

---

## SHARE WORKING PAPER SERIES

---

Older adults' (dis)satisfaction with  
healthcare received during the COVID-19  
pandemic:

Results from the Survey of Health, Ageing  
and Retirement in Europe

Petra Međimurec, Ivan Čipin and Dario Mustać

*Working Paper Series 89-2023*

*DOI: [10.6103/wp.892023](https://doi.org/10.6103/wp.892023)*

---

SHARE-ERIC | Leopoldstr. 139 | 80804 Munich | Germany | [share-eric.eu](https://share-eric.eu)

## About the SHARE Working Paper Series

The series is designed to provide a timely discussion of results based on SHARE data within the SHARE family, i.e., members of the SHARE Country Teams, Area Coordination Teams and other SHARE bodies. The papers are not peer reviewed; the authors are solely responsible for the scientific content and the graphical layout of their submissions. The respective Country Team Leaders and Area Coordinators are encouraged to look over the submissions by their team members.

The publisher (SHARE-ERIC) checks working papers in this series for formal issues such as proper acknowledgements to the funders of SHARE. The publisher takes no responsibility for the scientific content of the paper.

## Acknowledgements

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.

The SHARE data collection has been funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-13: 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, and 101052589. 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)).

# Older adults' (dis)satisfaction with healthcare received during the COVID-19 pandemic: Results from the Survey of Health, Ageing and Retirement in Europe

Petra Međimurec, Ivan Čipin and Dario Mustać (CA)<sup>1</sup>  
Department of Demography, Faculty of Economics & Business, University of Zagreb

October 30, 2023

## ABSTRACT

Using data from the Survey of Health, Ageing and Retirement in Europe (SHARE), and the two waves of the SHARE Corona Survey (SCS), we investigate whether, and how, older adults' (dis)satisfaction with healthcare services they were given changed throughout the course of the COVID-19 pandemic. Our results show that older adults were generally satisfied with the way they were treated in hospitals and outside hospitals during the pandemic. SHARE countries differ with respect to how, and to what extent, public satisfaction with healthcare changed during the pandemic. Controlling for country differences, we find a significant, albeit modest, decrease in satisfaction between the two waves of SCS, driven by a drop in satisfaction ratings among the very satisfied; for less satisfied, we find a significant increase in satisfaction. Poorer health, barriers in accessing healthcare, and difficulties in making ends meet are found to be associated with increases with dissatisfaction.

**KEYWORDS:** healthcare, satisfaction, older adults, SHARE, COVID-19 pandemic

**JEL CLASSIFICATION:** I10, I19, D12, J14

---

<sup>1</sup> CA = corresponding author; e-mail: [dmustac@efzg.hr](mailto:dmustac@efzg.hr)

# 1. INTRODUCTION

Older adults commonly exhibit a higher frequency of healthcare service utilisation (Institute of Medicine (US) Committee on the Future Health Care Workforce for Older Americans, 2008). This arises from several factors associated with ageing, including an increased prevalence of chronic health conditions, and a heightened demand for medical care (Maresova et al., 2019). Age-related conditions (for example, cardiovascular diseases, arthritis, diabetes, and cognitive impairments), usually require ongoing management and treatment. Moreover, older adults often need more interactions with healthcare providers for preventative care, screenings, and the management of age-related health concerns. Decline in functional abilities, increased frailty, and higher susceptibility to infections like COVID-19 further contribute to the greater use of healthcare services among older adults.

During the COVID-19 pandemic, elderly individuals experienced heightened vulnerability and greater susceptibility to mortality compared to their younger counterparts (Calderón-Larrañaga et al., 2020). Consequently, it is reasonable to infer that they sought healthcare services more frequently within the context of the pandemic. However, it should be noted that many non-urgent healthcare services were either postponed or denied during this period (Smolić, Čipin and Međimurec, 2022). Findings from a multinational European study on ageing underscored that individuals with compromised health and economic disadvantages were disproportionately likely to encounter restricted access to healthcare services (Arnault, Jusot and Renaud, 2022).

Patient satisfaction serves as an indicator of healthcare service quality and is used as an outcome measure. Our study aims to examine the (dis)satisfaction of the population 50+ with healthcare services received throughout the course of the COVID-19 pandemic in a pan-European context. Existing literature highlights that patient satisfaction hinges upon various sociodemographic variables, including age, gender, education, and the overall socioeconomic status. However, the relationship between these variables and patient satisfaction exhibits marked variability, with inconsistencies and contradictions prevalent across different studies (Batbaatar et al., 2017). Additionally, patient satisfaction with healthcare is influenced by variables related to health, encompassing self-rated health and objective health measures, as well as variables associated with healthcare access (Zhang et al., 2007).

