



# Determinants of Psychological Adjustment of Institutionalized Adolescents: A Systematic Review

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## 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 with this particularly vulnerable population to understand the factors that underlie the difficulties youths present within 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

## 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 individual's development, ranging from the 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).

## Methods

### 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 cut-off 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 take into account whether each disruption in care led to a positive or negative change in the caregiving environment	80%
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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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%
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** (continued)

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** (continued)

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%
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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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** (continued)

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** (continued)

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%
Gun-dogdu 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** (continued)

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** (continued)

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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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%
Lemoust de La-fosse 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 on adolescents' perceived rights and psychological functioning. Data from multiple contexts of RCS with a 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** (continued)

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** (continued)

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** (continued)

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** (continued)

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** (continued)

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** (continued)

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** (continued)

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%
Pumari- iega 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 cut-off levels. 67.6% had 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%
Pumari- iega 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 impulsivity. 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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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%
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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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** (continued)

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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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%
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 be difficult to interpret. Sampling limits result in low generalizability, and previous placement duration and externalizing or internalizing symptoms were not measured.	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 of bias interpretation. Authors overlooked the duration of 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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass
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%
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%

**Table 1** (continued)

Author(s)/ Year	Aim	Age range	Settings of care	Main Findings	Limitations / Strengths	Qual. Ass.
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%
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%

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

## 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 duplicates 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 (Fig. 1). The selected studies were published across the entire spectrum of research (between 1993 and 2024), as shown in Fig. 2. When analyzing the publications per decade, it's evident that the great majority of research in the area of psychological adjustment of institutionalized adolescents was conducted in the last decade, with growing interest from 2014 onwards.

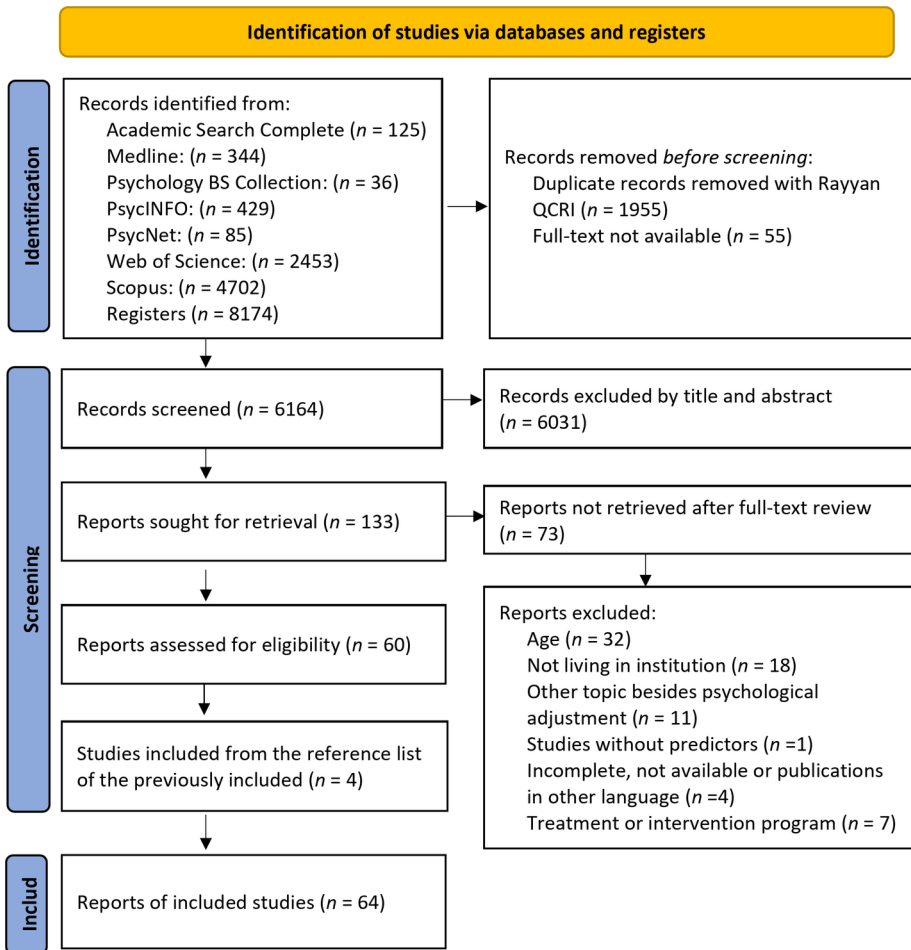
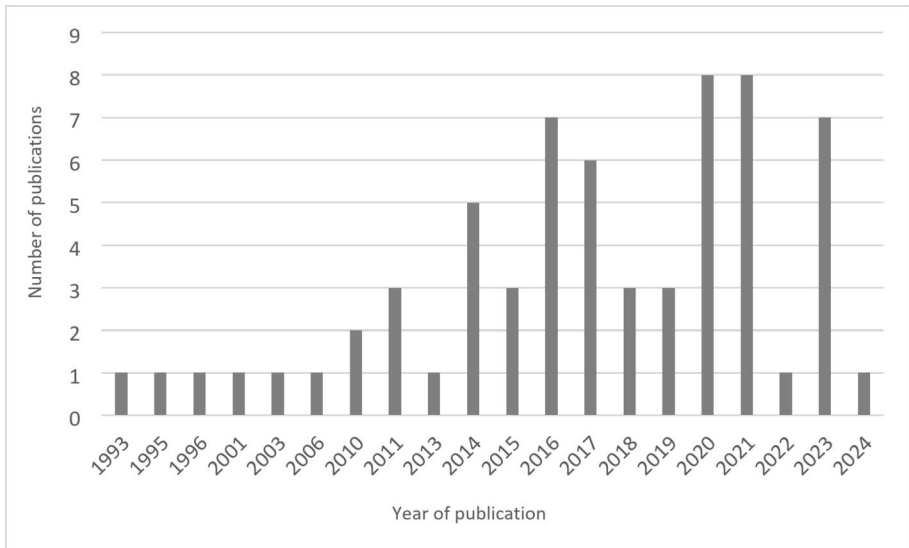


