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PSYCHOLOGICAL, SOCIAL AND ECONOMIC BURDEN OF
COVID-19: A COMPARISON OF POLISH AND
PORTUGUESE YOUNG ADULTS



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PORTUGUESE YOUNG ADULTS

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Work Authorship Declaration

I declare to be the author of this work, which is unique and unprecedented. Authors and works consulted are properly cited in the text and are included in the listing of references.

Sylwia Frączek

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Abstract ENG

Background The Covid 19 pandemic outbreak has affected the entire community, and its effects relate not only to physical health but also to mental health, social relations, and the economic situation of the population all over the world.

Purpose This research aims at studying the mental health, economic situation and social relations among Polish and Portuguese young adults before and during the Covid-19 pandemic. The present study also sought to assess the health-related quality of life (HRQoL) among Polish and Portuguese young adults before and during the Covid-19 pandemic.

Method A sample of young adults (aged 18-29) coming from Poland (n= 330) and Portugal (n= 189) filled in an online questionnaire composed of the EQ-5D-5L, some chosen questions from the SHARE Covid-19 survey and sociodemographic characteristics such as gender, age, marital status, labour status and residence. The Mann-Whitney U test and the Chi-square test for qualitative variables were used to show differences between Poles and Portuguese. In addition, Student's t-test for independent samples was applied for quantitative variables.

Results Almost two years since the beginning of the pandemic, Polish and Portuguese young adults reported a lower level of HRQoL in comparison to the times before the outbreak of Covid-19. Both before and during the pandemic, the Polish respondents rated their HRQoL higher than respondents from Portugal. Polish young adults rated their social and economic situation and mental health lower than their Portuguese peers.

Conclusion The results indicate what factors are contributing to the worsening of the general living situation of the respondents and show that governments and health authorities should, in addition to the medical consequences of the virus, take the necessary measures to mitigate the long term consequences of the virus, as well as paying special attention to the group of young adults who, in this uncertain time, are trying to make the most important decisions for their development.

Abstract PT

Contexto A Covid-19 tem perturbado a sociedade em muitas áreas. Teve um impacto negativo na saúde e vida humanas e tornou o acesso aos cuidados médicos mais difícil. A necessidade de isolamento social reduziu o contacto interpessoal e aumentou a intensidade das emoções negativas e a incidência de doenças mentais. Além disso, a pandemia destabilizou a economia mundial e contribuiu para a crise económica em muitos países.

Há necessidade de mais investigação sobre a situação psicológica, social e económica relacionada com a Covid-19 e a atenuação dos seus efeitos negativos. Embora já existam alguns estudos em Portugal e na Polónia sobre estas não existem estudos que incidam sobre estes dois países e os comparem. Além disso, por conhecimento dos autores, não há nenhum estudo que se concentre nos jovens destes dois países.

Objectivo Esta investigação visa estudar a saúde mental, a situação económica e as relações sociais entre jovens adultos polacos e portugueses antes e durante a pandemia de Covid-19. O presente estudo pretende também avaliar a qualidade de vida relacionada com a saúde (HRQoL) entre jovens adultos polacos e portugueses antes e durante a pandemia de Covid-19.

Método

O Questionário EQ-5D-5L foi utilizado para conduzir a investigação, que visava investigar a medição da qualidade de vida dos polacos e portugueses. Além disso, o estudo utilizou perguntas do questionário SHARE-COVID19 para verificar a situação económica, as relações sociais e a saúde mental dos inquiridos. O questionário foi criado em duas versões - polaco e português. Cada versão tinha as mesmas perguntas e a mesma estrutura. No início do questionário, os participantes foram informados de que ao preencher o questionário consentiam na sua participação no estudo. O questionário continha 4 secções - HRQoL, Saúde Mental, Relações Sociais, e Situação Económica. A versão de 5 níveis EQ-5D (EQ-5D-5L) foi utilizada para medir a HRQoL. Os dados obtidos com o questionário EQ-5D-5L permitem comparar os estados de saúde dos inquiridos com a avaliação da qualidade de vida da população em geral. As secções 2, 3 e 4 do questionário basearam-se no questionário SHARE-COVID19. A última parte do questionário centrou-se em aspectos sociodemográficos, tais como sexo, idade, estado civil, situação laboral e residência.

O estudo foi realizado em Janeiro e Fevereiro de 2022, entre polacos e portugueses, com idades compreendidas entre os 18-29 anos, utilizando amostras de bola de neve. Como a investigação teve lugar durante a pandemia de Covid-19, os questionários foram distribuídos aos inquiridos electronicamente utilizando o formulário Google, através de redes sociais.

As respostas obtidas às perguntas do inquérito foram introduzidas no programa estatístico SPSS da IBM, versão 26. A análise foi realizada com base nos dados recolhidos a partir dos questionários acima mencionados. No estudo foram utilizadas estatísticas descritivas para as variáveis quantitativas dadas - média, desvio padrão, valores mínimos e máximos e enviesamento. O teste Mann-Whitney U e o teste Chi-square para variáveis qualitativas foram utilizados para investigar a existência de diferenças entre polacos e portugueses. Além disso, o teste t de Student para amostras independentes foi aplicado para variáveis quantitativas. Para apresentar diferenças estatisticamente significativas, foi assumido um nível de significância de $p < 0,05$.

Resultados O estudo envolveu 519 inquiridos de 18-29 anos (com uma idade média de 25,27 anos), incluindo 330 da Polónia e 189 de Portugal. Entre os sujeitos, havia 225 (43,4%) mulheres polacas e 117 (22,5%) mulheres portuguesas. Havia menos homens - 105 (20,2%) polacos e 72 (13,9%) portugueses. É de notar que o grupo mais numeroso era constituído por pessoas solteiras - 180 (34,7%) dos inquiridos de origem polaca e 125 (24,1%) de origem portuguesa. 133 (25,6%) dos polacos e 55 (10,6%) dos portugueses eram casados ou em parceria civil. A maioria dos inquiridos estava empregada. Entre eles, havia 238 (45,9%) inquiridos de origem polaca e 103 (19,8%) de origem portuguesa. Entre os inquiridos, a maioria dos polacos vivia em áreas metropolitanas (23,1%), enquanto que os portugueses viviam em grandes cidades (14,1%). Em geral, entre os inquiridos, havia 342 mulheres (65,9%) e 177 homens (34,1%). A maioria dos inquiridos tinha o estatuto de donzela ou solteiro - 305 pessoas (58,8%). Além disso, 341 inquiridos (65,7%) estavam empregados. O local de residência mais frequentemente declarado era uma metrópole (174; 33,5%) e uma grande cidade (141; 27,2%).

Resultados revelam que quase dois anos desde o início da pandemia de adultos jovens polacos e portugueses relataram um nível mais baixo de HRQoL em comparação com os tempos antes do surto de Covid-19. As pontuações do índice EQ-5D-5L mostram que tanto antes como durante a pandemia, os inquiridos polacos classificaram a sua HRQoL mais alta do que os inquiridos de Portugal. É de notar que tanto polacos como

portugueses durante a pandemia sentiram níveis mais elevados de ansiedade e depressão, bem como de dor e desconforto em comparação com o tempo antes da pandemia.

Ao comparar a saúde mental, é evidente que a pandemia afectou os hábitos de sono dos jovens adultos polacos mais do que os portugueses. São também os polacos que se sentem mais solitários, mas isto também era perceptível antes da pandemia. Este resultado parece estar relacionado com as relações sociais - os polacos eram menos propensos do que os portugueses a realizar as suas actividades diárias, tais como ir às compras ou passear.

Como era de esperar dado o público-alvo - 59,7% de todos os inquiridos não estavam empregados na altura do surto. É notável que embora a maioria dos inquiridos polacos não tenha reduzido o seu horário de trabalho, a situação económica das famílias polacas deteriorou-se. No entanto, a maioria dos polacos está bem financeiramente e não se queixam do estado do seu orçamento familiar durante a COVID-19, mas a pandemia esgotou parte dele.

Conclusão Devido às restrições recorrentes e à crescente incerteza, os jovens adultos portugueses e polacos estão em maior risco de depressão e ansiedade. O objectivo do estudo era acompanhar as mudanças que ocorreram durante a pandemia a diferentes níveis entre os jovens adultos em dois países europeus. Os resultados podem indicar quais os factores que estão a contribuir para o agravamento da situação geral de vida dos respondentes e mostrar que os governos e as autoridades sanitárias devem, para além das consequências médicas do vírus, tomar as medidas necessárias para mitigar as consequências a longo prazo do vírus, bem como prestar especial atenção ao grupo de jovens adultos que, neste tempo de incerteza, estão a tentar tomar as decisões mais importantes para o seu desenvolvimento.

Keywords: Covid-19, HRQoL, Mental Health, Social Relations, Economic Situation

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List of abbreviations

EQ-5D-5L	Descriptive system for health-related quality of life states in adults, consisting of five dimensions, each of which has five severity levels that are described by statements appropriate to that dimension
EQ-VAS	EuroQol-visual analogue scales
HRQoL	Health-Related Quality of Life
SHARE	The Survey of Health, Ageing and Retirement
WHO	World Health Organization

1. Introduction

At the time of writing this dissertation, more than two years have passed since the outbreak of the Covid-19 pandemic. Very soon after its beginning, it was realised that, and attention has been drawn very quickly to the fact that in addition to physical health (Rothan, Byrareddy, 2020; Singhal, 2020), the pandemic and the restrictions associated with it are affecting all areas of human life (Cao, Fanga, Hou, Hana, Xinrong Xua, Dong, Zheng, 2020).