Regarding satisfaction with healthcare services among the European population 50+ in times of the COVID-19 pandemic, existing research suggests that older adults initially expressed relatively high levels of satisfaction with the care they were given (Tavares, 2021). However, our understanding of how their satisfaction evolved over the course of the pandemic is very limited. We also lack comprehensive knowledge regarding whether disparities exist in the changes in satisfaction related to older individuals' sociodemographic characteristics, health status, and the (in)ability to access healthcare.

In this academic context, our study's primary objective is to investigate whether, and to what extent, (dis)satisfaction with healthcare services changed among the population aged 50 and over throughout the course of the COVID-19 pandemic, within a pan-European context. Our inquiry involves an exploration of potential differences among various countries and a thorough examination of sociodemographic and health-related factors that may influence changes in satisfaction levels. We distinguish between satisfaction with hospital care and satisfaction with treatments provided by healthcare professionals or medical institutions (outside hospitals). Our analysis is guided by the following research questions:

1. How did the satisfaction of the older Europeans with the healthcare services they were given change throughout the course of the COVID-19 pandemic? Was there an increase or a decrease with public satisfaction with healthcare during the pandemic, or was there no significant change?
2. Are there discernible disparities in the change in public (dis)satisfaction with healthcare that can be attributed to sociodemographic and health-related characteristics of older Europeans? Moreover, do such disparities extend to encompass disparities in access to healthcare services?

To our knowledge, very few studies have explored changes in healthcare satisfaction during the pandemic, especially when considering the experiences of older populations on an international scale, as seen in Tavares (2021). This indicates a significant gap in the literature regarding the analysis of shifts in satisfaction levels throughout the COVID-19 pandemic.

Examining patient satisfaction with healthcare during this very specific period is of crucial importance for several reasons. Policymakers rely on patient satisfaction data to shape healthcare policies and regulations. Elevated levels of satisfaction may signify the

effectiveness of existing policies, while lower satisfaction scores can serve as a clear indicator of the necessity for policy adjustments and improvements. Furthermore, delving into satisfaction during a pandemic offers valuable insights that can be applied to future public health emergencies.

## 2. DATA AND METHODS

Our work is based on the Survey of Health, Ageing and Retirement in Europe (SHARE), a representative panel study of private households with persons aged 50 and over (Börsch-Supan et al., 2013). SHARE provides comprehensive information about health and socioeconomic living circumstances of older adults in participating countries. SHARE is very convenient for multi-country analyses because it applies the concept of ex-ante harmonization. Note that in SHARE, the spouses or partners of persons aged 50 and over, if living in the same household, are interviewed as well, regardless of their own age.

In this paper, we examine and compare the level of (dis)satisfaction with healthcare services received in different time points during the COVID-19 pandemic using data from the two waves of the SHARE Corona Survey (SCS; see Börsch-Supan, 2022a, 2022b). SCS was designed to collect information on health, social and economic impacts of COVID-19 on the lives of older adults. As such, SCS is particularly well suited to address our research questions: it targets older adults – who were disproportionately affected by COVID-19 and have higher healthcare needs in general – and offers detailed data on their health and healthcare utilisation. SCS covered 27 European countries and Israel. The first wave of SCS (SCS1) was conducted between June and September 2020, and the second wave of SCS (SCS2) was conducted between June and August 2021. SCS1 and SCS2 constitute the eighth and ninth wave of the SHARE panel, and thus can be merged with data that was collected in earlier waves of SHARE. More information about the regular panel waves of SHARE and the SHARE Corona Survey is available on the SHARE project website.<sup>2</sup>

---

<sup>2</sup> See here: <https://share-eric.eu/>. For general information about the SHARE database, see SHARE Release Guides: <https://share-eric.eu/data/data-documentation/release-guides>.

## 2.1. CONSTRUCTION OF THE STUDY SUBSAMPLES

SCS respondents answered separate questions about 1) being treated in a hospital and 2) visiting a doctor's office or a medical facility other than a hospital. For each type of healthcare service (in-hospital and out-of-hospital), SCS respondents were asked to evaluate their satisfaction with the way they were treated. Therefore, we construct two subsamples: one to analyse satisfaction with in-hospital care among SCS respondents who reported to have been treated in a hospital (the hospital subsample), and another to analyse satisfaction with out-of-hospital care among respondents who reported to have visited a doctor's office or a medical facility other than a hospital (the doctor/medical facility subsample). We focus on repeated users of healthcare, i.e., on respondents who participated in both waves of SCS, to examine whether, and how, patients' satisfaction with the healthcare services they were given (be it in hospitals or outside hospitals) changed throughout the course of the COVID-19 pandemic.