Fig. 1 Flowchart of the systematic literature review research and selection process adapted from Page et al. (2021)



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

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).

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).

**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			Ad-just E/B				
		Exp	Tran	Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net		Att	Rel	Fam	
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	+			+													
Bederman-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	+			+													+
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	+			+													+
Debnath et al. (2023)	RO	+	+		Repeated measures ANOVA, Moderation analyses, Pearson correlations	+			+													+





Table 2 (continued)

Author(s)/ Year	Country	Type of study		Analysis Plan	Sample size			Personal			Social			Caregiving			Ad-just E/B			
		Exp	Tran Lon		S	M	L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net		Att	Rel	Fam
McGinnis (2021)	KR	+		Chi-square, Intra-class 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	+							+								
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	+															+
Perry (2006)	USA	+		Pearson's chi-square, Ordinary least squares regression	+															+

**Table 2** (continued)

Author(s)/ Year	Country	Type of study		Analysis Plan	Sample size		Personal			Social			Caregiving			Adjust E/B						
		Exp	Tran Lon		S	M L	Risk	Plac	Ind	Rig	Sup	Peer	Act	Sib	Net		Att	Rel	Fam			
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			+															+
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			+															+
Singsstad et al. (2022)	NO	+		Imputation model, Linear regression, T-test			+															+
Soriano-Diaz et al. (2023)	ES	+		Inferential analysis, Welch test, Pearson's correlation, Linear regression			+															+

**Table 2** (continued)

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

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

## 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 as a consequence 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 as a result 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 also 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).

## 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 make generalizations, 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 also 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 pub-

lications 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 most 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 as a way 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 included studies, 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 as a result 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 be connected with 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 also 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 particular 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 the 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.

## 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 helps 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 prac-

titioners tasked with creating safer, more stable, and inclusive foster care environments for adolescents in residential care.

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**Data Availability** The data can be made available for consultation from the corresponding author upon request.

## Declarations

**Conflict of interest** The authors declare that they have no conflicts of interest.

**Ethical Approval** The present research was a secondary study that did not require ethical approval since no primary data collection was conducted. We hoped the results would contribute to research development in the field of psychological adjustment of institutionalized adolescents.

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