

**Xiang An**

**Well-Being Status, Unmet Healthcare Needs, and Changes in Health  
Behaviour During the COVID-19 Pandemic within the Senior  
European Citizens**



**UNIVERSITY OF ALGARVE**

Faculty of Economics

2020-2022

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Behaviour During the COVID-19 Pandemic within the Senior  
European Citizens**

**Master in Management**

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## *Authorship and Copyright Declaration*

### **Well-Being Status, Unmet Healthcare Needs, and Changes in Health Behaviour During the COVID-19 Pandemic within the Senior European Citizens**

#### **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 in the listing of references included.

(Xiang An)

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(signature)

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## ACKNOWLEDGMENTS

Nothing can stop time from progressing forward, which makes these two years pass quickly without me being aware of it. I would always remember my first steps on campus, when I had no affiliations and no agenda or goals for my academic future. As for now, I stand there, looking forward to being graduated from the university through this last submitted thesis. Casting my eyes back over the past two years, I feel a sense of light-heartedness and accomplishment. Whether it be happiness or laughter, loneliness or sadness, each and every one of them will build my everlasting memories over the past two years, which has filled me with endless gratitude for all the people and happenings that have helped me and allowed me to thrive.

Words cannot adequately express my gratitude to my supervisor, Profa, Professor Doutora Lara Ferreira, one of the most dedicated, experienced and intellectual professors in Portugal and Europe. Without her comprehensive instruction, patient supervision and supports, I would not have accomplished this thesis and elevated my work to this standard academic level. Specifically, my professor helped me from the selection of the topic to data assembly, from the writing of the proposal to the revision of the final paper, from correcting my grammatical errors to reminding me of the continuous format I should use in my references, and from the abstract lineage of the entire paper to the detailed selection of articles I should reveal. It was her that provided me with all-round help and psychological support to get me to the end of this precious journey. Therefore, let the occasion arise for me to express my highest respect and most sincere gratitude to my dearest professor.

## RESUMO

**Antecedentes:** A doença de Coronavirus 2019 (COVID-19) é uma infecção pandémica com risco substancial de morte, deixando a população idosa na Europa numa situação bastante terrível, especialmente nos idosos.

**Métodos:** Foram recolhidos dados demográficos por país sobre os idosos na Europa com mais de 50 anos de idade. A análise descritiva dos dados (ou seja, média, desvio padrão [DP], frequências e proporções [%]) foi realizada para traçar o perfil e examinar os resultados. Os dados foram comparados entre 4 grupos de estudo: (1) o estado de saúde física de pessoas com idade superior a 50 anos antes e depois do surto de COVID-19 (2) o estado de saúde mental de pessoas com idade superior a 50 anos antes e depois do surto de COVID-19 (3) o tratamento e qualidade do serviço médico de pessoas com idade superior a 50 anos após o surto de COVID-19 (4) as mudanças nos seus comportamentos de saúde que exerceram nas suas vidas desde o surto de COVID-19

**Resultados:** O impacto da COVID-19 na vida das pessoas idosas pode ser visto em mudanças no seu estado de saúde física, no seu estado de saúde mental, na sua experiência de serviços de saúde, e no seu comportamento de saúde. Tipicamente, um terço da população idosa europeia já está a experimentar alguns sintomas de doença física. Um quarto da população idosa europeia já apresenta sintomas de doenças mentais tais como fadiga, stress e problemas de sono, para além dos quais quase 77% ainda precisam de tomar medicação regularmente. Com base na experiência médica, a Eslováquia e a Lituânia necessitam de melhorar a qualidade dos serviços médicos, e todos os países europeus adoptaram a prática de adiar, cancelar e negar serviços médicos ou cirúrgicos, a fim de deixar recursos médicos para a COVID-19.

**Conclusão:** Este estudo mostra que a pandemia da COVID-19 está a ter um impacto substancial em todos os aspectos da vida das pessoas idosas na Europa. Como resposta individual, cada vez mais cidadãos idosos estão a decidir mudar os seus estilos de vida relacionados com a saúde e a ser mais cautelosos nos seus padrões de saúde. No futuro, será possível saber se os governos e as autoridades de saúde prestarão mais atenção à saúde física e mental das pessoas idosas.

*Palavras-chave:* Cuidados de saúde, idosos, comportamento em matéria de saúde, estado de saúde.

## ABSTRACT

**Background:** Coronavirus 2019 disease (COVID-19) is a pandemic infection with substantial risk of death, leaving the elderly population in Europe in a rather dire situation, especially in the elderly.

**Methods:** Country-based demographic data were collected elderly people in Europe over 50 years of age. Descriptive analysis of the data (i.e., mean, standard deviation [SD], frequencies and proportions [%]) was performed to profile and examine the results. The data were compared between 4 study groups: (1) the physical health status of people age above 50 before and after the outbreak of COVID-19 (2) the mental health status of people age above 50 before and after the outbreak of COVID-19 (3) the treatment and quality of medical service of people aged above 50 after the outbreak of COVID-19 (4) the changes in their healthcare behaviours that they have exerted into their lives since the outbreak of COVID-19

**Results:** The impact of COVID-19 on the lives of older people can be seen in changes in their physical health status, their mental health status, their experience of health services, and their health behaviour. Typically, one-third of the European elderly population is already experiencing some symptoms of physical illness. One quarter of the European elderly population already shows symptoms of mental illnesses such as fatigue, stress and sleep problems, in addition to which almost 77% still need to take regular medication. Based on medical experience, Slovakia and Lithuania need to improve the quality of medical services, and all European countries have adopted the practice of postponing, cancelling and denying medical or surgical services in order to leave medical resources for COVID-19. In the worst-case scenario, half of the planned medical appointments were postponed in Luxembourg and Portugal.

**Conclusion:** This study shows that the pandemic of COVID-19 is having a substantial impact on all aspects of the lives of older people in Europe. As an individuals' response, more and more senior citizens are deciding to change their health-related lifestyles and to be more cautious in their health standards. It will soon remain to be seen whether governments and public assistance will pay more attention to the physical and mental health of older people.

*Keywords:* Health care, elderly, health care behaviour, health status.

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## **LIST OF ABBREVIATIONS**

SHARE	The Survey of Health, Ageing and Retirement in Europe
COVID-19	Coronavirus Disease 2019
CAWI	Computer-Assisted Web Interview
PAPI	Paper-And-Pencil Interview
CAPI	Computer Assisted Personal Interview
CATI	Computer-assisted telephone interview
ICU	Intensive Care Unit

## LIST OF LATIN ABBREVIATIONS

The use of terms, phrases and abbreviations in Latin is very common. Some are used, for example, to avoid repetition of titles and authors, in the text or in a footnote. However, you should avoid an exaggerated use of them, since it can turn reading difficult. In some cases, it is preferable to repeat as many times as necessary bibliographic information. The following are some examples of the most common expressions in scientific papers:

cf. (confer)	compare, check out
e.g. (exempli gratia)	for example
et al. (et alia)	and other
etc. (et caetera)	and so on
et seq. (et sequens)	following, which follows
id. (idem)	the same author already
i.e. (id est)	This is
inter alia	among others
N.B. (nota bene)	note well
v., vs. (versus)	against
v.g. (verbi gratia)	for example (same as e.g.)

## CHAPTER 1. INTRODUCTION

Healthcare has faded rapidly into the spotlight of the mass media and the day-to-day operations of governments. Since the outbreak in Wuhan, China in January 2020, the world had no choice but to experience a global pandemic under the threat of COVID-19.

### 1. Background

Europe is often referred to as the "Senior World Continent". Not only because of its lengthy history, but also because of its ageing population. There is a much higher proportion of older people in rural areas than in urban areas in most countries, and some very big differences between countries. Until April 2022, one of the countries with the lowest percentage of older people is Turkey. Albania, North Macedonia, Luxembourg, Slovakia, Ireland and Iceland also have relatively low proportions compared to other European countries. The oldest population in Europe is mostly found in Southern Europe. This is particularly true in Evrytania, Greece, where 37.4% of the population is 65 years old or older. In most of Greece, more than 22.5 percent of the population is 65 years or older. Northwestern Spain and eastern Portugal also have high percentages of older people. Portugal's Orense, Zamora and Alto Tâmega region rank in the top ten in Europe. Italy and France also have areas with large populations of older adults. In Central Europe, Germany also has areas with a large elderly population, the vast majority of which are in the eastern part of the country (Landgeist, 2022).

In the first half of 2020, governments around the world implemented strict blockades and social isolation measures at the beginning of the outbreak, such as Portugal's social blockade isolation measures in 2020 that officially started in March and lasted until early 2021 in response to the ups and downs in the number of people infected by the outbreak at that time. However, the initial social blockade measures differed across European countries and preparations varied from country to country, resulting in varying degrees of impact on the quality of life, health status, and allocation of medical resources across countries, which further affected the political, economic, and psychological aspects of the countries, leading to a range of problems, including communication through the media and the application of self-protection measures.

Even though Europe has been exposed to as many as six waves of COVID-19 to date, the first blockade was technically the most restrictive and the timeliest government

response to the first wave of COVID-19, as governments adopted the most stringent control measures and prevention policies due to the unknown nature of the epidemic and the lack of effective pharmaceuticals. The impact on everyone on the continent is multifaceted, which is one of the reasons we chose the SHARE Wave 8 COVID-19 survey 1 as the only data source.

## **2. About SHARE Wave 8 COVID-19 Survey 1**

This study will focus on three elements that are the fundamental to fully know the impact of COVID-19 pandemic on the European elderly right at the end of the first national lockdowns on their own countries. These three elements are: well-being status, unmet healthcare needs, and changes in health behavior. Well-being, also known as wellness, prudential value or quality of life, refers to what is intrinsically valuable relative to someone. In other words, the well-being of a person is what is ultimately good for this person, what is in the self-interest of this person (Crisp, 2017). Most importantly, it is the embodiments of a person's lifestyle, indicating whether she/he is living in a wholesome status or not. It is also noticeable to us that within the concept of "well-being status", it is combined with two dimensions of area, which integrates mental health and physical health leading to more holistic approaches to disease prevention and health promotion. Since it is a standard to measure the life quality of a person, it gradually brings the necessity for us to understand how we should test different people health status and classify them into different levels. In our case, the more subtle level of classification of health status is applied into our studies, the more concrete, and individually related results we can obtain in the very end. Thus, we opted for a professional database, the SHARE Wave 8 COVID-19 Survey 1.

The SHARE is an abbreviation for The Survey of Health, Ageing and Retirement in Europe. SHARE Wave 8 COVID-19 is a more COVID-19-oriented questionnaire that provides a detailed and multifaceted perspective on the living conditions of people aged 50 and over in 26 European countries during the pandemic. It served as a first-hand source of information and research direction for our study. The questionnaire was carried out between June and August 2020, which coincides with the middle of the first round of transmission and the social blockade in European countries, which is the appropriate time frame for our study. All our data in this study will be taken from this SHARE wave 8 COVID-19 survey.

### **3. Objectives of the Study**

The objectives of this study are to outline a statistical framework for the health status of older people in Europe at the physical and psychological level, to assess the performance of the overall European healthcare environment and to analyze existing and possible changes in medical self-protection measures, based on a literature review.

More specifically, the study has the following sub-objectives:

- (1) To conduct a review of the sources and characteristics of each case collected by the survey
- (2) To build an overview picture of the age distribution, regional distribution and gender distribution of all respondents based on information from SHARE Wave 8 COVID-19 Survey 1 data
- (3) To assess the impact of COVID-19 on the lives of older people, as reflected in both the objective aspects of society and the subjective aspects of individuals
- (4) To assess the inherent links between the impact of COVID-19 on individual health status, of the experience of health care, and to discover what factors motivate more and more people to start changing their health care behavior.
- (5) To anticipate the likely development of health care behaviors for European senior citizens.

### **4. Structure**

This dissertation consists of five chapters. The following chapter reviews the literature including four parts: Mental health response to COVID-19 of the elderly; Physical health response to COVID-19 of the elderly; Clinical outcomes in elderly patients affected by COVID-19; The vulnerability of senior populations of considered nations. Chapter three presents the methodology which includes the questionnaire, data collection and analyses. Chapter four includes the results of data collection and discussion. Chapter five is a conclusion of the results and presents some thoughts on the theoretical, practical implications of the results and perspectives for future research.



## **CHAPTER 2. LITERATURE REVIEW**

Since December 2019, COVID-19 has been an unstoppable virus that is scattered and rooted in any corner of the world, resulting in the following worldwide confinement measures under the impact of pandemic. Healthcare installations, public administrations, and medical research centers have been endeavoring themselves to prioritize relatively vulnerable and susceptible population's protection as their pivotal tasks among the others, during which the senior citizens of each country and the related protection and implementation of emergency measures towards them have been compelled onto an unprecedented position in the social spotlight. However, data and research on clinical treatment towards the elderly in Europe and in the aftermath of this continuous isolation on old people's physiology are scarce. Thus, I started to collect, screen, and research on 8 essays and dissertations about the impact on the health-related quality of time towards the elderly in the global scale. Additionally, so as to draw a more apparent picture of the current researches' focus and concerns, to reveal the relevance and methodological inspiration in relation to our study, and to contribute our efforts to discover the important areas of research that have largely been left out regarding the healthcare status of senior citizens, we managed to divide them into four parts under the following topics: Mental health response to COVID-19 of the elderly; Physical health response to COVID-19 of the elderly; Clinical outcomes in elderly patients affected by COVID-19; The vulnerability of senior populations of considered nations.

### **2.1 Mental Health Response to COVID-19 of the Elderly**

Renato and colleagues (2020) studied the mental health status of the elderly under the increasing influence of social distance measures, comprehensive confinement, and scarce available medical resources. It is rather a rare occasion to focus on the documented health professional experiences from medical services employees while providing health services for the elderly in face of this novel pandemic. The countries they chose are Brazil, Norway and Portugal due to their positions in the worldwide ranking on the 2019 Human Development (HD) Report (<http://www.hdr.undp.org/en/2019-report>), and this paper aims to provide an overview of each country's response regarding the domain of public support towards the senior generation among these countries, emphasizing the ongoing consequences such as psychological suffering, fear, depression and anxiety. In Brazil, specific data about strategies used to manage older inpatients' mental health with or

without COVID-19 infection is provided by a team of psychological professionals working in Aroldo Tourinho Hospital. A voluntary campaign was launched by the Portuguese Government called “Care for All”, to aid the elderly who lived in care homes during the pandemic. Norway’s nursing homes have focused on the dementia patients who are more vulnerable to develop symptoms such as anxiety, depression and agitation by maintaining daily activities to stimulate pleasure. In conclusion, they unraveled a universal strategy within these three countries used to reduce the loneliness among the elderly is the usage of technologies which strengthen the possibilities of knitting them closer to their families and relatives and minimize the occurrence of potential mental suffering. There are great initiatives of using the flu vaccination campaign to screen the vulnerable elderly in Brazil are also worthwhile mentioning.

Another essay that focused on the mentality status of senior citizens is from (Cihan et al, 2021), which offers an extreme novel aspect from researching further. It is targeted on the Loneliness Scale of the elderly, and they used Mann Whitney-u test, Kruskal Wallis test, Pearson correlation analysis to present the descriptive data analysis, during which they encompassed 130 elderlies, and the data shows that there was a strong positive correlation between age and total loneliness score. The loneliness scale for those living alone, being well-educated, widowed, remain on a significantly higher level than others. Nonetheless, they failed to provide any timely psychological treatment and social support measures, which could be more than useful for further reference by public administration.

## **2.2 Physical Health Response to COVID-19 of the Elderly**

Oral health has surprisingly been a major challenge both from a public health and health services perspective. It is reported that around half of all care home residents have some of their own natural teeth, but their oral health is typically much worse than their community living peers, which inspired (McKenna et al, 2020) to conduct research on the medical care specifically on their oral health towards dependent older adults residing in care homes. Oral health services in clinics for dependent older adults reported an 81% reduction in patient attendance and no domiciliary services available to residential care home residents since March 2020 due to the COVID-19 related restrictions (McKenna et al, 2020). Significant difficulty in obtaining routine dental care due to the very complex needs of institutionalized older people, due to a lack of policy, inadequate resources and

staff training. The consequences could lead to the development of aspiration pneumonia. On the contrary, better oral hygiene and frequent professional oral care can reduce the progression or occurrence of respiratory tract diseases in dependent older patients (Lyons M et al, 2018). Before COVID-19 pandemic further amplifies the oral health challenges in care homes, considering the respiratory consequences of COVID-19 infection, nothing is more urgent than re-establishing the oral health promotion programs and appropriating delivery of oral healthcare services for dependent older people.

Demographic ageing poses a challenge worldwide, especially in Europe where the number of the older population is growing, leading to an increase in age-related diseases with major implications for healthcare services, clinical practice, medical care and society at large. Previous studies have demonstrated that physical activity (PA) is essential for healthier ageing and a better quality of life. This study sought to measure PA and the health-related quality of life (HRQoL) in people aged 55 years or older. A sample of the 202 older adults completed a survey in which descriptive statistics including the EQ-5D-5L and other items assessing PA and activities of daily living (ADL) performance were analyzed to characterize the sample and define their HRQoL in order to compare respondents' HRQoL with socio-demographic variables, PA and ADL performance according to their age. Sample subgroups targeting exercise and leisure time activities have been compared as well. The responses showed that respondents with at least one diagnosed condition had a lower HRQoL. The study also confirmed that the EQ-5D-5L is a valid tool for measuring HRQoL in older people. Public healthcare initiatives can be particularly effective drivers of healthy ageing and can contribute to the general well-being of older people. As the current findings show, regular public activity in older age groups is associated with improved overall health, and any self-reported public activity - whether it is exercise or leisure time activity - contributes to improved HRQoL in older age groups. Although older people in Portugal have good HRQoL overall, their morbidity and ageing have a negative impact on their HRQoL. Public health initiatives aimed at engaging older people in public activities can be particularly effective drivers of healthy ageing (Ferreira, L. N. et al, 2021).

### **2.3 Clinical Outcomes in Elderly Patients Exerted by COVID-19**

While the treatment towards COVID-19 pandemic keeps occupying the majority of healthcare resources, consistent data information on the management and prognosis of

the older patients (>70 years old) admitted in the intensive care unit (ICU) is required by the future decision making, which triggered Martin and colleagues (2021) to conduct an in-depth survey about the status, management and the prognosis of senior patients hospitalized in COVID-ICU based on the extracted COVID-ICU database under the international perspective. The methodology they employed is to create and calculate a propensity score for the purpose of making a weighted-comparison to evaluate the impact of intubation upon admission on Day-90 mortality, during which they made comparison between 1199 (28% of the COVID-ICU cohort) patients aged from 72 to 78 years old. After initial observation, it was not difficult to notice that the most comorbidities caused by COVID-19 were chronic hypertension (62%), diabetes (30%), and chronic respiratory disease (25%). Furthermore, the overall Day-90 mortality was 46% and reached 67% among the 193 patients over 80 years old, leading to the thrilling result that on the 90th Day, the mortality ratio raised to 46%, with dismal outcomes reported for patients older than 80 years or those intubated upon ICU admission. Simultaneously, the mortality rate among older patients suffering diabetics upon admission is significantly higher than others, and it is about time for the public reflected on the shocking result based on this essay that the patients above 70 years old took up more than a quarter of the COVID-19 population admitted in the participating ICUs during the first wave.

Another essay provided a valuable insight on identifying the health conditions of the institutionalized elderly individuals. Samples were collected from eight Long-Term Care Facilities (LTCF) in the Metropolitan Region of Natal, Rio Grande do Norte, with patients of 267 elderly people. Furthermore, they implemented a descriptive and cross-sectional study, with a quantitative approach, from February to December 2018. They also utilized the Elderly Health Handbook with the intention of collecting data on socio-demographic, health and risk factors, and most importantly, the Pearson's Chi-square test was established for analysis. The result they achieved is that protective measures for this population must be enhanced in view of their discovery that hypertensive elderly people aged 80 years or more turned out to have a greater tendency towards low weight. Among hypertensive elderly people, the chance of being underweight was approximately 4 times greater than that of elderly people who did not (Araújo MPD et al, 2021).

## **2.4 Observed Vulnerability for Senior Citizens**

Bhandari and his colleagues (2020) laid their attention on elderly population of the African American Community, and this might also be an impeccable opportunity to illustrate the urgency for timely actions to cope with the increased vulnerability of elderly African Americans during the COVID-19 pandemic and beyond. By engineering a data analysis and comparison among Data from the Centers for Disease Control and Prevention in US and the results from the Tuskegee Syphilis Experiment, it is evidenced that 37.3% of elderly patients (aged 65 years and older) who have been hospitalized for COVID-19 are African Americans, and the elderly African Americans had a 3.8-fold higher rate of hospitalization due to compared to elderly non-Hispanic White patients. What should be emphasized is the underlying inequities among elderly minorities ethnic groups are significantly associated with poor health outcomes. Thus, the author is suggesting a new method of reporting COVID-19 cases and deaths on the age-stratified racial coordinates, incorporating sustained efforts and deployment of resources to address social needs for senior generation in the inner-city environment, and this multifaceted approach can better function in screening unmet social needs and leverage existing resources to fulfil these needs.

To clarify the relationship between health literacy, COVID-19 knowledge and the number of information sources used, the effect of media use on health literacy, and the effect of media use on COVID-19 knowledge, Inoue and his team conducted an online cross-sectional study of 477 individuals aged 20-69 years. During interviews, participants were asked a series of questions about sociodemographic indicators, sources of health-related information, health literacy, and COVID-19 knowledge (Inoue, M. et al, 2022).

In their survey, sources of health-related information were categorized into four types: mass media, digital media, social media, and face-to-face communication. Through a analysis of detailed multiple regression analysis, they concluded that, taken together, mass media was the most frequently used source of information, followed by digital media, face-to-face communication, and social media. Social media use was significantly higher among individuals aged 20-29 years than other age groups, but social media was also the most timely and quickest source of important knowledge about COVID-19 global pandemic counseling and self-protection. This means that older adults are excluded from the immediate dissemination of information on health preparedness, and most of them

rely more on local information dissemination resources for information and supplemented by mass media in the form of television broadcasts, which can also be seen as a vulnerability of older adults during a global pandemic - a lack of access to timely information sources.

## **2.5 Summary**

In the summary of the eight articles mentioned above, I concluded that this pandemic has a comprehensive impact on all the elderly. For their spiritual aspects, especially during periods of social confinement, people are likely to suffer from some unexpected mental illnesses, and aloneness could be one of them. When it comes to the impact on their bodies, we have to consider not only the actual risk of contracting COVID-19, but also the health-related quality of life, and the state of their oral health may also be an aspect that people can overlook, especially in the absence of caregivers and scheduled doctor's appointments. Vulnerability is not a very specific way to describe the situation of older adults, but the last article points out a very interesting and unexpected aspect of vulnerability in older adults, namely the lack of access to timely information. After reading these articles, it gave me a clear perspective on where I should conduct the following investigation to examine the potential impact of COVID-19 on the elderly.

## **CHAPTER 3. RESEARCH METHODOLOGY**

This chapter explains the databases used in this study, namely the SHARE databases, describes the questionnaires and the reasons why we chose them. It also describes the data analysis procedures.

### **3.1 The SHARE Database**

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a research framework for studying the impact of Health, Social, Economic and Environmental policies on the life cycle of European citizens. From year 2004 to date, 530,000 in-depth interviews have been conducted with 140,000 people aged 50+ from 26 European countries and Israel. As a result, SHARE is the largest cross-European social science panel study, providing longitudinal micro data that are internationally comparable and provide insight into the public life conditions of individuals in Europe in terms of health and socioeconomics (Börsch-Supan, A., 2022).

The COVID-19 outbreak suddenly disturbed immensely SHARE during Wave 8 data collection in March 2020. Due to the reason that there is the temporary suspension of regular head-to-head interviews in all 26 participating countries, SHARE opted for a more flexible way to resume the fieldwork which is switching the interview mode to telephonic interviews and replacing the original questionnaire with a special Wave 8 COVID-19 Survey 1.