Many scientists have called particular attention to the consequences of the pandemic on mental health. Researchers such as Saladino, Algeri and Auriemma (2020) point out that certain social groups are at greater risk of developing anxiety, depression and post-traumatic symptoms because they are more sensitive to stress. In a study comparing the immediate psychological effects of COVID-19 quarantine in adolescents from Italy and Spain – Orgilés, Morales, Delvecchio, Mazzeschi, Espada (2020) observed that the most frequent psychological symptoms were: difficulty concentrating, boredom, irritability, restlessness, nervousness, loneliness, anxiety and worry. In addition, when family coexistence during quarantine became more difficult, the situation was more serious and stress levels higher.

Many researchers studying the impact of pandemics on mental health are also looking at social relations (Osofsky, Osofsky, Mamon, 2020; Saladino, Algeri, Auriemma, 2020). Their research indicates that psychological and social well-being is significantly impaired by "stay at home" orders, social distance and other precautions necessary to the containment of the pandemic, which prevent the establishment of social relationships. In addition, the psychological and social impacts are influenced by people's fears of getting sick and having to cope with friends and family getting sick and dying mostly alone from COVID-19.

Considering how Covid-19 has affected ordinary people, it should be noted that most researchers focus mainly on macroeconomics (Ceylan, Ozkan, Mulazimogullari, 2020; Fernandes, 2020; Habtamu, 2020). However, studies can be found in the literature which focus on the ability of households to cope, the role of population savings and the greater resilience of multi-professional households. Their findings suggest that household savings and consumption are falling significantly and that the average recovery time for individuals is almost a year. The long recovery period will be further exacerbated by a general decline in demand, a change in people's consumption behaviour and a general

slowdown in economic activity. (Martin, Markhvida, Hallegatte, Walsh, 2020). Other researchers (Li, Song, Peng, Wu, 2020) share these opinions noting that an outbreak of the COVID-19 pandemic significantly increases households' likelihood of being subjected to liquidity constraints, and low-educated, young, poor households and households that live in less-developed areas are vulnerable groups that need increased policy attention. Also, households residing in cities with more severe pandemics are more likely to suffer from liquidity constraints, mainly due to the shock of a pandemic on employment and income. And, the deterioration of households' liquidity constraints significantly increases their propensity to decrease consumption and increase saving.

As mentioned above studies pay particular attention to groups at increased risk, such as the elderly, children and young adults. It is precisely young people between the ages of 18 and 29 who are the focus of the following work. The topic of the study concentrates on the impact of a pandemic on vital aspects of life such as the mental health, economic and social situation of young people. In addition, the quality of life of respondents was analyzed in relation to their health. The target group for the survey were young Poles and Portuguese. To the authors' knowledge, there is no study that focuses on young people from these two countries and in her conviction it would be interesting to understand whether young people from these two countries think in the same way regarding the psychological, social and economic situation and health-related quality of life (HRQoL). Additionally, it would be interesting to understand whether the pandemic has had similar or different impacts on young people in these two countries.

Therefore, this research aims at studying the mental health, economic situation and social relations among Polish and Portuguese young adults before and during the Covid-19 pandemic. The present study also sought to assess the HRQoL among Polish and Portuguese young adults before and during the Covid-19 pandemic and compare the EQ-5D-5L indexes.

As the topic is of great interest to a wider audience, and there is a lack of research in this area in the literature, the author has decided to prepare the dissertation as an article according to the orientations of journals on health economics. Author plans to submit the article considering the following journals: European Journal of Public Health, International Journal of Psychology, *Ata Médica Portuguesa*, Applied Research in Quality of Life Research and International Journal of Public Health.

For this reason, this paper will have a different structure from a typical dissertation. A general introduction will be followed by chapter two presented in the form of an article

entitled “Psychological, social and economic burden of Covid-19: A Comparison of Polish and Portuguese young adults”. This chapter will consist of the following subchapters:

- An introduction which includes a literature survey, presents the research topic, its importance and the aims of the work.
- The methods used in this work explain the study design with a detailed explanation of the questionnaire developed for the study and its components, namely EQ-5L-5D and the selected questions from the SHARE-Covid 19 questionnaire. This subchapter describes also the variables and indicators and describes how the analysis of the data collected was carried out.
- The third subchapter presents the results of the research with a breakdown of the findings concerning HRQoL, mental health, social and economic situation.
- The discussion highlighted the most important facts from the previous subchapter and compared them to existing research. Furthermore, the limitations of the paper are pointed out, and the field for further research is highlighted.
- The conclusion of the article summarises the main findings of the work and indicates how they can be used to improve the situation of young adults in relation to the pandemic.

The third chapter of the dissertation is the general summary of the work followed by a references. In the appendix to this paper, the questionnaire used in this work is included. The references and questionnaire used to conduct the study will be added directly to the article before publication.

2. Article: Psychological, social and economic burden of Covid-19: A Comparison of Polish and Portuguese young adults.

2.1 Introduction

On December 31st World Health Organisation (WHO) was informed about the first cases of pneumonia of unknown cause in Wuhan city in China. Whereas the rapid increase in the incidence of the disease and the rising number of deaths led WHO to declare on the 11th of March Covid-19 a Pandemic (WHO, 2020). With the situation deteriorating day by day and the increase in the number of cases of the disease, authorities all over the

world have taken measures to stop the spread of the virus. Indispensable preventive measures such as the closure of schools and universities, remote working, and the introduction of lockdowns, to name a few, reveal the indirect effects of Covid-19, which can have equally long-lasting implications (Mansfield, Mathur, Tazare, Henderson A, Mulick, Carreira, Matthew, Bidulka, Gayle, Forbes, Cook, Wong, Strongman, Wing, Warren-Gash, Cadogan, Smeeth, Hayes, Quint, McKee, Langan, 2021).

At the time of writing this article, the pandemic has been going on for more than two years during which periods of lesser incidence have been interspersed with several waves of significant increases in incidence which necessitates the repeated imposition of the aforementioned safeguard measures by the governments of many countries. Taking this into account concerns have been expressed by mental health experts and public health practitioners about the potential effects of COVID-19 and the anticipated ramifications of social restrictions on wellbeing and mental health disorders (Holmes, O'Connor, Perry, Tracey, Wessely, Arseneault, Ballard, Christensen, Silver, Everall, 2020; Galea, Merchant, and Lurie 2020; Cao, Fanga, Hou, Hana, Xinrong Xua, Dong, Zheng, 2020). Increasingly prevalent mental health problems are most often addressed, however, studies have raised social (Sharma, Borah, 2020; Singh, Singh, 2020; Sohrabi, Alsafi, O'Neill, Khan, Kerwan, Al-Jabir, Agha, 2020; Tisdell, 2020) and economic, issues as well. Although the pandemic has severely affected the elderly (Girdhar, Srivastava, Sethi, 2020; Fraser, Lagacé, Bongué, Ndeye, Guyot, Bechard, Garcia, Taler, CCNA Social Inclusion and Stigma Working Group, Adam, Beaulieu, Bergeron, Boudjemadi, Desmette, Donizzetti, Éthier, Garon, Gillis, Levasseur, Lortie-lussier, Marier, Annie Robitaille, Sawchuk, Lafontaine, 2020; Jiménez-Pavón, Carbonell-Baeza, Lavie, 2020) it has been also challenging for young adults, who must deal with life-changing decisions despite the pandemic (Skarżynska, 2021).

The set of common factors important for shaping the behaviour of young adults depends to a large extent on the requirements and developmental tasks characteristic for a given age of life. The youngest adults (18-24 year-olds) more often than those slightly older, are studying, are not yet employed, are financially dependent on their parents, lead extensive social lives, and make professional plans. Between the ages of 25 and 35 the "developmental tasks" become different: then they look for permanent life partners and start families, need their own flat, financial independence, and professional stability. Thus, events of a different kind may form their outlook on life and their lifestyles (Skarżynska, 2021).

Covid-19 has disrupted society in many areas. It had a negative impact on human health and life and made access to medical care more difficult. The need for social isolation reduced interpersonal contact and increased the intensity of negative emotions and the incidence of mental illness (Talevi, Socci, Carai, Carnaghi, Falieri, Trebbi, Di Bernardo, Capelli, Pacitti, 2020; Holmes, O'Connor, Perry, Tracey, Wessely, Arseneault, Ballard, Christensen, Silver, Everall, 2020). In addition, the pandemic has destabilized the world economy and contributed to the economic crisis in many countries.