Our analysis is restricted to survey participants aged 50 and over who, at the time of the SCS interviews, were not living in nursing homes. After excluding cases with missing values on any of the variables of interest (5.2% of the hospital subsample, 3.6% of the doctor/medical facility subsample), we were left with 1,784 respondents in the hospital subsample, and with 10,102 respondents in the doctor/medical facility subsample.

## 2.2. VARIABLES AND MODELS

In both waves of SCS, respondents who reported to have been treated in a hospital and respondents who reported to have visited a doctor's office or a medical facility other than a hospital were asked to evaluate their satisfaction with the way they were treated on a 4-item scale, with 1 indicating they were very satisfied, 2 indicating they were somewhat satisfied, 3 indicating they were somewhat dissatisfied, and 4 indicating they were very dissatisfied. Note that higher scores indicate higher dissatisfaction (i.e., lower satisfaction) with healthcare services provided.

We use the respondents' satisfaction ratings to derive two outcome variables: 1) the change in satisfaction with hospital treatment and 2) the change in satisfaction with treatment at a doctor's office or a medical facility other than a hospital. Both variables measure the

difference between a respondent's satisfaction rating from SCS2 and a respondent's satisfaction rating from SCS1 (the difference is calculated as the satisfaction score from SCS2 *minus* the satisfaction score from SCS1). The dependent variables, therefore, range from -3 to 3. Positive values indicate an increase in dissatisfaction (i.e., a decrease in satisfaction) with healthcare services provided, negative scores indicate a decrease in dissatisfaction (i.e., an increase in satisfaction) with healthcare services provided, while 0 indicates no change in satisfaction scores throughout the course of the COVID-19 pandemic.

We estimate separate models to try to explain each of the two outcome variables, and in doing so, we consider the following set of predictor variables:

- *Satisfaction with treatment in SCS1*. We use this as a predictor variable to test whether the change in satisfaction between the two waves of SCS varies across satisfaction scores from SCS1. The variable takes on 4 values, as described above.
- *Rating of subjective health in SCS2*. Takes on 5 values, with 1 indicating excellent self-rated health, 2 indicating very good self-rated health, 3 indicating good self-rated health, 4 indicating fair self-rated health, and 5 indicating poor self-rated health.
- *Change in health in the last 3 months*. Measured in SCS2. Shows whether a respondent's health over the last 3 months 1) remained about the same, 2) worsened, or 3) improved.
- *Forwent medical treatment since last interview*. Measured in SCS2. Takes on the value of 1 if a respondent, since the SCS1 interview, forwent a medical treatment because (s)he was afraid to become infected by the corona virus, and 0 otherwise.
- *Medical appointment postponed since last interview*. Measured in SCS2. Takes on the value of 1 if a respondent, since the SCS1 interview, had a previously scheduled medical appointment postponed, because of the COVID-19 pandemic, by a doctor or a medical facility, and 0 otherwise.
- *Appointment for medical treatment denied since last interview*. Measured in SCS2. Takes on the value of 1 if a respondent, since the SCS1 interview, asked for an appointment for a medical treatment, but did not get one, and 0 otherwise.
- *Age (and age squared)*. Measured at the time of the SCS2 interview.



- *Education*. Categorized into low (ISCED1997 levels 0 – 2), medium (ISCED1997 levels 3 – 4), or high (ISCED1997 levels 5 – 6). Because the SCS datasets do not include a variable on respondents’ education, we merged data from earlier (regular) waves of SHARE with the SCS data to collect the required information.
- *Making ends meet*. Measured in SCS2. Takes on 4 values, with 1 indicating making ends meet with great difficulty, 2 indicating making ends meet with some difficulty, 3 indicating making ends meet fairly easily, and 4 indicating making ends meet easily. Note that each SCS household designated one of its members as a household respondent. This respondent answered the question about the household’s ability to make ends meet, given the household’s total monthly income. To provide scope for an individual-level analysis, we copied the data provided by the household respondent to the partner within the same household.

Table 1 presents descriptive statistics for the two SCS subsamples. We show percent shares or means (with standard deviations in parentheses), as appropriate, for all variables in our analysis.

