., 2017).

Article 5 results showed that adolescents high in Machiavellianism or psychopathy exerted less effort toward problem-solving and relied more heavily on

avoidance. Narcissism influenced psychological adjustment through both problem- and emotion-focused coping strategies.

Narcissism positive associations with problem-focused coping suggest that goal-oriented behavior and elevated self-concept may promote constructive responses to stress, thereby reducing adjustment problems. Narcissism associations with emotion-focused coping may reflect heightened self-focus and difficulties with affect regulation under stress (Mor & Winquist, 2002). These findings, consistent with Article 6, support the dual nature of narcissism as both a protective and risk factor (as previously indicated in Article 3). For example, Xia et al. (2023) reported that although narcissism was associated with adaptive coping, it also co-occurred with less effective emotion-focused strategies under stress, consistent with our findings. Results suggest that narcissists may be more inclined to confront stressors than avoid them, consistent with prior findings (e.g., Birkás et al., 2016; Saltoğlu & Irak, 2022) and with Article 6, which showed significant associations between narcissism and cognitive regulation strategies. Narcissistic adolescents may attempt to regulate stress through strategies aimed at preserving self-concept (Jones & Paulhus, 2011), while also leveraging social influence and status within institutional contexts (Jonason & Webster, 2012).

Consistent with Article 6, narcissism was associated with affective regulation difficulties among girls. Interestingly, the direct negative effect of narcissism on the SDQ total score was significant only among boys in study 5, whereas this trend was not observed in Article 3. This discrepancy may be due to the older range (12-24 years) of participants in Article 3, which may have attenuated gender differences.

Adolescents higher in psychopathy relied primarily on avoidance, consistent with their disregard for consequences (Lau & Marsee, 2013), emotional detachment (Muris et al., 2017; Paulhus & Williams, 2002), strong associations with affective dysregulation (Article 6), and adjustment difficulties (Article 3). These findings align with the view that psychopathic traits are particularly harmful in institutionalized settings where ER and social support are already compromised (Frick et al., 2014).

Psychopathy directly predicted greater reliance on avoidant coping strategies, which in turn contributed to maladjustment. Avoidant coping emerged as the most robust predictor of adjustment difficulties (Compas et al., 2017; Thompson et al., 2014; Zimmer-Gembeck & Skinner, 2016), with satisfaction with social support also playing a

meaningful role, reinforcing its central role in institutionalized adolescents' difficulties. Seeking support and guidance can mitigate both internalizing and externalizing symptoms (Zimmer-Gembeck & Skinner, 2016). Alongside the finding that avoidant attachment style predicted emotional dysregulation (Article 6), these results suggest that institutionalized adolescents may struggle to engage with their emotions and to invest effort in minimizing distress or solving problems. Avoidance of both challenges and relationships appears to reinforce DT characteristics of emotional coldness and instrumental use of others to achieve personal goals (Muris et al., 2017; Paulhus & Williams, 2002).

Overall, these findings underscore a complex interplay between personality traits, coping mechanisms, contextual resources, and psychosocial outcomes, highlighting the need to consider both dispositional and environmental factors in assessing the adjustment of youth in RCS.

Gender differences also emerged: girls reported greater reliance on avoidant coping, consistent with prior literature and Article 3 documenting higher levels of internalizing symptoms among females (Campos et al., 2019; Cotton et al., 2020).

Findings from Article 5 further demonstrated that problem-focused coping and satisfaction with social support functioned as protective factors, reinforcing the importance of secure and supportive relationships with caregivers and peers in institutional care (Pinheiro et al., 2024; Simão et al., 2025; Rueger et al., 2016). For youths in RCS, peer relationships serve multiple functions in the adaptation process. The proximity to the peer group allows them to express their ideas and feelings, foster empathy and positive involvement in relationship with others (Mota & Matos, 2015). The expressed need for greater social support activities may reflect relational deprivation. Girls high in Machiavellianism may employ manipulative strategies to compensate for feelings of exclusion or dissatisfaction (Rose & Rudolph, 2006), while boys high in narcissism may seek external reinforcement as a means of validation (Jones & Paulhus, 2011).

After a detailed analysis of the influence of several predictors on adolescents' adjustment, **Article 7** aimed to create profiles that grouped the different variables, providing a more unified and comprehensive perspective of the youth in the sample.

Cluster analysis identified three well-differentiated profiles, which were characterized based on multiple domains and categories.

The first group, representing the most well-adjusted adolescents, stood out for their supportive relationships, low levels of insecure attachment, older age, and longer time in residential care. These adolescents exhibited fewer DT traits, greater ER skills, and more adaptive coping abilities, suggesting that such characteristics contribute to greater emotional stability. Social support and institutional stability have been shown to buffer against the adverse effects of early trauma (Lam, 2024; Santos et al., 2023) and longer stays in care may foster secure bonds with new caregivers (Mota & Matos, 2008, 2015; Mota et al., 2024), compensating for earlier relational deprivation. Prolonged stability in the same institution may facilitate emotional restructuring by promoting predictability and continuity of care. These findings are consistent with prior research showing that youth adjustment to institutional life is shaped by both interpersonal relationships and internal psychological resources (del Valle & Bravo, 2013).

The second group did not stand out in sociodemographic terms. Socially, they maintain regular but unsatisfactory contacts. This group included a significant proportion of adolescents who were victims of domestic violence, reported delinquent behaviors and substance use. These results support Smyke et al. (2007) findings that the circumstances leading to placement can significantly influence adolescents' outcomes. Psychologically, this group showed low levels of DT traits, some ER difficulties, and, consequently, some adjustment challenges, although the data suggest only a moderate risk to psychological functioning.

The third group, representing the least well-adjusted adolescents, consisted primarily of girls with little time in care and low levels of institutional integration, a factor previously identified as protective – Article 2 and 3 (Mota et al., 2016; Santos et al., 2023). These adolescents reported limited contact with biological families and few close friendships, making them the most vulnerable subgroup. Prior research has shown that family contact and support are associated with better adjustment (Attar-Schwartz & Fridman-Teutsch, 2018; Shalem & Attar-Schwartz, 2022). These adolescents reported higher psychiatric medication use, engagement in risky behaviors (substance use and delinquency), and more adverse experiences compared to the other groups.

Such findings are consistent with literature linking exposure to adversity with harmful outcomes across the lifespan (Campbell et al., 2016; Gilbert et al., 2015) and with evidence that trauma exposure is a significant predictor of self-destructive behaviors, risky behaviors, and justice system involvement (Green et al., 2005; Kerig 2019).

This third group also showed elevated DT traits, ER difficulties, predominance of insecure attachment styles, and reliance on avoidant coping strategies, which together explain their poorer SDQ outcomes and greater emotional vulnerability. Prior studies have linked DT traits to maladaptive ER strategies and higher levels of stress, anxiety, and depression (Gómez-Leal et al., 2022; Mojsa-Kaja, 2021; Walker et al., 2022). Adolescents' difficulties in confiding in others, fewer close friendships, and higher attachment insecurity may explain their reduced sense of institutional integration. Furthermore, the broader organizational and social context of residential care – including caregiver relationships, institutional rules and norms, youth-to-staff ratios, and institutional typology – also plays a role in shaping adolescents' adjustment (Silva et al., 2022).

A comprehensive understanding of adjustment requires data from multiple informants, and institutional staff – who serve as primary caregivers in RCS – are well positioned to assess youth mental health and behavior. In **Article 8**, we examined the perspectives of multiple stakeholders in RCS, focusing on discrepancies between adolescents' self-reports and caregiver reports of psychological adjustment. Prior research has shown that discrepancies frequently emerge when multiple informants assess the same construct, with important implications for understanding adolescent development and psychopathology (Achenbach et al., 2005; Laird & De Los Reys, 2013).

Results revealed differences between adolescents and caregivers across all SDQ subscales and the total difficulties score, consistent with previous multi-informant studies (Molano et al., 2024). Adolescents consistently reported higher levels of difficulties than caregivers on all subscales, across both sex and age groups, perceiving themselves as more symptomatic. Caregivers, however, perceived more emotional difficulties in females, consistent with findings from Article 3. Younger participants reported more difficulties on most subscales, a trend also reflected in caregivers' reports. Caregivers reported more emotional, behavioral, and peer-related problems,

as well as overall difficulties, among participants aged 16-18. This may reflect both developmental transitions and the impact of institutionalization on prior social networks. Literature suggests that conflict with close friends decreases with age, while peer support increases in early adolescence but declines in mid-to-late adolescence (Furman & Buhrmester, 1992; Helsen et al., 2000).

A notable discrepancy appeared on the prosocial scale, where adolescents rated themselves higher than caregivers. Importantly, adolescents' reports of greater difficulties suggest they did not attempt to self-present positively or create a socially desirable image. Intraclass correlation coefficients confirmed these discrepancies, underscoring the importance of multi-informant assessments in collectivist institutional settings, where individual actions strongly influence group dynamics.

Given the limited to moderate agreement observed, the findings highlight the risks of substituting one informant's perspective for another and reinforce the value of multi-informant assessment (Martin et al, 2020). Discrepancies may reflect differences in access to information: adolescents can report in internal states, while caregivers are more reliant on observable behaviors, with the degree of discrepancy depending on the construct assessed (Laird & De Los Reys, 2013). While this study demonstrates informant discrepancies across SDQ subscales, caution is warranted in interpreting these differences as definitive indicators of adolescents' psychological adjustment.

In summary, adopting a comprehensive perspective on adolescent psychological adjustment, the eight studies conducted in this thesis contributed in several ways: (a) identified and organized the main determinants of adjustment into four overarching categories (*Article 1*); (b) adapted and validated two psychometric instruments with adequate properties, suitable for institutional settings, to assess both youths' integration within the institution and their relationships with professionals (*Article 2*), as well as attachment styles and risk of psychopathology (*Article 4*); (c) demonstrated that traits of the Dark Triad are significant predictors of adjustment, with psychopathy emerging as particularly detrimental, whereas narcissism appeared to exert a partially protective role (*Article 3*); (d) highlighted avoidant coping strategies as a risk factor and satisfaction with social support as a protective factor against maladjustment (*Article 5*); (e) showed that insecure attachment styles and Dark Triad traits predicted emotional dysregulation and maladjustment (*Article 6*); (f) identified three distinct adjustment

profiles, characterized by different domains and attributes (*Article 7*); and (g) emphasized the importance of using multiple informants to assess the same construct (*Article 8*), underscoring the training needs of professionals working with these adolescents.