Early pandemic research shows that Covid-19 stressors, such as economic issues effects on daily life, and academic delays were positively associated with the level of anxiety symptoms of Chinese college students during the pandemic, while social support was negatively correlated with their anxiety (Cao, Fanga, Hou, Hana, Xinrong Xua, Dong, Zheng, 2020). Some studies have shown that mental health problems remain severe among most young people at a time of public health emergency and low education level, negative coping styles and PTSD symptoms were the influence factors of youth mental health (e.g. Liang, Ren, Cao, Hu, Qin, Li, Mei, 2020). The subject of the influence of the economic situation on the psychological state during the pandemic was also taken up by Godinic, Obrenovic and Khudaykulov (2020). These researchers proved that economic insecurity is positively related to job insecurity and identity disruption, and negatively related to psychological well-being. They stated that stability is not only related to financial well-being, but also to a wide range of other advantages that are crucial for an individual's development, satisfaction and sense of identity. A global perspective on the issue can be found in the report of the Global Survey on Youth and Covid (2020), which aim was to capture the immediate effect of the pandemic on young adults regarding education, employment, mental well-being, rights and social activism. The main findings of the study suggest that the pandemic has been particularly hard for young women, teenagers and youth in lower-income countries. Many respondents found it difficult to make the transition from classroom to distance learning and this also reflects the the perception that a pandemic will have a negative impact on the chances of professional prospects. Plenty of the young respondents believe that the pandemic has not only negatively affected their access to mobility, but also their freedom of expression of faith (Youth and Covid, Impact on jobs, education, rights and mental well-being. Survey Report, 2020).

Likewise, Polish researchers are concerned with the subject of young adults during the pandemic. Szczepańska and Pietrzyka (2021) showed in their study a strong correlation between the severity of the confinement measures during the pandemic and the level of student activity in public spaces, significant deterioration in their physical and mental well-being, and overall quality of life. Also, Długosz (2020) has taken up the issue of the impact of pandemics on the lives of Cracow students. The majority of respondents believe that coronavirus is a serious danger, but only 1/3 said they feel threatened. Respondents were satisfied with their lives. They partially manifest symptoms of psychological stress in the form of tension, low mood, irritability, general apathy and headaches.

Equally Portuguese researchers are trying to analyze the situation of young people and young adults in the times of Covid-19. One of the tools is conducted by the Portuguese National Youth Council (CNJ, 2021) ongoing survey “How COVID-19 changed your life” addressing the topic of the economic and social impact of the pandemic on all generations, especially young people. The results of this research are not yet available. Most of the Portuguese studies focus on the youth from 16 to 24 years and relate to such matters as social life and friendship relationships, impact on daily routine, health and well-being strategies (Branquinho, Kelly, Arevalo, Santos, Gaspar de Matos, 2020; Branquinho, Santos, Gaspar de Matos, 2020).

There is a need for further research on the psychological, social and economic situation related to Covid-19 and the mitigation of its negative effects. Although there are already some studies in Portugal and Poland on these matters (e.g. Ferreira, Pereira, Fé Brás, Ilchuk, 202; Długosz, 2020; Bartkowiak, Karmolińska-Jagodzińska, 2021), there are no studies that focus on these two countries and compare them. Furthermore, to the authors' knowledge, there is no study that focuses on young people from these two countries. In fact, given that Portugal is a Mediterranean country and Poland is a Central/Eastern European country, it would be interesting to understand whether young people from these two countries think in the same way regarding the psychological, social and economic situation and health-related quality of life (HRQoL). Additionally, it would be interesting to understand whether the pandemic has had similar or different impacts on young people in these two countries.

Therefore, this research aims at studying the mental health, economic situation and social relations among Polish and Portuguese young adults before and during the Covid-19

pandemic. The present study also sought to assess the HRQoL among Polish and Portuguese young adults before and during the Covid-19 pandemic.

2.2 Method

2.2.1 Study design

International research always poses many problems. They appear at the level of research design (e.g. high cost, selection of research sample), selection of areas defining and delimiting a given issue, or difference in interpretation of obtained results. There are many problems, but not a few advantages either. Comparing the results of international research gives the possibility to obtain a new, broader perspective on their interpretation. At the same time, it shows the cultural specificity of how people react to global problems.

Before starting the research, the literature on the subject was studied. After elaborating the theoretical basis of the research, research tools were prepared, variables (dependent and independent) were selected, as well as indicators. The EQ-5D-5L Questionnaire was used to conduct the research, which aimed to investigate the measurement of the quality of life of Poles and Portuguese. In addition, the study used questions from the SHARE-COVID19 questionnaire to verify the economic situation, social relations and mental health of the respondents.

In December 2022, a pre-test of the questionnaire was conducted to collect comments and suggestions about the questionnaire from a sample of ten Portuguese and ten Polish aged between 18 and 29, who were not included in the main survey. Pre-test respondents were asked to complete the survey and to provide feedback on its content and structure. Consequently, the introduction to the questionnaire and unclear wording in several questions were redrafted.

The study was conducted in January and February 2022, among Poles and Portuguese, aged 18-29 years using snowball sampling. As the research took place in the era of the Covid-19 pandemic, questionnaires were distributed to respondents electronically using Google Form, via social networks.

The respondents were made aware of the content of the survey questions before taking the survey. The research was conducted independently. The respondents were informed about the scientific objectives of the research. Moreover, participation in the research was

voluntary and anonymous. Thanks to this, the respondents were willing to take part in the research. The average time to complete the questionnaires was 10 minutes. All questionnaires were completed according to the instructions and were taken into account in the research.

The research project received approval from the Independent Ethical Committee of the University of the Algarve (ref^a CEUAlg Pn°61/2021).

2.2.2. Questionnaire

The questionnaire was created in two versions - Polish and Portuguese. Each version had the same questions and structure. At the beginning of the questionnaire, participants were informed that by completing the questionnaire they consented to their participation in the study. The questionnaire contained 4 sections – HRQoL, Mental Health, Social Relations, and Economical Situation. The 5-level EQ-5D version (EQ-5D-5L) was used to measure HRQoL. Sections 2, 3 and 4 of the questionnaire were based on the SHARE-COVID19 questionnaire.

The last part of the questionnaire focused on socio-demographic aspects such as gender, age, marital status, labour status and residence.

2.2.2.1 EQ-5D-5L

The **EQ-5D-5L** is the most widely used generic questionnaire in Europe developed by the EuroQoL group to provide a simple assessment of the quality of life (Petryszyn, Kempa, Ekk-Cierniakowski, Battsengel, Trznadel, Więckowska, 2015). The EQ-5D-5L is a general questionnaire that comprises two parts.

The EQ-5D-5L descriptive system comprises five dimensions – mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension has five response levels: no problems, slight problems, moderate problems, severe problems, unable to /extreme problems. Responses are coded as single-digit numbers expressing the severity level selected in each dimension. A total of 3125 possible health states is defined in this way. Each state is referred to by a 5-digit code. This allows the computation of the EQ-5D-5L index, which reflects how good or bad a health state is according to the preferences of the general population of a country/region (EQ-5D-5L User Guide, 2019).

In addition, for the purpose of this research, each quality of life dimension was divided into two categories: no problems (level 1) and occurring problems (level 2-5). The choice of level 1 was interpreted as the best result (least problems/least severe complaints) and the choice of level 5 as the worst result (most problems, most severe complaints).

The second part of the questionnaire EQ-5D-5L - called EQ-VAS, contains a visual analogue scale (by means of which the respondent assesses his/her current state of health on a scale from 0 (worst imaginable health state) to 100 (best imaginable health state). The data obtained with the EQ-5D-5L questionnaire allows comparing the health states of the respondents with the assessment of the quality of life of the general population (Petryszyn, Kempa, Ekk-Cierniakowski, Battsengel, Trznadel, Więckowska, 2015).

In this study, we have used the Portuguese version of the EQ-5D-5L descriptive system, previously applied in other studies (e.g. Ferreira, Ferreira, Ribeiro, Pereira, 2016). The Portuguese EQ-5D-5L index was computed in the present study using the Portuguese value set (Ferreira, Antunes, Ferreira, 2019). Similarly, the Polish version of the EQ-5D-5L and the Polish value set was used to compute the Polish EQ-5D-5L index (Golicki, Jakubczyk, Graczyk, Niewada, 2019).

2.2.2.2 The SHARE COVID-19 questionnaire

The Survey of Health, Ageing and Retirement (SHARE) Corona Questionnaire was developed when data collection for Wave 8 of the SHARE in Europe had to be suspended due to the outbreak of the pandemic in 2020. In response, SHARE developed a special questionnaire covering the same topics as the regular SHARE questionnaire - but considerably shortened and focusing on the living situation of people aged 50 and over at the time of the pandemic. The SHARE Corona questionnaire includes 7 topics related to health and health behaviours, mental health, symptoms related to COVID-19 and health care, changes in professional and economic circumstances as well as changes in social networks (SHARE. Survey of Health, Ageing and Retirement in Europe. Release Guide 8.0.0, 2022)

As mentioned above sections 2, 3 and 4 of the questionnaire used for this research are based on selected questions from SHARE Corona Questionnaire 1 (Börsch-Supan, 2022) to which authorization has been given by the SHARE User Support Officer via e-mail. The selected questions are: 4 questions considering mental health (Have you had trouble sleeping recently?; Has that been more so, less so or about the same as before the outbreak

of Corona?; How much of the time do you feel lonely?; Has that been more so, less so or about the same as before the outbreak of Corona?), 2 questions with multiple sub-questions considering social relations (During the last three months, how often did you do each of the following activities?; Since the outbreak of Corona, how often did you have personal contact, that is, face to face, with the following people from outside your home?), 7 questions asking about the economical situation of the participants (Due to the Corona crisis have you become unemployed, were laid off or had to close your business?; Did you reduce your working hours since the outbreak of Corona?; Did you or any other household member receive additional financial support due to the outbreak of Corona from your employer, the government, relatives, friends, and/or others?; Who gave you this financial support? Thinking of your household's total monthly income since the outbreak of Corona, would you say that your household is able to make ends meet?; Since the outbreak of Corona, did you need to postpone regular payments such as rent, mortgage and loan payments, and/or utility bills?; Since the outbreak of Corona, did you need to dip into your savings to cover the necessary day-to-day expenses?).