### **3.2 Adaptation of the Data Collection of SHARE**

Since the field work was suspended, the normal Computer Assisted Personal Interview (CAPI) may not be the most efficient and doable way to resume their annual survey. However, with careful consideration of all the other probabilities and alternatives, especially when it comes to the specificity of target population to fill in the SHARE Corona Questionnaire, SHARE collectively decided to move to a more feasible investigation method under the circumstance, computer-assisted telephone interview (CATI).

### 3.3 The Questionnaire

After they chose the CATI as the methodology to conduct the survey. They had to reprogramme SHARE into a more COVID-19-oriented questionnaire and to translate it into 40 SHARE languages, in face of the severity of the COVID-19 pandemic and prolonged embargo.

Generally speaking, the newly adapted questionnaire covers all the questions related to the most significant aspects of lives for the elderly, especially including some questions asking about the infection risks, mental health, and life changes.

To be more specific, the newly developed Wave 8 COVID-19 Survey 1 contains the following 6 parts:

#### (1) Intro and basic demographics and finale

In this section the basic information is given and they initiate the process of describing each interviewee at the most basic level that we can know. Questions of asking consent, where they get invitations for their participation, gender, birthday, current living status have appeared in this part.

#### Health (physical and mental) and health behaviour

It includes the question about more detailed question to characterize the mental and physical status of the respondent. The subjects of the questions covering: anxiety, depression, sleeping problems, and loneliness before and after the COVID-19 outbreak.

#### Infections and self-awareness towards the infectious risks

Within this segment, the questionnaire is devised to ask question more COVID-19 related, including the existing similar symptoms of COVID-19, the hospitalization experience of the respondents and anyone they know, the testing experience for COVID-19.

#### (2) Quality of healthcare



Questions about the treatment of social medical service during the pandemic period that experienced by these European senior citizens and their degree of satisfaction towards it are also included. The statistics from this part can instantly help us to make further comparison between the quality of healthcare facilities, quality of healthcare services, and the ability to function in a crisis.

### (3) Changes in work and economic situation

The subjects they applied in these parts are unemployment, working from home or not, changes in working hours and income, and even financial support has been considered into this survey.

### (4) Social networks

In the part, they raised questions about the changes in personal contacts with family and friends, the maintenance status of their regular personal care given and received. On the other hand, this part also includes the question about their healthcare self-protection measures, practice of safety measures (e.g., mask-wearing, social-distance-maintaining).

We need to state that since the research chosen for this dissertation is directed at examining changes in health status, unmet medical needs, and medical behaviours, the unique components of the findings we use are (1) Intro and basic demographics and finale, (2) Health (physical and mental) and health behaviour, (3) Quality of healthcare, (4) Social networks.

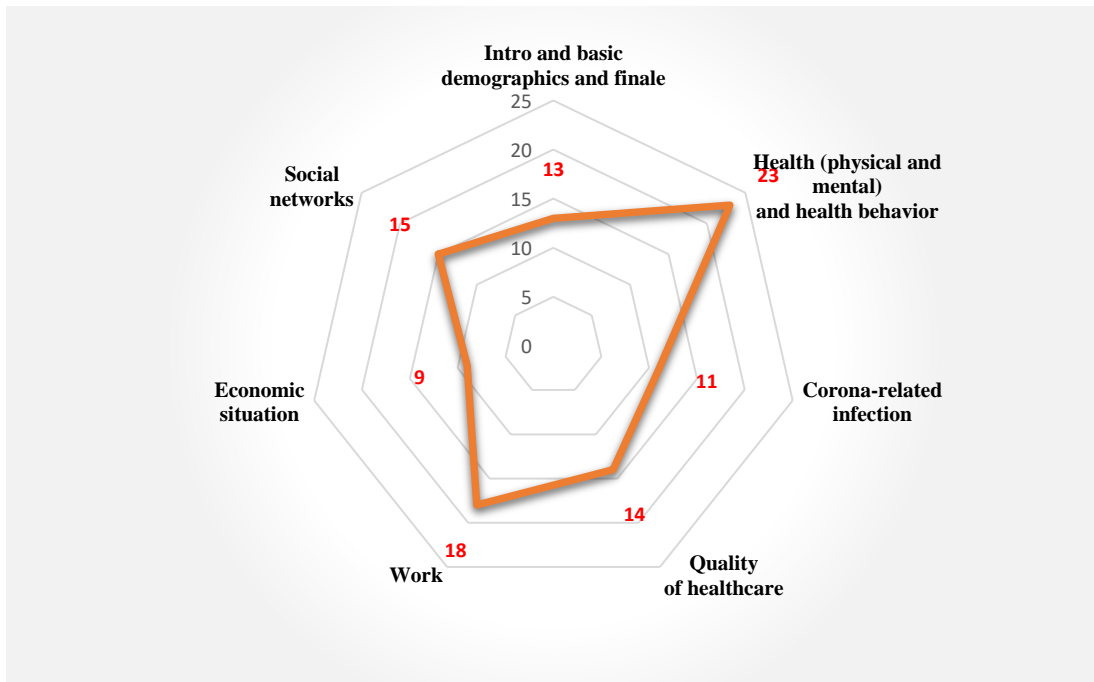


Figure 3.3: Quantities of questions under different subjects in SHARE Wave 8 COVID-19 Survey 1

It is apparent to see that SHARE Wave 8 COVID-19 Survey 1 have put the spotlight more on the health status of the elderly in Europe, as we can see from the number above in the figure 1, which is not a surprise, the well-being status of the whole survey results could possibly have multiple effects on the other factors considered, and the older generation might probably conduct according healthcare behaviour in their daily lives based on their self-awareness. Apart from that, there's is not a huge difference between the numbers of questions in other subjects. It is understandable to notice that economic situation of the senior citizens only brought 9 questions. Considering the whole context of the COVID-19 pandemic, economic situation, which was the focus of those former SHARE survey, had to make way for other more relevant health-related quality of lives' factors.

### 3.31 Wave 8 COVID-19 Survey 1 Design

In order to better the process of data collection, SHARE Wave 8 COVID-19 Survey 1 had used quite a complex method to fulfil (Altinay and Paraskevas, 2008). The process was as follows:

- (1) SHARE designed the questionnaire based on choice factors and socio demographic characteristics (see Appendix 1).

(2) SHARE modified the questionnaire based on the discussions from professionals of partner institutions and agencies.

(3) Distributed the final questionnaire to researching agencies.

(4) SHARE provided according to training for interviewers and assistance to adjust their researching system to the standard of questionnaire itself.

(5) Collected data from the agencies and used Excel to analyze initial data.

(6) Applied descriptive statistics to analyse the results.

(7) Publicized on SHARE database website:

*<http://www.share-project.org/home0.html>*

The following table shows the main elements of the questionnaire designed by SHARE for the SHARE Wave 8 COVID-19 Survey 1, divided by different topics. As you can note, if we treat Intro and Finale as one section, the questionnaire was designed in seven sections, in general. In addition to this, the questionnaire is arranged in the following order: introduction and basic demographics and finale, health (physical and mental) and health behaviours, coronary-related infections, quality of care, work, economic status, and social networks.

It is always important to obtain consent during the initial part of the introduction and basic demographics to ensure that the rights of all respondents are protected and that their personal information is not misused by the company. To create a sufficient profile of all respondents for further scientific research, information about age, gender, year of birth, and place of residence is collected in the first instance of the respondent.

After collecting basic demographic and consent information, the following questions were arranged in order from most important to least important. Since the survey was conducted during a global pandemic, questions related to health and COVID-19 were undoubtedly placed at the top of the questionnaire, which allowed respondents to focus their responses in this section. Physical health status, mental health status, and frequency of use of medical interventions during the COVID-19 pandemic were the most important issues for SHARE, and only then could a clearer picture be gathered of each respondent's

health status. Notably, SHARE also obtained the health status of the respondents before and after the COVID-19 outbreak, in which case a visualization and a comparison of the impact of the pandemic could be analysed. The questions in this section were so detailed that sleep problems that may have been caused by concerns about COVID-19 were encompassed.

Turning to the possible infection component of COVID-19, perhaps out of professional caution and to reduce the psychological stress of the respondents, SHARE designed only some basic inquiries about COVID-19, but the questions nevertheless covered all aspects needed for data collection purposes, such as: possible infectious symptoms, experience of COVID-19 detection, hospitalization due to the infection of COVID-19, and even about deaths that occurred around them due to COVID-19.

The next chapter of the questionnaire shifts the focus of the questions from the respondents' own physical and psychological reactions to the COVID-19 epidemic to a summary of how they were treated by the public health services. SHARE also asked about their medical appointments during the epidemic.

In the next three parts of the questionnaire, SHARE wanted to know mainly about the living situation after being affected by the COVID-19 pandemic. It focused on the status in the work environment, with the economic situation of themselves and their families, and with the frequency of social interactions. Although ideally this section could describe their specific encounters in economic terms, we will not incorporate the results of these three sections in our study because it is not in the scope of our study.

Topics	Question Subjects
Intro and basic demographics and finale	confirmation of letter of invitation
	confirmation of agreement for participation
	gender of respondent
	age of respondent
	living location
	suggestion for future interview
Health (physical and mental) and health behavior	health condition before the COVID-19 pandemic
	health condition within the COVID-19 pandemic
	mental health status in the last 6 months and last one month and reason
	regular drug consumption
	whether left home since COVID-19 and reason
	frequency of wearing masks
	frequency of keep social distance
frequency of washing hands	

	frequency of using hand sanitizer
	concern about covering cough or sneeze
	sleeping problem
	sense of loneliness
Corona-related infection	COVID-19 symptom experience
	COVID-19 test experience
	COVID-19 hospitalization experience
	death from COVID-19 of anyone close
Quality of healthcare	experience of forgoing medical treatment
	experience of medical appointment being postponed
	failure of booking a medical appointment
	experience of treatment in hospital after COVID-19 outbreak
	sense of satisfaction/dissatisfaction from the medical visit
Work	work status after COVID-19 outbreak
	unemployment experience after COVID-19 pandemic
	self-development in distant working environment
	protection measure in working environment
	sense of hygiene in working environment
	influence on working hours after COVID-19 outbreak
Economic situation	order to be interviewed within the family
	monthly income status
	possibility of additional financial support
	negative effect on life due to salary change after COVID-19 outbreak
Social networks	frequency of face-to-face personal contact after the outbreak of COVID-19
	frequency of virtual personal contact after the outbreak of COVID-19
	assistance for others to obtain necessities
	assistance for others to obtain personal care
	home care status before and after the COVID-19 outbreak

Table 3.31: The topics and question subjects of the SHARE Wave 8 COVID-19 Survey 1 (Börsch-Supan, A., 2022)

### 3.4 Sample and Fieldwork Design

Because of the sudden outbreak the COVID-19 in Europe, the order from the government for complete lock down in most European countries led to the suspension of fieldwork. That's why SHARE had to consider two groups of samples for further survey led by the CATI instrument. They are: (1) panellists who had not been interviewed in Wave 8 prior to the suspension of fieldwork, (2) panellists who had already been interviewed in Wave 8 face-to-face. In total, there were over 57,000 panellists participating. Although both groups of respondents received the same questionnaire, questions about the changes in household composition were asked further to those panellists who had not been interviewed face-to-face in Wave 8, which allows them not to answer the same questions one more time.

In order to adapt their survey methodology from CAPI to CATI fieldwork, there are couples of perspectives having been considered and taken care of.

New advance letter had been sent to Wave 8 panel members to announce the beginning of their telephonic interview, combined with the data protection statement as usual.

Especially due to the Wave 8 SHARE Corona survey would be conducted through CATI methodology under a far more complicated pandemic global background, SHARE made the timely decision to provide complete training for all interviewers via webinars, such as instructions for conducting CATI surveys properly and so on.

### 3.5 Fieldwork Time of Each Participating Countries

Country ID	Country	Fieldwork time (Beginning time)	Fieldwork time(Ending time)
12	Germany	June 19th	August 3rd
13	Sweden	June 17th	August 14th
14	Netherlands	June 19th	July 31st
15	Spain	June 11th	August 10th
16	Italy	June 9th	July 31st
17	France	June 16th	July 31st
18	Denmark	June 10th	August 7th
19	Greece	June 12th	August 7th
20	Switzerland	June 9th	August 6th
23	Belgium	June 8th	August 10th
28	Czech Republic	June 8th	August 6th
29	Poland	June 8th	August 5th
31	Luxembourg	June 25th	August 5th
32	Hungary	June 18th	August 11th
33	Portugal	June 11th	August 10th
34	Slovenia	June 8th	August 12th
35	Estonia	June 8th	July 27th
47	Croatia	June 15th	August 9th
48	Lithuania	June 13th	July 31st
51	Bulgaria	July 2nd	August 14th
53	Cyprus	June 11th	August 10th
55	Finland	June 12th	August 10th
57	Latvia	June 24th	August 11th
59	Malta	June 11th	August 10th
61	Romania	June 9th	August 11th
63	Slovakia	June 12th	July 30th

Table 3.5: Fieldwork time of each participating countries

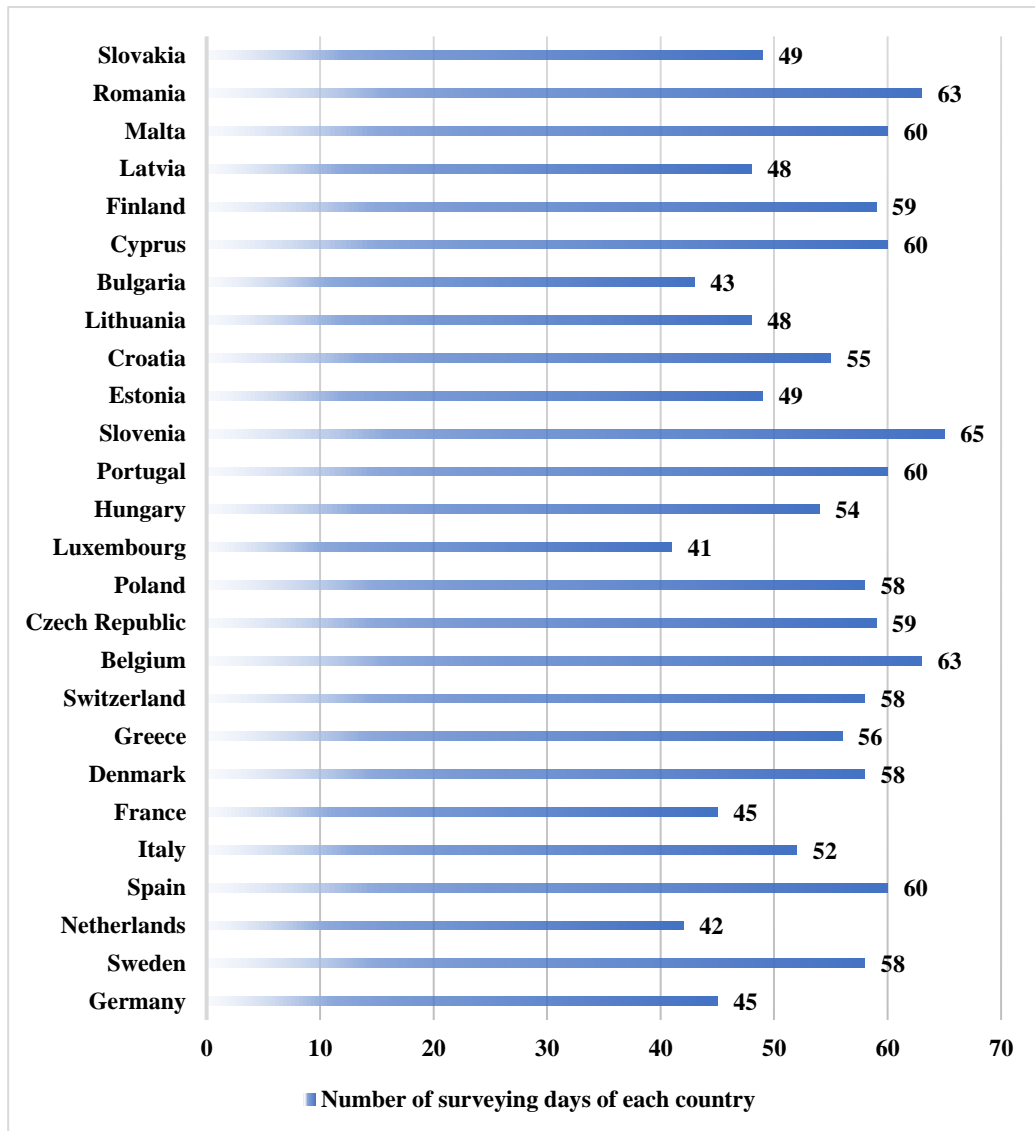


Figure 3.5: Number of surveying days of each participating country

As can be seen from the graph and table, 26 European countries and Israel have participated in the SHARE Wave 8 COVID-19 Survey 1. The first countries to start were Estonia, Slovenia, the Czech Republic, Poland and Belgium, which began the survey on 6 June, while the first country to complete the survey was Estonia too, which completed it on 27 July. On average, each country conducted the survey for 55 days, and the country with the shortest survey time was Luxembourg, with 41 days.

### 3.6 Our Data Collection and Selection Procedures

Through careful observation, we conclude that SHARE's questionnaire has the following five characteristics.

- (1) We found that all the variables designed for the questions were directly targeted to the research objectives.
  - (2) It became apparent to us that SHARE professionals had identified the most effective way to reach the target respondents: telephone interviews were the most appropriate during a global pandemic.
  - (3) All questions in the questionnaire are survey-based, clearly understandable and measurable, which is beneficial to both parties. As respondents, they are offered multiple choices by SHARE in all possible situations.
  - (4) What we likewise learned is that it is best to design a questionnaire of appropriate length, because it is still not appropriate to conduct any survey that is too time-consuming, even if monetary incentives are offered, and preferably respects the respondent's personal time.
  - (5) A valid questionnaire should contain questions that are likely to elicit accurate and measurable responses, and in an appropriate order.
- (Altinay and Paraskevas, 2008: 120-126).

In order to use this dataset, we specifically have been chosen something helpful from the results of the SHARE Wave 8 COVID-19 Survey 1 data. There are three steps within the process of filtration and modification.

- (1) To better integrate these data into our findings, as our target population is the elderly European generation, we excluded all data collected from Israel, as it is an Asian country located in the Middle East.
- As a direct result, the size of the survey population was reduced from 54,817 to 52,889 without the 1588 respondents from Israel, which previously represented 2.9% of all respondents. Without the inclusion of Israel, what remains unchanged is that Germany and Slovakia would still be the countries providing the fewest survey participants and having the highest number of participants, respectively.



Country identifier		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Germany	2819	5.3%	5.3%	5.3%
	Sweden	1397	2.6%	2.6%	8.0%
	Netherlands	805	1.5%	1.5%	9.5%
	Spain	2199	4.2%	4.2%	13.7%
	Italy	3901	7.4%	7.4%	21.0%
	France	2121	4.0%	4.0%	25.0%
	Denmark	2032	3.8%	3.8%	28.9%
	Greece	3830	7.2%	7.2%	36.1%
	Switzerland	1949	3.7%	3.7%	39.8%
	Belgium	3893	7.4%	7.4%	47.2%
	Czech Republic	2708	5.1%	5.1%	52.3%
	Poland	3075	5.8%	5.8%	58.1%
	Luxembourg	960	1.8%	1.8%	59.9%
	Hungary	1052	2.0%	2.0%	61.9%
	Portugal	1151	2.2%	2.2%	64.1%
	Slovenia	3235	6.1%	6.1%	70.2%
	Estonia	4642	8.8%	8.8%	79.0%
	Croatia	2136	4.0%	4.0%	83.0%
	Lithuania	1320	2.5%	2.5%	85.5%
	Bulgaria	866	1.6%	1.6%	87.1%
	Cyprus	834	1.6%	1.6%	88.7%
	Finland	1495	2.8%	2.8%	91.6%
	Latvia	1034	2.0%	2.0%	93.5%
	Malta	906	1.7%	1.7%	95.2%
	Romania	1569	3.0%	3.0%	98.2%
	Slovakia	960	1.8%	1.8%	100.0%
Total		52889	100.0%		

Table 3.6: Countries and numbers of participants considered

(2) It is a noteworthy fact that, given the objectives of this study, we will consider only three parts of the available data, which are.

- a) Health (physical and mental)
- b) Quality of healthcare
- c) Health behaviorur

(3) Furthermore, as the question "Corona-related infections" has too many outward connections to people around the respondent, for example this particular question. "Has anyone close to you died as a result of Corona virus infection?", which may have had a modest impact on health-related quality of life at presentation, we have therefore decided not to take this part of the survey into account.

### **3.7 Data Analysis Procedures**

Descriptive data analysis (i.e., mean, standard deviation [SD], frequency, and proportion [%]) was performed to profile the sample and examine the respondents' physical and mental health status, unmet medical needs, and medical self-protective behaviors.

The cross-sectional study has also been undertaken to figure out the internal correlations between the individual cases of these four components, in which context it can help me to make further hypotheses and analyses based on the results obtained from the preliminary descriptive data analysis.

This analysis will be based on the module for the whole European elderly population, but at the same time, when it comes to the treatment of health services, I will further present the results for the five European regions for additional analysis and comparison. Differences were considered statistically significant at the 5% level of significance. Data analysis was performed using SPSS (version 28.0.1.1).

The next chapter presents the final statistics provided by the questionnaire results, including socio-demographics and cumulative results.

## **CHAPTER 4. RESULTS AND DISCUSSION**

This chapter analyses the data generated by the fifty-three thousand two hundred and twenty-nine valid responses to the SHARE Corona questionnaire. It analyses data gathered in the following segments: regarding demographics, and changes in their health, both physical health and mental health, their private experiences of personal affliction in public health facilities, and their personal reactivity in the face of health care measures to protect itself. The aim is to juxtapose data specifically related to demographics, their health status, their experience of public health care treatment, combined with elements of their perceived personal reactions to better health measures, with a discussion of the weight that respondents from different parts of the European continent attach to some specific health status trends in each country when choosing the most appropriate way to protect themselves. It presents a discussion of elements of social and demographic characteristics, a discussion of health care characteristics, motivations and definitional choices.

### **4.1 Sample's Characteristics**

Based on the questions designed, asked and answered in the questionnaire, we aim to present the results of the questionnaire in a series of tables and graphs on the socio-demographic characteristics of the respondents, including gender, age, country of residence at the time of the survey, number of people living together, and the language they speak. An interpretation of each result is provided below, along with a brief analysis of each result.

#### **➤Countries Identifier**

In order to establish which country each respondent came from and to better gauge the results based on this geographical factor, we endeavored to find out how many respondents participated in each country and which country had the highest and the lowest number of respondents in order to assess general public enthusiasm and attitudes towards this SHARE Wave 8 COVID-19 Survey 1. Considering the enormous weight of geographical factors on the results under the "European countries" framework that we decided from the very beginning, we therefore had to find out the regional distribution of all respondents by geographical area.