*Table 1: Description of the SCS subsamples used in the analysis*

	<b>Hospital subsample (N = 1,784)</b>	<b>Doctor/medical facility subsample (N = 10,102)</b>
<b>Satisfaction with treatment in SCS1</b>		
Very satisfied	69.73%	73.64%
Somewhat satisfied	24.27%	23.26%
Somewhat dissatisfied	3.59%	2.39%
Very dissatisfied	2.41%	0.71%
<b>Satisfaction with treatment in SCS2</b>		
Very satisfied	67.66%	71.06%
Somewhat satisfied	25.50%	25.72%
Somewhat dissatisfied	4.15%	2.49%
Very dissatisfied	2.69%	0.73%
<b>Change in dissatisfaction with treatment (dependent variable)</b>	<b>0.03 (0.82)</b>	<b>0.03 (0.68)</b>
<b>Rating of subjective health in SCS2</b>		
Excellent	1.79%	3.57%
Very good	9.25%	15.51%
Good	29.48%	41.07%
Fair	36.88%	30.47%
Poor	22.59%	9.37%

Change in health in the last 3 months		
About the same	62.28%	75.86%
Worsened	24.10%	15.06%
Improved	13.62%	9.09%
Forwent medical treatment since last interview	7.29%	9.44%
Medical appointment postponed since last interview	25.22%	16.60%
Appointment for medical treatment denied since last interview	7.79%	5.80%
Age	71.84 (8.29)	70.85 (8.36)
Gender		
Male	47.25%	41.07%
Female	52.75%	58.93%
Education		
Low	35.26%	26.38%
Medium	35.65%	43.98%
High	29.09%	29.64%
Making ends meet		
With great difficulty	6.33%	4.74%
With some difficulty	17.15%	16.47%
Fairly easily	35.31%	34.90%
Easily	41.20%	43.88%
Country		
Austria	9.98%	11.68%
Belgium	17.21%	12.36%
Bulgaria	0.84%	1.19%
Croatia	0.84%	1.34%
Cyprus	0.22%	0.45%
Czechia	3.03%	5.68%
Denmark	8.35%	4.46%
Estonia	2.19%	1.72%
Finland	1.96%	4.27%
France	3.87%	8.75%
Germany	5.04%	12.62%
Greece	1.18%	3.26%
Hungary	0.78%	0.68%
Israel	2.19%	2.18%
Italy	2.30%	1.87%
Latvia	0.90%	0.76%
Lithuania	1.23%	0.50%
Luxembourg	2.69%	1.66%
Malta	2.07%	0.66%
Netherlands	4.65%	1.29%
Poland	3.31%	4.69%
Portugal	7.90%	1.69%
Romania	1.01%	2.84%

Slovakia	0.73%	1.51%
Slovenia	2.24%	2.23%
Spain	4.54%	2.34%
Sweden	4.54%	2.81%
Switzerland	4.20%	4.49%

*Source: own calculations based on SCS1, SCS2, and regular SHARE waves.*

We run two separate linear regression models to examine whether, and to what extent, the change in satisfaction with in-hospital and out-of-hospital treatments is associated with a range of sociodemographic variables (age and age squared, gender, education, making ends meet), health-related variables (self-rated health, recent change in health), and variables related to accessing healthcare (forgoing a medical treatment, having a medical appointment postponed, and having a medical appointment denied). In both models, we include country-fixed effects to control for cross-national differences in the change in satisfaction with healthcare services provided during the COVID-19 pandemic. Table 1 shows the distribution of the respondents by country in each SCS subsample.

We used STATA 18 (StataCorp, 2023) to prepare the data and to perform the statistical analysis, and the *ggplot2* package (Wickham, 2016) in R (R Core Team, 2023) for data visualisation. The scripts are available from the authors upon request.