2.2.3 Variables and their indicators

An important step in the research process is the identification of variables and their indicators. The assumptions made in this research work allowed the following variables presented in Table 1 to be identified.

Table 1 Variables and indicators

Variable	Nature of the variable	Indicator	Measurement instrument
Quality of Life: Mobility, Self-care, Usual Activities, Pain/Discomfort, Anxiety/Depression	Dependent variable	Questionnaire result (EQ-5D-5L index and EQ-VAS)	Questionnaire Euro – Quality of Life Questionnaire, version EQ5D-5L
Mental Health	Dependent variable	Answers to questions 6, 7, 8, 9 of the questionnaire	Questionnaire SHARE-Corona
Social relations	Dependent variable	Answers to questions 10, 11 of the questionnaire	
Economic situation	Dependent variable	Answers to questions 12, 13, 14, 15, 16, 17, 18 of the questionnaire	
Country of origin	Independent variable	Questionnaire statement	Personal data sheet, own study

Gender	Independent variable	Questionnaire statement	Personal data sheet, own study
Age	Independent variable	Questionnaire statement	Personal data sheet, own study
Marital status	Independent variable	Questionnaire statement	Personal data sheet, own study
Labour status	Independent variable	Questionnaire statement	Personal data sheet, own study
Area of residence	Independent variable	Questionnaire statement	Personal data sheet, own study

Source: Own elaboration

2.2.4 Statistical analyses

The next stage was to organise the collected material. The obtained answers to the survey questions were entered into the IBM SPSS Statistics program, version 26. The analysis was carried out on the basis of the collected data from the above-mentioned questionnaires. Descriptive statistics were used in the study for the given quantitative variables - mean, standard deviation, minimum and maximum values and skewness. The Mann-Whitney U test and the Chi-square test for qualitative variables were used to investigate the existence of differences between Poles and Portuguese. In addition, Student's t-test for independent samples was applied for quantitative variables. To present statistically significant differences, a significance level of $p < 0.05$ was assumed. Based on the collected data from the completed questionnaires, the statistical analysis presented in chapter three was performed.

2.3 Results

2.3.1 Study sample

The research was conducted among young adults from Poland and Portugal. Table 2 and 3 present the characteristics of the studied group according to sociodemographic features: gender, age, marital status, employment status and area of residence. The study involved 519 respondents aged 18-29 years (with a mean age of 25.27), including 330 from Poland and 189 from Portugal. Among the subjects, there were 225 (43.4%) Polish women and 117 (22.5%) Portuguese women. There were fewer men - 105 (20.2%) Poles and 72 (13.9%) Portuguese. It should be noted that the most numerous group were people who were single - 180 (34.7%) of respondents of Polish origin and 125 (24.1%) of Portuguese

origin. 133 (25.6%) of Poles and 55 (10.6%) of Portuguese were married or in a civil partnership. Most of the respondents were employed. Among them, there were 238 (45,9%) respondents of Polish origin and 103 (19,8%) of Portuguese origin. Among the respondents, most Poles lived in metropolitan areas (23.1%), while Portuguese lived in big cities (14.1%).

In general, among the respondents, there were 342 women (65.9%) and 177 men (34.1%). Most of the respondents had the status of a maiden or a bachelor - 305 people (58.8%). Moreover, 341 respondents (65.7%) were employed. The most frequently declared place of residence was a metropolis (174; 33.5%) and a big city (141; 27.2%).

Table 2 Demographic and social characteristics of respondents

Characteristics of respondents		Poland (n=330)	Portugal (n=189)	General
Gender	Female	225	117	342
		43,4%	22,5%	65,9%
	Male	105	72	177
		20,2%	13,9%	34,1%
Marital status	Single	180	125	305
		34,7%	24,1%	58,8%
	Marriage/Partnership	133	55	188
		25,6%	10,6%	36,2%
	Divorced or separated	15	9	24
		2,9%	1,7%	4,6%
Labour status	Working	2	0	2
		0,4%	0,0%	0,4%
	Working and studying	238	103	341
		45,9%	19,8%	65,7%
	Studying	53	39	92
		10,2%	7,5%	17,7%
Area of residence	A big city	22	39	61
		4,2%	7,5%	11,8%
	The suburbs or outskirts of a big city	17	8	25
		3,3%	1,5%	4,8%
	A large town	120	54	174
		23,1%	10,4%	33,5%
	A small town	58	34	92
		11,2%	6,6%	17,7%
Area of residence	A large town	68	73	141
		13,1%	14,1%	27,2%
	A small town	51	18	69
		9,8%	3,5%	13,3%
Area of residence	A rural area or village	33	10	43
		6,4%	1,9%	8,3%

Source: Compiled on the basis of research.

Table 3 Age of respondents by country of origin

Age	Overall (n=519)	Poland (n=330)	Portugal (n=189)
Mean	25,27	25,35	25,13
Standard deviation	3,21	2,86	3,75

Source: Compiled on the basis of research.

2.3.2 Health related quality of life

HRQoL reflects a person's well-being, coping with daily tasks and satisfaction with specific areas of life (reference?). HRQoL measured by the EQ-5D-5L questionnaire represented areas such as mobility, self-care, ability to perform usual activities, experiencing pain and discomfort, and feeling anxious and depressed. Respondents were asked to describe their health status based on these areas before the outbreak and during the pandemic. The results obtained are presented in Table 4 and Table 5 respectively.

As shown in Table 4, before the outbreak of the Covid-19 pandemic - 80.6% of respondents had no problems walking, as was expected since the surveyed sample was aged 18-29. More respondents from Portugal (44.2%) had no problems walking than from Poland (36.5%). More Portuguese respondents (44.2%) had no problems with washing and dressing than Polish respondents (36.3%). The study shows that Portuguese (43.1%) in a higher percentage than Poles (37.0%) did not have any problems with performing ordinary activities. In addition, it should be noted that respondents from Portugal (35.6%) were more likely to have felt no pain or discomfort before the pandemic outbreak than Poles (31.5%). The same was true for feeling anxious and depressed - more respondents from Portugal (32.2%) than Poland (26.8%) were not depressed.

In addition, it should be noted that the Chi-square test showed that there were statistically significant differences between the countries of origin of young adults in the assessment of health before the outbreak of pandemic Covid-19 in terms of areas: mobility ($\chi^2=48,03$, $p<0,05$), self-care ($\chi^2=72,28$, $p<0,05$), ability to perform usual activities ($\chi^2=35,88$, $p<0,05$) feeling pain and discomfort ($\chi^2=29,74$, $p<0,05$), feeling anxious and depressed ($\chi^2=23,35$, $p<0,05$).

Table 4 HRQoL before the Covid-19 pandemic among Polish and Portuguese young adults

Health related quality of life	Country		General	Chi-square test
	Poland	Portugal		

Mobility	I have no problems in walking about	36,5%	44,2%	80,6%	Chi-square test $\chi^2=48,03^*$
	I have slight problems in walking about	12,8%	3,4%	16,2%	
	I have moderate problems in walking about	2,0%	0,6%	2,6%	
	I have severe problems in walking about	0,0%	0,6%	0,6%	
	I am unable to walk about	0,0%	0,3%	0,3%	
Self Care	I have no problems washing or dressing myself	36,3%	44,2%	80,5%	Chi-square test $\chi^2=72,28^*$
	I have slight problems washing or dressing myself	14,8%	2,2%	17,0%	
	I have moderate problems washing or dressing myself	1,4%	0,8%	2,2%	
	I have severe problems washing or dressing myself	0,3%	0,0%	0,3%	
	I am unable to wash or dress myself	0,0%	0,0%	0,0%	
Usual activities	I have no problems doing my usual activities	37,0%	43,1%	80,1%	Chi-square test $\chi^2=35,88^*$
	I have slight problems doing my usual activities	13,2%	3,9%	17,1%	
	I have moderate problems doing my usual activities	1,4%	1,4%	2,8%	
	I have severe problems doing my usual activities	0,0%	0,0%	0,0%	
	I am unable to do my usual activities	0,0%	0,0%	0,0%	
Pain/Discomfort	I have no pain or discomfort	31,5%	35,6%	67,1%	Chi-square test $\chi^2=29,74^*$
	I have slight pain or discomfort	19,9%	8,6%	28,6%	
	I have moderate pain or discomfort	2,4%	1,9%	4,3%	
	I have severe pain or discomfort	0,0%	0,0%	0,0%	
	I have extreme pain or discomfort	0,0%	0,0%	0,0%	
Anxiety/Depression	I am not anxious or depressed	26,8%	32,2%	59,0%	Chi-square test $\chi^2=23,35^*$
	I am slightly anxious or depressed	21,9%	11,7%	33,6%	
	I am moderately anxious or depressed	3,6%	3,6%	7,1%	
	I am severely anxious or depressed	0,3%	0,0%	0,3%	
	I am extremely anxious or depressed	0,0%	0,0%	0,0%	

Source: Compiled on the basis of research. *p<0.001.