Although each empirical study pursued distinct objectives and examined the influence of specific variables on youth adjustment, their findings are interconnected and collectively provide a more holistic understanding of the phenomenon. In line with the title of this thesis, the determinants of psychological adjustment among institutionalized adolescents can be grouped according to the influence of individual, social, and environmental factors. Figure 2 synthesizes the main findings from the empirical studies and organizes, by levels of analysis, the variables that emerged as the most significant predictors of adolescents' adjustment. In the figure, the arrows illustrate the interrelations among the three groups of factors, underscoring that youths' adjustment is multidetermined and should not be approached from an isolated or reductionist perspective.

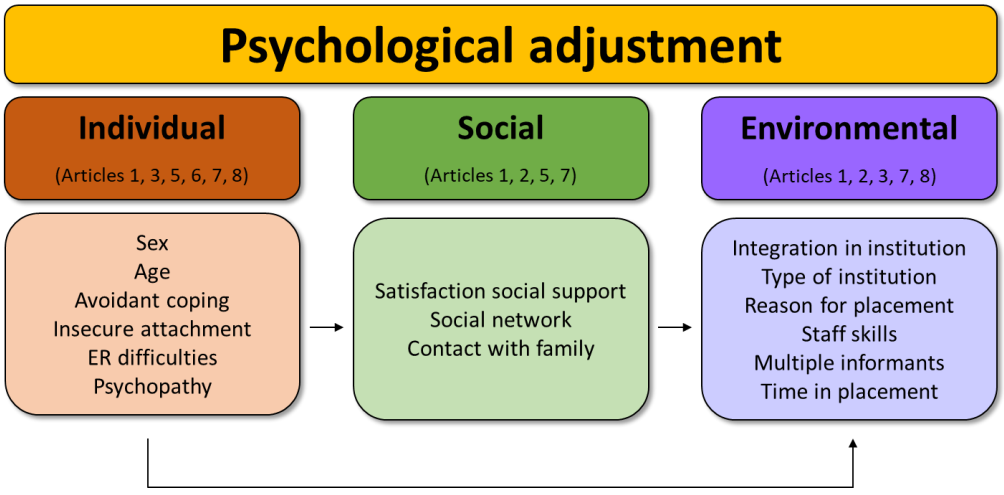

Figure 2. Synthesis of the main findings, with the most significant predictor variables by level of analysis and indication of the articles where these results are reported.

Although the results of this thesis derive from the Portuguese institutional care system, they resonate with international findings on the role of attachment, coping, social support, emotional regulation, and personality traits in adolescents' adjustment. This indicates that the mechanisms identified may be transferable to other contexts.

Nevertheless, their practical application should consider the specificities of each country's cultural and institutional environment.

International literature (e.g., Assouline & Attar-Schwartz, 2020; Compas et al., 2017; Moreno-Manso et al., 2023) already shows convergent findings, suggesting that many of the mechanisms identified in this work are relevant beyond the Portuguese context. These findings therefore provide both theoretical insights and practical guidance for designing interventions, informing policies, and supporting professionals working with adolescents in care. Although many of the psychological mechanisms identified in this thesis are likely universal, several contextual factors appear specific to Portugal. These include the structure of the institutional care system, staff training and stability, socio-economic conditions, and cultural norms regarding family and institutionalization. Furthermore, in Portugal, institutionalization may carry higher social visibility and stronger negative stereotypes, intensifying the stigma experienced by adolescents (Faria et al., 2008). While stigma exists in all countries, its form, intensity, and impact vary across cultural and institutional contexts. Thus, although the underlying mechanisms may generalize, their expression and practical consequences are shaped by the Portuguese context. Future research should adopt cross-cultural and comparative designs to examine the extent to which these determinants of adolescent adjustment operate similarly in different countries and care systems.

As adolescence begins, boys and girls encounter distinct risks for the development of psychopathology. Accordingly, the associations between coping strategies, ER, attachment, and adjustment problems may differ depending on the developmental stage at which they are assessed. Given the increase in depressive disorders during middle adolescence, it is particularly relevant to investigate these variables as risk factors for depressive symptoms. This work aimed to provide child protection professionals with a more nuanced perspective on the underlying causes and factors shaping adolescents' psychological adjustment.

Living in care often entails uncertainty about the future. Many of these adolescents also present behavioral and relational difficulties stemming from trauma, emotional deprivation, or insecure attachment. Rather than labelling adolescents prematurely as "pathological," it is essential to interpret their difficulties within the broader context of their life circumstances.

Limitations, strengths, and future research

Evolution is win-win…life is self-correcting.

(Deepak Chopra)

Limitations

After discussing the findings and methodologies, it is important to reflect on the limitations encountered, their implications for future research, and the strengths that distinguish the present work. While specific limitations of each study were addressed in their respective articles, here, we focus on those common to all studies.

A primary limitation concerns the cross-sectional design, which precludes causal inferences regarding the direction of influence between variables, as well as the examination of cumulative and longitudinal effects on adjustment. For example, Dark Triad traits have been associated with problematic behaviors in previous research; however, longitudinal studies are needed to clarify the directionality of these relationships, as existing evidence suggests bidirectional links between personality traits and problem behaviors. Longitudinal approaches are also essential for investigating the temporal dynamics among attachment styles, personality traits, emotional regulation, and behavioral outcomes.

A second limitation pertains to the complexity of constructs such as attachment and personality, which are influenced by diverse environmental factors, making it difficult to isolate causal pathways. Although adolescents' self-reports are critical and often underutilized in child welfare research, reliance on self-reports for traits such as Machiavellianism raises concerns due to the manipulative tendencies associated with this construct. The use of single-informant data is also a limitation, particularly in residential care settings where adolescents interact with multiple caregivers. Incorporating caregiver reports on constructs beyond psychological adjustment (e.g., institutional integration, personality) would enhance the analyses.

Third, the potential for social desirability bias must be acknowledged, as adolescents completed questionnaires within the residential care context and, in some cases, under supervision by institutional professionals. Additional limitations include the absence of test–retest reliability analyses for the PRCI and VASQ, and well as the lack of convergent validity testing with similar instruments.

Strengths

Despite these limitations, the study design also exhibited notable strengths. Two data collection protocols were implemented, varying the order of questionnaires to minimize fatigue effects and random responding.

In some analyses, age was categorized rather than treated as a continuous variable, enhancing interpretability and capturing nonlinear developmental patterns, in line with developmental psychology research. Restricting the sample to adolescents further increased the specificity of the findings, avoiding confounds associated with younger children.

Another strength was the high response rate from a hard-to-reach population, resulting in a large sample size that enabled robust statistical analyses. The study also achieved broad geographic representation, encompassing all institutions in the Algarve, Baixo Alentejo, and the Azores. Moreover, the inclusion of a wide range of empirically relevant dimensions provided a comprehensive perspective on both risk and protective factors. The use of both adolescent and caregiver reports further enriched the data, reducing social desirability bias and allowing comparison across informants.

Finally, two self-report scales were adapted and validated, with cutoff points established for the VASQ. These tools that can be readily employed by institutional staff to monitor adolescents' functioning without requiring additional training.

Future research

Building on the findings of the present thesis, several avenues for future research can be identified, which should consider multiple levels of influence on adolescents' psychological adjustment in RCS.

1. Individual level

Future studies should employ longitudinal designs to examine the trajectories of psychological adjustment over time, considering trauma history, the age at entry in residential care, duration of institutionalization, and placement stability. Such designs would allow for the investigation of how personality traits, attachment styles, emotional regulation abilities, and coping strategies interact to shape developmental outcomes. It is also important to examine individual differences in vulnerability and resilience, identifying factors that buffer against maladjustment and promote positive development. Longitudinal studies would also enable the investigation of changes in perceived institutional integration, the factors influencing these perceptions, and variations in relationships with caregivers over time. Additionally, the refinement of assessment tools, such as the VASQ, could focus on specifying attachment to preferred caregivers or significant figures, thereby clarifying which relationships most strongly influence adjustment outcomes.

2. Familial level

Although adolescents in RCS often have limited contact with their families, future research should explore the role of family relationships, both prior to and during institutionalization, as potential protective or risk factors. Studies could investigate how parental support, family reunification efforts, or alternative caregiving arrangements (e.g., foster care) affect psychological adjustment. Furthermore, examining the interaction between adolescents' attachment representations and the quality of remaining family connections could provide insight into how family dynamics moderate the impact of institutional placement.

3. Institutional level

Institutional factors such as caregiver-adolescent relationships, staff training, organizational climate, and adherence to evidence-based practices are critical determinants of adjustment. Future studies should evaluate how institutional policies, caregiver consistency and stability, group size, and daily routines influence adolescents' coping strategies, social integration, and behavioral outcomes. Examining how caregiver relationships and institutional practices shape adjustment profiles would further strengthen the conceptual framework developed in this thesis. Multi-informant approaches, incorporating both adolescent and caregiver reports, should continue to be prioritized to reduce bias and provide a more comprehensive understanding of

institutional processes. Longitudinal monitoring within institutions could identify how specific practices enhance positive adjustment and mitigate risks associated with placement.

4. Contextual and societal level

Research should also consider broader contextual factors, including cultural norms, regional policies, and legal frameworks governing child welfare. Comparative studies across regions or countries could clarify how systemic differences influence adjustment outcomes and identify best practices for institutional care. Additionally, societal attitudes toward adolescents in care, community support networks, and access to mental health services are important contextual variables that may moderate the effectiveness of interventions.

5. Methodological recommendations

Future research should continue to integrate multi-method approaches, combining self-report instruments, observational data, and longitudinal designs to better capture complex interactions among individual, familial, and institutional factors. Efforts to establish test–retest reliability, convergent validity, and culturally sensitive adaptations of assessment tools are essential to improve measurement precision and applicability across contexts.

6. Practical implications for research and intervention

Finally, future studies should evaluate interventions aimed at improving both individual and systemic outcomes. For instance, programs promoting emotion regulation, coping strategies, and attachment security could be tested alongside institutional training initiatives that strengthen caregiver competencies. Interventions addressing placement stability, family engagement, and alternative care arrangements (such as foster care or supported family reintegration) should also be evaluated to determine their impact on adolescents' adjustment. By integrating these levels, research can provide a holistic understanding of the factors that foster resilience and positive development among youth in residential care.

The quality of residential care institutions has increasingly sought to replicate, though not replace, the family environment, fostering more personalized interventions that approximate family-like systems. Zegers et al. (2006) demonstrated that adolescents' attachment representations were strongly correlated with increased trust

in mentors and decreased avoidance toward institutional staff, while mentors' own attachment representations predicted changes in adolescents' perceptions. Similarly, Hawkins-Rodgers (2007) developed a program aimed at reorganizing attachment behaviors and fostering resilience among institutionalized adolescents, grounded in the role of mentors and staff. This program enabled adolescents to build long-term relationships, experience empathic responses to traumatic events, and learn coping strategies. The relationships established with staff represented a continuous effort toward positive and substantive changes in adolescents' lives, thereby promoting better adjustment.