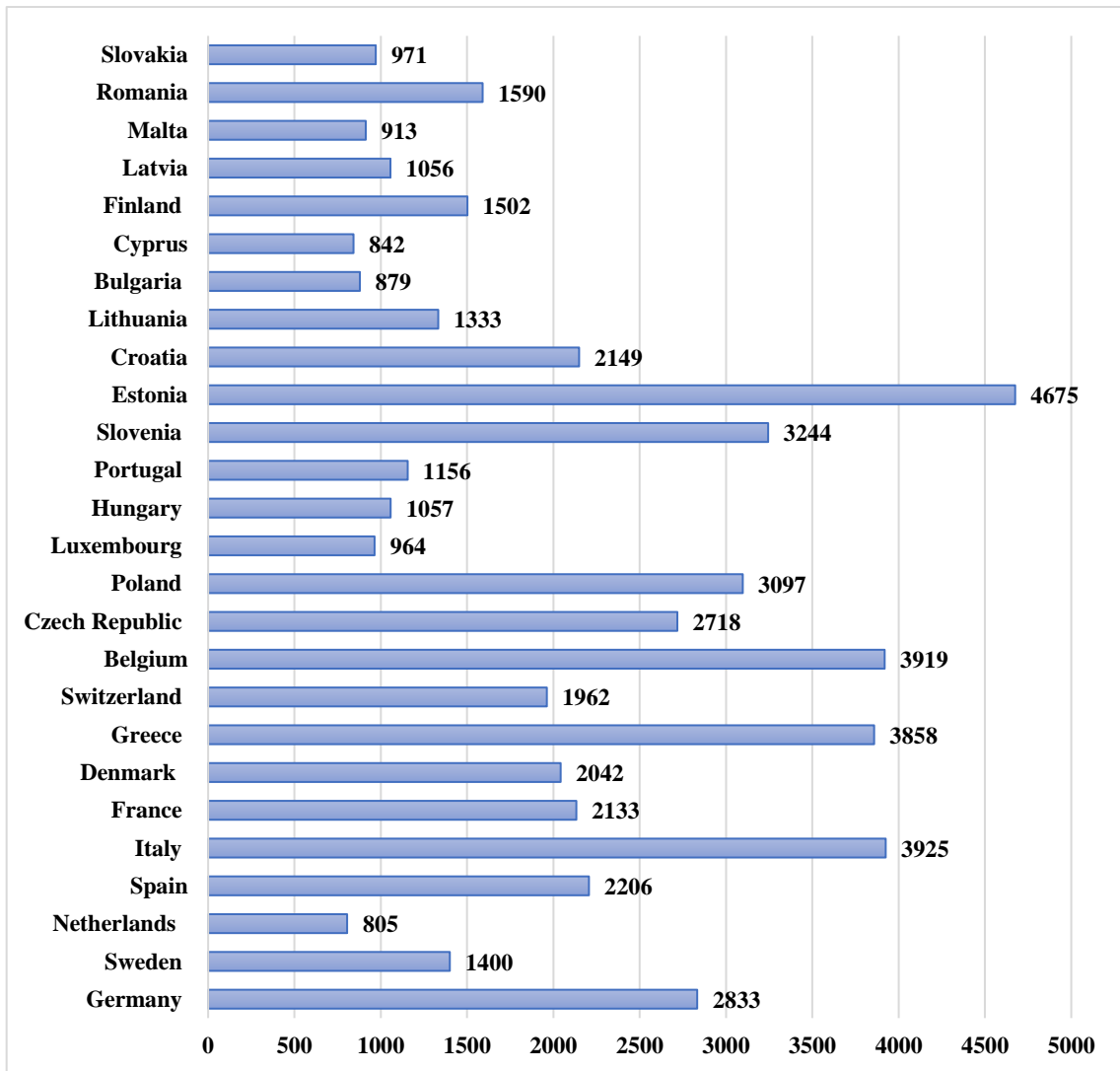


Figure 4.10: Number of respondents from 26 European countries

In Figure 4.1 one can clearly see the number of nationalities of the respondents during the survey without taking Israel into account. The country with the highest number of respondents among those conducting the survey is Estonia, while the country with the fewest respondents is the Netherlands. Considering that the population of the Netherlands is 1,713,873 and that in 2020 Estonia's population will only be 1,326,539, Estonia's population in comparison accounts for only 7.7% of the total population of the Netherlands. And the most populous country in Europe, Germany, contributed only 2,833 respondents, which is almost sixty-one percent of Estonia's respondents, while the total population of Germany is 83,783,945, making it more than 83 times the population of Estonia. While there are many reasons why the total population of each country does not correspond to the effective respondents in each country in this survey, our conclusions are the following four:

1. The general attitude of the public in each country is different. Some countries have a population that places greater importance on the security of their personal habits and on the protection of their personal data, while some countries are more open to contributions of academic social surveys to their own personal data and information.
2. The competencies of the various agents working in different countries are not coordinated. As SHARE itself made no mention of the minimum or maximum number of respondents required for the survey, this indirectly led to some institutions being keener to promote the survey in their own countries.
3. Some countries offered different monetary incentives which in some cases did not apply due to local law enforcement restrictions and limitations on information transfer. This is also a relative contributor to the completely different number of people willing to participate in the survey.
4. Considering that the proportion of ageing in society varies from country to country, the entire population does not reflect the actual size of the ageing population in each country. It is therefore unlikely that the number of respondents and the overall population in 2020 will be relatively correlated.

### ➤ **Regional Classification**

In order to better assess the data and arrive at overall results for each of the factors we might consider at the regional level throughout the survey, we have divided all the data into five regionals: Western, Central, Eastern, Northern and South-eastern and South-western Europe.

Europe is a continent of many nationalities, languages and civilizations. Today, more in excess of 748 million people live in Europe. For purposes of statistics, the United Nations' geographical chart divides the mainland of Europe into four distinct sub-regions. Eastern Europe, Western Europe, Southern Europe and Northern Europe. Each of these four sub-regions is comprised of several countries. Some of these countries are small and thinly populated, while others are large and heavily populated. All the countries in Europe are generally classified as developed countries, albeit some are more developed than others. It is also important to note that the divisions created by the UN Geographical Plan do not necessarily reflect the historical or current divisions of in Europe (Regions of Europe,2021).

We accordingly divided all 26 countries because of the UN Geographical Plan, which also serves to facilitate the analysis of the results of comparisons between regions. The countries who participated in the survey are divided as follows:

Northern Europe: Sweden, Denmark, Finland.

Eastern Europe: Estonia, Lithuania, Bulgaria, Latvia, Romania.

Western Europe: Netherlands, France, Switzerland, Belgium, Luxembourg.

South-western and south-eastern Europe: Spain, Italy, Greece, Portugal, Croatia, Cyprus, Malta, Slovenia.

Central Europe: Germany, Czech Republic, Hungary, Slovakia, Poland

### ➤ **Gender**

Gender is not comparatively very important when it comes to our results, but I feel it is still necessarily worth addressing and finding the underlying frequencies from all respondents collected in all 26 European countries. To begin with, it is easy to see that in all the countries considered, the number of female respondents is higher than the number of their male counterparts. The reason behind this may be that they place different priorities on the health status of the different genders. More to the point, it could also be due to the openness and patience level of the time-consuming surveys received. The highest number of female and male respondents came from Estonia. The lowest number of women and men respondents was from the Netherlands, with 444 and 361 respectively.

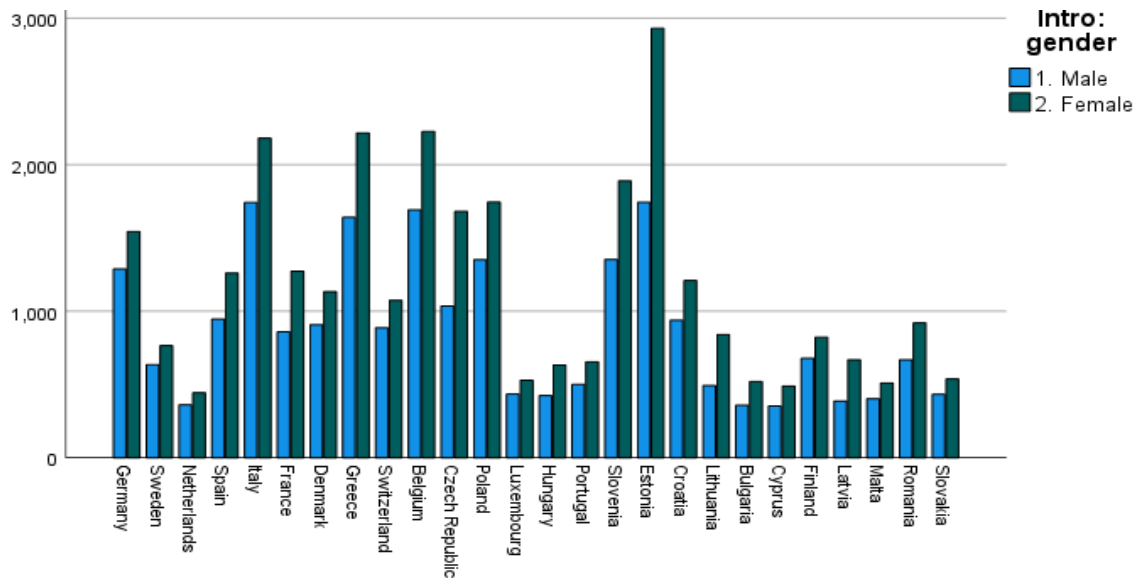


Figure 4.11: Gender distribution of each country

### ➤ Ages of respondents

Based on an age range of respondents, and influenced by the primary objectives of our study, we decided to constrain our survey sample to those aged 50+, with the implication that respondents had to have been born before 1970 when they were surveyed in 2020. We were left with 52,889 respondents over the age of 50 after screening out all respondents who did not meet our study criteria. Through a brief review of the age and distribution of all respondents, it is easy to see that many respondents were born between 1941 and 1961, signifying that the majority of them will be between 59 and 79 years old in 2020. In contrast, older respondents born between 1948 and 1957 appear most frequently in the survey, with an even number of approximately 2,000 of respondents of each individual age.

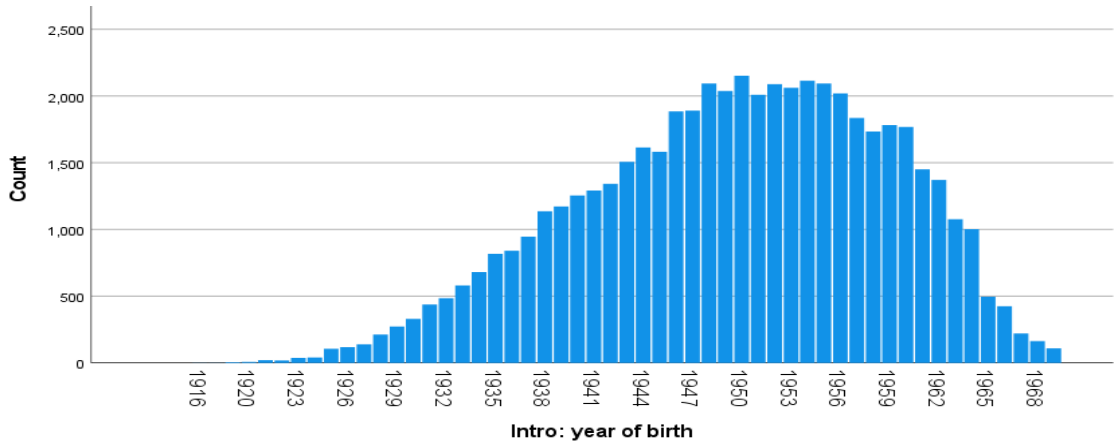


Figure 4.12: Age distribution by year

Here we shall look at the age distribution of the majority of respondents from the different regions. Focusing first on Central Europe, we discover that the most respondents were born between 1940 and 1960, which means that they are between 60 and 80 years old in 2020. There was only one exception: the peak age of respondents in Germany in 2020 was between 58 and 59, reaching virtually 180 people when it comes to respondents born in 1961. It is also worth pointing out that the respondents are hardly considered when it comes to individuals born prior to 1923. We might argue that in this area, considering Europe as a whole, the ageing of the population is not experiencing the most severe situation.

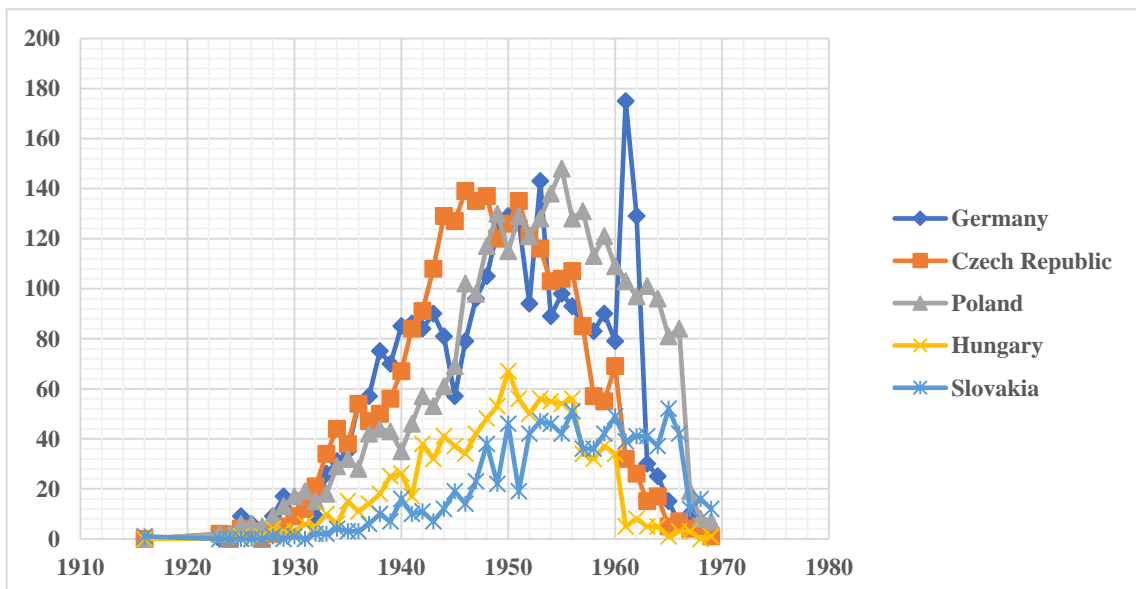


Figure 4.13: Age distribution of respondents from central Europe



Turning next to the Eastern part of Europe, it is even simpler to observe through the countries we have considered, as Estonia provides the lion's share of respondents across entire Europe, exceeding any other country in this region in almost all ages. The general trend we can be aware of from this region is that the age distribution of all respondents is not confined to the age range between 60 and 80 years. It can be suggested that the proportion of respondents in this region is, on average, between about 55 and 90 years of age. One could also argue that the process of population ageing is much better in this region than in the Central European countries we have considered. It is also astonishing that the countries we examined in this region have a strikingly comparable age distribution among respondents, which may reflect the likeness of the age profile of their demographics.

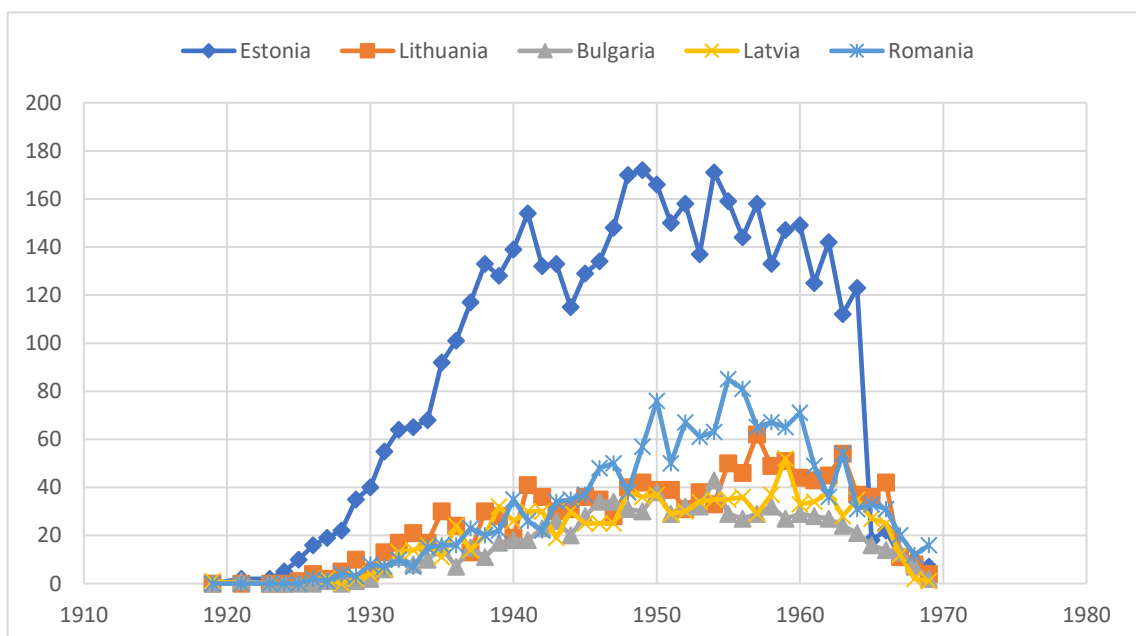


Figure 4.14: Age distribution of respondents from Eastern Europe

In what follows in the next section we concentrated on the age distribution from the respondents in northern Europe, and we took in consideration the following three countries: Sweden, Denmark and Finland. Quite evidently, many respondents in this region were born between 1945 and 1965, which would suggest that they would be between 55 and 75 years old the year 2020. However, a slight difference also exists between these countries, with Sweden having the largest population at a somewhat younger age than the other two countries, between 69 and 79 years old in the respondents. On the whole, depending on the age distribution of survey respondents, these three

countries in Northern Europe may have more ageing societies than Central and Eastern Europe, although Sweden may be in a marginally better position, with a younger population, as a result of its more open immigration policy and other reasons.

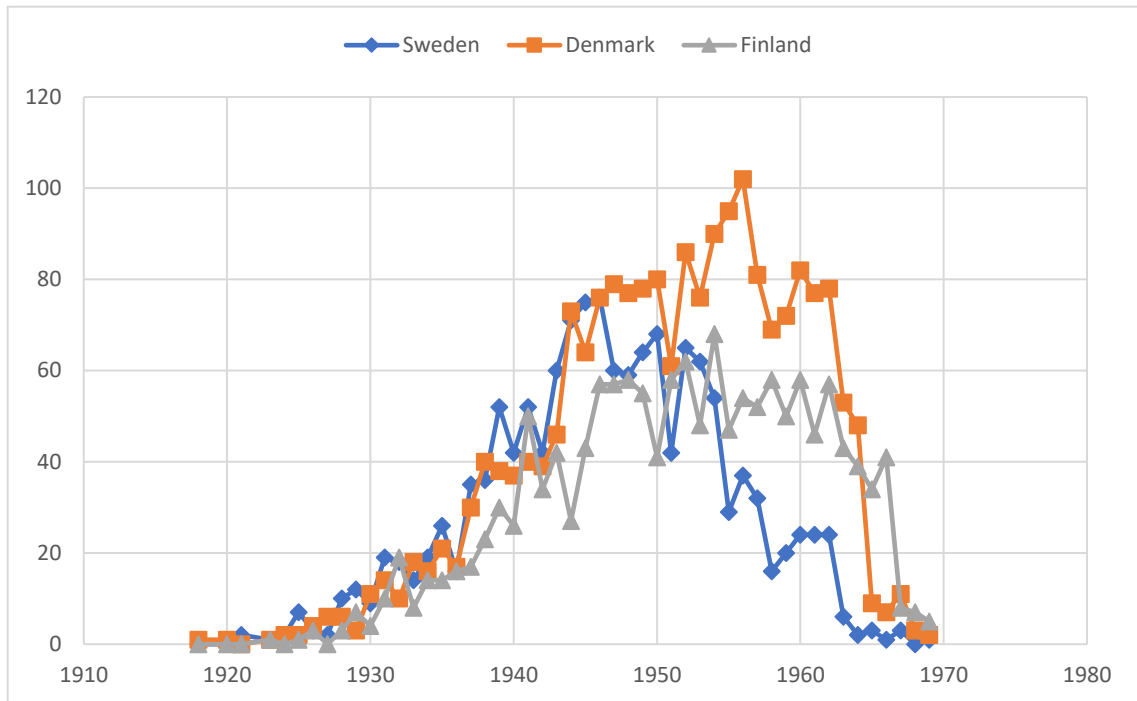


Figure 4.14: Age distribution of respondents from Northern Europe

It is appropriate to turn our attention now to the southern part of Europe, where we have the most countries divided, and where they are Portugal, Italy, Greece, Slovenia, Croatia, Spain and Cyprus. As can easily be noticeable, the most of respondents in this region were born between 1938 and 1965, implying that they will be between the ages of 55 and 82 in 2020. Whereas the difference in the age distribution of these seven countries is that the number of respondents in Croatia peaks between 61 and 67 years old, when it comes to Portugal and Cyprus, their age distribution is more divided on average between 54 and 90 years old. Few assumptions can be made about the general age distribution of the population in this region, as it is not easy to take note of a trend.

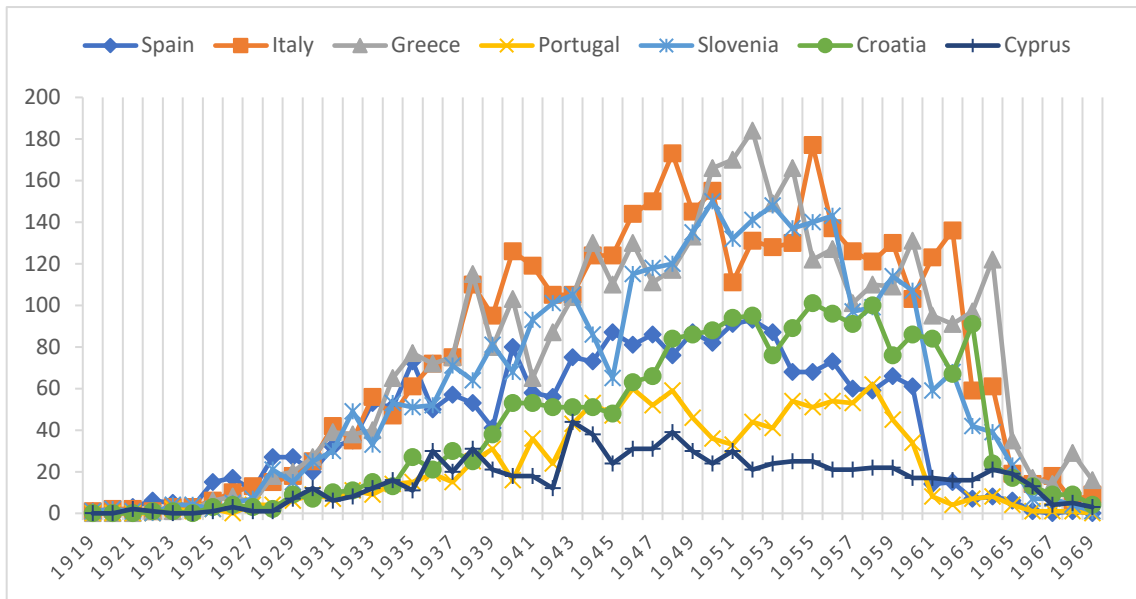


Figure 4.15: Age distribution of respondents from Southern Europe

The final region we would like to analyse here is Western Europe, of which we include five countries. As a rule, one can readily note that the greater part of the respondents in this region were all born between 1940 and 1960, which means they will mostly be between 60 and 80 years old in 2020. It can also more than be noted that Belgium provides the most respondents of all categories of survey respondents. Furthermore, the most common age group among survey respondents in this country is between 55 and 80 years old. The ageing of the population in Eastern Europe, we can also assume, is likely to be very similar to here.