Chi-square test was conducted to examine the differences between Polish and Portuguese young adults in the assessment of health areas during the Covid-19 pandemic. The study showed that there are statistically significant differences between young adults from Portugal and Poland in terms of areas: mobility ($\chi^2=46,40$, $p<0,05$), self-care ($\chi^2=51,46$, $p<0,05$), ability to perform usual activities ($\chi^2=16,06$, $p<0,05$). During the Covid-19 pandemic, Poles (40.3%) were more likely to have no problems walking than Portuguese (34.0%). To a greater extent, Poles (43.3%) than Portuguese (38.0%) had no problems with washing and dressing. Respondents from Poland (40.5%) did not have any problems with performing usual activities compared to respondents from Portugal (29.9%).

In addition, it should be noted that the outbreak of the pandemic increased feelings of pain and discomfort and feelings of anxiety and depression among the surveyed young adults from Poland and Portugal. Analysing the results obtained, more than half of the respondents (55.3%) did not feel any pain or discomfort. It is also worth pointing out that 34.0% felt little pain or discomfort during the pandemic. Concerning feelings of anxiety and depression among young adults from Portugal and Poland, it should be noted that there were similar levels of those who felt no anxiety and depression (37.6%) and those who felt slight anxiety and depression (36.9%). The difference between young adults from Poland and young adults from Portugal was not statistically significant ($p>0.05$). This means that the country of origin was not a differentiating factor.

Table 5 HRQoL during the Covid-19 pandemic among Polish and Portuguese young adults

Health related quality of life		Country		General	Chi-square test
		Poland	Portugal		
Mobility	I have no problems in walking about	40,3%	34,0%	74,3%	Chi-square test $\chi^2=46,40^*$
	I have slight problems in walking about	17,2%	4,0%	21,2%	
	I have moderate problems in walking about	2,3%	1,1%	3,4%	
	I have severe problems in walking about	0,6%	0,4%	1,1%	
	I am unable to walk about	0,0%	0,2%	0,2%	
Self Care	I have no problems washing or dressing myself	43,3%	38,0%	81,3%	Chi-square test $\chi^2=51,46^*$
	I have slight problems washing or dressing myself	12,7%	1,8%	14,5%	
	I have moderate problems washing or dressing myself	2,6%	1,5%	4,2%	
	I have severe problems washing or dressing myself	0,0%	0,0%	0,0%	

	I am unable to wash or dress myself	0,0%	0,0%	0,0%	
Usual Activities	I have no problems doing my usual activities	40,5%	29,9%	70,4%	Chi-square test $\chi^2=16,06^*$
	I have slight problems doing my usual activities	17,5%	7,0%	24,5%	
	I have moderate problems doing my usual activities	1,9%	3,2%	5,1%	
	I have severe problems doing my usual activities	0,0%	0,0%	0,0%	
	I am unable to do my usual activities	0,0%	0,0%	0,0%	
Pain/Discomfort	I have no pain or discomfort	32,2%	23,1%	55,3%	Chi-square test $\chi^2=3,23$ $p=0,52$
	I have slight pain or discomfort	21,3%	12,7%	34,0%	
	I have moderate pain or discomfort	4,7%	4,7%	9,3%	
	I have severe pain or discomfort	0,7%	0,7%	1,3%	
	I have extreme pain or discomfort	0,0%	0,0%	0,0%	
Anxiety/Depression	I am not anxious or depressed	22,9%	14,6%	37,6%	Chi-square test $\chi^2=6,52$ $p=0,26$
	I am slightly anxious or depressed	22,9%	14,0%	36,9%	
	I am moderately anxious or depressed	9,6%	9,8%	19,4%	
	I am severely anxious or depressed	3,7%	2,2%	5,9%	
	I am extremely anxious or depressed	0,2%	0,0%	0,2%	

Source: Compiled on the basis of research. * $p<0.001$.

In addition, an analysis of the assessment of EQ-VAS before and during the Covid-19 pandemic was conducted, as presented in Table 6. Respondents described their well-being before the pandemic outbreak as high ($M=83.76$; $SD=11.65$). Both Poles ($M=82.79$; $SD=11.66$) and Portuguese ($M=85.45$; $SD=11.46$) described their well-being as high. As for the assessment of well-being during the Covid-19 pandemic, it should be noted that the overall assessment of well-being is lower than before the outbreak. It was determined at a medium level ($M=78.18$; $SD=13.86$). Analysing the assessment of respondents from Poland and Portugal, Poles ($M=78.14$; $SD=13.00$) and Portuguese ($M=78.25$; $SD=15.28$) also rated their well-being lower - at the medium level.

Table 6 Subjective assessment of well-being during the outbreak of the Covid-19 pandemic

Descriptive statistics	Subjective assessment of well-being before the outbreak of the Covid-19 pandemic			Subjective assessment of well-being during the outbreak of the Covid-19 pandemic		
	Poland	Portugal	General	Poland	Portugal	General
M	82,79	85,45	83,76	78,14	78,25	78,18
SD	11,66	11,46	11,65	13,00	15,28	13,86
Min	40	30	30	40	20	20
Max	100	100	100	100	100	100

Source: Compiled on the basis of research.

Using the Mann-Whitney U test, respondents from Poland and Portugal were compared in terms of subjective assessment of well-being before and during the Covid-19 pandemic. Interpreting the data in Table 7, it can be concluded that there are statistically significant differences between respondents from Poland and respondents from Portugal in terms of subjective assessment of well-being before the pandemic outbreak ($p < 0.05$). Residents of Portugal rated their pre-pandemic well-being higher than residents of Poland. There are no statistically significant differences between Poles and Portuguese in terms of subjective assessment of well-being during the Covid-19 pandemic ($p > 0.05$).

Table 7 Subjective assessment of well-being before and during Covid-19 pandemic among Polish and Portuguese young adults

	Poland (n=330)		Portugal (n=189)		Mann-Whitney U	
	M	SD	M	SD	U	P
Subjective assessment of well-being before the outbreak of the Covid-19 pandemic	82,79	11,66	85,45	11,46	26316,00	0,00*
Subjective assessment of well-being during the Covid-19 pandemic	78,14	13,00	78,25	15,28	29692,50	0,36

* $p < 0,05$

Source: Compiled on the basis of research.

In terms of HRQoL as presented in Table 8 the mean EQ-5D-5L index score of the Polish sample during the quarantine is 0.944 (standard deviation [SD] = 0.080), which is lower

than before the pandemic – 0.965; SD = 0.055. Analogously Portuguese EQ-5D-5L index score is lower during pandemic than before – 0.899; SD = 0.118 and 0.957; SD = 0.078 respectively. Lower and significantly different is the index score of the Portuguese sample in relation to the index score of Polish respondents during the duration of the pandemic.

Table 8 EQ-5D-5L index scores of Polish and Portuguese young adults before and during the Covid-19 pandemic

	Before the Covid-19 pandemic				During the Covid-19 pandemic			
	M	SD	Min	Max	M	SD	Min	Max
Poland	0.965	0.055	0.793	1.000	0.944	0.080	0.510	1.000
Portugal	0.957	0.078	0.490	1.000	0.899	0.118	0.430	1.000

Source: Compiled on the basis of research.

2.3.3 Mental health, social relations, economic situation before and during the Covid-19 pandemic

2.3.3.1 Mental health

With the onset of the Covid-19 pandemic, society began to face a variety of factors that had a significant impact on mental health. These included: fear of contagion, social distance, isolation, financial deterioration and quarantine. These factors prompted the construction of a mental health strategy.

The study group was asked to provide information on recent trouble sleeping, frequency of recent trouble sleeping before the pandemic outbreak, feeling lonely and frequency of recent loneliness compared to before the pandemic outbreak (Table 9).

The results showed that 56.6% of the respondents had trouble sleeping or had recently changed their sleep mode. In contrast, 43.4% of the respondents did not have sleep problems. Additionally, it should be noted that the country of origin of the respondents was a differentiating factor for recent sleep problems ($\chi^2=6.70$, $p<0.05$). This means that more Polish young adults (38.7%) than Portuguese young adults (17.9%) had problems with sleep. The vast majority of respondents declared that they had trouble sleeping (63.8%) more or less the same as before the pandemic outbreak. Among them were 39.9% of Poles and 2.9% of Portuguese.

According to the study conducted for this thesis, almost half of the respondents (44.6%) sometimes felt lonely. Additionally, using the Mann-Whitney U test, it was checked whether there were statistically significant differences between young adults from Poland and Portugal in terms of feeling loneliness. It turned out that the country of origin was a differentiating factor for recent feelings of loneliness ($U=27081.00$; $p<0.05$). More young Polish adults (29.5%) than young Portuguese adults (15.4%) experienced loneliness. Regarding the frequency of feeling lonely recently compared to before the outbreak of the pandemic by the respondents, 61.7% of them felt lonely more or less the same. It should be noted that already one in three respondents (33.9%) felt loneliness more often during the pandemic than before the pandemic outbreak. The difference between young adults from Poland and Portugal was statistically significant ($U=27182.00$; $p<0.05$).