Simsek et al. (2007) further showed that regular contact and affective involvement with parental figures, teachers, and institutional staff enhanced adolescents' perceptions of social support, which in turn fostered protective factors against emotional and behavioral difficulties. Collectively, these studies illustrate promising areas for research and intervention with this population.

In Portugal, several intervention programs and projects have been developed specifically for youth in residential care. Some focus on social skills, autonomy, relationships with caregivers, and social reintegration (e.g., Gameiro et al., 2024), whereas others developed a compassionate mind training (e.g., Santos et al., 2023). Findings indicate effectiveness in strengthening adolescents' emotional security, increasing supportive behaviors among professionals, reducing perceived aggression, enhancing social support, improving self-concept, and promoting better cognitive and emotional functioning.

Another important area concerns staff training, exemplified by the CareME program (Carvalho et al., 2021), an attachment-based intervention for caregivers in RCS. The development and replication of such programs may contribute to reducing risk factors and strengthening protective factors that influence the psychological adjustment of institutionalized youth.

Final conclusions and practical implications

"Foi o tempo que dedicaste à tua rosa que fez a tua rosa tão importante."

(Antoine de Saint-Exupéry, O Principezinho)

Although residential institutions vary considerably in the quality of care provided – with significant implications for youth development – residential care continues to function as a protective and promotive measure. It creates opportunities for supportive relationships that foster well-being and the development of adaptive behavioral and relational patterns in adolescents (Siqueira & Dell'Aglio, 2006).

Focusing on youth within the child protection system allows the identification of factors and conditions that promote positive adjustment. The use of multiple informants in assessments provides a more comprehensive understanding and strengthens the tools available for intervention.

Portugal has one of the highest proportions of children and adolescents in residential care in Europe, most of them adolescents. Globally, the World Health Organization (WHO, 2025) estimates that 15% of adolescents experience mental health disorders – a vulnerability even more pronounced among youth in care. According to the CASA Report (ISS, 2024), mental health diagnoses are most frequent among youth aged 15-20, with behavioral problems being particularly common in boys aged 12-17. These problems, varying in severity, often reflect internal distress and psychosocial maladjustment.

Over the past decade, the overall number of children in care has decreased, yet the proportion of adolescents has increased. The CASA Report highlights key indicators of psychosocial adjustment in this population, including behavioral problems, mental health status, use of psychiatric medication, and access to specialized care. Research stresses the importance of early identification of psychopathological symptoms to enable timely psychoeducational support and prevent further maladjustment. The

prevalence of mental health difficulties among institutionalized youth remains markedly higher than in the general population.

Positive and supportive relationships with caregivers are crucial for well-being. While previous studies have documented the adverse effects of institutionalization on development, adolescents in care have also proven to be reliable informants in research.

This thesis sought to develop a comprehensive model of psychological adjustment in adolescents living in residential care, analyzing individual, social, and environmental determinants. At the **individual level**, variables such as sex, age, psychiatric medication, psychoactive substance use, personality traits, attachment style, coping strategies, and emotion regulation were significant predictors of adjustment. At the **social level**, perceived social support and frequency of contact with biological family members also played an important role. At the **environmental level**, factors such as reason for placement, length of stay, type of institution, and degree of institutional integration had measurable effects. In contrast, institutional religious orientation and the presence of siblings were not significant.

The data collection protocol proved appropriate for this population, yielding satisfactory psychometric properties. The PRCI scale, in particular, may serve as a valuable tool for preventing placement disruptions and promoting stability by assessing factors that hinder integration. Across the seven empirical studies conducted, the impact of each variable was examined in depth, culminating in the development of a comprehensive final profiling.

This analysis made it possible to identify and characterize distinct youth profiles in care, contributing to a clearer understanding of the Portuguese institutionalized adolescent population. Findings can inform social, educational, and legal policies guiding intervention and residential care practices. The sample included around 10% of all institutionalized adolescents in Portugal, representing facilities from the mainland and the Azores and Madeira archipelagos, as well as their professional caregivers.

Importantly, results reflect the perspectives of both adolescents and the professionals responsible for their care. Better adjustment was associated with mixed-gender institutions, longer stays, higher perceived social support, and specific placement reasons – particularly in cases involving sexual abuse. Key predictors of

maladjustment included poor institutional integration, avoidant coping, emotion regulation deficits, insecure attachment, and Dark Triad traits. A decline in reported difficulties among older youth (ages 19–24) may indicate improved adjustment due to developmental changes, longer support, and more stable relationships.

Institutional deprivation thus appears to have a probabilistic rather than deterministic effect on emotional and behavioral outcomes (Lee et al., 2010). Not all institutionalized youth present dysfunction, underscoring the importance of nuanced, individualized assessments. Interventions should therefore avoid reductionist approaches and instead target the multiple, intersecting factors influencing adjustment.

Given the high prevalence of psychological difficulties, professionals should prioritize developing adolescents' emotional regulation and coping strategies. For internalizing problems, interventions should focus on anxiety and depression; for externalizing behaviors, on self-control, attention, and impulse regulation. Effective regulation, however, requires emotionally stable and secure environments. Trust-based and responsive with caregivers and peers are key to fostering adaptive emotional and relational development. Similarly, secure and consistent relationships reduce not only behavioral problems but also emotional distress and maladaptive personality traits. Encouraging adaptive coping is fundamental to strengthening social relationships and overall adjustment.

In Portugal, the child protection system does not differentiate between children who commit offenses and those who are victims of abuse or neglect, creating specific challenges for youth aged 12-16 (Gaspar & Guerra, 2024). Although residential care remains necessary, greater investment in family-based alternatives is essential (McCall, 2013). Family placements must not be viewed as secondary solutions. Prior to placement, comprehensive evaluations should identify children's and families' psychological, social, and economic needs – mapping risks and protective factors to maximize resources and minimize vulnerabilities.

It is often difficult to determine whether adolescents' difficulties are pre-existing or consequences of institutionalization. Longitudinal approaches may help distinguish persistent challenges from context-dependent issues and clarify intervention needs. Recognizing that most institutionalized adolescents wish to return

to their families, and many maintain contact with them, investments in parenting skills and family support are crucial.

Practical implications

Research in the social sciences, particularly with at-risk youth, should inform evidence-based interventions and provide indicators of best practice through dissemination of results, dialogue among stakeholders, and integration of findings into concrete actions aimed at improving young people's lives. In this sense, research must generate a transferable social impact (Small, 2005). Throughout this project, I maintained a commitment to ensuring that the knowledge produced would return to the community and, especially to those directly involved. To maximize scientific impact, findings have been disseminated (or are in the process of being published) in peer-reviewed journals and presented at scientific conferences.

This thesis analyzed determinants of psychological adjustment among adolescents in residential care, generating results of both scientific and practical relevance. Its contribution extends beyond academia, aligning with evidence-based practices in interventions with adolescents and families. Collaboration between youth and institutional professionals is essential to align needs with resources, expectations with possibilities, and potential with effective intervention.

Despite policy progress toward family-based care, residential care remains a reality for many children and adolescents. Improving its quality is therefore crucial to promote adjustment and development. Given the high prevalence of socioemotional difficulties among adolescents in RCS, early identification of those at risk for mental health problems is essential. Routine psychological screening, timely access to specialized services, and individualized interventions should be prioritized.

Findings highlight the need for gender-sensitive support programs that account for gender-related needs and biases. Training professionals to recognize and address adolescents' main challenges – such as attachment difficulties, maladaptive coping, and deficits in ER – should be a priority. Safer, more stable, and inclusive residential environments are also essential. Structured interventions, including mentoring and group-based activities, can support psychosocial well-being and foster positive peer networks. Caregiving is shaped by one's own history of being cared for. Within institutional settings, close and affectionate relationships with caregivers can play a

crucial role in meeting attachment needs, fostering trust, and strengthening adolescents' sense of belonging. To manage the considerable emotional demands of this role, caregivers benefit from stable and supportive frameworks. Therefore, the development and implementation of targeted training programs and the provision of regular supervision are essential strategies to equip professionals, enhance the quality of care, and mitigate the potential negative consequences of institutionalization.

Assessing attachment styles in RCS and strengthening caregiver-adolescent relationships are central to promoting adjustment. Results also underscore the importance of secure environments, given the observed associations between DT traits, insecure attachment styles, adjustment problems, and ER difficulties. Emotional closeness and reliable caregiving figures play a critical role in developing socioemotional competencies and regulation strategies (Bowlby, 1977). Secure attachment further supports brain development, effective affect regulation, and adaptive mental health (Schore, 2001). Interventions that strengthen regulation and attachment bonds are therefore an investment in healthier developmental trajectories. Tools such as the PRCI scale may assist practitioners in distinguishing between well-adjusted adolescents and those requiring additional support.

Tailored interventions should also consider personality-related risk factors. Personalized approaches can target specific deficits in self-control, coping, and problem-solving while fostering empathy and emotional engagement. Monitoring high-risk profiles and implementing intensive, relationship-focused interventions is essential. Professionals in RCS require specialized training to manage the challenges posed by personality traits and to reduce the escalation of psychological difficulties. Enhancing caregiver training in recognizing emotional and internalizing symptoms may also reduce discrepancies between adolescent- and caregiver reports.

Psychological adjustment assessment should be part of a comprehensive toolkit for both research and practice. Evaluating personality traits, attachment, coping strategies, and emotion regulation enables early detection of at-risk adolescents and informs individualized care plans. Understanding how personality interacts with environmental influences reinforces the need to equip caregivers with strategies that promote behavioral control and emotional growth.

Grounded in a **social-ecological perspective**, effective reintegration into the family environment requires involving families throughout the placement process (Bravo & Del Valle, 2003). Family-centered interventions should focus on restoring secure attachment, relational continuity, and responsive caregiving. Their success depends on systematic coordination between residential care services and family-oriented programs, combined with continuous training and supervision for caregivers. Parent-support programs or legally established alternatives, such as foster care, may further mitigate the negative impact of institutional placement, reduce adverse outcomes, and foster higher levels of adjustment.

Adopting a strengths-based framework that emphasizes protective factors is also recommended. Profile-specific interventions are particularly useful: well-adjusted adolescents may benefit from supportive programs preparing them for independent living; moderately adjusted adolescents require preventive programs targeting substance use, relational risks, and social skills; and those with the poorest adjustment should receive intensive, trauma-informed interventions focused on emotional regulation, attachment repair, and adaptive coping.