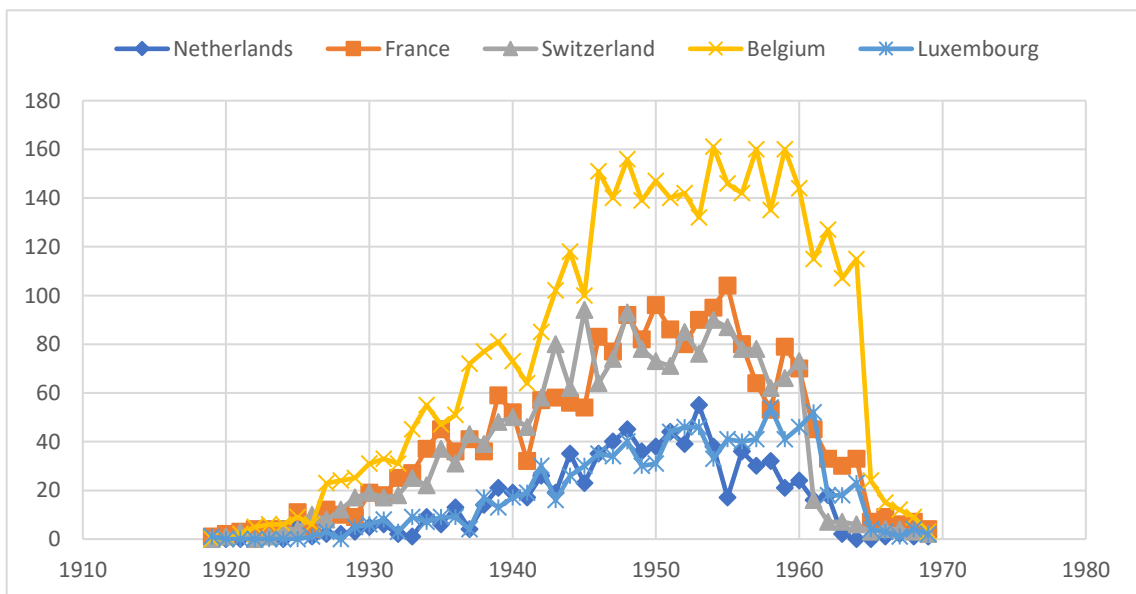


Figure 4.16: Age distribution of respondents from Western Europe

## ➤ Living Status

To further investigate and diagnose what kind of experiences during the national lockdown and choices they made regarding hygienic measures of self-protection, it would have been useful to know a little about the living conditions of the majority of the respondents. From the charts we have produced based on the descriptive cross-sectional analysis method, it is not surprising to note that, regardless of where the respondents came from, they were mostly living in their own private homes at the time of the questionnaire. Particularly during the national lockdown in Europe in 2020, we can also be aware from the tables that the country with the most percentage of respondents living in their usual home is Slovakia, while Sweden provided us with the lowest percentage of respondents living in their usual home amounting to 93.4%.

Intro: usual home or moved temporarily					
Country identifier		-2. Refusal	-1. don't know	1. Usual home	2. Lives now temporarily elsewhere
Germany	Count	1	0	2798	20
	% within Country identifier	0.00%	0.00%	99.30%	0.70%
Sweden	Count	0	0	1305	92
	% within Country identifier	0.00%	0.00%	93.40%	6.60%
Netherlands	Count	0	0	802	3
	% within Country identifier	0.00%	0.00%	99.60%	0.40%
Spain	Count	0	0	2110	89
	% within Country identifier	0.00%	0.00%	96.00%	4.00%
Italy	Count	0	0	3811	90
	% within Country identifier	0.00%	0.00%	97.70%	2.30%
France	Count	0	0	2077	44
	% within Country identifier	0.00%	0.00%	97.90%	2.10%
Denmark	Count	0	0	2002	29
	% within Country identifier	0.00%	0.00%	98.60%	1.40%
Greece	Count	0	0	3809	21
	% within Country identifier	0.00%	0.00%	99.50%	0.50%
Switzerland	Count	0	0	1925	24
	% within Country identifier	0.00%	0.00%	98.80%	1.20%
Belgium	Count	0	1	3842	50
	% within Country identifier	0.00%	0.00%	98.70%	1.30%
Czech Republic	Count	0	0	2649	59
	% within Country identifier	0.00%	0.00%	97.80%	2.20%
Poland	Count	1	0	3045	29
	% within Country identifier	0.00%	0.00%	99.00%	0.90%
Luxembourg	Count	0	0	944	16
	% within Country identifier	0.00%	0.00%	98.30%	1.70%
Hungary	Count	0	0	1031	21

	% within Country identifier	0.00%	0.00%	98.00%	2.00%
Portugal	Count	0	0	1128	22
	% within Country identifier	0.00%	0.00%	98.10%	1.90%
Slovenia	Count	0	0	3204	31
	% within Country identifier	0.00%	0.00%	99.00%	1.00%
Estonia	Count	0	0	4469	172
	% within Country identifier	0.00%	0.00%	96.30%	3.70%
Croatia	Count	0	0	2107	28
	% within Country identifier	0.00%	0.00%	98.70%	1.30%
Lithuania	Count	0	0	1281	39
	% within Country identifier	0.00%	0.00%	97.00%	3.00%
Bulgaria	Count	0	0	843	23
	% within Country identifier	0.00%	0.00%	97.30%	2.70%
Cyprus	Count	0	0	831	3
	% within Country identifier	0.00%	0.00%	99.60%	0.40%
Finland	Count	0	4	1457	34
	% within Country identifier	0.00%	0.30%	97.50%	2.30%
Latvia	Count	0	0	1011	23
	% within Country identifier	0.00%	0.00%	97.80%	2.20%
Malta	Count	0	0	895	10
	% within Country identifier	0.00%	0.00%	98.90%	1.10%
Romania	Count	0	0	1546	23
	% within Country identifier	0.00%	0.00%	98.50%	1.50%
Slovakia	Count	0	0	958	2
	% within Country identifier	0.00%	0.00%	99.80%	0.20%

Table 4.10: Living Status of respondents

## 4.2 The Characteristics, Percentages, Tendency, and Further Discoveries Based on the Response of the Respondents' Physical and Mental Well-Being Status

In this subsection, we compile and tabulate data on the health status of respondents in each European country. We present the results for each question that appears in the questionnaire in a centrally integrated general model and in a relative partitioned model for further comparison. It shows the percentage of respondents who were affected to some degree by the COVID-19, both mentally and physically, both overall and across regions. The following is an explanation of each section, a discussion of the results and a brief analysis of each section.

### 4.2.1 Physical Status of the Elderly in Europe after the Outbreak of COVID-19

Notably, out of a total of 52,889 respondents, 13 respondents declined to answer this question for either personal reason. A further 22 respondents were unaware of their personal health status at the pre COVID-19 outbreak, which may be due to their lack of personal knowledge. From the valid responses, 6.6% said their health was in excellent

status, 15.7% said it was very good and 44.4% said their health was good enough. On the whole, it is remarkable that 66.7 % of people maintained a positive attitude towards their health. There are still 26.1 % of people who say their health is neither good nor bad. Worryingly, 7.2% already stated that their health had declined before the outbreak. To summarize, based on all the statistics we have gathered from here, it is feasible to say that most respondents did not have huge concerns about their health ahead of the pandemic outbreak.

Health: how was your health before the outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	13	.0	.0	.0
	-1. Don't know	22	.0	.0	.1
	1. Excellent	3479	6.6	6.6	6.6
	2. Very good	8285	15.7	15.7	22.3
	3. Good	23488	44.4	44.4	66.7
	4. Fair	13796	26.1	26.1	92.8
	5. Poor	3793	7.2	7.2	100.0
	Total	52876	100.0	100.0	
Missing System	13	.0			
Total	52889	100.0			

Table 4.21: How was your health before the outbreak

For a further consideration of the changes in the health status of these respondents, for the sake of giving us an idea of all the changes in the health status of the elderly population in continental Europe, they were asked the next question: Has their health situation ever changed since the outbreak? It is unfortunate that there were still seven respondents who refused to reply to this question, but whose proportions did not have much influence on the results. Also of note is the fact that 16 of them were not aware of any change in their health, justifiable as some had simply adapted to society's blockade measures. In addition to these two minor irrelevant parts, only 8.8% expressed concern that their health had deteriorated, while 88.2% thought that their health had remained virtually unchanged until the moment they were surveyed. This result caught us by surprise, as we had assumed that the average health status of the majority of elderly people might have been greatly affected during the post-COVID-19 blockade in European countries, which also revealed that the majority of European people over the age of 50 were able to adapt easily to the different rhythms and imperatives of society. We have

reached this conclusion on this issue also because the survey was conducted during the first wave of the COVID-19 epidemic in Europe and the social blockade in each country was implemented only for a short period of time and there was no great discontentment, disruption or intolerance to people's lives.

Health: change in your health since the outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	7	.0	.0	.0
	-1. Don't know	16	.0	.0	.0
	1. Improved	1520	2.9	2.9	2.9
	2. Worsened	4675	8.8	8.8	11.8
	3. About the same	46657	88.2	88.2	100.0
	Total	52875	100.0	100.0	
Missing System		14	.0		
Total		52889	100.0		

Table 4.22: Change in your health since the outbreak

In the next six tables statistics are displayed on the respondents' existing concerns about their general physical well-being. Within the questionnaire certain illnesses are addressed, such as hip fracture, diabetes or high blood sugar, heart disease or other heart problems, chronic lung disease, cancer or malignant tumors, other diseases or health conditions. Within these six conditions, the disease status of their physical condition was divided into six segments, which allowed for a more inclusive description and conveyance of their personal health status during the COVID-19 blockade.

For a start, the respondents with a hip fracture were asked to look at the situation. From the questionnaire results, only 256 out of all valid respondents answered yes, amounting to about 0.5% of the total number of respondents. Where diabetes and hypertension are concerned, 1029 people answered "yes" in the questionnaire, which represented 1.9% of the total number of people interviewed. Evidently, there is a greater prevalence of diabetes and hypertension among older people in Europe. On the subject of heart attacks or other heart problems, as well as the fact that more people in Europe suffered from this disease among the elderly, deserve to be mentioned. Of the people who were interviewed, 1,470 (2.7% of the total respondents) had this particular disease. Equally intriguing is the fact that in Europe there are not surprisingly as many people with chronic lung disease as with heart disease. With only 627 of those surveyed suffering from chronic lung disease, this represents only 1.2% of the entire population surveyed.

And speaking of cancer or malignancy, it would have been as important as chronic lung disease, as the number of people with each of these diseases is very close. Unfortunately, 769 respondents had this disease, which represents only 1.5% of the entire survey sample. It was astonishing to us that the number of people suffering from other diseases or health conditions, which were not mentioned in the previous choices, was much higher than the other options in the question. 3,425 respondents, or 6.5%, suffered from more complex illnesses than those listed in the previous options. Looking not only at the number but also at the percentages, it should not be hard to see that the order of prevalence of the different diseases from highest to lowest would be: other illnesses or health conditions, cardiac disease or other heart problems, diabetes or hyperglycaemia, cancer or malignancy, chronic lung disease, and hip fracture. We can therefore infer that the most frequent diseases among older people in Europe are unexpected physical diseases and conditions, cardiac problems, diabetes and hypertension. The results shall show the general condition of the older generation in Europe and not be related to the arrival of the COVID-19 pandemic.

Health: hip fracture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	47188	89.2	89.2	89.2
	-2. Refusal	5	.0	.0	89.3
	-1. Don't know	3	.0	.0	89.3
	1. Yes	256	.5	.5	89.7
	5. No	5421	10.2	10.3	100.0
	Total	52873	100.0	100.0	
Missing System		16	.0		
Total		52889	100.0		

Table 4.23: Hip fracture

Health: diabetes or high blood sugar

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	47188	89.2	89.2	89.2
	-2. Refusal	6	.0	.0	89.3
	-1. Don't know	12	.0	.0	89.3
	1. Yes	1029	1.9	1.9	91.2
	5. No	4638	8.8	8.8	100.0
	Total	52873	100.0	100.0	
Missing System		16	.0		



Total	52889	100.0		
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Table 4.24: Diabetes or high blood sugar

Health: heart attack or other heart problem

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -9. Not applicable (qqn47188 routing)	47188	89.2	89.2	89.2
-2. Refusal	5	.0	.0	89.3
-1. Don't know	16	.0	.0	89.3
1. Yes	1417	2.7	2.7	92.0
5. No	4247	8.0	8.0	100.0
Total	52873	100.0	100.0	
Missing System	16	.0		
Total	52889	100.0		

Table 4.25: Heart attack or other heart problem

Health: chronic lung disease

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -9. Not applicable (qqn47188 routing)	47188	89.2	89.2	89.2
-2. Refusal	6	.0	.0	89.3
-1. Don't know	14	.0	.0	89.3
1. Yes	627	1.2	1.2	90.5
5. No	5038	9.5	9.5	100.0
Total	52873	100.0	100.0	
Missing System	16	.0		
Total	52889	100.0		

Table 4.26: Chronic lung disease

Health: cancer or malignant tumour

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -9. Not applicable (qqn47188 routing)	47188	89.2	89.2	89.2
-2. Refusal	5	.0	.0	89.3
-1. Don't know	28	.1	.1	89.3
1. Yes	796	1.5	1.5	90.8
5. No	4856	9.2	9.2	100.0
Total	52873	100.0	100.0	
Missing System	16	.0		
Total	52889	100.0		

Table 4.27: Cancer or malignant tumor

Health: other illness or health condition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	47188	89.2	89.2	89.2
	-2. Refusal	5	.0	.0	89.3
	-1. Don't know	8	.0	.0	89.3
	1. Yes	3425	6.5	6.5	95.8
	5. No	2247	4.2	4.2	100.0
	Total	52873	100.0	100.0	
Missing	System	16	.0		
Total		52889	100.0		

Table 4.28: Other illness or health condition

In an endeavour to illuminate the changes in their health since the COVID-19 outbreak, the producers of the questionnaire highlighted symptoms of some very obvious physical conditions, many of which could be signs of an oncoming, more serious illness. Among the symptoms they chose to ask about in the questionnaire were increased number of falls in the last 6 months, fear of falling in the last 6 months, dizziness, fainting or blackouts in the last 6 months, and fatigue in the last 6 months. The time period limited by this question is the last 6 months. As the time period for the survey in all European countries is from June 2020 to August 2020, it would probably be the first half of 2020 if the question was set to the 6 months prior to the survey, which is coincidentally equal to the start of the COVID-19 outbreak in Wuhan, China. It may be noteworthy, however, that this period does not necessarily equate to the time when each country imposed a full lock down to counter the dissemination of COVID-19 in their country.

Regarding people who had accidentally fallen since the COVID-19 outbreak, it bears witnessing those 46,994 interviewees answered yes, representing 8.9% of all valid answers, compared to the answers to the last 6 queries, showing a considerable degree of statistical variability in their current illness. The statistics get worse to worse with 9,212 people answering yes to 17.4% of all respondents to the question considering the fear of falling in the last 6 months. This is a frightening sign, with nearly 20% of respondents fearing suddenly fainting on the floor. This fear of fainting may be caused by many reasons. However, one can comfortably assume that stringent social restrictions had been implemented in almost all European countries and that face-to-face communication was not officially recommended, all of which could directly have contributed to the fear of

contracting COVID-19, leading to a potentially more psychological fear of it and thus to the physical state of suddenly fainting on the floor.

Things have not gotten any better in the last six months at all in relation to the actual symptoms of dizziness, fainting or blackouts. A total of 8,935 respondents, or 16.9% of the total, picked a positive answer. The worst situation occurred with the question "fatigue in the last 6 months", with 15,037 people electing a "yes" answer, or almost 30%. From the results of all the surveys we collected, it would be tempting to draw a conclusion about the physical presentation of the great majority of older people in Europe. Although the percentage of old people with complicated physical condition is much lower compared to the general geriatric population, the visual and mental effects of the COVID-19 make it possible to assess that an increasing number of older people feel fatigued all at all times, which was confirmed by almost 30% of them in the survey. On top of this, 17% of people suffered from dizziness, fainting or blackouts, which can be seen as a more serious chronological condition. While only nearly 9% of people have experienced a fall for some reason in the last six months since June 2020, the number of people who fear falling has increased incredibly to nearly 18%, almost twice as many as those who actually experienced a fall. With this result we can also gauge the mental stress that the elderly are under during this complicated time. All these symptoms may lead to more serious disorders, but it is difficult to know if these have been cured because of the varying capacity and accessibility of medical services.

Health: falling down more in last 6 months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	20	.0	.0	.0
	-1. Don't know	75	.1	.1	.2
	1. Yes	4694	8.9	8.9	9.1
	5. No	48082	90.9	90.9	100.0
	Total	52871	100.0	100.0	
Missing System	18	.0			
Total	52889	100.0			

Table 4.29: Falling down more in last 6 months

Health: fear of falling down in last 6 months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	23	.0	.0	.0

	-1. Don't know	112	.2	.2	.3
	1. Yes	9212	17.4	17.4	17.7
	5. No	43524	82.3	82.3	100.0
	Total	52871	100.0	100.0	
Missing System		18	.0		
Total		52889	100.0		

Table 4.29: Fear of falling down in last 6 months

Health: dizziness, faints or blackouts in last 6 months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	21	.0	.0	.0
	-1. Don't know	93	.2	.2	.2
	1. Yes	8935	16.9	16.9	17.1
	5. No	43822	82.9	82.9	100.0
	Total	52871	100.0	100.0	
Missing System		18	.0		
Total		52889	100.0		

Table 4.30: Dizziness, faints or blackouts in last 6 months

Health: fatigue in last 6 months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	24	.0	.0	.0
	-1. Don't know	127	.2	.2	.3
	1. Yes	15037	28.4	28.4	28.7
	5. No	37683	71.2	71.3	100.0
	Total	52871	100.0	100.0	
Missing System		18	.0		
Total		52889	100.0		

Table 4.31: Fatigue in last 6 months

Following the questioning of respondents about their formal conventional health conditions, in a bid to make a furthermore complete comparison with all respondents' previous responses to reveal potential effect caused by COVID-19 in older people, the questionnaire has been designed to ask several more questions about changes in specific areas of health related to the diseases mentioned in the preceding questions. Therefore, intelligent questionnaire creators from SHARE entered questions such as whether they had started taking medications related to these common diseases, which could reveal their

personal feelings during the pandemic on one side and how worried they were about their health from a psychological point of view on the other side. The categories of drugs considered in the questionnaire were: chronic bronchitis drugs, coronary heart or cerebrovascular disease drugs, hypertension drugs, prescription drugs, hyperlipidemia drugs, and other heart disease drugs.

We are alarmed to observe that 76.7% of the survey respondents used prescription drugs at the time of the interview and only 23.2% did not need to take any medication. In this circumstance, it is possible to conclude that the majority of the elderly population in Europe is very concerned and attentive to their well-being and most of them are in the habit of taking regular medications to prevent or treat diseases of old age, but on the other hand, this also provides a risk that they will not be able to find regular medications to buy or prescribe during the national blockade of the COVID-19 pandemic. Most of them, chances are, have received varying degrees of difficulty in obtaining medications, which can be seen in the next part of analysis. Thirty percent of the aged population was taking high blood cholesterol medications, a probability much higher than the rate of drug intake for other diseases. From this we can draw the conclusion that high blood cholesterol is a very common disease among European senior citizens compared to other listed diseases. It is not surprising that more than 50% of the survey respondents answered yes to the question of whether they were taking hypertension medication, since hyperemia is common among older people anywhere in the world. However, we can also note from the survey results that 52 respondents did not know if they should take hypertension medication. From this we can surmise that not all older people in Europe are aware of the importance of detecting the potential threat of common diseases such as hypertension. It is reassuring that not many people are taking medications for coronary heart disease or cerebrovascular disease. Only 15.2% of all respondents were required to take regular medication for coronary heart disease or cerebrovascular disease. 16.4% of results needed to take medications related to heart disease, and 59.8% of them answered "no". Regarding diabetes medications, only 14.6% of the elderly population in Europe needed to take them regularly. Chronic bronchitis medications are also less common among the older generation in Europe, with only 4.6% of respondents giving a "yes" answer.

Based on all the statistics we obtained from the survey, we can make the following speculations about the prevalence of the utilization of the different medications for

geriatric diseases in the European elderly population. High blood lipid medications must come first, with 29.9 of the survey respondents considering them to be routine medications. Other heart disease medications, coronary or cerebrovascular disease medications, and diabetes medications are taken with almost the same frequency in the old European population, about 16%. Finally, only 5% of the elderly population takes chronic bronchitis medications regularly, which makes chronic bronchitis the least frequent disease among the European elderly population we compared.

Health: regularly takes prescription drugs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	18	.0	.0	.0
	-1. Don't know	12	.0	.0	.1
	1. Yes	40582	76.7	76.8	76.8
	5. No	12256	23.2	23.2	100.0
	Total	52868	100.0	100.0	
Missing System		21	.0		
Total		52889	100.0		

Table 4.32: Regularly takes prescription drugs

Health: high blood cholesterol drugs taken regularly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	12286	23.2	23.2	23.2
	-2. Refusal	52	.1	.1	23.3
	-1. Don't know	251	.5	.5	23.8
	1. Yes	15818	29.9	29.9	53.7
	5. No	24458	46.2	46.3	100.0
	Total	52865	100.0	100.0	
Missing System		24	.0		
Total		52889	100.0		

Table 4.33: High blood cholesterol drugs taken regularly

Health: high blood pressure drugs taken regularly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	12286	23.2	23.2	23.2

-2. Refusal	52	.1	.1	23.3
-1. Don't know	131	.2	.2	23.6
1. Yes	27598	52.2	52.2	75.8
5. No	12798	24.2	24.2	100.0
Total	52865	100.0	100.0	
Missing System	24	.0		
Total	52889	100.0		

Table 4.34: High blood pressure drugs taken regularly

Health: coronary or cerebrovascular diseases drugs taken regularly

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -9. Not applicable (qqn routing)	12286	23.2	23.2	23.2
-2. Refusal	56	.1	.1	23.3
-1. Don't know	228	.4	.4	23.8
1. Yes	8059	15.2	15.2	39.0
5. No	32236	61.0	61.0	100.0
Total	52865	100.0	100.0	
Missing System	24	.0		
Total	52889	100.0		

Table 4.35 coronary or cerebrovascular diseases drugs taken regularly

Health: other heart disease drugs taken regularly

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -9. Not applicable (qqn routing)	12286	23.2	23.2	23.2
-2. Refusal	59	.1	.1	23.4
-1. Don't know	194	.4	.4	23.7
1. Yes	8675	16.4	16.4	40.1
5. No	31651	59.8	59.9	100.0
Total	52865	100.0	100.0	
Missing System	24	.0		
Total	52889	100.0		

Table 4.36: Other heart disease drugs taken regularly

Health: diabetes drugs taken regularly

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -9. Not applicable (qqn routing)	12286	23.2	23.2	23.2
-2. Refusal	56	.1	.1	23.3

	-1. Don't know	124	.2	.2	23.6
	1. Yes	7697	14.6	14.6	38.1
	5. No	32702	61.8	61.9	100.0
	Total	52865	100.0	100.0	
Missing System		24	.0		
Total		52889	100.0		

Table 4.37: Diabetes drugs taken regularly

Health: chronic bronchitis drugs taken regularly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn12286 routing)	12286	23.2	23.2	23.2
	-2. Refusal	59	.1	.1	23.4
	-1. Don't know	161	.3	.3	23.7
	1. Yes	2444	4.6	4.6	28.3
	5. No	37915	71.7	71.7	100.0
	Total	52865	100.0	100.0	
Missing System		24	.0		
Total		52889	100.0		

Table 4.38: Chronic bronchitis drugs taken regularly

#### 4.22 Mental Status of the Elderly in Europe after the Outbreak of COVID-19

During the previous section on the physical health of the older European population, respondents have been asked about the common geriatric diseases they suffer from and the regular medications they take, and it is clear to note that the first type of questions inquire about general health based on the symptoms of the diseases they suffer from, while the second type of questions interrogate the changes in their physical health and their personal perceptions of themselves after the COVID-19 outbreak physical health, which can be seen vividly in the increased need to take medication. Our next step is to further develop a more detailed understanding of the health of the European elderly population, and it is high time that the mental health of all respondents was being assessed. This time, the creators of the questionnaire have concentrated on the following four areas: Loneliness, Sleep difficulties, Depression, and Tension for each respondent. Loneliness, difficulty sleeping, depression, and sense of tension for each respondent. For comparison between recent time and the period after the COVID-19 outbreak, as in the previous section, there are two different levels of questions in the same section of the questionnaire. In the first stratum, respondents were asked how they felt in the last month before the



questionnaire, and in the second stratum, the more explicit question was asked: whether they felt more different types of emotional distress since the COVID-19 outbreak. Now we will take a moment to look at the performance of the respondents' psychological health in face of different mental troubles.