Table 9 Mental health before the Covid-19 pandemic outbreak among Polish and Portuguese young adults

Mental Health		Country		General	Statistical test
		Poland	Portugal		
Trouble sleeping recently	Trouble sleeping or recent change in sleep routine	38,7%	17,9%	56,6%	Chi-square test $\chi^2=6,70^*$
	No sleeping problems	24,9%	18,5%	43,4%	
Prevalence of sleep problems in recent versus pre-pandemic outbreak	More so	21,0%	11,4%	32,4%	Mann-Whitney U Test $U=30372,50$ $p=0,56$
	Less so	2,7%	1,2%	3,9%	
	About the same	39,9%	23,9%	63,8%	
Recent feelings of loneliness	Often	16,2%	6,7%	22,9%	Mann-Whitney U Test $U=27081,00^*$
	Some of the time	29,5%	15,4%	44,9%	
	Hardly ever or never	17,9%	14,3%	32,2%	
Frequency of feeling lonely recently versus before the pandemic outbreak	More so	18,3%	15,6%	33,9%	Mann-Whitney U Test $U=27182,00^*$
	Less so	3,5%	1,0%	4,4%	
	About the same	41,8%	19,8%	61,7%	

* $p<0,05$

Source: Compiled on the basis of research.

2.3.3.2 Social relations

Social distancing has been identified as one of the non-pharmacological means of containing the spread of Covid-19 infection, and various models have shown its positive significance for the vast majority of populations in the long term. Distancing will become unnecessary when a population achieves herd immunity, following widespread infection, after mass immunization or after effective use of drugs.

The Covid-19 pandemic changed people's attitudes not only toward health. It also had an impact on social relations and relationships with loved ones. The need for social isolation reduced interpersonal contact and increased the intensity of negative emotions and the incidence of mental illness. The emergence of the pandemic affected the frequency of various activities that were performed before the outbreak of the pandemic, e.g. shopping, walking, meeting friends and family.

Table 10 shows the results for the frequency of activities since the outbreak compared to before the outbreak. Almost half (49.3%) of the respondents declared that they go out shopping as often during the pandemic as before the outbreak. However, also a significant proportion of respondents (46.8%) now go out shopping less often than before. Taking into account the frequency of going out for a walk, most respondents (47.4%) enjoy this pleasure less frequently than before the pandemic. Young adults from Poland (33.5%) went out less often than young adults from Portugal (22.5%). The outbreak of the Covid-19 pandemic resulted in respondents meeting more people outside the household less frequently (56.1%) and visiting other family members (60.5%) compared to before the pandemic. Respondents from Poland met less frequently with other people than respondents from Portugal.

Additionally, it should be noted that the Mann-Whitney U test showed that there were statistically significant differences between the countries of origin of young adults in terms of going for a walk ($U=27385.00$; $p<0.05$), meeting more than five people outside the household ($U=24097.00$; $p<0.05$) and visiting other family members ($U=26775.00$; $p<0.05$).

Table 10 Frequency of activities compared to pre-pandemic Covid-19 among Polish and Portuguese young adults

Frequency of activities compared to the period before the Covid-19 pandemic outbreak		Country		General	Statistical test
		Poland	Portugal		
Go shopping	Not any more	0,2%	0,4%	0,6%	Mann-Whitney U Test
	Less often	30,4%	16,4%	46,8%	

	About the same	32,2%	17,1%	49,3%	U=29716,50 p=0,31
	More often	0,8%	1,9%	2,7%	
	Don't know	0,0%	0,6%	0,6%	
	Not any more	1,7%	3,3%	5,0%	
Go for a walk	Less often	33,7%	13,7%	47,4%	Mann-Whitney U Test U=27385,00*
	About the same	26,0%	12,5%	38,5%	
	More often	2,1%	6,0%	8,1%	
	Don't know	0,0%	1,0%	1,0%	
Meet with more than 5 people from outside your household	Not any more	1,2%	4,2%	5,4%	Mann-Whitney U Test U=24097,00*
	Less often	33,5%	22,5%	56,1%	
	About the same	28,5%	8,5%	37,0%	
	More often	0,4%	1,2%	1,5%	
Meet with other members of your family	Not any more	1,7%	1,9%	3,7%	Mann-Whitney U Test U=26775,00*
	Less often	35,8%	24,7%	60,5%	
	About the same	25,6%	8,9%	34,5%	
	More often	0,4%	1,0%	1,3%	

*p<0,05

Source: Compiled on the basis of research.

The frequency of personal contact (face to face) with others outside the home since the outbreak is shown in Table 11. As shown in the survey, the response related to the personal contact with their children was no for 49.0% of the respondents. Since the outbreak of the Covid-19 pandemic, as declared by 36.7% of young adults, personal contact with their children was daily. Almost a third of the respondents (32.2%) had "face-to-face" contact with their parents on a daily basis, while 30.1% of respondents had less frequent contact. As for other relatives (46,8%), respondents met them less frequently since the outbreak. Respondents had personal contact with other unrelated persons (43.2%) several times a week since the pandemic.

In addition, the results showed that there were statistically significant differences between the young adults' countries of origin in terms of frequency of meeting their children (U=17888.50; p<0.05), meeting their parents (U=2546.00; p<0.05), meeting other relatives (U=16779.00; p<0.05) and meeting other unrelated persons (U=14907.00; p<0.05). More often young adults from Portugal (27.4%) were not asked about personal

contact with their children than those from Poland (21.6%). Respondents from Poland (21.2%) were more likely to see their parents daily than respondents from Portugal (11.0%). In addition, Portuguese respondents (24.2%) were less likely than Polish respondents (22.6%) to have had personal contact with other relatives since the pandemic outbreak. More young adults from Poland (34.8%) than from Portugal met with unrelated persons (8.4%) several times a week.

Table 11 Frequency of personal contact (face to face) compared to pre-pandemic Covid-19 among Polish and Portuguese young adults

Frequency of personal contact (face to face) with individuals compared to before the Covid-19 pandemic outbreak		Country		General	Statistical test
		Poland	Portugal		
Own children	Daily	30,1%	6,6%	36,7%	Mann-Whitney U Test U=17888,50*
	Several times a week	11,4%	0,8%	12,2%	
	About once a week	0,4%	0,4%	0,8%	
	Less often	0,2%	1,0%	1,2%	
	Not applicable	21,6%	27,4%	49,0%	
	Don't know	0,0%	0,2%	0,2%	
Own parents	Daily	21,2%	11,0%	32,2%	Mann-Whitney U Test U=25546,00*
	Several times a week	20,7%	4,2%	24,9%	
	About once a week	3,9%	6,0%	9,8%	
	Less often	17,8%	12,4%	30,1%	
	Not applicable	0,2%	2,7%	2,9%	
Other relatives	Daily	6,5%	1,2%	7,7%	Mann-Whitney U Test U=16779,00*
	Several times a week	33,4%	4,5%	37,9%	
	About once a week	1,8%	4,1%	5,9%	
	Less often	22,6%	24,2%	46,8%	
	Never	0,2%	0,0%	0,2%	
	Not applicable	0,2%	1,0%	1,2%	
	Don't know	0,2%	0,2%	0,4%	
Other non-relatives like neighbours, friends, or colleagues	Daily	13,9%	1,6%	15,5%	Mann-Whitney U Test U=14907,00*
	Several times a week	34,8%	8,4%	43,2%	
	About once a week	3,3%	5,3%	8,6%	
	Less often	12,3%	19,8%	32,1%	

Don't know	0,2%	0,4%	0,6%
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*p<0,05

Source: Compiled on the basis of research.

2.3.3.3 Economic situation

The pandemic destabilised the world economy and contributed to an economic crisis in many countries. When the WHO declared a state of a pandemic, the governments of most countries in the world issued administrative decisions aimed at bringing economies to a halt. These decisions disrupted labour markets. The violent decisions increased unemployment and inactivity and interfered with employee-employer relations. In order to mitigate the negative effects of the COVID-19 shock, governments introduced austerity measures for enterprises.

The results of the survey related to the economic situation of the respondents are presented in Table 12. 59.7% of the respondents were not employed at the time of the outbreak. When asked whether the number of working hours of the respondents had decreased since the outbreak, almost three quarters (74.4%) said that it had not decreased. Additional financial support in connection with the outbreak of the pandemic from the employer, public institutions, relatives or other persons were not received by 77.1% of the respondents. Such financial support was received by only 22.9% of the respondents. As many as 77.6% of respondents were not asked about the source of financial support. Taking into account the total monthly household income since the outbreak, the vast majority of households were struggling to make "ends meet" (59,0%). The largest number of respondents (65.7%) did not have to set aside regular payments such as rent, loan repayments, and mortgages due to the Covid-19 outbreak. Respondents' opinion on the use of savings for daily expenses since the outbreak was divided. This means that 52.8% of the respondents did not use savings, while 47.2% were forced to use savings for daily expenses.