### 3. RESULTS

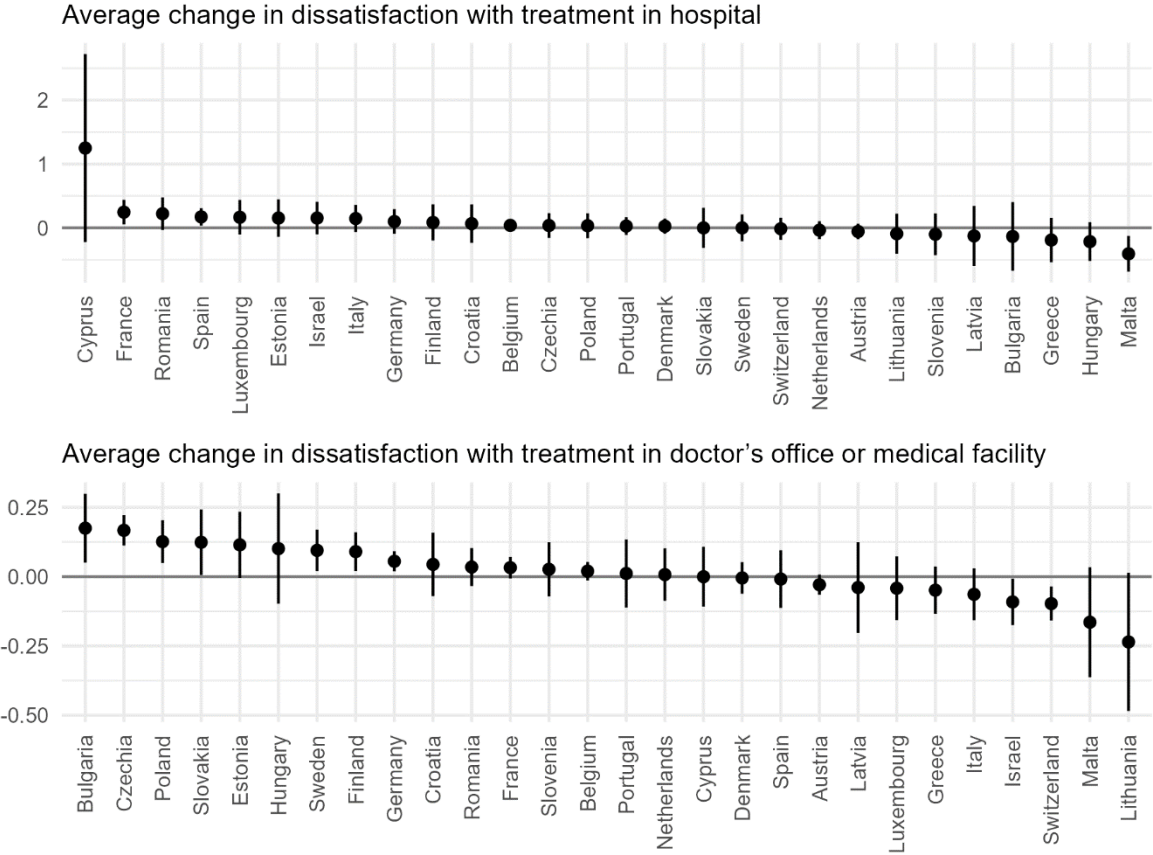
The description of the SCS subsamples shows that SHARE respondents were largely satisfied with the healthcare services they were provided with during the COVID-19 pandemic (see the upper panel of Table 1). Over 90% of interviewees reported that they were very or somewhat satisfied with the way they were treated in hospitals in both waves of SCS, and over 95% of interviewees reported that they were very or somewhat satisfied with the way they were treated at a doctor's office or a medical facility other than a hospital in both waves of SCS. Between the two waves of SCS, the (dis)satisfaction ratings changed little, if at all: the dissatisfaction with healthcare services rose by 0.032, on average, in the hospital subsample (a change not significantly different from 0; p-value = 0.101), and by 0.027, on average, in the doctor/medical facility subsample (a change significantly different from 0; p-value = 0.000).

Figure 1 displays the magnitude of the change in (dis)satisfaction with healthcare services by country. Note that the y-axes on the two plots in Figure 1 are not equidistant. With respect to

in-hospital care (see the upper plot in Figure 1), the 95% confidence intervals (CIs) contain 0 for most of the SHARE countries, indicating that there was no significant change in the satisfaction of older adults with the way they were treated in hospitals during the COVID-19 pandemic. For Malta, the change is negative (it amounts to -0.41 with 95% CI: -0.68, -0.13), which means that, on average, the dissatisfaction with healthcare decreased (i.e., satisfaction increased) between the two waves of SCS. In France and Spain, on the other hand, we observe a positive change (an increase in dissatisfaction with in-hospital care), amounting to 0.25 points (95% CI: 0.05, 0.44) and 0.17 points (95% CI: 0.04, 0.31), respectively. With reference to the satisfaction with treatments at a doctor's office or a medical facility (see the bottom plot in Figure 1), we observe a significant increase in dissatisfaction in 7 countries: Bulgaria (by 0.18 points with 95% CI: 0.05, 0.30), Czechia (by 0.17 points with 95% CI: 0.11, 0.22), Poland (by 0.13 points with 95% CI: 0.05, 0.20), Slovakia (by 0.12 points with 95% CI: 0.01, 0.24), Sweden (by 0.10 points with 95% CI: 0.02, 0.17), Finland (by 0.09 points with 95% CI: 0.02, 0.16), and Germany (by 0.06 points with 95% CI: 0.02, 0.09), and a significant decrease in dissatisfaction in Switzerland (a change of -0.10 points with 95% CI: -0.16, -0.04) and Israel (a change of -0.09 points with 95% CI: -0.17, -0.01).