In the month before the survey, it became clear that 30.2% of the older adults felt nervous, including 21.4% who admitted that they felt more nervous because of the COVID-19 outbreak, which corresponds to 11,315 people. During the final month before the survey, 26.1% of seniors felt depressed, among which 16.5% of them all committed that their depression was caused by the COVID-19 breakout. Regarding sleep problems, 14,630 people, or 27.7% of all respondents, had sleep problems in the month prior to the questionnaire. Of the total respondents, 8.1% admitted that the sleep problems were caused by the COVID-19 outbreak. The topic of loneliness has long been a vigorous one. Concerning loneliness, respondents were asked how often they felt lonely, and based on the results, we can calculate that 7.3% felt lonely often, 21.2% felt lonely from time to time, and in summary, 28.5% of the survey respondents felt lonely in general, regardless of the COVID-19 outbreak. Notably, among all the older people surveyed, we note that 71% chose the answer "hardly or never feel lonely", implying that in general, the European population has a low level of loneliness and that older generations do not usually feel lonely. We attribute this probably to closer family ties, a more welcoming social environment, mutual trust between strangers and, most importantly, better social care services for the elderly population in Europe. Not surprisingly, only 11.5% of the respondents admitted that they had become lonelier as a result of the COVID-19 outbreak.

In general, of the three mental health problems listed, nervousness and sleep disturbances occur most frequently among the older population in Europe, with both conditions accounting for 30% of the population. Approximately 25% of older adults suffer from Sadness and Depression, while 20% suffer from Loneliness. To summarize, there is no great difference in the frequency of each of these disorders and therefore, the elderly population in Europe needs more care when it comes to possible mental health problems. The mental health disorder most likely to be affected by COVID-19 is nervousness, with about 20% of the population potentially having this symptom. Our guess is that most of them were experiencing more nervousness symptoms because of fear of infection and hospitalization for possible complicating symptoms during the worldwide pandemic. The COVID-19 pandemic also contributed to more elderly people

suffering more symptoms of loneliness and depression, which may have affected about 12 percent of them. Among the elderly population, the least worrisome mental problem was sleeping, which affected only 8.1% of the entire elderly population.

Health: felt nervous in last month

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	23	.0	.0	.0
	-1. Don't know	121	.2	.2	.3
	1. Yes	15954	30.2	30.2	30.5
	5. No	36764	69.5	69.5	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.39: Felt nervous in last month

Health: more or less nervous since outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	36908	69.8	69.8	69.8
	-1. Don't know	12	.0	.0	69.8
	1. More so	11315	21.4	21.4	91.2
	2. Less so	311	.6	.6	91.8
	3. About the same	4316	8.2	8.2	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.40: More or less nervous since outbreak

Health: sad or depressed in last month

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	26	.0	.0	.0
	-1. Don't know	147	.3	.3	.3
	1. Yes	13806	26.1	26.1	26.4
	5. No	38883	73.5	73.6	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.41: Sad or depressed in last month

Health: more or less depressed since outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	39056	73.8	73.9	73.9
	-2. Refusal	2	.0	.0	73.9
	-1. Don't know	23	.0	.0	73.9
	1. More so	8713	16.5	16.5	90.4
	2. Less so	324	.6	.6	91.0
	3. About the same	4744	9.0	9.0	100.0
	Total	52862	99.9	100.0	
Missing	System	27	.1		
Total		52889	100.0		

Table 4.42: More or less depressed since outbreak

Health: trouble sleeping recently

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	22	.0	.0	.0
	-1. Don't know	57	.1	.1	.1
	1. Trouble with sleep or recent change in pattern	14630	27.7	27.7	27.8
	2. No trouble sleeping	38153	72.1	72.2	100.0
	Total	52862	99.9	100.0	
Missing	System	27	.1		
Total		52889	100.0		

Table 4.43: Trouble sleeping recently

Health: more or less trouble sleeping since outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	38232	72.3	72.3	72.3
	-2. Refusal	2	.0	.0	72.3
	-1. Don't know	15	.0	.0	72.4
	1. More so	4275	8.1	8.1	80.4
	2. Less so	244	.5	.5	80.9
	3. About the same	10094	19.1	19.1	100.0
	Total	52862	99.9	100.0	
Missing	System	27	.1		
Total		52889	100.0		

Table 4.44: More or less trouble sleeping since outbreak

Health: how often do you feel lonely

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	27	.1	.1	.1
	-1. Don't know	254	.5	.5	.5
	1. Often	3844	7.3	7.3	7.8
	2. Some of the time	11207	21.2	21.2	29.0
	3. Hardly ever or never	37530	71.0	71.0	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.45: How often do you feel lonely

Health: more or less lonely since outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	37811	71.5	71.5	71.5
	-2. Refusal	1	.0	.0	71.5
	-1. Don't know	12	.0	.0	71.6
	1. More so	6063	11.5	11.5	83.0
	2. Less so	453	.9	.9	83.9
	3. About the same	8522	16.1	16.1	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.46: More or less lonely since outbreak

### 4.3 The Social Healthcare Treatment among Elderly in Europe after the Outbreak of COVID-19

Certainly, it is not enough to consider the physical and mental health status of the respondents, as we should also consider the impact of the objective socio-medical environment, such as their experiences in health care facilities and services. Therefore, for the purpose of better detecting the impact of COVID-19 on the elderly in Europe, it is necessary to contemplate the following scenarios answered by the respondents: abandonment of medical treatment since the outbreak, abandonment of planned medical treatment or surgery, postponement of medical appointments due to COVID-19, postponement of planned medical treatment or surgery, refusal of appointments after the outbreak, refusal of planned medical treatment or surgery, satisfaction with hospital treatment, and Satisfaction with the medical facility.

Like the rate of abandoning planned medical treatment or surgery, 11.8% of respondents answered "yes" when it comes to the rate of having to abandon medical treatment after the outbreak, while on the other hand, 88.1% of respondents received medical treatment in a timely manner without any disruption after the outbreak. Regarding the withdrawal of planned medical treatment or surgery, 627 people had to withdraw from their pre-scheduled medical treatment or surgery, which represents 10% of the number of people who had prior appointments, meaning that 90% of people had their planned medical treatment or surgery without any interruption. As it relates to delayed medical appointments due to COVID-19, nearly 27% of the entire elderly population experienced this situation, while the rest of the respondents did not experience a similar situation. In talking about planned medical or surgical procedures, we were shocked to find that 1,700 people had a planned medical or surgical procedure postponed that should not have happened, representing 12.3% of the valid responses from the entire older adult population. We were also encouraged to see that of the remaining valid responses, 12,174 seniors, or 87.7%, said their planned medical or surgical treatment was not postponed. Addressing the denial of appointments after the outbreak, we found that 5.1% of the elderly population had suffered this situation and the majority had not. Fortunately, we only found 260 people whose planned appointments were denied when it comes to planned medical or surgical procedures, which represents almost 10% of all valid answers, and 90.3% of the elderly population did not suffer any denial of their planned appointments. In terms of satisfaction with hospital treatment, considering all valid cases in the survey, 68.4% were satisfied and 26.1% were somewhat satisfied, which means that in total 94.5% of the elderly population was satisfied with the treatment. On the other hand, those who feel dissatisfied and somewhat dissatisfied represent 5.5%. Turning to health care: Satisfied with treatment in a health care facility, 72.5% of those who had been treated in a health care facility prior to the survey considered their treatment to be satisfactory and 24.3% considered their treatment to be somewhat satisfactory. Conversely, not many older adults were dissatisfied with the medical facilities they had visited, with only 3.2% feeling dissatisfied.

Healthcare: forwent medical treatment since outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	18	.0	.0	.0
	-1. Don't know	22	.0	.0	.1

	1. Yes	6244	11.8	11.8	11.9
	5. No	46576	88.1	88.1	100.0
	Total	52860	99.9	100.0	
Missing System		29	.1		
Total		52889	100.0		

Table 4.47: Forwent medical treatment since outbreak

Healthcare: forwent planned medical treatment or operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	46616	88.1	88.2	88.2
	-2. Refusal	2	.0	.0	88.2
	-1. Don't know	8	.0	.0	88.2
	1. Yes	627	1.2	1.2	89.4
	5. No	5607	10.6	10.6	100.0
	Total	52860	99.9	100.0	
Missing System		29	.1		
Total		52889	100.0		

Table 4.48: Forwent planned medical treatment or operation  
Healthcare: postponed medical appointment due to COVID-19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	22	.0	.0	.0
	-1. Don't know	40	.1	.1	.1
	1. Yes	13881	26.2	26.3	26.4
	5. No	38916	73.6	73.6	100.0
	Total	52859	99.9	100.0	
Missing System		30	.1		
Total		52889	100.0		

Table 4.49: Postponed medical appointment due to COVID-19  
Healthcare: postponed planned medical treatment or operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	38978	73.7	73.7	73.7
	-2. Refusal	2	.0	.0	73.7
	-1. Don't know	5	.0	.0	73.8
	1. Yes	1700	3.2	3.2	77.0
	5. No	12174	23.0	23.0	100.0
	Total	52859	99.9	100.0	
Missing System		30	.1		
Total		52889	100.0		

Table 4.50: Postponed planned medical treatment or operation

Healthcare: denied appointment since outbreak

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	20	.0	.0	.0
	-1. Don't know	29	.1	.1	.1
	1. Yes	2689	5.1	5.1	5.2
	5. No	50121	94.8	94.8	100.0
	Total	52859	99.9	100.0	
Missing System		30	.1		
Total		52889	100.0		

Table 4.51: Denied appointment since outbreak

Healthcare: denied planned medical treatment or operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	50170	94.9	94.9	94.9
	-2. Refusal	1	.0	.0	94.9
	-1. Don't know	2	.0	.0	94.9
	1. Yes	260	.5	.5	95.4
	5. No	2426	4.6	4.6	100.0
	Total	52859	99.9	100.0	
Missing System		30	.1		
Total		52889	100.0		

Table 4.52: Denied planned medical treatment or operation

Healthcare: satisfaction with treatment in hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	48874	92.4	92.5	92.5
	-2. Refusal	5	.0	.0	92.5
	-1. Don't know	22	.0	.0	92.5
	1. Very satisfied	2709	5.1	5.1	97.6
	2. Somewhat satisfied	1033	2.0	2.0	99.6
	3. Somewhat dissatisfied	141	.3	.3	99.9
	4. Very dissatisfied	75	.1	.1	100.0
	Total	52859	99.9	100.0	
Missing System		30	.1		
Total		52889	100.0		

Table 4.53: Satisfaction with treatment in hospital

Healthcare: satisfaction with treatment at medical facility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	38590	73.0	73.0	73.0
	-2. Refusal	14	.0	.0	73.0
	-1. Don't know	42	.1	.1	73.1
	1. Very satisfied	10307	19.5	19.5	92.6
	2. Somewhat satisfied	3448	6.5	6.5	99.1
	3. Somewhat dissatisfied	341	.6	.6	99.8
	4. Very dissatisfied	117	.2	.2	100.0
	Total	52859	99.9	100.0	
Missing	System	30	.1		
Total		52889	100.0		

Table 4.54: Satisfaction with treatment at medical facility

In seeking to clarify and compare the specific performance of healthcare providers across countries and to improve the certainty of the results, we needed to remove the impact of all invalid and irrelevant data where 'not applicable', 'refused' or 'don't know' was selected. In the end, we arrived at more detailed percentage results in the following eight areas for further evaluation:

1. rate of dissatisfaction with hospital treatment.
2. Rate of dissatisfaction with treatment at a health facility.
3. rate of abandonment of treatment after an outbreak
4. rate of abandonment of planned medical or surgical procedures
5. rate of postponement of medical appointments due to COVID-19
6. rate of postponement of planned medical or surgical procedures
7. rate of refusal of appointments after an outbreak
8. rate of refusal of planned medical or surgical treatment

The countries with the highest rates of dissatisfaction with hospital treatment were Slovakia (13.16%), Lithuania (9.09%) and Bulgaria (8.06%), followed by Greece (5.26%) and Hungary (4.88%). It has also been noted that most of these countries with the highest dissatisfaction rates are in the Eastern part of Europe. On the other hand, the country with



the lowest dissatisfaction rate was Cyprus, where almost no one was dissatisfied with their hospital services during the pandemic. In addition to this, Spain and Sweden were also the two countries with the lowest dissatisfaction rates with hospital treatment, at 1.13% and 1.35% respectively.

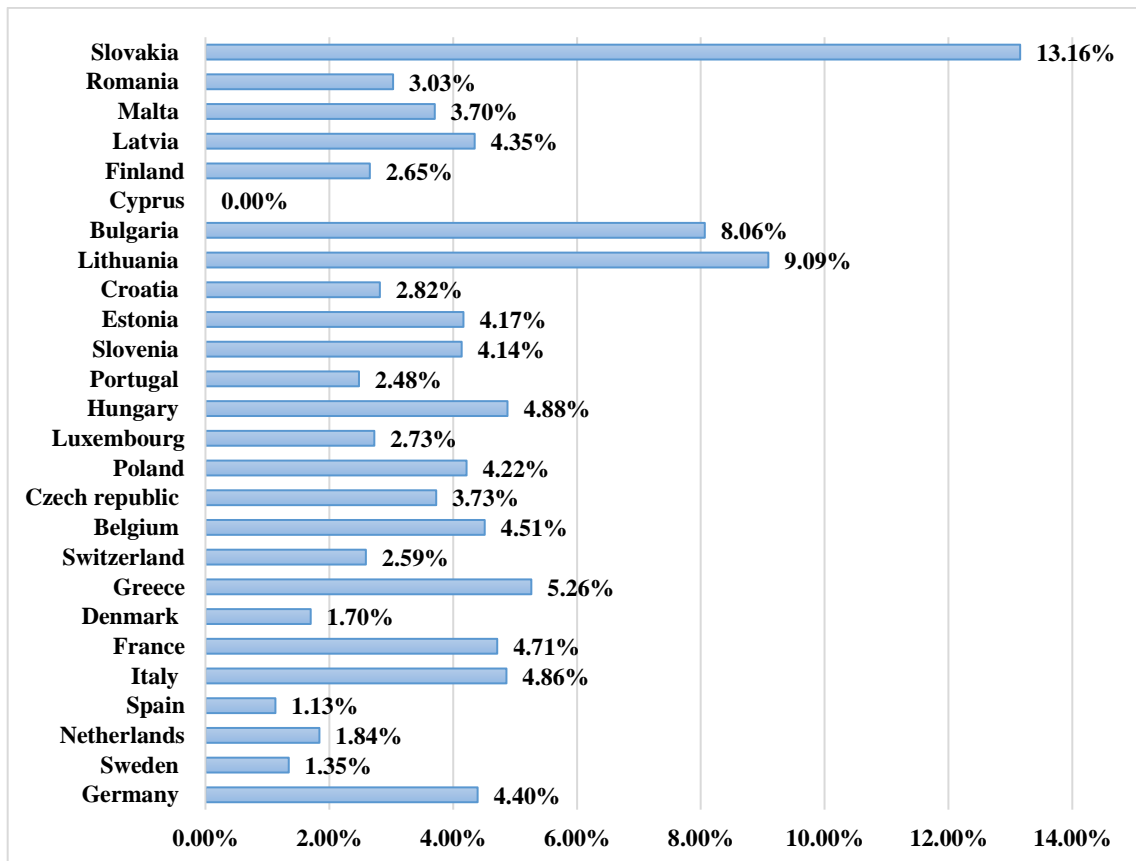


Figure 4.30: Dissatisfaction rate with treatment in hospital in each European country

Turning to the rate of dissatisfaction with treatment in health care facilities in European countries, Lithuanians have a particularly high rate of dissatisfaction at 20.99%, which means that almost a quarter of Lithuanians are dissatisfied with the medical care they received in health care facilities during the national embargo. Apart from this, Latvia, Greece and Slovakia are the next three countries with a high dissatisfaction rate of around 7.3%, while Hungary and Portugal are the next countries in line with dissatisfaction rates of 6.32% and 5.54% respectively. The country with the lowest dissatisfaction rate is still Cyprus with only 0.98%.

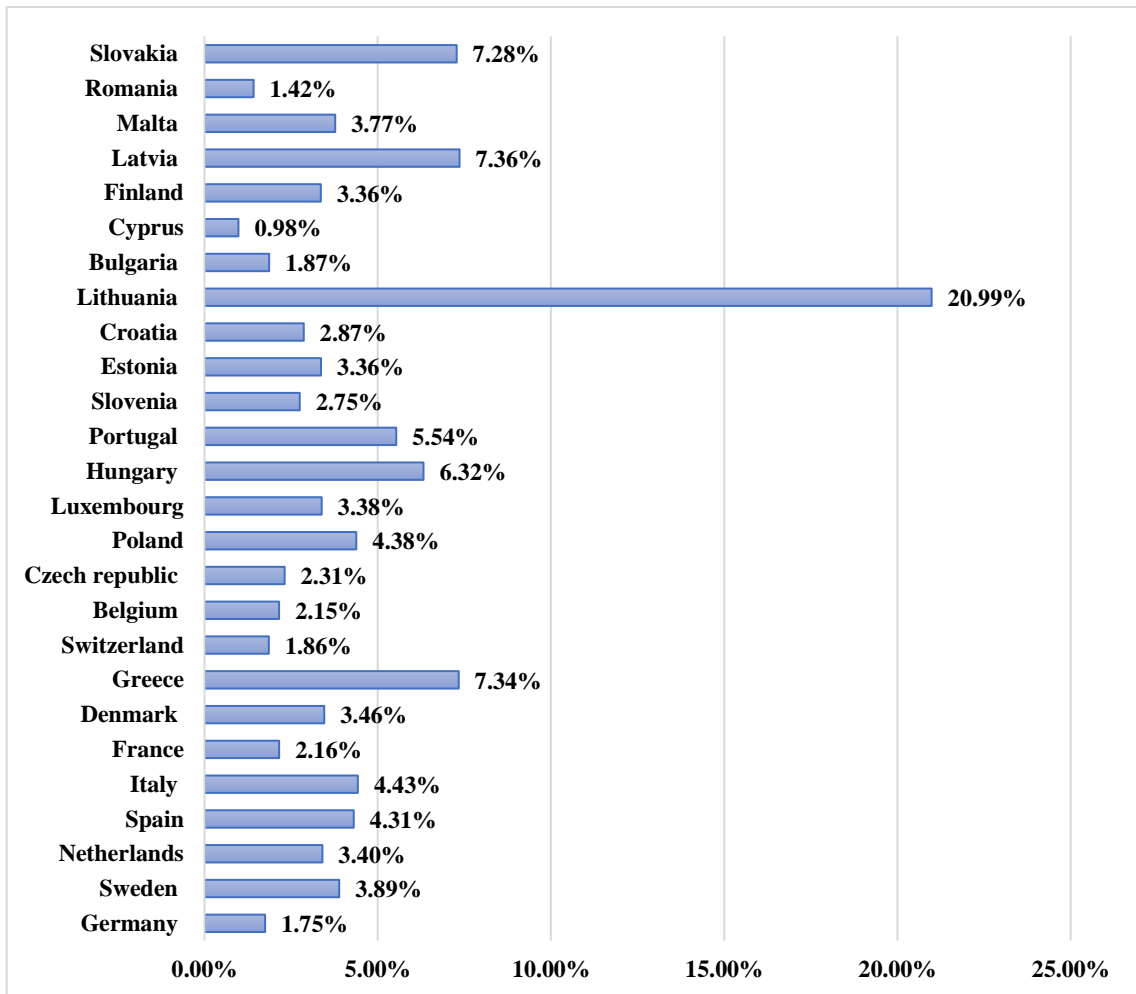


Figure 4.31: Dissatisfaction rate with treatment at medical facility in each European country

Next, we look at the ranking of the refusal rate for planned medical or surgical treatment. Slovakia refused almost a third of the prearranged medical or surgical treatments. Cyprus, the Netherlands, Romania and Italy refused almost around 15% of prearranged medical treatment. The countries with the lowest refusal rates were Bulgaria and Portugal. In Bulgaria, almost 100% of the pre-arrangements were carried out and in Portugal, only 2.47% of the pre-planned treatments were refused.

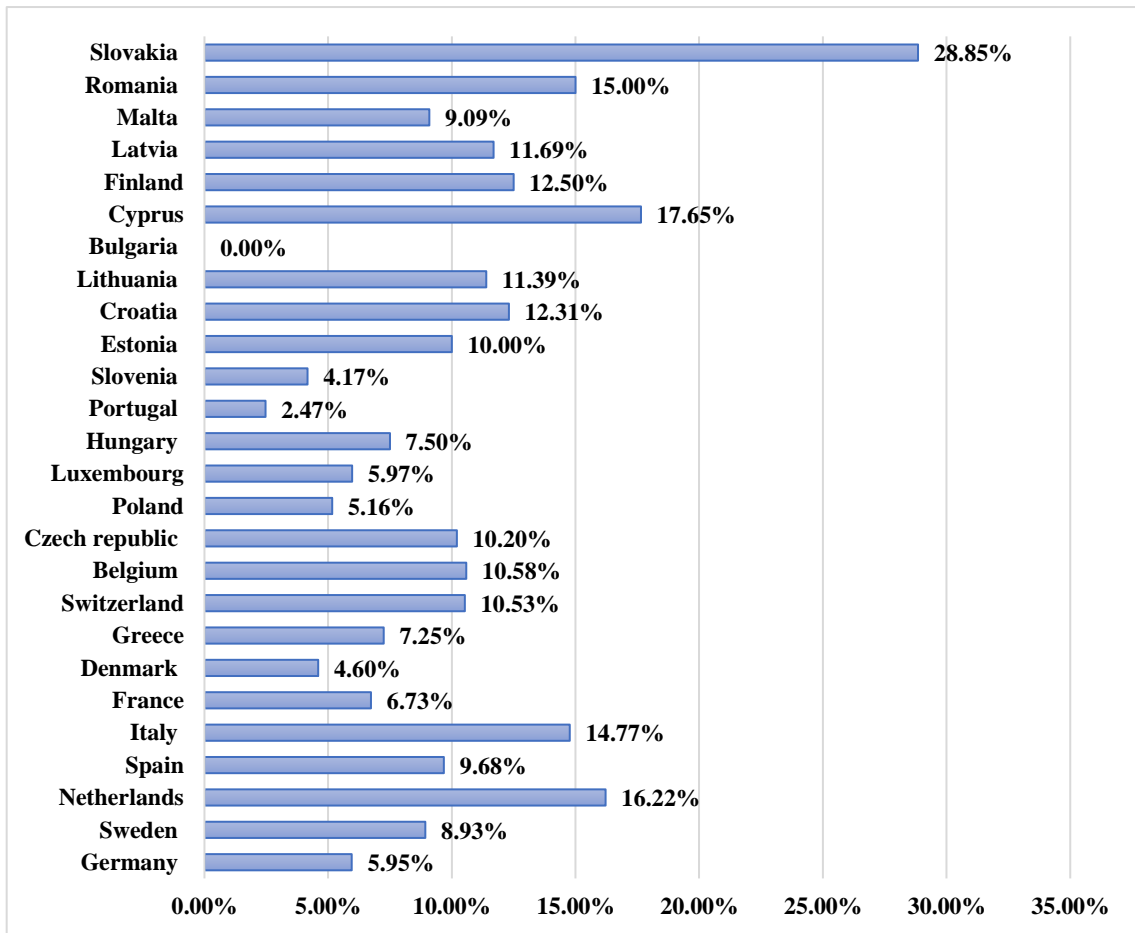


Figure 4.32: Rate of denial of planned medical or surgical treatment

Since the outbreak, the two countries with the highest refusal rates for appointments are Lithuania and France with a refusal rate of approximately 10%. Countries such as Latvia, Estonia, Portugal, Luxembourg, Poland and Belgium have a refusal rate of around 6.5% and the country with the lowest refusal rate is Bulgaria at 0.49%.