It is worth noting that the country of origin of young adults showed to be a differentiating factor between employment during the pandemic ($\chi^2=29.32$; $p<0.05$), reduced hours ($\chi^2=7.88$; $p<0.05$), the origin of financial support ($\chi^2=17.83$; $p<0.05$), monthly household income ($U=23137.00$; $p<0.05$), postponing regular household maintenance payments ($\chi^2=42.24$; $p<0.05$), using savings to cover necessary daily expenses during the pandemic ($\chi^2=19.59$; $p<0.05$). It turned out that more young adults from Poland (32.4%)

than from Portugal (27.4%) were not working. Moreover, a higher percentage of Poles (44.7%) than Portuguese (29.7%) did not have reduced working hours. More Poles (48.0%) did not receive funding due to the pandemic outbreak than the Portuguese (29.1%). Both 49.1% of Poles and 28.4% of Portuguese were not affected by the origin of the financial support. The research showed that it was Polish young adults (42.4%) who were more likely than Portuguese young adults (16.6%) to be able to maintain their households with some difficulty. Additionally, it should be noted that it was Polish respondents (35.3%) who did not have to set aside regular payments compared to Portuguese respondents (30.4%). Regarding the use of savings by Polish and Portuguese young adults, it was more often the Poles (28.9%) than the Portuguese (23.9%) who did not have to use savings during the pandemic.

Table 12 Economic situation before and during the Covid-19 pandemic among Polish and Portuguese young adults

Economic situation		Country		General	Statistical test
		Poland	Portugal		
Employment/self-employment including working for a company during the Covid-19 pandemic	Yes	31,2%	9,1%	40,3%	Chi-square test $\chi^2=29,32^*$
	No	32,4%	27,4%	59,7%	
Reducing working hours during the Covid-19 pandemic	Yes	18,9%	6,7%	25,6%	Chi-square test $\chi^2=7,88^*$
	No	44,7%	29,7%	74,4%	
Additional financial support in connection with a pandemic outbreak from employer, public institutions, relatives, friends and/or others	Yes	15,6%	7,3%	22,9%	Chi-square test $\chi^2=1,34$ $p=0,25$
	No	48,0%	29,1%	77,1%	
Origin of financial support	Employer	5,0%	0,4%	5,4%	Chi-square test $\chi^2=17,83^*$
	Government	3,9%	4,4%	8,3%	
	Relatives	3,9%	2,7%	6,6%	
	Friends	0,6%	0,2%	0,8%	
	Others	1,2%	0,2%	1,4%	
	Not applicable	49,1%	28,4%	77,6%	
Monthly household income since the outbreak	With great difficulty	6,2%	2,7%	8,9%	Mann-Whitney U Test $U=23137,50^*$
	With some difficulty	42,4%	16,6%	59,0%	
	Fairly easily	13,7%	11,2%	24,9%	

	Easily	1,3%	6,0%	7,3%	
Postpone regular payments such as rent, loan and mortgage repayments, and/or bill payments during the pandemic	Yes	28,3%	6,0%	34,3%	Chi-square test $\chi^2=42,24^*$
	No	35,3%	30,4%	65,7%	
Using savings to cover essential daily expenses during a pandemic	Yes	34,7%	12,5%	47,2%	Chi-square test $\chi^2=19,59^*$
	No	28,9%	23,9%	52,8%	

*p<0,05

Source: Compiled on the basis of research.

2.4 Discussion

The present study sought to assess the health-related quality of life (HRQoL) among Polish and Portuguese young adults before and during the Covid-19 pandemic but also aims at studying the mental health, economic situation, and social relations among Polish and Portuguese young adults before and during the Covid-19 pandemic.

The findings reveal that almost two years since the beginning of the pandemic Polish and Portuguese young adults reported a lower level of HRQoL in comparison to the times before the outbreak of Covid-19. EQ-5D-5L index scores show that both before and during the pandemic, the Polish respondents rated their HRQoL higher than respondents from Portugal. It should be noted that both Polish and Portuguese during the pandemic felt higher levels of anxiety and depression as well as pain and discomfort in comparison to the time before the pandemic.

When comparing mental health, it is clear that the pandemic has affected the sleeping habits of Polish young adults more than Portuguese. It is also Poles who feel more lonely, but this was also noticeable before the pandemic. This result seems to be connected with the social relations - Poles were less likely than Portuguese to carry out their daily activities such as going out shopping or for a walk.

Similar results concerned were obtained at the very beginning of the pandemic in the study by Wang, Pan, Wan, Tan, Xu and Ho (2020) were 53.8% of respondents rated the psychological impact of the pandemic on mood as moderate or severe and 16.5% of respondents reported moderate to severe depressive symptoms. The result of the study also showed that vulnerable groups i.e. those showing higher levels of stress, anxiety and depression were women, people with specific physical symptoms (e.g. muscle pain, dizziness) and students.

Another recent study published by Portuguese researchers revealed that quarantined people reported higher levels of anxiety and lower HRQoL, as measured by the EQ-5D-5L, compared with the pre-COVID-19 pandemic general population and that those with higher levels of anxiety tended to have a lower HRQoL (Ferreira, Pereira, Fé Brás, Ilchuk, 2021).

As could be expected given the target audience - 59.7% of all of the respondents were not employed at the time of the outbreak. It is remarkable that although most Polish respondents have not reduced their working hours the economic situation of Polish households has deteriorated. The findings of the research are in line with the study of Szustak, Gradoń and Szewczyk (2021) - the economic situation of Poles people is ambiguous. However, most Poles are doing well financially and do not complain about the state of their household budget during COVID-19, but the pandemic depleted some of it. The reason why savings are melting away may therefore be the reluctance of Poles to take on debt in times of economic instability and thus more inclined to compromise their savings than to use credit or loans to finance larger purchases. It cannot be excluded that in this way respondents were thus trying to compensate for lower incomes during the lockdown or even for losing them altogether.

Based on literature research, this study appears to be the first to examine HRQoL to the same extent as the psychological, economic and social consequences of a pandemic among young respondents from two different European countries. However, this study had certain limitations that need to be taken into consideration. First, the survey respondents were selected based on their age (18-29). As noted in the introduction of the article young adults are a group that is diverse in terms of developmental tasks. The questionnaire, on the other hand, focused more on young adults who are independent and self-supporting. Thus the questionnaire could have included more differentiating questions for those still in high school and living with their parents. This issue is also linked to another limitation, namely, other variables could have been included in the questionnaire, such as level of education or the need to study/work remotely or on-site. Such variables might play a relevant role in the aim of the study. Nevertheless, there was a need to balance the length, the method of data collection, and the purpose of the questionnaire. Another limitation is the time when the survey was carried out - about two years after the announcement of the pandemic. It would also be extremely interesting to have carried out this study during the first lockdown. Given the variation in Covid-19

restrictions, the same research undertaken during the first lockdown could have an impact on research results.

A comprehensive survey covering various areas of life is extremely important in terms of improving the lives of the population since an effective pandemic response should take into account the fact that social, economic and health problems are closely interlinked. Taking into account the differences in mental, economic and social status between respondents from Poland and Portugal, it would be interesting to investigate whether these differences are correlated with the different restrictions for both countries - such as the length and number of lock-ups or the ban on moving between municipalities. A study along these lines could indicate which restrictions are effective in combating the virus while imposing the least possible burden on society.

2.5 Conclusion

Pandemic has been going on for more than two years during which periods of lesser incidence have been interspersed with several waves of significant increases in incidence which necessitates the repeated imposition of the aforementioned safeguard measures. The course of a pandemic is not the only phenomenon that requires in-depth research. The COVID-19 pandemic is an unexpected and sudden social experience. The collective quarantine recommended by the WHO in order to slow down the spread of the pandemic has also health, social and economic consequences.

This uncertainty and the constant fear of getting sick, both for oneself and those close to oneself, affects most aspects of life. Particular attention should be paid to those in risk groups, including young adults. With the recurring restrictions and growing uncertainty, Portuguese and Polish young adults are facing an increased risk of depression and anxiety. The aim of the study was to monitor the changes that occurred during the pandemic at different levels among young adults in two European countries. The results may indicate what factors are contributing to the worsening of the general living situation of the respondents and show that governments and health authorities should, in addition to the medical consequences of the virus, take the necessary measures to mitigate the long term consequences of the virus, as well as paying special attention to the group of young adults who, in this uncertain time, are trying to make the most important decisions for their development.

3. Conclusion

The COVID-19 pandemic is a distressing social experience. The WHO-recommended collective quarantine to slow the spread of the pandemic has health, social, and economic consequences. Most aspects of life are affected by this uncertainty and constant fear of becoming ill, both for oneself and those close to oneself. Those at risk, including young adults, should be given special consideration.

Because of the recurring restrictions and growing uncertainty, young Portuguese and Polish adults are at a higher risk of depression and anxiety. The aim of the study was to monitor the changes that occurred during the pandemic at different levels among young adults in two European countries. The results may indicate which factors are contributing to the worsening of the general living situation of the respondents and show that governments and health authorities should, in addition to the medical consequences of the virus, take the necessary measures to mitigate the long term consequences of the virus, as well as paying special attention to the group of young adults who, in this uncertain time, are trying to make the most important decisions for their development.

As mentioned in the Discussion of the article presented research has the limitation that should be taken into account. Firstly, the questionnaire should include more differentiated questions depending on the life stage of the respondent. Secondly, other variables could have been included in the questionnaire, such as level of education or the need to study/work remotely or on-site. Such variables might play a relevant role in the aim of the study. Nevertheless, there was a need to balance the length, the method of data collection, and the purpose of the questionnaire. The third limitation is the time when the survey was carried out - about two years after the announcement of the pandemic. Given the variation in Covid-19 restrictions, the same research undertaken during the first lockdown could have an impact on research results.