Finally, reflecting on the effectiveness of protection measures requires a broader analysis of the social and economic determinants of trauma and maltreatment. Prioritizing vulnerable contexts and reducing insecure attachment relationships should be treated as a public health priority (Granqvist et al., 2017).

REFLEXÃO FINAL

O amor é uma luz que não deixa escurecer a vida.

(Camilo Castelo Branco)

A institucionalização de crianças e adolescentes afeta cada vez mais famílias em Portugal, em diferentes níveis, perspetivas e contextos, com repercussões em várias áreas. Não foi possível esclarecer em que condições aconteceram as retiradas dos jovens que participaram neste trabalho, mas sabemos que esse momento constitui muitas vezes (mais) uma experiência traumática, para além de todas as vivências impactantes que estes jovens guardam consigo. Apesar disso, a maior parte dos participantes deste estudo afirma que pretende regressar para junto da família de origem quando sair da instituição.

Com base nos resultados encontrados e que representam a realidade de milhares de jovens que vivem afastados das suas famílias, com parcos ou nenhuns laços afetivos, é minha expectativa que o modelo compreensivo aqui retratado possa servir para aprimorar as políticas sociais e de intervenção junto desta população.

Os resultados e as conclusões aqui apresentadas retratam rostos e vidas muito jovens, pautadas por um silêncio ruidoso, que é carregado numa bagagem cheia de memórias, perdas, desilusão e (por vezes, pouca) esperança. É minha convicção, e expectativa, que a implementação do novo modelo de funcionamento das casas de acolhimento, enquadrado pela Portaria n.º 450/2023, possa minimizar alguns dos impactos da institucionalização, uma vez que determina alterações que visam trabalhar a autonomização dos jovens e uma redução significativa do número de residentes por instituição, para que possam ser acompanhados por uma equipa técnica e educativa de forma mais próxima. Desse modo, poderá ser dada uma atenção maior e mais individualizada de forma a promover estilos de vinculação mais seguros e formas mais adaptativas de resolver os problemas, que os protejam e preparem para os desafios da vida adulta, ou para um regresso mais estabilizado e consistente ao meio familiar de origem.

Quando a família de origem não é alternativa viável para servir de modelo educativo e conferir a proteção e segurança necessárias, deveria ser dada à criança ou jovem a possibilidade de ser integrada numa família de acolhimento para que o seu desenvolvimento possa decorrer num ambiente securizante, supervisionado, e para que lhes seja devolvida a esperança de que as características individuais, sociais e contextuais podem fazer parte de uma constelação de fatores que influenciam mas não determinam a sua capacidade de ajustamento sem considerarmos a importância de se sentirem únicos e especiais.

É fundamental ouvirmos as vozes daqueles que achamos estar a proteger, querer conhecer as suas histórias não só de fragilidade, mas também de potencialidades, e promovermos uma discussão alargada e compreensiva sobre os diferentes fatores e agentes que intervêm na promoção dos direitos e melhores interesses das crianças. Independentemente da sua idade, sexo, cultura, ou origem, a criança tem o direito a ser cuidada, mas também de ser ouvida e atendida nas suas necessidades.

Ao longo da realização deste trabalho contactei com muitos jovens institucionalizados, olhei-os nos olhos, senti os seus medos, escutei algumas das suas críticas, expectativas, e anseios, e a cada comunicação ou intervenção pública que realizei procurei sempre dar-lhes voz. É fundamental que as investigações não sejam apenas estudos empíricos, mas sim formas efetivas de converter números em melhorias de vidas humanas, e resultados estatísticos em mudanças significativas na vida de cada um dos que se veem privados da sua liberdade de decidir, interagir ou contradizer.

No trabalho diário com estes jovens, é crucial que sejam realizadas intervenções baseadas em evidências científicas, que seja promovida uma autonomia informada, e que os jovens possam ser cocriadores de uma nova narrativa que lhes permita sair de forma estruturada, planeada e fortalecida das instituições.

Ser um jovem institucionalizado não é só ser um número num relatório anual, ser parte de um ficheiro numa base de dados, ou um processo nos serviços sociais cuja história foi esmiuçada e ameaçada não poucas vezes. É muito mais do que viver numa casa partilhada, com regras rígidas e adultos a impor autoridade. Ser um jovem a viver numa instituição significa que para trás ficou um passado que não soube cuidar de si,

significa ser parte de um presente que na maior parte das vezes não foi desejado, que encerra em si segredos e sofrimentos muitas vezes silenciados, mas acima de tudo significa que a perspetiva de futuro depende de um conjunto de condições impostas e não conquistadas ou garantidas.

O futuro de um jovem institucionalizado cabe nos sonhos de quem acredita que pode ser brilhante, fazer tudo diferente, e vingar o que os adultos não souberam cuidar.

Apesar das estatísticas mostrarem que muitos dos jovens que hoje estão numa instituição, quando saírem vão enfrentar dificuldades acrescidas comparativamente com os jovens da sua idade que vivem com as suas famílias biológicas, eles têm o direito e a capacidade para sonhar que serão diferentes. O seu desejo de liberdade e de poder decidir sobre o seu futuro leva-os demasiadas vezes a assumir escolhas erradas, precipitadas e ingénuas. Mas eles têm o direito de querer ser livres. Serão para sempre prisioneiros da sua história, dos erros que a sociedade não soube evitar, e serão provavelmente novamente vítimas das suas escolhas. Mas, numa sociedade onde o apoio social é instável, as figuras de referência conferem insegurança, as estratégias para resolver problemas são reduzidas, a capacidade para regular as emoções é disfuncional, e a personalidade assombra... podemos nós pensar em ter jovens ajustados? Depende só deles? Podem as instituições adaptar-se e assegurar todas as condições que estes jovens precisam para efetivar uma mudança de paradigma eficaz?

O futuro começa a construir-se na infância, no contexto familiar, nas primeiras relações. É lá que se constroem os alicerces daqueles que serão o futuro da nossa sociedade. Se como diz o poeta, "a criança é o pai do homem", quando é que reconhecemos que as instituições não têm apenas equipas técnicas a fazer trabalho administrativo, mas sim grupos de jovens a quem precisamos dar mais atenção e tentar minimizar os estragos que as suas origens deixaram? Parece-me responsável assumir e reconhecer que nem sempre a solução ideal existe ou é exequível, e é necessário escolher um mal menor que vá resolvendo os problemas mais imediatos. É importante por isso dar um voto de confiança às instituições e a quem lá trabalha diariamente fazendo o seu melhor. Mas cabe à sociedade, e a cada um de nós, dar a estes jovens e

às suas famílias, as condições e o apoio que precisam, numa altura precoce, que permita evitar um desfecho potencialmente traumático.

Ser um jovem a viver numa instituição poderia significar apenas uma mudança de casa que contemplasse uma mudança efetiva de realidade, e de futuro.

Ser um jovem a viver numa instituição poderia ser apenas uma questão habitacional. Mas não é.

Poderia ser apenas uma questão familiar. Mas não é.

Poderia ser apenas um problema social. Também não é só isso.

Poderia ser uma questão de saúde mental. É demasiado redutor.

Viver numa instituição é não ter culpa.

Viver numa instituição é tudo aquilo que só os jovens que lá vivem conseguirão descrever. A quem os quiser verdadeiramente ouvir e conhecer.

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APPENDICES

Appendix A

Consumo de Substâncias Psicoativas em Jovens Portugueses Institucionalizados: a relação com as estratégias de *coping* e a Tríade Negra da personalidade

RESUMO

Os adolescentes a viver em acolhimento residencial apresentam um risco acrescido de problemas emocionais e comportamentais. Em Portugal, a percentagem de jovens que consome algum tipo de substância psicoativa tem aumentado e, no último ano, entre os jovens acolhidos o aumento foi de 10%. Pretendemos explorar as relações entre os traços de personalidade da Tríade Negra, as estratégias de *coping* e o ajustamento psicológico, e investigar potenciais diferenças entre sexos. Foram utilizados questionários de autorrelato (Questionário de Capacidades e Dificuldades, Short Dark Triad, Brief COPE) para recolher os dados numa amostra de 511 jovens, dos 12 aos 24 anos, a viver em 46 instituições de acolhimento residencial. Foram realizadas análises descritivas e de correlações. Mais de metade dos jovens já experimentou pelo menos uma substância. Observam-se diferenças entre sexos nos problemas emocionais, hiperatividade e comportamento pro-social, assim como no maquiavelismo e psicopatia; ao nível dos consumos não se observam diferenças entre sexos. O uso de substâncias correlaciona-se positivamente com todas as dimensões do SDQ e negativamente com o comportamento pro-social. Os três traços da Tríade Negra correlacionam-se positivamente com estratégias de *coping* desadaptativas; o narcisismo é o único traço que correlaciona positivamente com todas as estratégias. Estes resultados podem ajudar os profissionais das instituições, da área da infância e juventude, e das equipas de prevenção a delinear intervenções individualizadas. Recomenda-se um trabalho articulado entre todos os profissionais para que a intervenção junto desta população seja ajustada às características particulares de cada situação, considerando as especificidades da adolescência.

Palavras-chave: Ajustamento psicológico; Estratégias de *coping*; Jovens institucionalizados; Substâncias psicoativas; Tríade Negra da personalidade

ABSTRACT

Adolescents living in residential care have an increased risk of emotional and behavioral problems. In Portugal, the percentage of young people who consume some kind of psychoactive substance has increased and, in the last year, among young people in residential care, the increase was 10%. We intend to explore the relationships between the Dark Triad personality traits, *coping* strategies and psychological adjustment, and to investigate potential differences between boys and girls. Self-report questionnaires (Strengths and Difficulties Questionnaire, Short Dark Triad, Brief COPE) were used to collect data from a sample of 511 young people, aged 12 to 24, living in 46 residential care institutions. Descriptive and correlation analyses were carried out. More than half of the young people had experimented at least one substance. There were differences between sexes in emotional problems, hyperactivity and pro-social behavior, as well as Machiavellianism and psychopathy; there were no differences between sexes in terms of consumption. Substance use correlated positively with all the dimensions of the SDQ and negatively with prosocial behavior. The three Dark Triad traits correlated positively with maladaptive coping strategies; narcissism is the only trait that correlates positively with all strategies. These results can help professionals in institutions, in the area of children and young people, and in prevention teams to design individualized interventions. It is recommended that all professionals work together so that the intervention with this population is adjusted to the particular characteristics of each situation, considering the specificities of adolescence.