Overall, the results presented in Figure 1 show that SHARE countries significantly differ with respect to how, and to what extent, the (dis)satisfaction with healthcare changed throughout the course of the COVID-19 pandemic: in some countries, there was an increase in satisfaction, while in other countries, there was a decrease in satisfaction. In many countries, however, the satisfaction of older adults with healthcare services remained unchanged during the COVID-19 pandemic. In countries in which the change was significant, it was not particularly large.

Figure 1: Change in satisfaction with healthcare received during the COVID-19 pandemic by country (point ranges represent 95% confidence intervals)



Source: own calculations based on SCS1, SCS2, and regular SHARE waves.

In the next step of our analysis, we ran two linear regression models to examine the effects of selected predictor variables on the change in patients’ (dis)satisfaction throughout the course of the COVID-19 pandemic, controlling for country differences. The results are presented in Table 2.

Let us first turn to the change in patients’ (dis)satisfaction with in-hospital care. Results from Table 1 show that it differs across satisfaction ratings from SCS1: the higher the dissatisfaction in SCS1, the bigger the drop in dissatisfaction by SCS2. With all other variables in the model held constant, the average change in dissatisfaction would amount to 0.327 (p-value = 0.000) if all respondents were very satisfied with the way they treated in a hospital in SCS1.<sup>3</sup> This suggests that an increase in dissatisfaction with in-hospital care between the two waves of SCS was driven by lower satisfaction among respondents who were very satisfied with in-

<sup>3</sup> We used the *margins* command in STATA for the calculations presented here. Output is available upon request.

hospital care in the outbreak of the COVID-19 pandemic (in SCS1). But the change in dissatisfaction turns significantly negative for those who were somewhat satisfied, somewhat dissatisfied, or very dissatisfied in SCS1, dropping to -0.445 (by 0.772, p-value = 0.000), to -1.124 (by 1.451, p-value = 0.000), and -1.972 (by 2.299, p-value = 0.000), respectively (see Table 2). Thus, there was an increase in satisfaction (i.e., a decrease in dissatisfaction) between the two waves of SCS for older adults who, in the outbreak of the COVID-19 pandemic (in SCS1), rated their satisfaction with in-hospital care below the “very satisfied” category.

Regarding the health-related predictor variables, we find a significant increase in dissatisfaction with in-hospital care for older adults who rated their health in SCS2 as fair (predicted change in dissatisfaction of 0.052, p-value = 0.050) or poor (predicted change in dissatisfaction of 0.142, p-value = 0.001), and among older adults whose health recently (in a 3-month period prior to the SCS2 interview) worsened (predicted change in dissatisfaction of 0.097, p-value = 0.007). The model estimates further show that barriers in accessing healthcare are associated with a decrease in satisfaction with in-hospital care. Having (vs. not having) had a medical appointment postponed between the two waves of SCS is found to increase dissatisfaction with in-hospital care by, on average, 0.144 (p-value = 0.000).

With respect to the sociodemographic predictor variables, we find no significant effects of age, gender, or education. Making ends meet with difficulty, on the other hand, is found to be associated with an increase in dissatisfaction with in-hospital care received during the COVID-19 pandemic (predicted change in dissatisfaction of 0.155, p-value = 0.043 for making ends meet with great difficulty; predicted change in dissatisfaction of 0.094, p-value = 0.031 for making ends meet with some difficulty).