Taking into consideration the results of the study, especially higher levels of anxiety and depression as well as pain and discomfort in comparison to the time before the pandemic, special attention should be paid to access to mental healthcare support. Policymakers should weigh the advantages and disadvantages of restrictions, provide clear and consistent guidance to the public, and conduct time-bound policy evaluations to mitigate the negative effects of COVID-19 restrictions and develop strategies for future outbreaks.

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Appendix A: Questionnaire

Psychological, social and economic burden of Covid-19: a comparison of Polish and Portuguese young adults.

Dear Participants,

My name is Sylwia Fraczek and I am a student of Master of Management in Healthcare from the University of Algarve. I am inviting you to participate in this research by completing the following survey. The aim of the research is to determine the impact of Covid-19 on young adults on 3 different dimensions: psychological, social and economic. The questionnaire is addressed to young adults between 18 and 29 years old from Poland and Portugal. The results will be analysed collectively and used to provide a comparison of the psychological, social and economic situation of Polish and Portuguese young adults before and during a pandemic. The questionnaire is anonymous and confidential. The overall questionnaire consists of 24 questions, which will take approximately 10-12 minutes to complete. The collected data will be used only for academic purposes.

Thank you for taking your time in assisting me in this research.

Sincerely,

Sylwia Fraczek

Before I start the questionnaire, I would like to know if you agree to participate in the survey and if you authorize to use the collected responses for the purposes of academic research on the impacts of COVID 19 on the quality of life and health of Portuguese/Polish citizens.

☐ Yes ☐ No (if the respondent answers no, the questionnaire ends)

I would like to thank you for your availability and cooperation.

Due to ethical and legal issues, before you start the survey, I would like to know if you are in one of the following situations:

- ☐ Refugee
- ☐ Migrant in an irregular situation
- ☐ Sex worker
- ☐ Have cognitive difficulties
- ☐ Political dissident
- ☐ Traumatized or at risk of trauma
- ☐ You are under 18 years of age

(if the respondent is in any of the situations described above, the questionnaire ends)

Thank you.

1-HEALTH-RELATED QUALITY OF LIFE

Under each heading, please tick ONE box that best describes your health BEFORE THE OUTBREAK OF CORONA and the ONE box that best describes your health TODAY:

1. Mobility

	BEFORE THE OUTBREAK OF CORONA	TODAY
I have no problems in walking about	<input type="checkbox"/>	<input type="checkbox"/>
I have slight problems in walking about	<input type="checkbox"/>	<input type="checkbox"/>
I have moderate problems in walking about	<input type="checkbox"/>	<input type="checkbox"/>
I have severe problems in walking about	<input type="checkbox"/>	<input type="checkbox"/>
I am unable to walk about	<input type="checkbox"/>	<input type="checkbox"/>

2. Self Care

	BEFORE THE OUTBREAK OF CORONA	TODAY
I have no problems washing or dressing myself	<input type="checkbox"/>	<input type="checkbox"/>
I have slight problems washing or dressing myself	<input type="checkbox"/>	<input type="checkbox"/>
I have moderate problems washing or dressing myself	<input type="checkbox"/>	<input type="checkbox"/>
I have severe problems washing or dressing myself	<input type="checkbox"/>	<input type="checkbox"/>
I am unable to wash or dress myself	<input type="checkbox"/>	<input type="checkbox"/>

3. Usual activity (*e.g. work, study, housework, family or leisure activities*)

	BEFORE THE OUTBREAK OF CORONA	TODAY
I have no problems doing my usual activities	<input type="checkbox"/>	<input type="checkbox"/>
I have slight problems doing my usual activities	<input type="checkbox"/>	<input type="checkbox"/>
I have moderate problems doing my usual activities	<input type="checkbox"/>	<input type="checkbox"/>
I have severe problems doing my usual activities	<input type="checkbox"/>	<input type="checkbox"/>
I am unable to do my usual activities	<input type="checkbox"/>	<input type="checkbox"/>

4. Pain/Discomfort

	BEFORE THE OUTBREAK OF CORONA	TODAY
I have no pain or discomfort	<input type="checkbox"/>	<input type="checkbox"/>
I have slight pain or discomfort	<input type="checkbox"/>	<input type="checkbox"/>
I have moderate pain or discomfort	<input type="checkbox"/>	<input type="checkbox"/>
I have severe pain or discomfort	<input type="checkbox"/>	<input type="checkbox"/>
I have extreme pain or discomfort	<input type="checkbox"/>	<input type="checkbox"/>

5. Anxiety/Depression

	BEFORE THE OUTBREAK OF CORONA	TODAY

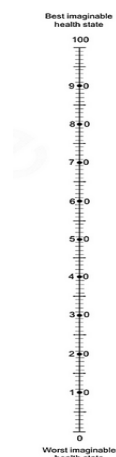
I am not anxious or depressed	<input type="checkbox"/>	<input type="checkbox"/>
I am slightly anxious or depressed	<input type="checkbox"/>	<input type="checkbox"/>
I am moderately anxious or depressed	<input type="checkbox"/>	<input type="checkbox"/>
I am severely anxious or depressed	<input type="checkbox"/>	<input type="checkbox"/>
I am extremely anxious or depressed	<input type="checkbox"/>	<input type="checkbox"/>

- I would like to know how good or bad your health was **BEFORE THE OUTBREAK OF CORONA**

-The scale below is numbered from 0 to 100.

-100 means the best health imaginable. 0 means the worst health imaginable.

- Please write the number you chose in the box below.



YOUR HEALTH BEFORE THE OUTBREAK OF CORONA=

- I would like to know how good or bad your health is **TODAY**

-The scale below is numbered from 0 to 100.

-100 means the best health imaginable. 0 means the worst health imaginable.

- Please write the number you chose in the box below.



YOUR HEALTH TODAY=

2-MENTAL HEALTH (Single choice questions)

6. Have you had trouble sleeping recently?

- a) Yes
- b) No

7. Has that been more so, less so or about the same as before the outbreak of Corona?

- a) More so
- b) Less so
- c) About the same

8. How much of the time do you feel lonely?

- a) Often
- b) Some of the time
- c) Hardly ever or never

9. Has that been more so, less so or about the same as before the outbreak of Corona?

- a) More so
- b) Less so
- c) About the same

3-SOCIAL RELATIONS

10. Since the outbreak, how often have you done the following compared to before the outbreak?

10a. Go shopping?

- a) More often
- b) About the same
- c) Less often
- d) Not any more
- e) Don't know

10b. Go for a walk?

- a) More often
- b) About the same
- c) Less often
- d) Not any more
- e) Don't know

10a. Meet with more than 5 people from outside your household?

- a) More often
- b) About the same
- c) Less often
- d) Not any more
- e) Don't know

10a. Meet with other members of your family?

- a) More often
- b) About the same
- c) Less often
- d) Not any more
- e) Don't know

11. Since the outbreak of Corona, how often did you have personal contact, that is, face to face, with the following people from outside your home:

11a. Own children:

- a) Daily
- b) Several times a week
- c) About once a week
- d) Less often
- e) Never
- f) Don't know
- g) Not applicable

11a. Own parents:

- a) Daily
- b) Several times a week
- c) About once a week
- d) Less often
- e) Never
- f) Don't know
- g) Not applicable

11c. Other relatives:

- a) Daily
- b) Several times a week
- c) About once a week
- d) Less often
- e) Never
- f) Don't know
- g) Not applicable

11d. Other non-relatives like neighbours, friends, or colleagues:

- a) Daily
- b) Several times a week
- c) About once a week
- d) Less often
- e) Never
- f) Don't know
- g) Not applicable

4-ECONOMIC SITUATION

12. Due to the Corona crisis have you become unemployed, were laid off or had to close your business?

- a) Yes
- b) No

13. Did you reduce your working hours since the outbreak of Corona?

- a) Yes
- b) No

14. Did you or any other household member receive additional financial support due to the outbreak of Corona from your employer, the government, relatives, friends, and/or others?

- a) Yes
- b) No

15. Who gave you this financial support?

- a) Employer
- b) Government
- c) Relatives
- d) Friends
- e) Others
- d) Not applicable

16. Thinking of your household's total monthly income since the outbreak of Corona, would you say that your household is able to make ends meet:

- a) With great difficulty
- b) With some difficulty
- c) Fairly easily
- d) Easily

17. Since the outbreak of Corona, did you need to postpone regular payments such as rent, mortgage and loan payments, and/or utility bills?

- a) Yes
- b) No

18. Since the outbreak of Corona, did you need to dip into your savings to cover the necessary day-to-day expenses?

- a) Yes
- b) No

5-SOCIO-DEMOGRAPHICS

19. Gender?

- a) Male
- b) Female

20. Age?

21. Martial status?

- a) Single
- b) Marriage/partnership
- c) Divorced or separated
- d) Widow/widower

22. What is your labour status?

- a) Working
- b) Working and studying
- c) Studying
- d) Not working or studying

23. How would you describe the area where you live?

- a) A big city
- b) The suburbs or outskirts of a big city
- c) A large town
- d) A small town
- e) A rural area or village