Keywords: Coping strategies; Dark Triad of personality; Institutionalized youth; Psychoactive substances; Psychological adjustment

1. INTRODUÇÃO

Um relatório da UNICEF que analisou quarenta e dois países da Europa e Ásia Central, identificou Portugal como o país com mais crianças e jovens retirados às

famílias (UNICEF, 2024). Os últimos dados disponibilizados pela Segurança Social reportam mais de 5400 crianças e jovens em situação de acolhimento, das quais 84% encontram-se a viver em instituições e dessas, 25% deram entrada no acolhimento devido a problemas de comportamento (Instituto da Segurança Social [ISS], 2024). A literatura tem documentado que os jovens em acolhimento residencial (AR) apresentam mais problemas emocionais, comportamentais, sociais e académicos que os seus pares a viver com as famílias biológicas (Molano et al., 2024; Mota el al., 2017), e que estas dificuldades persistem na vida adulta, após a saída das instituições (Harrison et al., 2023; Sulimani-Aidan, 2017). No que concerne ao acolhimento, as mudanças no contexto de vida, nos cuidadores, e a inerente rotatividade dos cuidadores no ambiente institucional, aumentam a suscetibilidade dos jovens para sofrerem problemas psicológicos (Rayburn et al., 2018). O ajustamento psicológico nestes jovens é multideterminado (Simão et al., 2025), envolve a adaptação ao ambiente utilizando recursos emocionais, cognitivos e sociais (Schoeps et al., 2019), e pode ser conceptualizado como o conjunto dos problemas internalizantes como a ansiedade ou depressão (Dwight et al., 2024), e externalizantes como a agressividade ou o consumo de substâncias, que os indivíduos exibem, e que muitas vezes co-ocorrem (Keil & Price, 2006).

A adolescência é uma etapa do desenvolvimento que inclui a procura de experiências, limites e definição da identidade, sendo um período sensível para o início do uso e abuso de substâncias psicoativas (SPA) (Gilvarry, 2000). O álcool e o tabaco são as substâncias mais utilizadas pelos adolescentes, e a cannabis a substância ilícita mais consumida, sendo frequente a associação das diferentes SPA (Gilvarry, 2000; Lavado & Calado, 2024).

Os maus-tratos físicos e psicológicos na infância, muitas vezes presentes na história dos jovens em AR, influenciam o consumo de SPA na fase da adolescência (Fernández-Artamendi et al., 2020; Gilvarry, 2000). Alguns estudos relatam que qualquer tipo de maltrato pode resultar numa prevalência de 85,7% de consumo de cannabis ao longo da vida (Nawi et al., 2021), enquanto outros trabalhos realizados em Espanha indicam que 37,2% dos adolescentes em AR são consumidores frequentes de drogas (Martín et al., 2018). Nestes jovens a proporção de consumo de cannabis aumentou de 9 para 18% após 36 meses no acolhimento (Nawi et al., 2021).

Uma revisão sistemática recente (Nawi et al., 2021) identificou alguns fatores que podem ser considerados de risco para o consumo de SPA, concretamente: a existência de problemas de saúde mental e comportamental prévios à institucionalização, pressão dos pares, fraca supervisão, relações parentais disfuncionais, sexo, acontecimentos de vida traumáticos, características da personalidade, e estratégias de *coping*. Paralelamente, os autores identificaram vários fatores de proteção, tais como: um bom nível de autoestima, a religiosidade, relação com os pares, autocontrolo, e a existência de políticas de combate ao consumo de droga. No contexto português a percentagem de jovens que até aos 18 anos já experimentou ou consome algum tipo de substância tem vindo a diminuir, com exceção de alguns grupos específicos (Lavado & Calado, 2024), e entre os jovens em AR o aumento foi de 10% em relação a 2022 (ISS, 2024).

O *coping* pode ser definido como a resposta cognitiva, emocional e comportamental de um indivíduo para gerir as exigências internas e externas decorrentes dos problemas do quotidiano (Folkman, 1984). Os indivíduos selecionam as estratégias de *coping* a utilizar com base na perceção do seu controlo sobre os fatores de stresse, ajustando as respostas para evitar o desajustamento (Lazarus & Folkman, 1984). Estratégias de *coping* eficazes podem influenciar a adaptação aos diferentes contextos sociais bem como minimizar dificuldades de integração (Frydenberg & Lewis, 2009). As estratégias de *coping* podem também mediar a relação entre as experiências de vida adversas, os recursos pessoais e sociais para as resolver, e as consequências dos problemas de saúde mental. Estratégias desadaptativas conduzem a um aumento dos sintomas internalizantes, enquanto estratégias adaptativas reduzem os sintomas externalizantes. Os jovens em AR sofrem frequentemente vários tipos de maus-tratos e fatores de stresse crónicos, que conduzem a piores resultados em termos de saúde mental. Simultaneamente, as estratégias de *coping* influenciam a variância na quantidade de problemas de internalização e externalização que apresentam (Huffhines et al., 2020; Miller et al., 2011). Assim, os estilos de *coping* podem esclarecer acerca das disparidades de saúde mental que os adolescentes em AR apresentam. O seu ajustamento psicológico depende então do tipo e duração dos maus-tratos, mas também da forma como os

jovens gerem os seus sentimentos e comportamentos após os maus-tratos (Huffhines et al., 2020).

A Tríade Negra (TN) refere-se a caraterísticas de personalidade subclínicas de maquiavelismo, narcisismo e psicopatia ligadas a comportamentos da população em geral que são éticas, moral e socialmente questionáveis (Klimstra et al., 2014). Embora considerados aversivos ou negativos, estes traços não são indicativos de patologia, no entanto englobam dimensões de personalidade socialmente prejudiciais e todos os traços captam tendências socialmente indesejáveis (Muris et al., 2017; Paulhus & Williams, 2002). O maquiavelismo é definido por enganar, explorar e manipular (Klimstra et al., 2014; Götz et al., 2020); o narcisismo envolve visões grandiosas de si mesmo e estratégias de dominância (Klimstra et al., 2014); e a psicopatia está associada à impulsividade, procura de emoção e baixa empatia (Paulhus & Williams, 2002). A TN representa um lado malévolo e desadaptativo da natureza humana, frequentemente associado a efeitos e comportamentos psicossociais adversos (Sijtsema et al., 2019). Investigações prévias mostraram que a TN pode influenciar as estratégias de *coping* e a saúde psicológica (Birkás et al., 2016) e que cada caraterística provoca respostas distintas ao stresse (Birkás et al., 2016; Yang et al., 2024).

O consumo de SPA, as estratégias de *coping* e as características da TN podem influenciar o ajustamento psicológico dos jovens em AR e foram consideradas neste estudo que teve como ponto de partida o facto de não existir até ao momento, tanto quanto conhecemos, um estudo português que retrate a realidade dos consumos dos jovens a viver em AR e procure relacionar com as características da Tríade Negra da Personalidade e com a utilização das estratégias de *coping*. O presente estudo insere-se no âmbito de uma investigação mais alargada que identificou que, tanto em Portugal como a nível internacional, não existe nenhum trabalho publicado que tenha investigado a presença das características da TN da personalidade em jovens a viver em regime de AR. Deste modo, o objetivo deste estudo é explorar a experiência de consumo de SPA, as estratégias de *coping* e a TN em jovens que vivem em AR, de modo a conhecer o seu impacto no ajustamento psicológico dos mesmos. Esperamos que os resultados possam contribuir para a definição de estratégias interventivas mais adequadas à especificidade desta população, nomeadamente pelos técnicos das equipas de prevenção dos comportamentos aditivos e dependências, ou outros

profissionais que trabalhem na área da infância e juventude, ou do acolhimento residencial.

2. METODOLOGIA

Participantes

Participaram 511 jovens de 46 instituições portuguesas de acolhimento residencial, incluindo 232 rapazes (45,4%) e 279 raparigas (54,6%), com idades compreendidas entre os 12 e os 24 anos (*M* = 15,87, *DP* = 2,25). A distribuição etária foi a seguinte 12-15 anos: n= 226 (44,2%); 16-18 anos: n= 227 (44,4%); 19-24 anos: n= 58 (11,4%). A faixa etária dos 12-24 anos é a mais prevalente no AR em Portugal (ISS, 2024). Em média, os jovens viviam na atual instituição há 41 meses (*DP* = 43; intervalo = 1-204). Embora muitos jovens apresentassem mais do que uma razão para terem sido acolhidos, as principais razões para as atuais medidas de proteção foram a negligência e os maus-tratos (38%), o absentismo escolar (30%), os problemas financeiros (29%) e a violência doméstica (25%). Relativamente ao nível de escolaridade, a maioria dos participantes (75%) concluiu o 3º ciclo do ensino básico. A maioria dos jovens (93%) tinha irmãos, mas apenas 31% viviam na mesma instituição.

Instrumentos

O protocolo de recolha de dados incluiu um questionário sociodemográfico para caracterização da amostra, onde se incluíram questões relacionadas com a experimentação, consumo regular, ou intenção de consumo das SPA mais consumidas pelos jovens portugueses (Lavado & Calado, 2024), bem como outras substâncias menos prevalentes, assim como cada um dos instrumentos que abaixo se descrevem.

Questionário de Capacidades e Dificuldades (Goodman, 1997; versão portuguesa de Pechorro et al., 2011)

O SDQ é uma escala de autorrelato de 25 itens concebida para avaliar problemas socio-emocionais em crianças e adolescentes. Os itens são classificados através de uma escala tipo Likert de três pontos (0 = "Não é verdade", 1 = "É um pouco verdade", 2 = "É muito verdade") e estão organizados em cinco subescalas: problemas emocionais, problemas comportamentais, dificuldades de hiperatividade/desatenção, problemas de relacionamento com os pares e comportamentos pró-sociais (Goodman, 1997). A pontuação total das dificuldades do SDQ (ou seja, a soma de todas as

subescalas, exceto os comportamentos pró-sociais) é uma medida psicometricamente sólida dos problemas globais de saúde mental dos jovens (Goodman et al, 2010). Os valores de consistência interna na versão original (Goodman, 2001) variavam entre 0.41 e 0.80, indicando uma boa fiabilidade interna. Na adaptação portuguesa (Pechorro et al., 2011), os alfas de Cronbach variaram entre 0.43 e 0.61. Para o presente estudo, os valores de fiabilidade obtidos para cada subescala e para a escala total do SDQ foram os seguintes: problemas emocionais $\alpha = 0.68$, problemas de comportamento $\alpha = 0.57$, problemas de hiperatividade/desatenção $\alpha = 0.66$, problemas de relacionamento com os pares $\alpha = 0.51$, comportamentos pró-sociais $\alpha = 0.78$, e escala total $\alpha = 0.78$.