*Table 2: Results from linear regression models for (1) change in (dis)satisfaction with treatment in a hospital and (2) change in (dis)satisfaction with treatment at a doctor’s office or a medical facility*

	<b>Hospital sample</b> (N = 1,784)		<b>Doctor/medical facility sample</b> (N = 10,102)	
Satisfaction with treatment in SCS1 (ref. Very satisfied)				
Somewhat satisfied	-0.772 (0.042)	***	-0.777 (0.014)	***
Somewhat dissatisfied	-1.451 (0.098)	***	-1.608 (0.047)	***

Very dissatisfied	-2.299 (0.172)	***	-2.531 (0.107)	***
Rating of subjective health in SCS2 (ref. Good)				
Excellent	0.029 (0.071)		-0.096 (0.021)	***
Very good	0.029 (0.054)		-0.045 (0.015)	***
Fair	0.107 (0.039)	***	0.052 (0.014)	***
Poor	0.197 (0.054)	***	0.107 (0.024)	***
Change in health in the last 3 months (ref. About the same)				
Worsened	0.092 (0.044)	**	0.032 (0.018)	*
Improved	0.036 (0.053)		-0.029 (0.020)	
Forwent medical treatment since last interview	0.061 (0.073)		0.060 (0.021)	***
Medical appointment postponed since last interview	0.144 (0.040)	***	0.053 (0.016)	***
Appointment for medical treatment denied since last interview	0.139 (0.080)	*	0.196 (0.031)	***
Age	-0.033 (0.029)		-0.009 (0.009)	
Age squared	0.000 (0.000)		0.000 (0.000)	
Gender (ref. Male)				
Female	0.015 (0.031)		0.006 (0.011)	
Education (ref. Medium)				
Low	0.030 (0.044)		0.018 (0.014)	
High	-0.001 (0.041)		0.016 (0.013)	
Making ends meet (ref. Fairly easily)				
With great difficulty	0.135 (0.080)	*	0.067 (0.034)	**
With some difficulty	0.075 (0.050)		0.015 (0.018)	
Easily	-0.022 (0.036)		-0.039 (0.012)	***
Country controls		YES		YES
R squared		0.390		0.401

Notes: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ . Robust standard errors in brackets.

Source: own calculations based on SCS1, SCS2, and regular SHARE waves.

Turning to the next model, in which we examine the change in (dis)satisfaction with treatment at a doctor's office or a medical facility other than a hospital, we once more find that higher

dissatisfaction in SCS1 is associated with bigger drops in dissatisfaction by SCS2. With all other variables in the model held constant, the average change in dissatisfaction would amount to 0.265 (p-value = 0.000) if all respondents were very satisfied with the way they treated at a doctor's office or a medical facility other than hospital in SCS1. The change in dissatisfaction, however, again turns significantly negative for those who were somewhat satisfied, somewhat dissatisfied, or very dissatisfied in SCS1, decreasing, on average, by 0.777 (p-value = 0.000), 1.608 (p-value = 0.000), and 2.531 (p-value = 0.000), respectively (see Table 2).

Better self-rated health is associated with an increase in satisfaction with out-of-hospital care (predicted change in dissatisfaction ranges from -0.084 with a p-value = 0.000 for excellent self-rated health, to 0.119 with a p-value = 0.000 for poor self-rated health), and a worsening in health is associated with an increase in dissatisfaction with out-of-hospital care. Having (vs. not having) had a medical appointment denied between the two waves of SCS is found to increase dissatisfaction with out-of-hospital care by, on average, 0.196 (p-value = 0.000). We also find significant effects of forgoing a medical treatment or having a medical treatment postponed between the two waves of SCS.

The effects of age, gender, and education on the change in (dis)satisfaction with out-of-hospital care are found to be insignificant. There is a clear (albeit rather gentle) gradient, however, in the effect of making ends meet.

#### 4. CONCLUSION

The primary objective of this study was to investigate change in public (dis)satisfaction with healthcare services during the COVID-19 pandemic. We focused on older adults across 27 European countries and Israel, using data from the Survey of Health, Ageing, and Retirement in Europe (SHARE) and the two waves of the SHARE Corona Survey (SCS). The main findings of our study can be summarized as follows.

First, older adults exhibited a relatively high level of satisfaction with the care they received in both waves of SCS. However, on average, the overall level of public satisfaction with healthcare underwent a marginal decrease during the COVID-19 pandemic. Second, we found variation in the change in satisfaction levels across countries participating in SCS. Some countries saw an increase in public satisfaction with healthcare services provided throughout



the course of the COVID-19 pandemic, while some countries saw a decline. In many countries, however, the change was insignificant. Third, accounting for country differences, the significant decrease in satisfaction with healthcare services provided during the pandemic primarily stemmed from a shift from “very satisfied” to “somewhat satisfied”, while those who were less satisfied than “very satisfied” reported a notable increase in satisfaction in the second wave of SCS compared to the first. Fourth, the satisfaction decreased significantly among older adults with poorer health and a worsening in health between the two waves of SCS, as well as among those who faced barriers in accessing healthcare. Fifth, with regards to sociodemographic characteristics, we did not identify significant effects of age, gender, or education on changes in satisfaction with healthcare during the COVID-19 pandemic. However, dissatisfaction increased, on average, among individuals experiencing financial difficulties.