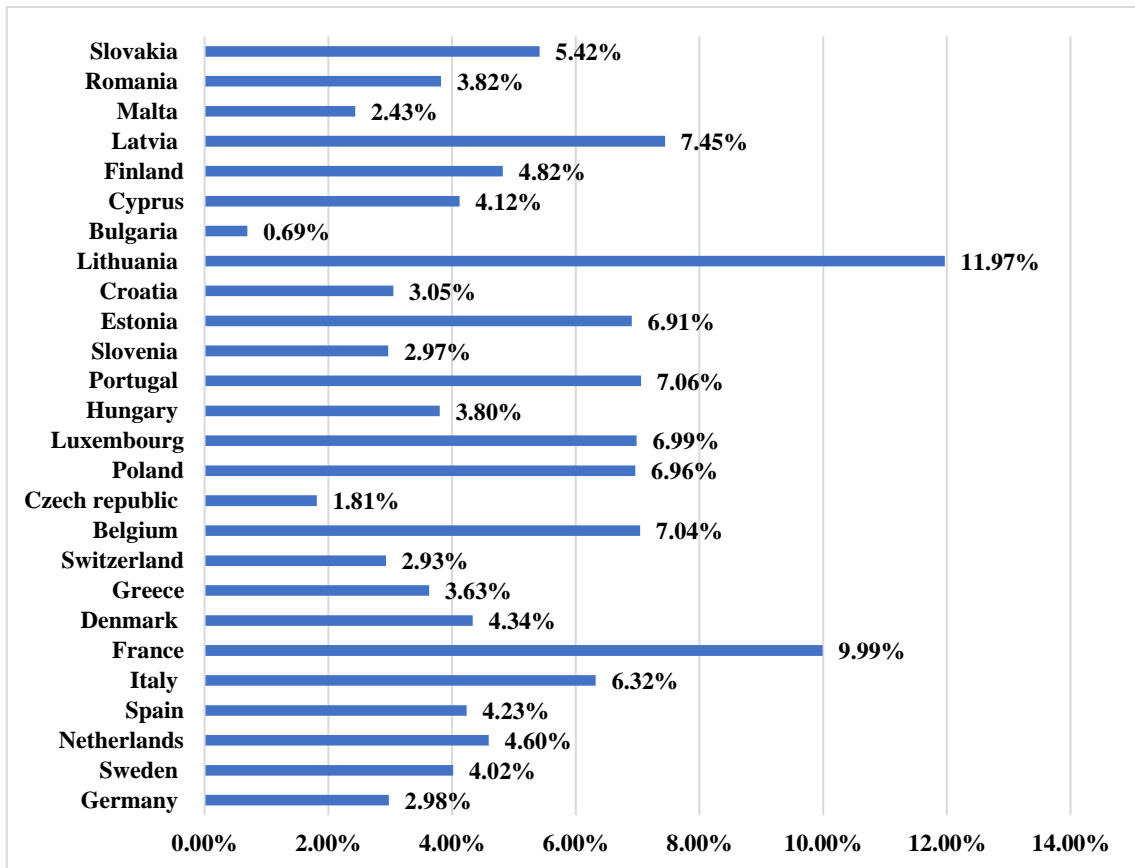


Figure 4.33: Rate of denial of appointment since outbreak

Postponement of planned medical treatment or surgery is the norm, with 20 out of 26 countries postponing more than 10% and in one case even 25%, namely Bulgaria, where almost a quarter of routine medical appointments have been postponed since the outbreak. Countries that have postponed around 15% of planned medical treatment or surgery are Finland, Belgium, Lithuania, Italy, Sweden, Slovakia, Romania, the Netherlands, Estonia and many more. Although Portugal and Spain are the countries that have postponed medical treatment or surgery the least, the aged population in these two countries also experienced a postponement rate of 5%.

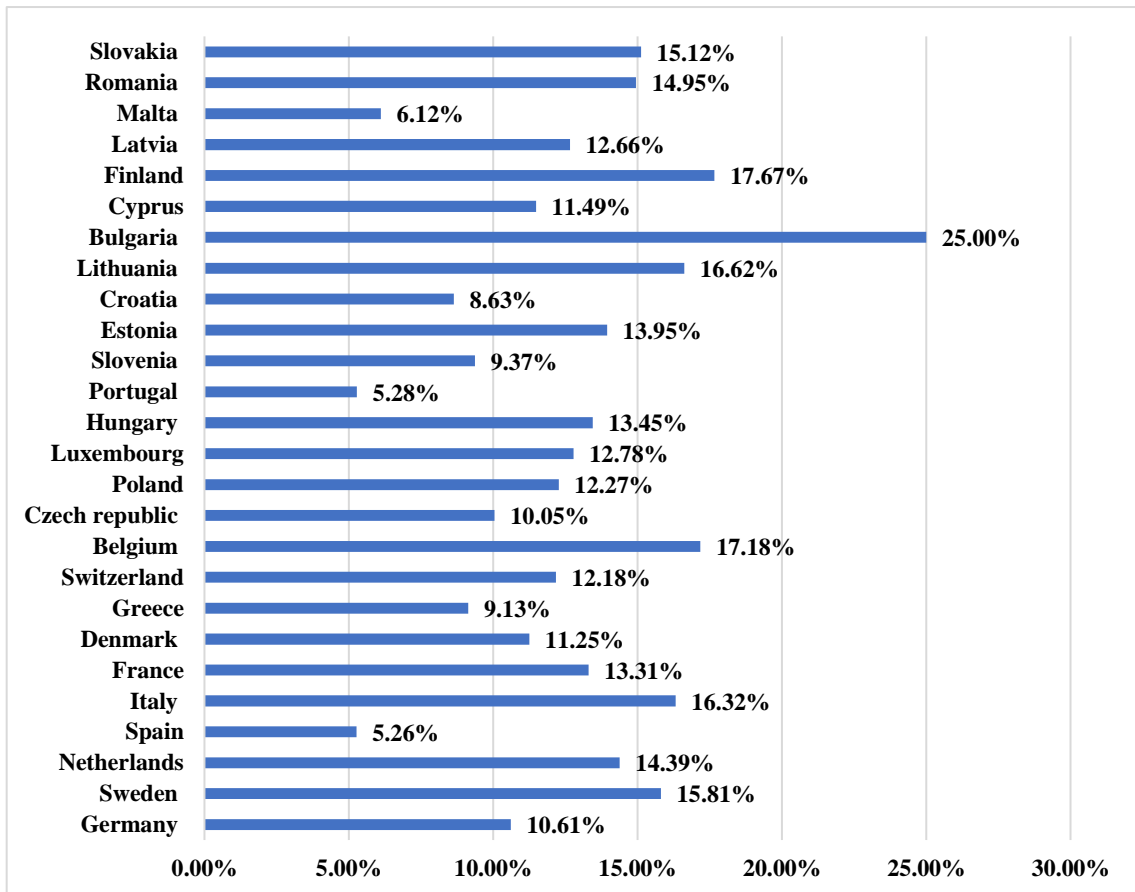


Figure 4.34: Rate of postponement of planned medical or surgical procedures

Referring to the rate of delayed medical appointments due to COVID-19, Luxembourg and Portugal delayed almost 50% of their medical appointments due to COVID-19, which has probably affected half of the elderly population in their countries who need timely medical appointments. Malta, the Czech Republic, Belgium, the Netherlands and France delayed nearly 35% of their timely medical appointments. A country that has maintained and protected regular medical appointments from COVID-19 is Bulgaria, which postponed only 1.4% of general appointments.

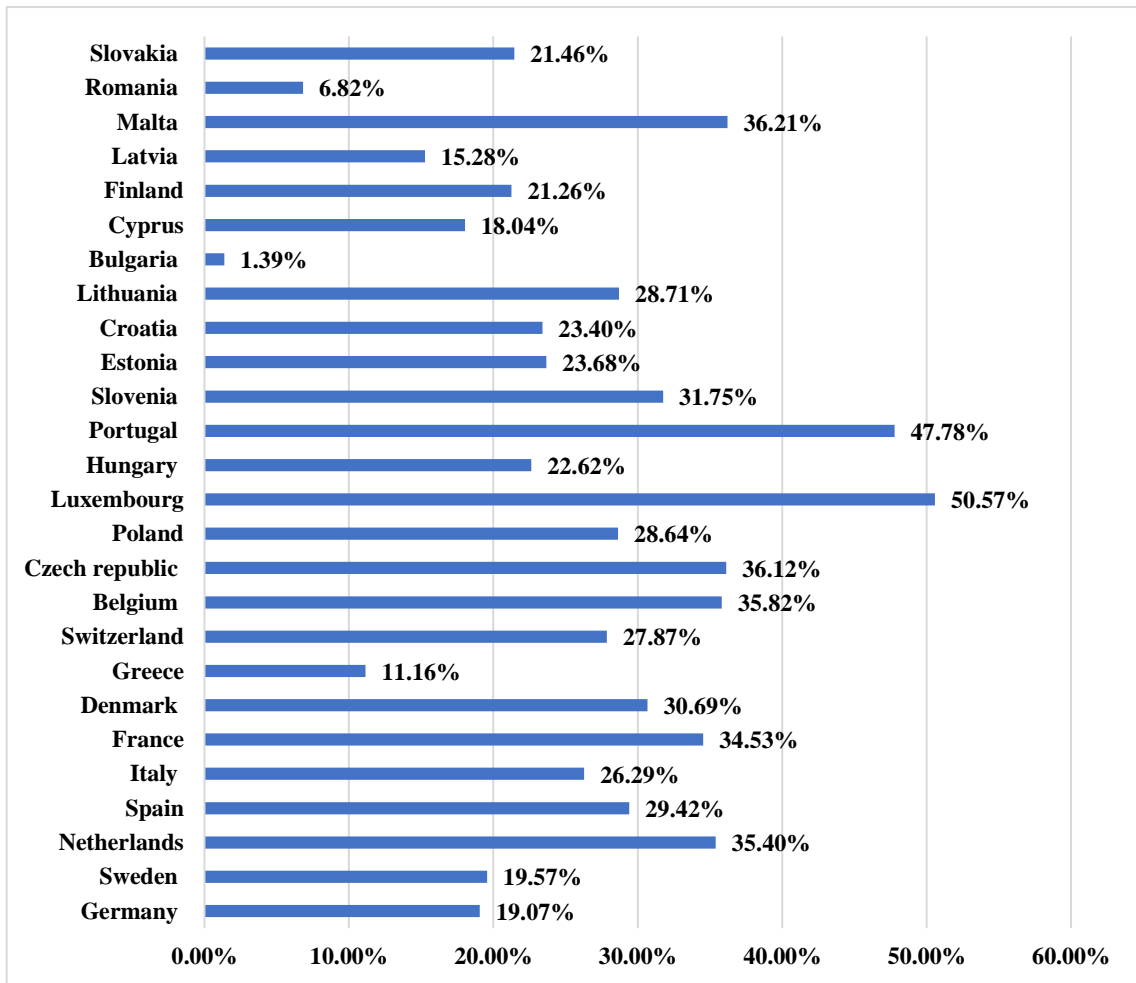


Figure 4.35: Rate of postponement of medical appointment due to COVID-19

In 14 European countries, more than 10% of the elderly population had to abandon their planned medical services or surgeries. Three countries - Italy, Latvia and Romania - provided the highest rates of cancellation of planned medical services. In the Czech Republic, Slovenia and Spain, which succeeded in preventing patients from cancelling planned medical services or procedures during the pandemic, the rates were 4.09%, 4.76% and 4.58% respectively.

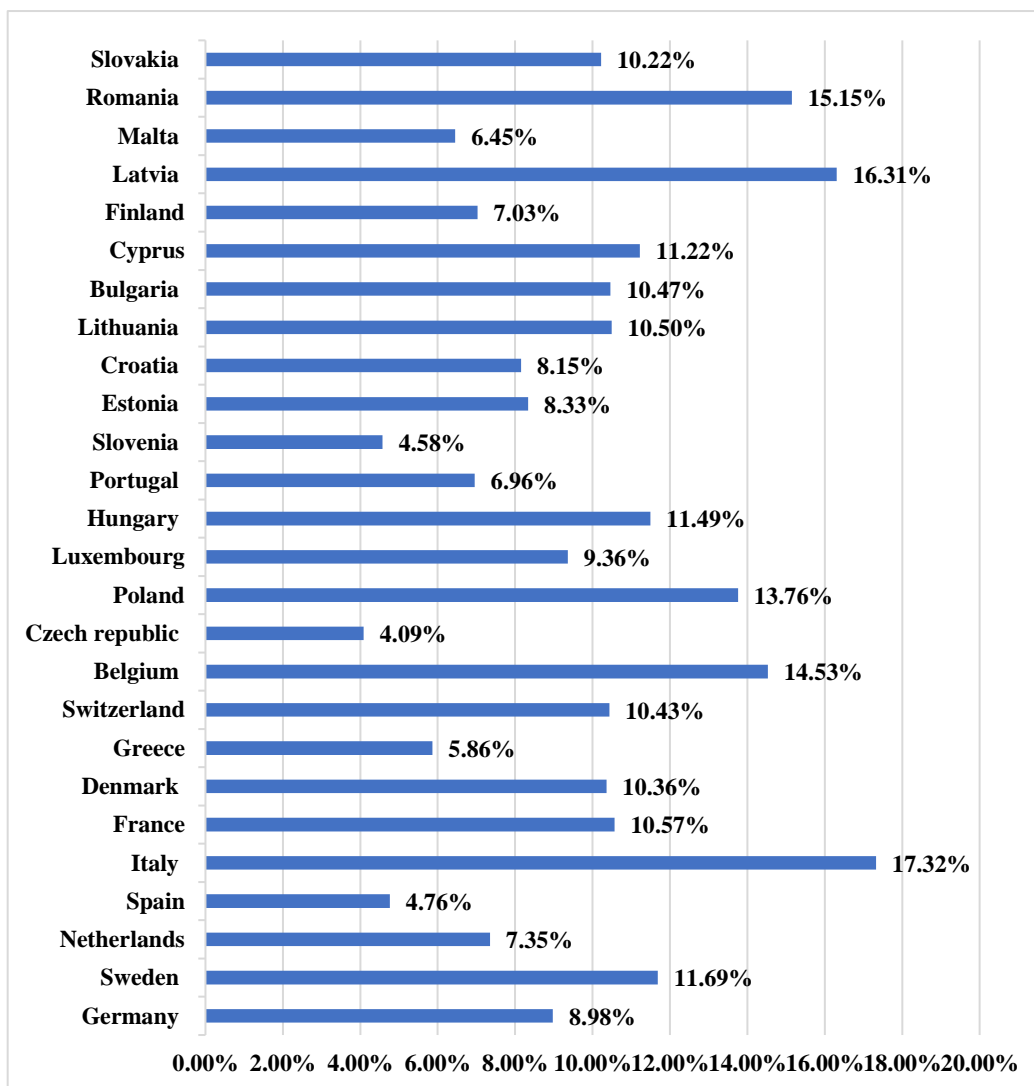


Figure 4.36: Rate of abandonment of planned medical or surgical procedures

In trying to make a timely appointment to see a doctor, it may not be possible to make a successful appointment in some countries. In Luxembourg, 21.29% of older people had to give up their appointments, and the rates in Greece, the Czech Republic and Germany were almost identical, at 17%. Spain, Romania and Slovenia are the countries with the lowest proportion of people dropping appointments, with drop-out rates of 3.82%, 4.21% and 4.73% respectively.

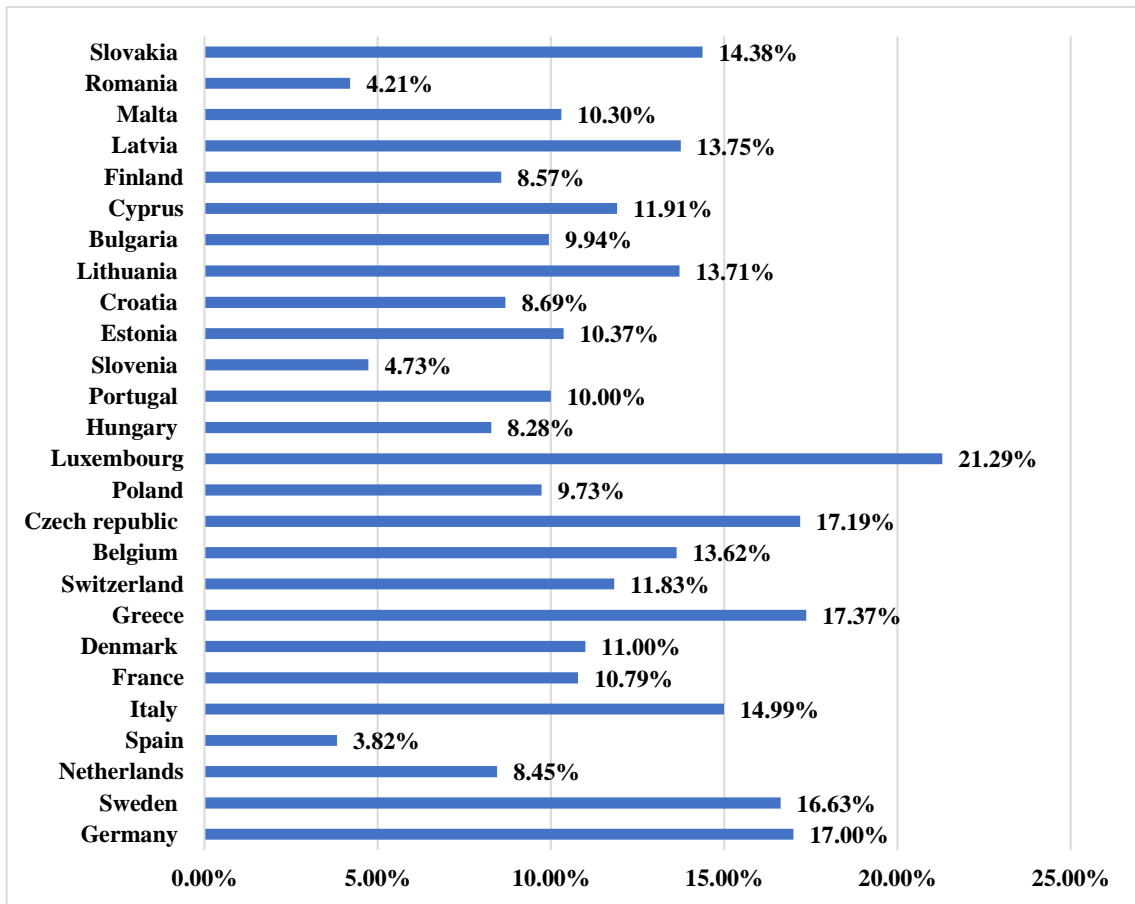


Figure 4.37: Rate of abandonment of medical treatment since outbreak

#### 4.4 The Changes in Their Personal Healthcare Behaviors among Elderly in Europe after the Outbreak of COVID-19

After analyzing the physical status and mental health of older people in Europe during the pandemic and following the comparison of the treatment of health services that older people received in different scenarios, all of which may eventually lead us to discuss in the next section the actual impact on their lives, which will be represented by changes in their health care behaviors for self-protection. The health behaviors being considered in the survey are wearing a mask in public, keeping a distance from others in public, washing hands more than usual, using hand sanitizer or disinfectant more than usual, covering coughs and sneezes more than usual, and taking medications or drugs to prevent COVID-19. As you may also notice, these six measures are also recommended by the media and authorities to prevent COVID-19 infection.



First, and foremost, the attitude of people over 50 years old in Europe towards wearing masks in public is illustrated. A high proportion of older people began using masks, i.e., 47.1% always use masks, 9.4% used them regularly, and another 9.4% used them sometimes. If they were combined, you would see that nearly 66% of people in Europe were using masks. Regarding keeping their distance in public, 62.3% of respondents said they would always keep their distances, 14.6% decided to keep their distance fairly often, and 3.5% decided to keep their social distance sometimes. Overall, 80.4% of seniors in Europe had applied social distance in their lives. Hand washing has been shown to be the most effective way to eliminate COVID-19 from the hands, as evidenced by the statistics we saw in the survey. 88.6% of seniors have adopted hand washing in their lives. It is heartening to note that 83.7% of the elderly made the decision to use hand sanitizer or disinfectant more often than usual, while 16.1% still refused to do so. To prevent the spread of COVID-19 and to better maintain a better sanitary practice, 83.5% covered coughing and sneezing more often after a COVID-19 outbreak. Compared to other statistics, we have seen a huge difference in statistics in reference to finding pharmaceutical treatments. Only seven percent of seniors ever sought pharmaceutical help to try to treat or prevent COVID-19 infection. Our speculation is that the survey was conducted in the early stages of the COVID-19 outbreak and that the government and medical services did not know enough about this new virus or on how to treat it, and even vaccinations have not been developed, therefore, it may be difficult for anyone to find any medication that can treat or prevent this virus.

When compared carefully, we can recognize that different medical treatments and their physical condition have a significant impact on the elderly population in Europe, considering their physical and mental health condition, which can be seen in self-protective health behaviors. A behavior that is most adopted is hand washing, with almost 88% of people agreeing that they would like to do this during their lives and make it a part of their day-to-day activities. In addition to this, one can also identify that keeping social distance, covering coughs and sneezes, and using hand sanitizer are almost equally frequently performed, all a little more than 80%, from which we gather also that although the percentage of people performing these three behaviors is not as high as for hand washing, 80% is still a considerable number for the entire European elderly population. Moreover, it is also worth noting that older adults may not be as enthusiastic about wearing masks as the other four behaviors mentioned, but still 66% of them have chosen

to use masks in their lives as a way to modify their health care behavior. Last but not least, due to the previous status quo, it has been impossible to find any effective medication to treat COVID-19, and therefore only 7% of older adults were able to do so.

Health: wore a face mask in public

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	9683	18.3	18.3	18.3
	-2. Refusal	28	.1	.1	18.4
	-1. Don't know	28	.1	.1	18.4
	1. Always	24927	47.1	47.2	65.6
	2. Often	4988	9.4	9.4	75.0
	3. Sometimes	4966	9.4	9.4	84.4
	4. Never	8243	15.6	15.6	100.0
	Total	52863	100.0	100.0	
Missing	System	26	.0		
Total		52889	100.0		

Table 4.55: Wore a face mask in public

Health: kept distance from others in public

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-9. Not applicable (qqn routing)	9683	18.3	18.3	18.3
	-2. Refusal	21	.0	.0	18.4
	-1. Don't know	74	.1	.1	18.5
	1. Always	32952	62.3	62.3	80.8
	2. Often	7722	14.6	14.6	95.4
	3. Sometimes	1838	3.5	3.5	98.9
	4. Never	573	1.1	1.1	100.0
	Total	52863	100.0	100.0	
Missing	System	26	.0		
Total		52889	100.0		

Table 4.56: Kept distance from others in public

Health: washed hands more than usual

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	12	.0	.0	.0
	-1. Don't know	67	.1	.1	.1
	1. Yes	46847	88.6	88.6	88.8
	5. No	5937	11.2	11.2	100.0
	Total	52863	100.0	100.0	

Missing System	26	.0		
Total	52889	100.0		

Table 4.57: Washed hands more than usual

Health: used hand sanitizer or disinfection fluids more than usual

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	8	.0	.0	.0
	-1. Don't know	54	.1	.1	.1
	1. Yes	44284	83.7	83.8	83.9
	5. No	8516	16.1	16.1	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.58: Used hand sanitizer or disinfection fluids more than usual

Health: covered coughs and sneezes more than usual

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	30	.1	.1	.1
	-1. Don't know	316	.6	.6	.7
	1. Yes	44182	83.5	83.6	84.2
	5. No	8334	15.8	15.8	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.59: Covered coughs and sneezes more than usual

Health: took drugs or medicine as prevention against COVID-19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-2. Refusal	8	.0	.0	.0
	-1. Don't know	64	.1	.1	.1
	1. Yes	3667	6.9	6.9	7.1
	5. No	49123	92.9	92.9	100.0
	Total	52862	99.9	100.0	
Missing System		27	.1		
Total		52889	100.0		

Table 4.60: Took drugs or medicine as prevention against COVID-19

#### 4.5 Interaction between Data on Mental State, Physical State, Medical Experience and Personal Health Measures in European Older Adults

Following the descriptive analysis of data on psychological status, physiological status, medical treatment experience, and personal hygiene measures of older adults in Europe after the first wave of the COVID-19 epidemic, we proposed a cross-sectional data analysis to explore whether there are correlations among these four dimensions of data. The cross-sectional data analysis will help us to compare the data at a specific point in time when the European elderly were surveyed and when the elderly was first experiencing the social blockade policies in the European countries, to see if there is an inherent positive or negative relationship between the variables, to help us to make further speculations and inferences close to the reality, and to provide a reference for subsequent data speculation. The data can also be used as a reference opportunity and an attempt to investigate the phenomenon soon.