Short Dark Triad (SD3, Jones & Paulhus, 2014; versão portuguesa de Pechorro et al., 2018)

A escala SD3 foi concebida para captar a Tríade Negra (Jones & Paulhus, 2011), com enfoque nas conceções clássicas e nas características de cada traço, nomeadamente: os maquiavélicos são manipuladores estratégicos, os narcisistas promovem a procura de atenção e os psicopatas são impulsivos em busca de emoção. Trata-se de uma medida breve de 27 itens que avalia as dimensões do maquiavelismo, do narcisismo e da psicopatia, com nove itens em cada uma das três subescalas. A versão portuguesa (Pechorro et al., 2018) excluiu alguns itens, culminando numa estrutura com três fatores e sete itens cada. Os participantes indicam o seu nível de concordância numa escala de Likert de 5 pontos que varia entre 1 “Discordo totalmente” e 5 “Concordo totalmente”. Pontuações mais elevadas indicam níveis mais elevados de traços da TN. No estudo de validação a consistência interna foi boa para as três subescalas do SD3, com valores de alfa de Cronbach e de fiabilidade composta sempre superiores a 0.80. No presente estudo, os valores de fiabilidade obtidos para cada subescala foram os seguintes: maquiavelismo $\alpha = 0.78$, narcisismo $\alpha = 0.58$, e psicopatia $\alpha = 0.69$.

Brief COPE (Carver, 1997; versão portuguesa de Nunes et al., 2021)

O Brief COPE (Carver, 1997) é uma versão reduzida do COPE original para avaliar as estratégias de *coping* dos indivíduos numa situação de stresse. É um instrumento de auto-preenchimento composto por 14 subescalas com 2 itens cada, e os 28 itens são escritos em termos da ação que as pessoas implementam. As respostas são dadas

numa escala de 4 pontos (de 0 = “Nunca faço isto” a 3 = “Faço quase sempre”). Os alfas de Cronbach na versão original[36] situam-se entre 0.50 e 0.90 indicando uma boa fiabilidade interna; na adaptação portuguesa (Nunes et al., 2021) os alfas de Cronbach variaram entre 0.37 e 0.88. Para o presente estudo, obtiveram-se os seguintes valores de consistência interna: *coping* ativo α = 0.65, planeamento α = 0.69, uso de suporte instrumental α = 0.74, aceitação α = 0.63, humor α = 0.58, religião α = 0.70, uso de suporte emocional α = 0.71, reinterpretação positiva α = 0.72, expressão de sentimentos α = 0.68, auto-culpabilização α = 0.61, auto-distração α = 0.49, negação α = 0.58, uso de substâncias α = 0.80, e desinvestimento comportamental α = 0.70.

Procedimentos

Foi obtida aprovação ética da Comissão de Ética da Universidade do Algarve (CEUAlg Pn° 110 /2023). Todos os procedimentos realizados no estudo cumpriram os padrões éticos da Declaração de Helsínquia de 1964 e as suas alterações posteriores. Os autores da versão portuguesa da escala SD3 concordaram com a utilização deste instrumento em jovens em AR.

Quarenta e seis instituições de Portugal continental e dos arquipélagos dos Açores e da Madeira foram contactadas por telefone e e-mail. Os diretores técnicos foram informados sobre os objetivos e procedimentos do estudo, tendo todos concordado em colaborar. Os critérios de inclusão dos participantes foram: ter idade igual ou superior a 12 anos, dominar a língua portuguesa e não apresentar nenhuma condição médica que afetasse a sua participação no estudo. Foram excluídos os jovens identificados por profissionais da instituição como tendo défice cognitivo. Os participantes elegíveis foram informados sobre o objetivo do estudo pelo primeiro autor e foram convidados a participar voluntariamente. Foram também informados de que podiam desistir em qualquer momento sem sofrer quaisquer consequências. Os participantes com idade igual ou superior a 16 anos que concordaram em participar deram o seu consentimento informado por escrito. Para os participantes com idade inferior a 16 anos, o tutor legal ou o diretor técnico de cada instituição forneceu o consentimento informado por escrito.

Os adolescentes preencheram na instituição de acolhimento o protocolo estruturado, anónimo, para recolha de dados. Foi pedido aos diretores das casas de

acolhimento que preenchessem igualmente de forma anónima, um protocolo estruturado com detalhes sobre as caraterísticas de cada instituição.

Plano de análise

A análise dos dados foi efetuada utilizando o IBM SPSS 29.0 (IBM Corp., 2020) para realizar a análise estatística descritiva e inferencial. Foram consideradas estatisticamente significativas as diferenças de médias em que o valor de *p* do teste era menor ou igual a 0.05. Os casos omissos foram excluídos da análise. Foram efetuadas análises para investigar as associações entre as estratégias de *coping*, as dimensões da TN, o consumo de SPA, e o ajustamento psicológico. Foram utilizadas correlações de Pearson para analisar as associações entre as variáveis. As correlações foram consideradas baixas se inferiores a 0.20, moderadas se entre 0.20 e 0.50, e altas se superiores a 0.50 (Marôco, 2021).

3. RESULTADOS

Num primeiro momento apresentamos a estatística descritiva da amostra relativamente ao ajustamento psicológico e à presença de traços da TN. A análise da Tabela 1 permite observar que as raparigas apresentam mais problemas de ajustamento (SDQ total), mas simultaneamente mais comportamentos pró-sociais, e que os rapazes pontuam mais alto em todas as facetas da TN.

Tabela 1. Estatística descritiva do ajustamento psicológico e das características da TN por sexo *($N_{raparigas}$ = 279, $N_{rapazes}$ = 232).*

	Raparigas		Rapazes	
	M	***DP***	***M***	***DP***
Problemas emocionais	5.29	2.39	3.80	2.20
Problemas comportamentais	2.79	2.01	3.08	2.04
Hiperatividade	4.94	2.50	4.37	2.19
Relacionamento com os pares	3.34	2.05	3.34	2.04
Comportamento pro-social	7.79	2.13	6.87	2.42
SDQ total	16.35	6.46	14.59	5.82
Maquiavelismo	2.71	0.79	2.92	0.86
Narcisismo	3.03	0.63	3.09	0.67
Psicopatia	2.39	0.76	2.62	0.74

Foi realizado um teste *t* para amostras independentes que revelou a existência de diferenças significativas entre sexos nos problemas emocionais ($t = 7.27$, $p < .001$), hiperatividade ($t = 2.71$, $p = .007$), comportamentos pro-sociais ($t = 4.57$, $p < .001$), valor total do SDQ ($t = 3.22$, $p = .001$), maquiavelismo ($t = -2.85$, $p = .005$) e psicopatia ($t = -3.34$, $p < .001$). Os problemas de comportamento estão no limiar da significância estatística.

Numa análise comparativa entre grupos etários observou-se que os participantes mais novos apresentam mais problemas emocionais, de comportamento, e de hiperatividade, sendo que os comportamentos pró-sociais aumentam com a idade dos jovens. Observou-se ainda que os rapazes mais novos apresentam mais traços de maquiavelismo e psicopatia.

Na Tabela 2 apresentam-se os valores absolutos e as percentagens relativamente à experimentação, uso regular ou intenção de consumo de SPA pela totalidade dos jovens.

Tabela 2. Experimentação e intenção de consumo de substâncias (*N* = 511).

	N (%)				
	Álcool	**Tabaco**	**Cannabis**	**MDMA**	**LSD**
Já experimentei	283 (55.40)	184 (36.00)	103 (20.20)	30 (5.90)	14 (2.70)
Consumo regularmente	26 (5.10)	103 (20.20)	11 (2.20)	0	0
Quero experimentar	10 (2)	3 (0.60)	5 (1)	5 (1)	6 (1.20)
Não quero experimentar	192 (37.60)	221 (43.20)	392 (76.70)	476 (93.20)	491 (96.10)

A análise da Tabela 2 revela que mais de metade dos jovens inquiridos já experimentou pelo menos uma substância, e que cerca de 27% consome regularmente uma substância, preferencialmente tabaco. Verifica-se também que a maior parte dos participantes recusa experimentar substâncias ilícitas, sobretudo as sintéticas (MDMA e LSD), mas a percentagem reduz para menos de metade no que respeita a substâncias legais como o tabaco ou o álcool. Realizou-se uma análise de diferenças entre sexos relativamente ao consumo de SPA, mas não se observaram diferenças estatisticamente significativas.

Na Tabela 3 apresentam-se as correlações entre as diferentes estratégias de *coping*, os traços da TN e as dimensões do SDQ. Observam-se correlações significativas entre todas as estratégias adaptativas para enfrentamento dos problemas. Verifica-se que os três traços da TN se correlacionam de forma significativa com estratégias desadaptativas (e. g., auto-distração, negação, desinvestimento comportamental), e o uso de substâncias para fazer face aos problemas correlaciona-se positivamente com todos os traços da TN. O narcisismo é o único traço que se correlaciona positivamente com todas as estratégias de *coping*, por outro lado a psicopatia correlaciona-se com o humor, o suporte instrumental, e a auto-distração o que parece validar as características deste estilo de personalidade enquanto indivíduos que utilizam os outros para benefício próprio, desvalorizando ou ignorando os próprios sentimentos, problemas ou preocupações. O uso de substâncias corelaciona-se positivamente com estratégias de reinterpretação positiva, humor, suporte emocional, negação e expressão de sentimentos como se os consumos fossem uma "solução mágica" para os problemas ou uma forma de encontrar refúgio/apoio emocional. Finalmente, esta estratégia de recorrer a substâncias para enfrentar os problemas correlaciona-se positivamente com todas as dimensões do SDQ e negativamente com os comportamentos pro-sociais.

Em média, as estratégias que os jovens referem utilizar com mais frequência perante situações de problema são o planeamento, aceitação, *coping* ativo e auto-distração. O recurso às substâncias ou à religião surgem como as estratégias menos referidas.