In light of these findings, we conclude that European healthcare systems effectively responded to the COVID-19 pandemic, having ensured that a vulnerable demographic group – the elderly – were under adequate care and reasonably satisfied during the crisis. Older Europeans maintained a relatively high level of satisfaction with only minor fluctuations. A decrease in satisfaction for older adults in poorer health and persons encountering difficulties accessing healthcare services is unsurprising.

As a recommendation for future research, it might be valuable to explore interactions between different variables in their effects on the change in satisfaction with healthcare throughout the course of the COVID-19 pandemic, to assess whether certain effects are specific to particular population subgroups. Additional consideration can also be given to the variation of the effects across countries. Moreover, examining the reasons behind dissatisfaction with in-hospital and out-of-hospital care provided during the pandemic, especially among older adults who were consistently dissatisfied, among those who transitioned from satisfaction to dissatisfaction, and among those who transitioned from dissatisfaction to satisfaction, might result in valuable insights for healthcare policy and practice.

## REFERENCES

- Arnault, L., Jusot, F. and Renaud, T. (2022). Economic vulnerability and unmet healthcare needs among the population aged 50+ years during the COVID-19 pandemic in Europe. *European Journal of Ageing*, 19, pp. 811-825. DOI: 10.1007/s10433-021-00645-3
- Batbaatar, E., Dorjdagva, J., Luvsannyam, A., Savino, M. M. and Amenta, P. (2017). Determinants of patient satisfaction: a systematic review. *Perspectives in Public Health*, 137(2), pp. 89-101. DOI: 10.1177/1757913916634136
- Börsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S. and Zuber, S. (2013). Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE), *International Journal of Epidemiology*, 42(4), pp. 992-1001. DOI: 10.1093/ije/dyt088
- Börsch-Supan, A. (2022a). *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
- Börsch-Supan, A. (2022b). *Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 9. COVID-19 Survey 2*. Release version: 8.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w9ca.800
- Calderón-Larrañaga, A., Dekhtyar, S., Vetrano, D. L., Bellander, T. and Fratiglioni, L. (2020). COVID-19: risk accumulation among biologically and socially vulnerable older populations. *Ageing Research Reviews*, 63 (101149). DOI: 10.1016/j.arr.2020.101149
- Institute of Medicine (US) Committee on the Future Health Care Workforce for Older Americans (2008). 2 Health Status and Health Care Service Utilization. In: Institute of Medicine (US) Committee on the Future Health Care Workforce for Older Americans. *Retooling for an Aging America: Building the Health Care Workforce*. Washington (DC): National Academies Press (US). Available from: <https://www.ncbi.nlm.nih.gov/books/NBK215400/>
- Maresova, P., Javanmardi, E., Barakovic, S., Barakovic Husic, J., Tomsone, S., Krejcar, O. and Kuca, K. (2019). Consequences of chronic diseases and other limitations associated with old age – a scoping review. *BMC Public Health*, 19(1431). DOI: 10.1186/s12889-019-7762-5
- R Core Team (2023). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>
- Smolić, Š., Čipin, I. and Međimurec, P. (2022). Access to healthcare for people aged 50+ in Europe during the COVID-19 outbreak. *European Journal of Ageing*, 19, pp. 793-809. DOI: 10.1007/s10433-021-00631-9
- StataCorp (2023). *Stata Statistical Software: Release 18*. College Station, TX: StataCorp LLC.

Tavares, A. I. (2021). *Public satisfaction with health care services provided during COVID-19 pandemic, evidence from SHARE*. MPRA Paper No. 117148, Munich Personal RePEc Archive. Available from: <https://mpra.ub.uni-muenchen.de/id/eprint/117148>

Wickham, H. (2016). *ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York.

Zhang Y., Rohrer J., Borders T. and Farrell T. (2007). Patient Satisfaction, Self-Rated Health Status, and Health Confidence: An Assessment of the Utility of Single-Item Questions. *American Journal of Medical Quality*, 22(1), pp. 42-49. DOI: 10.1177/1062860606296329