##### 4.51 Connection between Data on Mental State and Personal Hygiene Measures

When considering the higher prevalence of depression among those who washed their hands more often after the COVID-19 outbreak and those who did not, it was more likely that a higher prevalence of depression was found among those who decided to wash their hands more often. However, it is also noticeable that there was only a 5% difference in the prevalence of depression between the two types of people, meaning that the prevalence of depression was about 15% between people regardless of whether they decided to engage in more self-protective hygiene practices.

		Health: more or less depressed since outbreak			Total	Prevalence of depression
		1. More so	2. Less so	3. About the same		
Health: washed hands more than usual	1. Yes	7973	300	4032	46846	17.020%
	5. No	726	24	704	5937	12.228%

Table 4.61: Prevalence of depression and handwashing

##### 4.52 Connection between Data on Mental State and Medical Treatment Experience

By taking into account the correlation between the medical care experience of the elderly and the prevalence of depression, we can see from the table that the likelihood of

developing depression since the outbreak is high among the elderly with medical care refusal experience, and the difference can reach 14% compared to the elderly without medical care refusal experience. At the same time, comparing the current table with the previous one, we can also see that the prevalence of depression is much higher in relation to their experience of seeking medical care than self-protective health measures.

		Health: more or less depressed since outbreak			Total	Prevalence of depression
		1. More so	2. Less so	3. About the same		
Healthcare: denied appointment since outbreak	1. Yes	796	26	282	2689	29.602%
	5. No	7905	297	4460	50121	15.772%

Table 4.62: Prevalence of depression and denied health appointment

#### 4.53 Connection between Data on Physical State and Medical Treatment Experience

The correlation between the prevalence of health deterioration and the experience of medical appointments can also be found in the huge difference between those who were denied medical appointments and those who were not. Seniors who were denied a medical appointment had a 20% rate of physical health deterioration, while those who were not denied a medical appointment still had a rate of 8%.

		Health: change in your health since the outbreak			Total	Prevalence of health deterioration
		1. Improved	2. Worsened	3. About the same		
Healthcare: denied appointment since outbreak	1. Yes	98	522	2068	2689	19.412%
	5. No	1420	4144	44541	50121	8.268%

Table 4.63: Prevalence of health deterioration and denied medical appointment

#### 4.54 Connection between Data on Physical State and Personal Hygiene Measures

The correspondence between personal hygiene measures and physical health status is also a very significant and interesting finding. One can see that elderly people without improved personal protective hygiene measures (e.g., handwashing) are likely to suffer a higher prevalence of physical health deterioration, but their prevalence is only 1% higher than that of elderly people who do not take the same measures.

		Health: change in your health since the outbreak				Prevalence of health deterioration
		1. Improved	2. Worsened	3. About the same	Total	
Health: washed hands more than usual	1. Yes	1354	4078	41401	46847	8.705%
	5. No	162	577	5194	5937	9.719%

Table 4.64: Prevalence of health deterioration and handwashing

## 4.6 Discussion

In this section, discussions are presented by comparing the results with current academic research concerning elements of health-related characteristics, treatment characteristics of health services, and human variation in protective medical behaviour.

### 4.6.1 Discussion on Health-related Characteristic

Within the first part of the analysis, we have analyzed the state of the physical health and the mental health of the European elderly population based on the respondents' answers. In the physical health section, we have divided the analysis into three main parts, in accordance with the differences in the directivity of the questions asked in the questionnaire.

The foundation of bodily health status among the elderly population is much more well founded than we would expect. Preliminary to the analysis of the physical impact of COVID-19 on the elderly population, most of the survey respondents, 86.2%, were in good or relatively good physical proportions. Their overall physical health had not deteriorated significantly since the COVID-19 outbreak. A mere 8.8% of the elderly population felt that their physical health had deteriorated. Taking some common diseases as an example, regardless of COVID-19, there were 6.5% of the elderly population suffering from some complex diseases not mentioned in the questionnaire. On top of that, almost 3% of the elderly respondents indicated that they had been affected by heart disease and other heart-related problems, suggesting that this is the most common disease among European senior citizens. In conclusion, the proportions of the population who had diabetes and hyperglycemia, cancer or malignancy and chronic lung disease were almost identical, at around 1.5% respectively. Arising from this all information, we are

required to deduce that the associated diseases are likely to occur more and more in an increasing number of the population, where society will need to engender and cultivate an enlargement of the number of associated physicians and doctors to fulfill the future needs, as the elderly population is liable to enlarge.

Despite the good physical foundation of most of the European elderly population, there were still more manifestations from the negative effects of COVID-19. Approximately 9% of older people in Europe had fallen in the 6 months prior to the survey, and of these almost 18% had the same fear of falling. In the previous 6 months, 29% of people felt increasingly tired and 17% felt increasingly dizzy. As the survey was conducted in different countries around mid-2020, on the basis that the so called last 6 months until the survey can be roughly seen as the period after the COVID-19 outbreak. It can be postulated that an ever-increasing number of serious illnesses and minor symptoms tend to occur in the elderly because of the social exclusion and daily media coverage of COVID-19 in each country, as well as more precautionary lifestyles and additional safety measures. The most pronounced is that one third of the elderly experienced fatigue, which is quite alarming.

In addition to the original required medication, the elderly population may become increasingly concerned about the emergence of other potential pathologies, complications after already contracting COVID-19, and they chose to take specific medications to prevent the possibility of illness. Above all, it is important to recognize that it turns out that nearly 77% of the elderly population already requires regular input of medication. In more specific terms, hyperlipidemic drugs must be considered the most popular, with 29.9 of the survey respondents considering them to be regular medications. Other cardiology medications, coronary or cerebrovascular disease medications and diabetes medications had been taken almost as frequently among the European elderly population, at around 16%. The outcomes of the medication situation among the elderly population revealed that there is no opportunity to have pharmacies cordoned off during a pandemic and that health care providers and hospitals must leave as much as possible to treat possible routine-care needs and emergency medical appointments. From this section you may also notice inconsistencies, namely that 86.2% of respondents answered "good or relatively good" with regard to their health status, which can easily be explained, as being medicated does not mean that the illness has reached a fairly serious point; on the contrary, the illness they have must be relatively mild and under control.

In general, without considering COVID-19, stress and sleep disorders occur most frequently among the elderly population in Europe, with both conditions accounting for 30% of the population. Approximately 25% of older people suffered from sadness and depression, while about 20% had loneliness. With these statistics, it is to be concluded that a lower proportion of the elderly population than that suffering from symptoms of a possible mental illness have symptoms of a physical illness. Consequently, more consideration needs to be accorded to mental health assistance in government health care facilities and services. As compared to the impact of physical conditions, mental well-being is more severely affected by COVID-19. Roughly 20 percent of the aged population may experience symptoms of nervousness. More significantly, approximately 17 percent of the older population has been consistently depressed since the outbreak. Loneliness and sleeplessness may be infrequent in many percentages of the population, but they should also be considered in order to prevent their occurrences.

#### **4.6.2 Discussion on the Social Healthcare Treatment**

During the global pandemic, health facilities and medical services in Europe had not been seriously interrupted and that the majority of elderly people's medical needs had not been obstructed. One cannot help but notice that 88.1% of respondents managed to receive treatment in time after the outbreak without any disruption, but still 10% of pre-arranged appointments had that had to be withdrawn as there was a possible lack of medical resources at the time. Even better than the withdrawal of medical appointments, 27% of older people's medical appointments had to be postponed and re-arranged to another time, which may have affected one third of older people's medical appointments across Europe, regardless of whether they were urgent or not. For approximately 12% of people pre-scheduled medical or surgical procedures had to be postponed, leaving them with no alternatives but to reschedule to a later time, which could be a travesty as perhaps a patient in quite a bad state had waited a considerable amount of time for a surgical procedure to become available and further delays could lead to an irreversible situation for their body. Of those elderly populations who have had the opportunity to visit hospitals and medical facilities, the vast majority have been overwhelmingly positive in their response to the services they have received. In any event, there is therefore no cause for concern about the availability and quality of care. It is equally interesting to note, however, that satisfaction with hospitals is much higher than with medical facilities. This may be explained by the fact that hospitals are usually public and have better resources



in the medical field, whereas medical facilities can be private or public and their quality may vary considerably depending on their funding.

#### **4.6.3 Discussion on The Personal Healthcare Behaviors**

Given the potential physical and psychological reactions they suffer, 29% of whom have felt increasingly fatigued in the last 6 months, 17% have felt increasingly dizzy, faint or blacked out, bearing in mind that 77% of the elderly population require regular input of medication, considering that around 20% may have symptoms of stress, and taking into account that 27% of medical appointments for older people have had to be postponed and rescheduled, we have to admit that the way to respond to all this has to be to protect oneself from COVID-19 in health care measures. 88% agreed that they were willing to wash their hands in their lives and make it part of their daily activities. Nearly as often performed when it is about keeping social distance, covering coughs and sneezes and using hand sanitizer, all a little more than 80%. This is a commonsense logic, and in order not to worsen one's physical and mental health and thus reduce the likelihood of attending any medical facility or hospital, safeguarding one's health care behavior is already the most effective and efficient way to do so.

#### **4.6.4 Discussion on Connection between Data on Mental State, Physical State, Medical Experience and Personal Health Measures in European Older Adults**

Here are the results we obtained from the cross-sectional analysis between these four dimensions:

- 1) In the first wave of COVID-19, European senior citizens were at a higher risk of deteriorating health when they were denied access to medical care, which could be easily explained by the fact that all health services were so concentrated on caring for COVID-19 cases that those elderly people who often needed medical attention were left in a very bad situation without access to professional physical health checks.

- 2) The elderly who were denied a medical appointment were also subjected to a high risk of depression. It is hypothetical that the population denied medical appointments may be the same group of people in the previous context. Thus, without professionals to inspect them physically, they also suffer from increasing

mental illness due to fear of a potentially worsening health condition and being infected by COVID-19. This negativity is also easily spread in society through persons' words.

3) Turning to those elderly people who were inclined to wash their hands more often, it is remarkable that these people had a lower probability of suffering from deterioration of physical health, along with a higher probability of suffering from depression, which makes excellent sense. People who were willing to do more protective hygiene etiquette on themselves were bound to have a more cautious mindset and a prudent lifestyle.

#### **4.6.5 Discussion Based on the Previous Literature Review**

It was the work of Renato (2020) that provided me with the initial interests for this study. As I traveled from China to Portugal in social confinement, I kept thinking about how different people would make a living and what the difference between the two kinds of social confinement would be, especially for special social groups such as children and the elderly. How flexible the social isolation measures are implemented varies greatly across countries for vulnerable groups. Although I did not pursue the direction of studying the actual confinement in each European country, I think it would be more practical to delve into the actual impact on everyone from different dimensions to reveal their problems.

Mental health is constantly neglected by the public and individuals themselves compared to physical health. And loneliness would be the greatest indication of their mental problems, especially during periods of social lockdown when people are not allowed to leave their homes (Cihan et al., 2021). In conjunction with his work, I selected relative data from the SHARE Wave 8 COVID-19 Survey1 database for the study of the first wave of psychiatric effects of the COVID-19 pandemic within Europe, with questionnaires on loneliness, depression, insomnia, etc. Because the effects of the COVID-19 pandemic are profound, we needed to include as many variables as possible to capture the most specific situation we were studying.

Most Intensive Care Units (ICUs) were converted into COVID-ICUs during the pandemic to face the constant influx of COVID-19 infected patients. The work of Martin (2021) surprised me because of how scarce ICUs are and the distressing experience of

being denied or having medical appointments cancelled because of COVID. All of this reminds us of how the elderly should effectively protect themselves from COVID-19 through personal hygiene measures. Evidence suggests that hygienic methods of self-protection by the elderly do have a very significant effect on protecting their health from deterioration.

Sources of health-related information are classified into four types: mass media, digital media, social media, and face-to-face communication (Inoue, M. et al, 2022). It is worth mentioning that, in addition to the mental and physical difficulties that older people may suffer, the lack of accurate information and resources for viral pandemics, vaccines, epidemic prevention policies, etc. may also put them in a very scary situation.

#### **4.7 Final Remarks**

This study reveals the core health-related characteristics of the older population over 50 years old, the state of health care in the public, and personal choices regarding changes in health care measures by mid-2020, who have responded to the questionnaire for this study. The final conclusions were found as a result of the questionnaire, based on the answers of different respondents from different European countries from different ages and gender. We have reviewed, analyzed, classified and summarized their contributions. We figured out the overall picture of each characteristic, the impact of COVID-19 on the different characteristics, the internal links between the different characteristics based on everyone, and the possible tendencies in front of us soon.

## CHAPTER 5. CONCLUSIONS

The objective of this thesis was to determine the mental health of the respondents, their physical well-being, the medical treatments and experiences they had suffered, and the variations in their personal health care behaviours. The subordinate aim was to describe development and turbulence in each of the elements we mentioned. Frequencies, percentages, and comparisons of data were considered in our study in order to figure out the exact alterations in each element. The conclusions have been drawn based on the results of the data analysis of the questionnaire and the literature review, considering the objectives of this work. The information collected may be of relevance to the overall performance of the European elderly population in each country.

### 5.1 Conclusions and Perspectives for Future Research

The overarching results show the performance of three of these components: health status, health care experience, and health care behavior of the European elderly population over the age of 50. I also aimed to show internal correlations and potential trends between these three, which may also lead into further speculation on further changes in the healthcare behavior of these individuals in Europe.

At the outset, it is pertinent to appreciate that all the people in our chosen sample were over 50 years of age, which meant that they were all born before 1970. Their general health was relatively good and did not show any major problems in the survey. A majority of them still considered themselves healthy enough to conquer the complex period during the global pandemic. However, when we go a little further, we find that beneath the surface of peace and elegance, something slightly more dangerous may be happening among them. More and for more people are experiencing fatigue and dizziness, and even more fear of falling to the ground, all of which could be very ominous and could be triggers for the coming disaster caused by the COVID-19 pandemic. We would also like to think that the vast majority of them were taking their medication regularly, so there was a huge risk of a lack of medication to eat during the social blockade. Furthermore, it is worth noting that common diseases such as heart disease and hypertension were already seriously affecting the lives of older people before the pandemic and the COVID-19 outbreak made their lives even more difficult.

When talking about mental health, a greater number of symptoms of mental illness were listed and applied in the questionnaire. It is noteworthy that about 25% of older people have sadness and depression, while 20% experienced loneliness. We have therefore concluded that at least a quarter of the older population in Europe has mental illness or at the very least symptoms of mental illness. If a quarter of the entire population is considered, a quarter of the entire population is probably a very large number if we consider all the countries in Europe. Even though we do not see serious symptoms of any of the mental illnesses they may suffer from, it is still tempting to see the enormous impact COVID-19 has on their normal lives and their daily psychology. In contrast, on the other hand, we also find that the impact of COVID-19 on the mental health of older people is not on the same level as the impact on the physical health of the European elderly population. 29% of people feel increasingly tired, for instance, which means that at least a third of the older population is affected by possible physical illness and any symptoms of physical illness. We can therefore only see a slightly different impact of COVID-19 on mental health conditions and physical health conditions. Ultimately, the health status of the elderly population results in the majority of the elderly population not requiring great or urgent medical appointments or hospitalization, and this impact can therefore be seen in the next conclusion on the health treatment of the elderly population.

Medical service performance was included in our study because we expected our findings to strike a greater balance between the subjective health-related factors of the individual and the objective factors of the social environment. Their previous appointment schedule was disrupted to some extent as they talked about their treatment and experience at the health facilities they had visited. For illustration, 10% of appointments had to be cancelled, a third had to be postponed and rescheduled, and about 12% of medical procedures booked had to be postponed. All in all, approximately 25% of the elderly population had their medical appointments disrupted to some extent. This result only considered the case of health care facilities, if we take into account more other factors such as transport blockades, personal disabilities, the living situation of single elderly people, the distance of houses from local health care services, different social blockade measures, the proportion of the European elderly population affected by COVID-19 in local health care services could be even higher. In addition to this, one should not lose sight of the fact that the medical care they received in hospitals and health services after the outbreak was, according to all the answers, very satisfactory.

Consequently, we may now conclude that the accessibility of health services to the elderly population was relatively limited, as can be seen from the proportion of abandoned and re-arranged health services; on the other hand, although the accessibility of health services was disturbed, those who experienced health services during the pandemic were very satisfied, implying that the quality of health services was maintained and protected. Given the dire situation during the pandemic and the uncertainty of the chances of getting timely treatment for any illness, it was also found that older people managed to renew their personal health care behavior at the same time.

Finally, it is time to wrap up the last component, namely the changes in the health care behavior of older people. The analysis and statistics above show that there has been a significant change in their health care behavior. Almost 88% of older people accepted that they wash their hands as part of their daily activities. It is performed almost as often when it comes to keeping social distance, covering coughs and sneezes and using hand sanitizer, all a little more than 80%. This shift in habits could be due to the objective circumstances of a global pandemic, where everyone's social activities are restricted, or to the fact that most people fear that their previous geriatric condition will worsen if they are infected with COVID-19, or to the fact that one third of older people's medical requirements have been negatively affected, or to the propaganda of the media and authorities.

We would assume that the statistical data we gathered from the surveys about the healthcare behaviors in the interviews must be the highest level we could observe, since the surveys were conducted in the middle of a global pandemic and at a time when the world was experiencing the first and the strongest wave of attacks from the COVID-19 virus. It is therefore safe to expect that as more and more knowledge about COVID-19 is discovered and disseminated to an increasing number of ordinary people and given that the virulent effects of the virus will become less and less virulent over time, government policies in each country will become increasingly experienced and flexible in dealing with the virus. Health care behaviors for personal health protection will decrease to a more stable level, meaning that health care behaviors will become a daily occurrence for a certain group of people who live their lives with a greater focus on disease prevention and health, while most others will still use them in some cases, at the request of the authorities.

## 5.2 Limitations

Four main limitations can be seen in this study.

The first was that the number of female respondents was higher than the number of male respondents. The optimal study would have had approximately the same number of respondents from both genders, in this case we can use the data to further examine the differences in health status and attitudes towards health behaviours between the two genders.

In the second place, as mentioned earlier, the fact that SHARE did not set specific limits on the number of respondents, resulting in the number of respondents in some countries becoming several times the number of respondents in other countries, may have led to very uneven results in our study, especially when it comes to embargo measures and the quality of health facilities in different countries.

What's more, some of the limitations were also identified during the data collection process. We found that some questionnaire respondents were unwilling to cooperate in answering the questions by choosing "not applicable" or "refusal" option in the question on certain issues and we speculated that they may have felt that the answers might be too personal, and they were reluctant to expose it to the public.

And lastly, there were technical problems which forced us to acknowledge that the surveys in different countries were conducted at different times and over different periods of time. This time period can easily affect the quality of the survey results and the number of people who have enough time to complete the survey effectively.

As the overcoming of the current COVID-19 pandemic increases, there will probably be a relatively innovation in the medical field in different European countries and in Europe as a whole. Due to this time experience, the Healthcare sector in different countries should be taught more about the techniques to deal with future global pandemics and to adapt accordingly. As we know from our research, there is a strong need for medication in the elderly population as far as physical health is concerned, and as such no pharmacy or hospital should remain closed. From the perspective of mental health, we know that society as a whole ought to pay more attention to dealing with the symptoms of common mental illnesses and to providing timely services for elderly people living

alone from time to time. From a healthcare perspective, healthcare quality should be maintained, but it shouldn't interfere with or change a patient's planned surgery or appointment. Such is their basic right of access to health care services. More efforts need to be made by the government to convince people to use health care practices in their lives and include them as part of their daily routines. I noted that even during the global pandemic, 40% of people were still reluctant to use masks. But if the habit of using a mask or washing hands or using hand sanitizer could be maintained and retained in some circumstances, wouldn't they also be more effective and efficient in preventing another global pandemic in the time to come?



## BIBLIOGRAPHY

Abdelbasset, W. K. (2020). Stay Home: Role of Physical Exercise Training in Elderly Individuals' Ability to Face the COVID-19 Infection. *Journal of Immunology Research*, 2020, 8375096. <https://doi.org/10.1155/2020/8375096>

Altinay, L., & Paraskevas, A. (2008). *Planning research in hospitality and tourism*. Abingdon, UK: Routledge

Araújo MPD, Nunes VMdA, Costa LdA, Souza TAd, Torres GdV, Nobre TTX (2021) Health conditions of potential risk for severe COVID-19 in institutionalized elderly people. *PLoS ONE* 16(1): e0245432. <https://doi.org/10.1371/journal.pone.0245432>

Börsch-Supan, A. (2022). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 8. COVID-19 Survey 1. Release version: 8.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w8ca.800

Cihan, F. G., & Durmaz, F. G. (2021). Evaluation of COVID-19 phobia and the feeling of loneliness in the geriatric age group. *International Journal of Clinical Practice*, doi:<http://dx.doi.org/10.1111/ijcp.14089>

Couper, M. P. (2011). The future of modes of data collection. *Public Opinion Quarterly*, 75, 889-908.

Crisp, R. (2017). Well-Being. *Philpapers.org*. Retrieved 20 March 2022, from <https://philpapers.org/rec/CRIW-2>.

De Vries, L., Gensler, S., & LeeFlang, P. S. H. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*, 26(2), 83-91.

Ferreira, L. N., Pais, S., Ilchuk, K., & Santos, M. (2021). Ageing, Health-Related Quality of Life and Physical Activity – Evidence Based on the EQ-5D-5L. *Ageing International*. <https://doi.org/10.1007/s12126-021-09445-7>

Healthwatch Bolton home care report | Healthwatch. *Healthwatch.co.uk*. (2014). Retrieved 20 March 2022, from <https://www.healthwatch.co.uk/reports-library/healthwatch-bolton-home-care-report>.

Jäckle, A.E., Lynn, P., & Burton, J. (2015). Going Online with a Face-to-Face Household Panel: Effects of a Mixed Mode Design on Item and Unit Non-Response. *Survey research methods*, 9, 57-70.

Landgeist. (2022). Elderly Population in Europe. *Landgeist*. <https://landgeist.com/2022/04/26/elderly-population-in-Europe/>

Lee, P. G., Jackson, E. A., & Richardson, C. R. (2017). Exercise Prescriptions in Older Adults. *American Family Physician*, 95(7), 425–432. <https://pubmed.ncbi.nlm.nih.gov/28409595/>

Lin, E. (2022). Well-being, part 2: Theories of well-being. *Philosophy Compass*, 17(2). <https://doi.org/10.1111/phc3.12813>

Luiten, A., Hox, J.J., & de Leeuw, E. (2020). Survey Nonresponse Trends and Fieldwork Effort in the 21st Century: Results of an International Study across Countries and Surveys. *Journal of Official Statistics*, 36, 469 - 487.

Lyons, M., Smith, C., Boaden, E., Brady, M. C., Brocklehurst, P., Dickinson, H., Hamdy, S., Higham, S., Langhorne, P., Lightbody, C., McCracken, G., Medina-Lara, A., Sproson, L., Walls, A., & Watkins, D. C. (2018). Oral care after stroke: Where are we

Inoue, M., Shimoura, K., Nagai-Tanima, M., & Aoyama, T. (2022). The Relationship Between Information Sources, Health Literacy, and COVID-19 Knowledge in the COVID-19 Infodemic: Cross-sectional Online Study in Japan. *Journal of medical Internet research*, 24(7), e38332. <https://doi.org/10.2196/38332>

Regions Of Europe. (2021). *WorldAtlas*. [https://www.worldatlas.com/articles/the-four-European-regions-as-defined-by-the-united-nations-geoscheme-for-Europe.html#h\\_27131307773816207891026](https://www.worldatlas.com/articles/the-four-European-regions-as-defined-by-the-united-nations-geoscheme-for-Europe.html#h_27131307773816207891026)  
now?. *European stroke journal*, 3(4), 347–354.  
<https://doi.org/10.1177/2396987318775206>

McKenna, G., Janssens, B., Srinivasan, M., Brocklehurst, P., & Tsakos, G. (2020). Who is caring for the oral health of dependent institutionalised elderly during the COVID-19 pandemic? *Gerodontology*, 37(4) doi:<http://dx.doi.org/10.1111/ger.12504>

Medway, Rebecca L./Roger Tourangeau (2015), Response Quality in Telephone Surveys: Do Prepaid Cash Incentives Make a Difference?, in: *Public Opinion Quarterly*, Vol. 79(2), 524-543.