Tabela 3. Correlações entre as estratégias de *coping*, traços da Tríade Negra e dimensões do SDQ (*N* = 511).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1.Ativo	-	.61***	.52***	.38***	.23***	.27***	.36***	.37***	.34***	.29***	.20***	.07	.06	.19***	.09	.28***	.03	.13**	-.14**	-.05	.32***	.32***	-.03
2.Plan		-	.57***	.51***	.25***	.26***	.28***	.38***	.37***	.27***	.22***	.02	.03	.22***	.07	.30***	-.00	.10*	-.12**	-.19***	-.04	.31***	-.09
3.Rein			-	.40***	.33***	.24***	.40***	.37***	.31***	.19***	.22***	.11*	.03	.04	.02	.25***	-.04	-.04	-.07	-.18***	-.08	.25***	-.14**
4.Acei				-	.23***	.23***	.23***	.29***	.35***	.20***	.24***	.05	.10*	.14**	.05	.21***	.01	.13**	-.01	-.09	.01	.26***	.02
5.Hum					-	.17***	.19***	.24***	.31***	.22***	.14**	.15***	.23***	.20***	.15***	.09*	.12*	.08	.08	.09*	.03	.05	.10*
6. Reli						-	.24***	.32***	.23***	.26***	.23***	.13**	.09*	.16***	.05	.19***	.02	.15***	.09	-.00	.04	.19***	.10*
7.Sup em							-	.61***	.33***	.32***	.46***	.10*	.21***	.15***	.02	.19***	.04	.25***	.04	.08	-.07	.26***	.12**
8.Sup ins								-	.26***	.34***	.47***	.11*	.20***	-10*	.10*	.29***	.14***	.25***	.10*	.02	-.05	.26***	.12*
9.Autodis									-	.33***	.28***	.10*	.20***	.30***	.17***	.22***	.15***	.26***	.07	.16***	.04	.15***	.20***
10.Neg										-	.30***	.27***	.47***	.45***	.21***	.22***	.27***	.33***	.28***	.24***	.15***	.10*	.36***
11.Exp sen											-	.15***	.33***	.18***	.13**	.17***	.23***	.31***	.22***	.26***	.07	.10*	.31***
12.Subs												-	.37***	.25***	.26***	.21***	.33***	.26***	.43***	.21***	.25***	-.14**	.40***
13.Desinv													-	.41***	.27***	.10*	.33***	.45***	.37***	.38***	.28***	-.02	.53***
14.Autoc														-	.21***	.13**	.23***	.48***	.20***	.30***	.29***	.15***	.46***
15.Maq															-	.40***	.60***	.16***	.25***	.12**	.19***	-.17***	.25***
16.Narc																-	.38***	.14**	.12**	-.08	.00	.17***	.06
17.Psicop																	-	.19***	.49***	.27***	.28***	-.25***	.43***
18.Emoc																		-	.27***	.38***	.36***	.22***	.74***
19. Comp																			-	.44***	.33***	-.31***	.71***
20. Hiper																				-	.15***	-.15***	.72***
21. Pares																					-	-.21***	.63***
22. Prosoc																						-	-.15***
23. SDQ T																							-

Nota: 1 = *coping* ativo, 2 = Planear, 3 = Reinterpretação positiva, 4 = Aceitação, 5 = Humor, 6 = Religião, 7 = Suporte emocional, 8 = Suporte instrumental, 9 = Auto-distração, 10 = Negação, 11 = Expressão de sentimentos, 12 = Uso de substâncias, 13 = Desinvestimento comportamental, 14 = Auto-culpabilização, 15 = Maquiavelismo, 16 = Narcisismo, 17 = Psicopatia, 18 = Problemas emocionais, 19 = Problemas de comportamento, 20 = Hiperatividade, 21 = Problemas de relacionamento com os pares, 22 = Comportamentos pró-sociais, 23 = SDQ total.

* $p < ,05$; ** $p < ,01$; *** $p < ,001$

4. DISCUSSÃO

Este estudo pretendeu conhecer a experiência de consumo de SPA, as estratégias de *coping* e a presença de traços da TN em jovens portugueses que vivem em AR, de modo a conhecer o seu impacto no ajustamento psicológico destes adolescentes. Com uma amostra que cobre todas as regiões do território nacional observamos que o consumo de substâncias é transversal entre sexos e grupos etários. Embora o consumo de substâncias surja como uma das estratégias menos referidas para fazer face aos problemas, é importante notar que muitos dos jovens experimentam ou consomem com frequência por motivos diversos, e não apenas com o intuito de resolver problemas do seu quotidiano. É ainda importante ressaltar um possível efeito de desejabilidade social nos resultados uma vez que os questionários foram respondidos no contexto institucional.

Aproximadamente metade dos jovens (48%) a quem é aplicada uma medida de proteção em regime de acolhimento institucional esteve exposta a comportamentos de perigo pelos pais (ISS, 2024). Esta condição, juntamente com o facto de muitas famílias biológicas serem disfuncionais, não demonstrarem competências parentais adequadas ou apresentarem estilos educativos com consequências negativas para o comportamento e desenvolvimento dos jovens, fazem com que os mesmos não aprendam um modelo adequado de resolução de problemas, revelando falta de estratégias de resolução de problemas adaptativas e dificuldades de regulação emocional. Adicionalmente, observam-se problemas de ajustamento psicológico que nesta população surgem associados a múltiplos determinantes (Simão et al., 2025), como por exemplo o apoio social (Singstad et al., 2022), a relação com os cuidadores (Rayburn et al., 2018) ou as estratégias de *coping* utilizadas (Gundogdu & Eroglu, 2023). Verifica-se que o ajustamento psicológico destes jovens, assim como questões relacionadas com a sua saúde mental, encontram-se associados de uma forma positiva com a procura de suporte emocional, e de uma forma negativa com o uso de substâncias, tanto ao nível do ajustamento global como dos problemas emocionais ou comportamentais que apresentam.

Os jovens que vivem em AR nesta fase da vida enfrentam mais dificuldades neste processo do que os seus pares que vivem com as famílias biológicas, em parte porque as relações familiares são disfuncionais na maioria dos casos, mas também

devido à rutura das ligações sociais com os amigos quando entram no acolhimento (Molano et al., 2024).

O facto de o recurso às substâncias estar positivamente associado a estratégias de reinterpretação positiva, humor, suporte emocional, negação e expressão de sentimentos parece configurar da parte dos jovens uma desvalorização dos efeitos dos consumos, como se as consequências do uso de SPA fossem negadas uma vez que cumprem um propósito de bem-estar ou servem para obter algum apoio emocional. No mesmo sentido, o recurso às substâncias como estratégia para enfrentar os problemas correlaciona-se positivamente com todas as dimensões do SDQ e negativamente com os comportamentos pró-sociais, observando-se dificuldades em todas as áreas e, portanto, considerando-se um maior nível de desajustamento, e simultaneamente uma dificuldade em apresentar comportamentos pro-sociais. Os comportamentos pró-sociais aumentam no grupo de participantes com idades entre os 19 e os 24 anos, o que parece sugerir que a transição da adolescência para a idade adulta é acompanhada de alguma melhoria nos comportamentos e adequação social.

Os rapazes pontuam mais alto em todas as facetas da TN, em linha com os resultados observados noutras investigações com adultos, ou com adolescentes da população em geral (Klimstra et al., 2014). Observou-se ainda que os rapazes mais novos apresentam mais traços de maquiavelismo e psicopatia, podendo colocar-se a hipótese de ser mais difícil para os participantes mais novos adaptarem-se ao contexto institucional ou distanciarem-se das experiências precoces prévias à institucionalização (e. g., vitimização, negligência ou maus-tratos) que estão associados na literatura ao desenvolvimento destas características (Jonason et al., 2014). Estudos anteriores mostraram que o maquiavelismo e a psicopatia estão significativamente relacionados com os elevados níveis de sofrimento psicológico dos jovens e que o maquiavelismo pode aumentar o sofrimento psicológico (Mushtaq et al., 2022).

Os três traços da TN correlacionam-se de forma significativa com estratégias desadaptativas confirmando-se a tendência de serem traços socialmente indesejáveis (Muris et al., 2017; Paulhus & Williams, 2002), e a dificuldade em reconhecer os seus comportamentos. Estudos anteriores mostraram que a TN pode influenciar as estratégias de *coping* utilizadas (Birkás et al., 2016) e que cada traço provoca respostas distintas ao stresse (Birkás et al., 2016; Yang et al., 2024). No presente estudo verificou-

se que de uma forma geral os jovens com traços elevados de TN recorrem a mais estratégias desadaptativas, com exceção do narcisismo que é o único traço que se correlaciona positivamente com todas as estratégias de *coping*. Os jovens com elevados níveis de psicopatia apresentam estratégias para lidar com os problemas baseadas no humor, suporte instrumental, e auto-distração o que parece validar as características deste estilo de personalidade enquanto impulsivo, procura de emoção ou baixa empatia (Paulhus & Williams, 2002). Simultaneamente retratam-se como indivíduos que utilizam os outros para benefício próprio, desvalorizando ou ignorando os próprios sentimentos ou problemas. Estes jovens parecem não abdicar de determinados comportamentos porque são insensíveis aos potenciais problemas causados por comportamentos de risco, mas porque a atração por potenciais recompensas decorrentes de comportamentos de risco é mais cativante (Malesza & Ostaszewski, 2016). Estas características podem ainda explicar o facto de uma grande quantidade de adolescentes que entram no AR (25%) ser devido a problemas de comportamento e atividades de risco (ISS, 2024), não explicados apenas por fatores ambientais ou experiências adversas na infância.

A TN representa um lado desadaptativo da natureza humana, frequentemente associado a comportamentos psicossociais negativos (Sijtsema et al., 2019). Os resultados obtidos permitem comprovar esta característica através das correlações positivas observadas com as diferentes dimensões da escala SDQ, e com as correlações negativas entre o maquiavelismo e a psicopatia com os comportamentos pró-sociais. O recurso a substâncias para fazer face aos problemas correlaciona-se positivamente com todos os traços da TN, acentuando a tendência para a adoção de comportamentos impulsivos, baseados na procura de emoção ou na ausência de julgamento moral. Contudo, conforme referido por alguns autores, alguns dos consumos que os jovens institucionalizados apresentam parecem refletir comportamentos prévios à institucionalização (McCrystal et al., 2008). Estudos anteriores mostraram uma associação entre o maquiavelismo e o consumo de álcool, e entre o narcisismo e o consumo de tabaco e outras SPA (Pechorro et al., 2021).

Implicações práticas

Uma constelação de fatores que inclui modelos parentais desadequados, poucos fatores de proteção, banalização dos efeitos das SPA, utilização de estratégias

de *coping* desadaptativas, dificuldades de regulação emocional, problemas de vinculação ou características da personalidade, faz desta população específica um grupo de alto risco para o consumo de SPA. Acrescem a estes fatores a perceção que os jovens têm de si como sendo alvo de discriminação ou inferiores aos outros jovens e que, consequentemente, afeta a sua capacidade de inclusão na sociedade levando a que muitos dos problemas de ajustamento persistam após a saída do acolhimento. Por esse motivo é fundamental que sejam delineadas estratégias de intervenção individualizadas e articuladas e que, no contexto terapêutico da relação reparadora, se tenha em consideração as seguintes necessidades: treinar estratégias de *coping* alternativas e positivas, encontrar novas formas de lidar com as situações, desenvolver estratégias de regulação emocional e comportamental, analisar os modelos de referência destes jovens, avaliar os fatores de risco e os fatores de proteção. Simultaneamente, é fundamental adotar uma compreensão mais abrangente do significado do uso das substâncias por estes jovens, considerados um grupo de alto risco (SICAD, 2022), uma vez que do ponto de vista institucional o consumo de SPA pode ser gerador de mais conflitos, provocar quebras na confiança ou implicar uma maior restrição de comportamentos associados às regras e rotinas estabelecidas. Por fim, é fundamental assegurar formação adequada às equipas técnicas e educativas das instituições de acolhimento, aos técnicos que trabalham na área da infância e juventude, implementar junto dos jovens programas de treino de competências, e desenvolver ações de sensibilização e informação para esta população.

5. CONCLUSÃO

Os resultados obtidos com o presente estudo mostram que o consumo de SPA nesta amostra de jovens institucionalizados é transversal entre sexos e grupos etários, e que mais de metade dos jovens já experimentou pelo menos uma substância. Observaram-se diferenças entre sexos no que respeita aos traços da TN, e os três traços correlacionam-se de forma significativa com estratégias de *coping* desadaptativas. O ajustamento psicológico destes jovens está associado à procura de suporte emocional e ao uso de substâncias. O uso de substâncias correlaciona-se positivamente com todas as dimensões da escala de ajustamento e negativamente com o comportamento pro-social, e o recurso a substâncias para fazer face aos problemas

correlaciona-se positivamente com todos os traços da TN, acentuando a tendência destes jovens para a adoção de comportamentos desajustados. Os resultados confirmam a importância de estudar esta população de forma a minimizar os fatores de risco e potenciar fatores de proteção que promovam um melhor ajustamento psicológico destes jovens.

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Appendix B

Regulamento Geral da Proteção de Dados <rgpd@ualg.pt>
qui, 06/07/2023 10:50
Para:ANA CAROLINA GLÓRIA SIMÃO <a21331@ualg.pt>
Cara Ana Simão

Na qualidade de Encarregado da Proteção de Dados da UALG e na sequência da continuidade do Vosso pedido de Parecer sobre a Conformidade RGPD do questionário no âmbito do estudo "Determinantes do ajustamento psicológico de adolescentes institucionalizados: a influência de fatores individuais, sociais e ambientais", confirmo encontrar no estudo as condições necessárias para evitar possíveis situações que possam responsabilizar a UAlg em termos de falta de cumprimento de requisitos da conformidade de privacidade de dados conforme o RGPD e LPDP.

Mais informo que para garantir a conformidade RGPD o documento de Informação Prévia de Privacidade de Dados deve ser apresentado **a cada participante** requisitando a sua leitura, tomada de conhecimento e assinatura para os termos e condições e termo de consentimento. Chamo também a atenção especial que para entrevistados menores de 16 anos, o documento deve ser assinado pelo "**titular de responsabilidade parental**" do jovem, tal como está previsto no formulário.

Este email representa parecer do EPD sobre tratamentos de dados pessoais e pode ser apresentado para Parecer da Comissão de Ética da Ualg.

Ao dispor para eventuais esclarecimentos ou informações adicionais.
Melhores Cumprimentos
Júlio Fernandes - na qualidade de EPD da UAlg

Para mais informação e guias de ajuda, aconselho vivamente consultar a área de "Proteção de Dados" na Intranet da Ualg em https://ualgnet.ualg.pt/servicos#protecao-de-dados .

Appendix C

UAlg
UNIVERSIDADE DO ALGARVE
COMISSÃO DE ÉTICA

Nº DO PROCESSO	CEUAlg Pnº 110 /2023
DATA DO PEDIDO	22 de Julho de 2023
TÍTULO/TEMA	Determinantes do Ajustamento Psicológico de Adolescentes Institucionalizados: a influência de fatores individuais, sociais e ambientais.
RESPONSÁVEL/REQUERENTE	Ana Carolina Glória Simão
FUNDAMENTO DO PEDIDO DE PARECER	Na qualidade de responsável pelo estudo, solicita à CEUAlg parecer favorável para a sua realização.
PARECER FINAL DA COMISSÃO DE ÉTICA DA UALG	**Positivo sem recomendações.**

Universidade do Algarve, 30 /10/2023
Presidente da Comissão de Ética da UAlg

Assinado por: JOSÉ ANTÓNIO CARREIRA SARAIVA MONTEIRO
Num. de Identificação: 03958463
Data: 2023.10.30 19:04:18+00'00'

CHAVE MÓVEL

Appendix D

INFORMAÇÂO DE REQUISITOS DE PRIVACIDADE DE DADOS

Termos e Condições Gerais de Privacidade de Dados

Ana Simão, aluna da Universidade do Algarve, com sede em Campus da Penha, 8005-139, Faro, Portugal, telefone +351289800100, pretende aplicar o protocolo de recolha de dados que se anexa no âmbito do estudo "Determinantes do ajustamento psicológico de adolescentes institucionalizados: a influência de fatores individuais, sociais e ambientais", no período entre 01/07/2023 e 01/03/2024, e tem como responsável pelo estudo Ana Simão, sob a orientação da Prof Doutora Cristina Nunes.

O principal objetivo do estudo é recolher dados que permitam clarificar quais os principais preditores do ajustamento psicológico dos jovens institucionalizados. Este questionário/inquérito é realizado através do suporte papel.

Os dados pessoais previstos a tratamento no âmbito do estudo "Determinantes do ajustamento psicológico de adolescentes institucionalizados: a influência de fatores individuais, sociais e ambientais" são: sexo, idade, nacionalidade, número de retenções escolares, escolaridade completa, atividades realizadas fora da escola, número de irmãos, escolaridade e situação profissional dos pais, contactos com a família de origem, envolvimento em crimes, consumo de substâncias psicoativas, apoio psicológico e medicamentoso, antiguidade da institucionalização, motivo do acolhimento residencial, projeto de vida na instituição, quantidade e satisfação com o apoio social recebido, estratégias de *coping*, características da tríade negra da personalidade, estilos de vinculação, estratégias de regulação emocional e perceção da integração na instituição, sendo que a categoria dos titulares a recolher os dados serão jovens de ambos os sexos com idades entre os 12 e os 21 anos que se encontram a viver em instituições de acolhimento.

Todos os dados são recolhidos apenas para efeitos da investigação "Determinantes do ajustamento psicológico de adolescentes institucionalizados: a influência de fatores individuais, sociais e ambientais", *estando garantida a confidencialidade do seu tratamento e a exclusiva utilização pela Universidade do Algarve, com um período de retenção dos dados sendo o mínimo necessário para a realização do estudo, e sendo o seu tratamento realizado nos termos e condições da Política de Proteção de Dados que se encontra acessível em www.ualg.pt.*

Se necessitar de algum esclarecimento adicional em relação à participação ou ao preenchimento do questionário, é favor contactar pelo telefone 289301553 ou pelo email a21331@ualg.pt.

Eu aceito os termos e as condições acima descritos. Da mesma forma, como titular de dados, aceito as condições gerais e os termos das Políticas de Proteção de Dados do Universidade do Algarve.

Titular de Dados: Assinatura _____ *Data* ___/___ /_____

Para Titulares de Dados menores de 16 anos deve assinar o Titular de Responsabilidade Parental:

Assinatura _____ *Data* ___/___ /_____

Consentimento para Tratamento de Dados

Autorizo expressamente o tratamento dos dados pessoais pela Universidade do Algarve, para efeitos de estudo realizado na investigação "Determinantes do ajustamento psicológico de adolescentes institucionalizados: a influência de fatores individuais, sociais e ambientais ", *de acordo com os termos de informação sobre tratamento de dados e a Política de Proteção de Dados que se encontram disponíveis em www.ualg.pt . Estou consciente de que posso retirar o consentimento ou exercer os direitos de proteção de dados, designadamente os direitos de reclamação, acesso, retificação, oposição, limitação do tratamento ou apagamento, através de contacto com o Encarregado da Proteção de Dados da Universidade do Algarve pelo correio eletrónico rgpd@ualg.pt, e caso assim o considere necessário, apresentar reclamação à Comissão Nacional de Proteção de Dados, através dos contatos disponíveis em www.cnpd.pt.*

Titular de Dados: Assinatura _____ *Data* ___/___ /_____

Para Titulares de Dados menores de 16 anos deve assinar o Titular de Responsabilidade Parental:

Assinatura _____ *Data* ___/___ /_____

Termo de Consentimento Informado

O meu nome é Ana Simão e estou a realizar um estudo no âmbito da minha investigação de Doutoramento em Psicologia Clínica, orientada pela Professora Doutora Cristina Nunes.

Venho pedir a tua colaboração e participação nesta investigação que visa compreender os aspetos que contribuem para o bem-estar dos jovens nas instituições de acolhimento. A tua participação nesta investigação consiste no preenchimento de alguns questionários e é totalmente voluntária pelo que podes desistir a qualquer momento sem qualquer consequência para ti. Os dados recolhidos são confidenciais e anónimos, as informações pessoais vão permanecer no sigilo, não sendo reveladas a ninguém. As informações recolhidas serão inseridas num ficheiro em conjunto com as respostas de outros jovens, sem a identificação dos participantes, e serão usadas apenas para fins científicos.

Estou disponível para responder a qualquer dúvida através do contacto de e-mail: a21331@ualg.pt.

Muito obrigada pela tua colaboração e pelo tempo disponibilizado!

A investigadora responsável,

_____

(Ana Simão)

Appendix E

Termo de Consentimento Informado

O meu nome é Ana Simão e estou a realizar um estudo no âmbito da minha investigação de Doutoramento em Psicologia Clínica, orientada pela Professora Doutora Cristina Nunes.

Venho pedir a sua colaboração e participação nesta investigação que visa compreender a influência que os fatores individuais, sociais e ambientais têm no ajustamento psicológico de jovens institucionalizados. A sua participação nesta investigação consiste no preenchimento de alguns questionários e é totalmente voluntária pelo que pode desistir a qualquer momento sem qualquer consequência. Os dados recolhidos são confidenciais e anónimos, as informações pessoais vão permanecer no sigilo, não sendo reveladas a ninguém. As informações recolhidas serão inseridas num ficheiro em conjunto com as respostas de outros técnicos e dos jovens que colaborarem no estudo, sem a identificação dos participantes, e serão usadas apenas para fins científicos.

Estou disponível para responder a qualquer dúvida através do contacto de e-mail: a21331@ualg.pt.

Muito obrigada pela sua colaboração e pelo tempo disponibilizado!

A investigadora responsável,

_____

(Ana Simão)