MERCER, A., CAPORASO, A., CANTOR, D., & TOWNSEND, R. (2015). HOW MUCH GETS YOU HOW MUCH? MONETARY INCENTIVES AND RESPONSE RATES IN HOUSEHOLD SURVEYS. *The Public Opinion Quarterly*, 79(1), 105–129. <http://www.jstor.org/stable/24546360>

Örsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S., Zuber, S. (2013), "Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE)", *International Journal of Epidemiology*, Vol. 42, No. 4, pp. 992-1001.

Renato Sobral Monteiro-Junior, Carneiro, L. S. F., Maria, L. B., Kari Midtbø Kristiansen, Cristina, A. S., Desirée Sant'Ana Haikal, . . . Deslandes, A. C. (2020). COVID-19 pandemic: A multinational report providing professional experiences in the management of mental health of elderly. (). Cambridge: Cambridge University Press. doi:<http://dx.doi.org/10.1017/S1041610220001027>

Scherpenzeel, A.C., Axt, K., Bergmann, M., Douhou, S., Oepen, A., Sand, G., Schuller, K., Stuck, S., Wagner, M., & Börsch-Supan, A. (2020). Collecting survey data among the 50+ population during the COVID-19 outbreak: The Survey of Health, Ageing and Retirement in Europe (SHARE). *Survey research methods*, 14, 217-221.

Singer, E., & Ye, C. (2013). The Use and Effects of Incentives in Surveys. *The ANNALS of the American Academy of Political and Social Science*, 645(1), 112–141. <https://doi.org/10.1177/0002716212458082>

Steeves, J. A., Shiroma, E. J., Conger, S. A., Van Domelen, D., & Harris, T. B. (2019). Physical activity patterns and multimorbidity burden of older adults with different levels of functional status: NHANES 2003–2006. *Disability and Health Journal*, 12(3), 495–502. <https://doi.org/10.1016/j.dhjo.2019.02.005>

This paper uses data from SHARE Waves 1, 2, 3, 4, 5, 6, 7, 8 and 9 (DOIs: 10.6103/SHARE.w1.800, 10.6103/SHARE.w2.800, 10.6103/SHARE.w3.800, 10.6103/SHARE.w4.800, 10.6103/SHARE.w5.800, 10.6103/SHARE.w6.800, 10.6103/SHARE.w7.800, 10.6103/SHARE.w8.800, 10.6103/SHARE.w8ca.800, 10.6103/SHARE.w9ca800), see Börsch-Supan et al. (2013) for methodological details.(1)The SHARE data collection has been funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982, DASISH: GA N°283646) and Horizon 2020 (SHARE-DEV3: GA N°676536, SHARE-COHESION: GA N°870628, SERISS: GA N°654221, SSHOC: GA N°823782, SHARE-COVID19: GA N°101015924) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, and VS 2020/0313. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01\_AG09740-13S2, P01\_AG005842, P01\_AG08291, P30\_AG12815, R21\_AG025169, Y1-AG-4553-01, IAG\_BSR06-11, OGHA\_04-064, HHSN271201300071C, RAG052527A) and from various national funding sources is gratefully acknowledged (see [www.share-project.org](http://www.share-project.org)).

**Appendix 1: Questionnaire of SHARE Wave 8 COVID-19 Survey 1**

# Appendix 1: Questionnaire of SHARE Wave 8 COVID-19 Survey 1

## A – Intro and basic demographics

### CAA001\_

Some time ago, we sent you an invitation letter, which also included a data protection statement. Have you received the statement?

1. Yes
5. No

### CAA002\_

In this case, I will then summarise the most important points of the statement for you. Furthermore, I will be pleased to answer any question regarding the protection of your data that you may have now. The \*\*\* in cooperation with SHARE-ERIC are responsible for the implementation of the survey. We, [FILL in name of Survey Agency], are commissioned to carry out the interviews.

The purpose of the study is to provide scientists with data on health, socio-economic status and social and family networks to address their research questions in relation to the process of population ageing. Participating in this interview is voluntary and the information is kept confidential. We will not record the conversation. During the interview, I will enter your answers in a computer. They will be stored together with a code number only. I.e., your contact details and names are strictly stored separately from the information provided by you during the interview. Your contact details and names will be stored until the end of the SHARE study's last wave of data collection only. After the collection of the individual interviews, they will be compiled and later on be used only for research purposes in different analyses, without the individual researcher knowing your identity. The results of the analyses will be presented in an anonymised form only.

If we should come to any question you don't want to answer, just let me know and I will go on to the next question. Non-participation will not lead to any disadvantages for you. You can also withdraw consent at any time with effect for the future. Furthermore, you have several other data protection rights. In the next step, I will tell you how you can receive more information about your rights. Do you agree to participate in this study?

*IWER: Answer all questions of R.*

1. Yes, R consented to participate.
2. No, R refused to participate. No interview possible.

### CAA003\_

Thank you. For further information, you can contact us by calling [FILL in telephone number of survey agency]. Furthermore, we can send the data protection statement to you again. Do you want us to send you the statement once more?

*IWER: Provide R sufficient time to note the telephone number.*

1. Yes, R wants the data protection statement to be sent again
2. No, R has received information to R's satisfaction

### CAA004\_

If you have questions regarding the data protection statement, I will be pleased to answer them. Let me stress that participating in this interview is voluntary and that the information is kept confidential. We will not record the conversation. Instead, during the interview, I will enter your answers in a computer. Your answers will be used only for

research purposes in different analyses, without the individual researcher knowing your identity. If we should come to any question you don't want to answer, just let me know and I will go on to the next question. Do you agree to participate in this study?

*IWER: Answer all questions of R.*

1. Data protection statement has been provided; R consented to participate.
2. Data protection statement has been provided; R refused to participate. No interview possible.

**CAA005\_**

*IWER: Are you sure that Respondent has refused to participate?*

1. Yes, R refused. Terminate interview.
2. No, R consented. Continue interview.

**CADN042\_**

*IWER: Note sex of respondent (ask if unsure).*

1. Male
2. Female

**CADN002\_**

In which month were you born?

**CADN003\_**

In which year were you born?

**CAA006\_**

Are you in your usual home now or have you temporarily moved elsewhere due to Corona?

1. Usual home
2. Lives now temporarily elsewhere

**H – Health (physical and mental) and health behaviours**

**CAPH003\_**

Before the outbreak of Corona, would you say your health was excellent, very good, good, fair, or poor?

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

**CAH002\_**

If you compare your health with that before the outbreak of Corona, would you say your health has improved, worsened, or stayed about the same?

1. Improved
2. Worsened
3. About the same

**CAH003\_**

Since we last interviewed you, were you diagnosed with a major illness or health condition?

1. Yes
5. No

**CAH004\_**

Do you have any of the following illnesses or health conditions?

*IWER: With this we mean that a doctor has told you that you have this condition, and that you are either currently being treated for or bothered by this condition.*

**CAH004\_1** Hip fracture?

**CAH004\_2** Diabetes or high blood sugar?

**CAH004\_3** High blood pressure or hypertension?

**CAH004\_4** A heart attack including myocardial infarction or coronary thrombosis or any other heart problem including congestive heart failure?

**CAH004\_5** Chronic lung disease such as chronic bronchitis or emphysema?

**CAH004\_6** Cancer or malignant tumor, including leukemia or lymphoma, but excluding minor skin cancers?

**CAH004\_7** An other illness or health condition

1. Yes

5. No

-1. Don't know

-2. Refusal

**CAPH089\_**

For the past six months at least, have you been bothered by any of the following health conditions? Please answer yes or no:

**CAPH089\_1** Falling down

**CAPH089\_2** Fear of falling down

**CAPH089\_3** Dizziness, faints or blackouts

**CAPH089\_4** Fatigue

1. Yes

5. No

-1. Don't know

-2. Refusal

**CAH006\_**

Do you regularly take prescription drugs?

1. Yes

5. No

**CAH007\_**

Do you take any of the following drugs? Please answer yes or no: Drugs for...

*IWER: READ OUT.*

**CAH007\_1** High blood cholesterol?

**CAH007\_2** High blood pressure?

**CAH007\_3** Coronary or cerebrovascular diseases?

**CAH007\_4** Other heart diseases?

**CAH007\_5** Diabetes?

**CAH007\_6** Chronic bronchitis?

1. Yes

5. No

-1. Don't know

-2. Refusal

**CAH010\_**

Since the outbreak of Corona, have you ever left your home?

1. Yes

5. No

**CAH011\_**

Since the outbreak of Corona, how often have you done the following activities, as compared to before the outbreak? Not any more, less often, about the same, or more often?

**CAH011\_1** Going shopping?

**CAH011\_2** Going out for a walk?

**CAH011\_3** Meeting with more than 5 people from outside your household?

**CAH011\_4** Visiting other family members?

1. Not any more
2. Less often
3. About the same
4. More often
5. Does not apply
- 1. Don't know
- 2. Refusal

**CAH012\_**

How often did you wear a face mask when you went outside your home to a public space?  
Was it always, often, sometimes, or never?

1. Always
2. Often
3. Sometimes
4. Never

**CAH013\_**

How often did you keep distance to others when you went outside your home? Was it  
always, often, sometimes, or never?

1. Always
2. Often
3. Sometimes
4. Never

**CAH014\_**

Did you wash your hands more frequently than usual?

1. Yes
5. No

**CAH015\_**

Did you use special hand sanitizer or disinfection fluids more frequently than usual?

1. Yes
5. No

**CAH016\_**

Did you pay special attention to covering cough and sneeze?

1. Yes
5. No

**CAH017\_**

Did you take any drugs or medicine as a prevention against Corona?

1. Yes
5. No

**CAH020\_**

In the last month, have you felt nervous, anxious, or on edge?

1. Yes
5. No

**CAH021\_**

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

1. More so
2. Less so
3. About the same

**CAMH002\_**



In the last month, have you been sad or depressed?

1. Yes
5. No

**CAMH802\_**

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

1. More so
2. Less so
3. About the same

**CAMH007\_**

Have you had trouble sleeping recently?

1. Trouble with sleep or recent change in pattern
2. No trouble sleeping

**CAMH807\_**

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

1. More so
2. Less so
3. About the same

**CAMH037\_**

How much of the time do you feel lonely? Often, some of the time, or hardly ever or never?

1. Often
2. Some of the time
3. Hardly ever or never

**CAMH837\_**

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

1. More so
2. Less so
3. About the same

**C – Corona-related infection**

**CAC002\_**

Since the outbreak of Corona, did you or anyone close to you experience symptoms that you would attribute to the COVID illness, e.g. cough, fever, or difficulty breathing?

*IWER: Respondent can think of people who live close, and people who are close in an emotional sense, like family members.*

1. Yes
5. No

**CAC003\_**

Who was it? Please tell me their relationship to you.

*IWER: Check all that applies and enter the number of persons in the checkbox on the right. IWER: PROBE: 'Any others?'*

1. Respondent
2. Spouse or partner
3. Parent
4. Child
5. Other household member
6. Other relative outside household

7. Neighbor, friend or colleague
8. Caregiver
97. Other

**CAC004\_**

Have you or anyone close to you been tested for the Corona virus and the result was positive, meaning that the person had the COVID disease?

1. Yes
5. No

**CAC005\_**

Who was tested positive? Please tell me their relationship to you.

1. Respondent
2. Spouse or partner
3. Parent
4. Child
5. Other household member
6. Other relative outside household
7. Neighbor, friend or colleague
8. Caregiver
97. Other

**CAC007\_**

Have you or anyone close to you been tested for the Corona virus and the result was negative, meaning that the person did not have the COVID disease or has recovered from it?

1. Yes
5. No

**CAC008\_**

Who was tested and the result was negative? Please tell me their relationship to you. IWER: Check all that applies and enter the number of persons in the checkbox on the right. IWER: PROBE: 'Any others?'

1. Respondent
2. Spouse or partner
3. Parent
4. Child
5. Other household member
6. Other relative outside household
7. Neighbor, friend or colleague
8. Caregiver
97. Other

**CAC010\_**

Have you or anyone close to you been hospitalized due to an infection from the Corona virus?

1. Yes
5. No

**CAC011\_**

Who was hospitalized? Please tell me their relationship to you.

1. Respondent
2. Spouse or partner
3. Parent
4. Child
5. Other household member

- 6. Other relative outside household
- 7. Neighbor, friend or colleague
- 8. Caregiver
- 97. Other

**CAC013\_**

Has anyone close to you died due to an infection from the Corona virus?

- 1. Yes
- 5. No

**CAC014\_**

I am very sorry. Can you tell me who that was?

- 2. Spouse or partner
- 3. Parent
- 4. Child
- 5. Other household member
- 6. Other relative outside household
- 7. Neighbor, friend or colleague
- 8. Caregiver
- 97. Other

**Q – Quality of healthcare**

**CAQ005\_**

Since the outbreak of Corona, did you forgo medical treatment because you were afraid to become infected by the corona virus?

- 1. Yes
- 5. No

**CAQ006\_**

Which type of medical treatment did you forgo? Please answer yes or no. Did you forgo...

**CAQ006\_1** Check up at a general practitioner?

**CAQ006\_2** Check up at a specialist, including a dentist?

**CAQ006\_3** A planned medical treatment, including an operation?

**CAQ006\_4** Physiotherapy, psychotherapy, rehabilitation?

**CAQ006\_97** Some other type of medical treatment?

- 1. Yes
- 5. No
- 1. Don't know
- 2. Refusal

**CAQ010\_**

Did you have a medical appointment scheduled, which the doctor or medical facility decided to postpone due to Corona?

- 1. Yes
- 5. No

**CAQ011\_**

Which type of medical treatment had to be postponed?

**CAQ011\_1** Check up at a general practitioner?

**CAQ011\_2** Check up at a specialist, including a dentist?

**CAQ011\_3** A planned medical treatment, including an operation?

**CAQ011\_4** Physiotherapy, psychotherapy, rehabilitation?

**CAQ011\_97** Some other type of medical treatment?

- 1. Yes

- 5. No
- 1. Don't know
- 2. Refusal

**CAQ015\_**

Did you ask for an appointment for a medical treatment since the outbreak of Corona and did not get one?

- 1. Yes
- 5. No

**CAQ016\_**

Which type of medical treatment were you denied? Please answer yes or no. Were you denied...

**CAQ016\_1** Check up at a general practitioner?

**CAQ016\_2** Check up at a specialist, including a dentist?

**CAQ016\_3** A planned medical treatment, including an operation?

**CAQ016\_4** Physiotherapy, psychotherapy, rehabilitation?

**CAQ016\_97** Some other type of medical treatment?

- 1. Yes
- 5. No
- 1. Don't know
- 2. Refusal

**CAQ025\_**

Since the outbreak of Corona, were you treated in a hospital?

- 1. Yes
- 5. No

**CAQ027\_**

How satisfied were you with the way you were treated? Very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?

- 1. Very satisfied
- 2. Somewhat satisfied
- 3. Somewhat dissatisfied
- 4. Very dissatisfied

**CAQ028\_**

Why were you dissatisfied?

*IWER: Let R mention all reasons and check all that applies.*

- 1. Long waiting time
- 2. Overcrowded
- 3. Doctor and nurses did not have time for me
- 4. Shortage of equipment and supplies
- 5. Insufficient safety measures against infections
- 97. Other

**CAQ020\_**

Since the outbreak of Corona, did you go to a doctor's office or a medical facility other than a hospital?

- 1. Yes
- 5. No

**CAQ021\_**

Was this related to Corona?

- 1. Yes
- 5. No

**CAQ022\_**

How satisfied were you with the way you were treated? Very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?

1. Very satisfied
2. Somewhat satisfied
3. Somewhat dissatisfied
4. Very dissatisfied

**CAQ023\_**

Why were you dissatisfied?

*IWER: Let R mention all reasons and check all that applies.*

1. Long waiting time
2. Overcrowded
3. Doctor and nurses did not have time for me
4. Shortage of equipment and supplies
5. Insufficient safety measures against infections
97. Other

**W - Work**

**CAEP805\_**

At the time when Corona broke out, were you employed or self-employed, including working for family business?

1. Yes
5. No

**CAW002\_**

Due to the Corona crisis have you become unemployed, were laid off or had to close your business? *IWER: Business closure can be both temporarily or permanently.*

1. Yes
5. No

**CAW003\_**

How long were you unemployed, laid off or had to close your business?

*IWER: Number in weeks.*

**CAW010\_**

Since the outbreak of Corona, some people worked at home, some at their usual work place outside their home, some both. How would you describe your situation?

*IWER: If R got unemployed, laid off, or had to close business since the outbreak, R should think of the remaining time he or she worked during the outbreak. None of these means that did not work at all, neither at the usual workplace nor at home.*

1. Worked at home only
2. Worked at the usual work place
3. Worked from home and at the usual work place
4. None of these

**CAW012\_**

Did you learn new computer skills?

1. Yes
5. No
9. Works without computer

**CAW013\_**

Was your Internet connection adequate? Please answer yes or no:

1. Yes
5. No
9. Works without internet

**CAW016\_**

Did you get any protection such as masks, gloves, protective screens, disinfection fluid at the work place?

- 1. Yes
- 5. No

**CAW017\_**

How safe did you feel health-wise at your work place? Was it very safe, somewhat safe, somewhat unsafe, or very unsafe?

- 1. Very safe
- 2. Somewhat safe
- 3. Somewhat unsafe
- 4. Very unsafe

**CAW020\_**

How many hours per week did you normally work before the outbreak of Corona? Please include overtime.

**CAW021\_**

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

*IWER: If R got unemployed, laid off, or had to close business, code 'Yes'.*

- 1. Yes
- 5. No

**CAW022\_**

What was the lowest number of hours in a single week?

*IWER: If R got unemployed, laid off, or had to close business, put 0 hours.*

**CAW023\_1**

When was that?

**CAW023\_2**

In which week of the month was that?

**CAW024\_**

Did you increase your working hours since the outbreak of Corona? Please include overtime.

- 1. Yes
- 5. No

**CAW025\_**

What was the highest number of hours in a single week?

**CAW026\_1**

When was that?

**CAW026\_2**

In which week of the month was that?

**E – Economic situation**

**CAE001\_**

*IWER: Are you interviewing the first respondent in this household?*

- 1. Yes
- 5. No

**CAHH017\_**

How much was the overall monthly income, after taxes and contributions, that your entire household had in a typical month before Corona broke out?

*IWER: Enter an amount in [currency of country].*

**CAE003\_**

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?

1. Yes
5. No

**CAE004\_**

Who gave you this financial support?

*IWER: Check all that applies. IWER: Probe: "Any others?"*

1. Employer
2. Government
3. Relatives
4. Friends
97. Others

**CAE005\_**

What was the lowest overall monthly income, after taxes and contributions, that your entire household had, including any financial support you may have received since the outbreak of Corona?

*IWER: Enter an amount in [currency of country].*

**CACO007\_**

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 with great difficulty, with some difficulty,

fairly easily, or easily?

1. With great difficulty
2. With some difficulty
3. Fairly easily
4. Easily

**CAE011\_**

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

1. Yes
5. No

**CAE012\_**

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

1. Yes
5. No

**S – Social networks**

**CAS003\_**

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? Was it daily, several times a week, about once a week, less often, or never?

*IWER: Read out each relationship and check the appropriate answer.*

**CAS003\_1** Own children:

**CAS003\_2** Own parents:

**CAS003\_3** Other relatives:

**CAS003\_4** Other non-relatives like neighbors, friends, or colleagues:

1. Daily
2. Several times a week
3. About once a week

- 4. Less often
- 5. Never
- 99. Not applicable
- 1. Don't know
- 2. Refusal

**CAS004\_**

Since the outbreak of Corona, how often did you have contact by phone, email or any other electronic means with the following people from outside your home? (Was it daily, several times a week, about once a week, less often, or never?)

*IWER: Read out each relationship and check the appropriate answer.*

**CAS003\_1** Own children:

**CAS003\_2** Own parents:

**CAS003\_3** Other relatives:

**CAS003\_4** Other non-relatives like neighbors, friends, or colleagues:

- 1. Daily
- 2. Several times a week
- 3. About once a week
- 4. Less often
- 5. Never
- 99. Not applicable
- 1. Don't know
- 2. Refusal

**CAS010\_**

Since the outbreak of Corona, did you help others outside your home to obtain necessities, e.g. food, medications or emergency household repairs?

- 1. Yes
- 5. No

**CAS011\_**

Compared to before the outbreak of Corona, how often did you help the following people from outside your home to obtain necessities: less often, about the same, or more often?

*IWER: Read out each relationship and check the appropriate answer.*

**CAS003\_1** Own children:

**CAS003\_2** Own parents:

**CAS003\_3** Other relatives:

**CAS003\_4** Other non-relatives like neighbors, friends, or colleagues:

- 1. Daily
- 2. Several times a week
- 3. About once a week
- 4. Less often
- 5. Never
- 99. Not applicable
- 1. Don't know
- 2. Refusal

**CAS012\_**

Since the outbreak of Corona, did you provide personal care to others outside your home?

- 1. Yes
- 5. No

**CAS013\_**

How often did you provide personal care to the following people from outside your home compared to before the outbreak of Corona; less often, about the



same, or more often? *IWER: Read out each relationship and check the appropriate answer.*

**CAS013\_1** Own children:

**CAS013\_2** Own parents:

**CAS013\_3** Other relatives:

**CAS013\_4** Other non-relatives like neighbors, friends, or colleagues:

1. Less often
2. About the same
3. More often
99. Not applicable
- 1. Don't know
- 2. Refusal

**CAS015\_**

Since the outbreak of Corona, did you do any other volunteering activity?

1. Yes
5. No

**CAS016\_**

Was it less often, about the same, or more often than the volunteering that you did before the outbreak of Corona?

1. Less often
2. About the same
3. More often

**CAS020\_**

Since the outbreak of Corona, were you helped by others from outside of home to obtain necessities, e.g. food, medications or emergency household repairs?

1. Yes
5. No

**CAS021\_**

How often did the following people from outside your home help you to obtain necessities, compared to before the outbreak of Corona? Less often, about the same, or more often?

*IWER: Read out each relationship and check the appropriate answer.*

**CAS021\_1** Own children:

**CAS021\_2** Own parents:

**CAS021\_3** Other relatives:

**CAS021\_4** Other non-relatives like neighbors, friends, or colleagues:

1. Less often
2. About the same
3. More often
99. Not applicable
- 1. Don't know
- 2. Refusal

**CAS025\_**

Did you regularly receive home care before the outbreak of Corona?

1. Yes
5. No

**CAS026\_**

Since the outbreak of Corona, did you face more difficulties in getting the amount of home care that you need?

1. Yes

5. No

**CAS027\_**

Which difficulties were they?

*IWER: Let R mention all difficulties and check all that applies.*

1. I had to pay more to get the help I need
2. People who cared for me could not come to my home
3. Other difficulties

**CAS028\_**

Did the people who cared for you wear protective devices such as masks or gloves?

1. Yes
  5. No
99. No caregiver visited my home since the outbreak.

**F -- FINALE**

**CAF001\_**

We now come to the end of the interview. These were a lot of questions about a hard time. But even during hard times there are some good things in life. What was your most uplifting experience since the outbreak of Corona, in other words, something that inspired hope or happiness? *IWER: DO NOT READ OUT. Let respondent answer and choose appropriate option.*

1. Named something right-away
2. Hesitated to name something
3. Did not name anything

**CAF002\_**

Finally, what is it that you are looking most forward to doing once Corona abates?

*IWER: DO NOT READ OUT. Let respondent answer and choose appropriate option.*

1. Named something right-away
2. Hesitated to name something
3. Did not name anything

**CAF005\_**

*IWER CHECK: Who answered the questions?*

1. Respondent only
2. Respondent and proxy
3. Proxy only