Public satisfaction with health care services provided during covid-19 pandemic, evidence from share

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Public satisfaction with health care during COVID-19 pandemic first wave, evidence from SHARE database

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Abstract

This analysis aims to determine the main factors explaining satisfaction of the healthcare provided during the first wave of the pandemic.

We use data collected by SHARE-COVID survey. We estimate two ordered logits applied to satisfaction with health care provided. One ordered logit explains satisfaction for hospital treatment and the other explains satisfaction for doctor appointments.

Most people report satisfaction with the health care provided and a minority of people report dissatisfaction. Main results show that people with higher incomes tend to report higher satisfaction while people with lower health status report more often lower satisfaction. We also found that national lockdown during the first wave of the pandemic had no effect on the level of public satisfaction with health care while countries with a Beveridge-type of health system are more likely to feel dissatisfaction with the health care provided.

People with lower health status were less satisfied by health care services which may be improved with ehealth alternatives. More research is needed to understand fully the reasons for dissatisfaction during the first wave of the pandemic.

Introduction

The COVID-19 pandemic was declared on 30 January 2020 by the World Health Organization (WHO). Since then, health systems across Europe have been under great pressure due to the sudden increase in demand for healthcare caused by COVID-19 patients. Several treatments and medical appointments have been cancelled or postponed due to the limited capacity of health systems (Thorlby et al.2020). Despite the suspension of several healthcare services, health systems continued to provide some healthcare to patients in need or with prior appointments.

Our research concerns the level of satisfaction that people have with the health care provided during the pandemic, specifically in Europe. Patient satisfaction has been studied by researchers, health professionals and policy makers (Donabedian 2005; Ham 2005; Hawthorne 2006; Sitzia and Wood 1997; Tavares and Ferreira 2020; Ware et al.1977). The factors associated with patient satisfaction include healthcare provider characteristics, socio-psychological factors, health status, expectations, socioeconomic status and demographic factors as reviewed by Batbaatar and colleagues (2017). Among these factors, it is worth mentioning those related with providers, continuity of the experience, access and accessibility which are positively correlated with satisfaction; as well as those related with individual characteristics such as age, female gender, education which are associated positively with satisfaction (Batbaatar et al. 2017; Tavares and Ferreira 2020).

Public satisfaction with health services is a concern in health policy both at the level of the relationship between people and provider and at the level of the overall health system (Ham 2005; Sitzia and Wood 1997). A recent empirical analysis, conducted by Tavares and Ferreira (2020), described and estimated the factors influencing the public satisfaction with health system coverage, using the SHARE database. These authors found that public satisfaction tended to be more prevalent in social insurance health systems than in nation heath systems.

Our exploratory analysis aims are 1) to describe people satisfaction for health care services provided during the first wave of the pandemic of COVID-19 in Europe, 2) to identify the factors associated with those levels of satisfaction, 3) to check if these levels of satisfaction are related with the type of health system (either social insurance or national health system types) and with the government decision to lockdown to respond to the pandemic.

To achieve these aims, we use data collected by SHARE-COVID during the summer of 2020. We use quantitative methods to describe people satisfaction and ordered logits to estimate the associated factors with satisfaction.

The main contribution of this exploratory analysis is providing evidence on how people feel towards the services provided during pandemic and to contribute to the discussion about the possible improvements in European health systems.

Research design and Methods

Population survey and sample

We have used the SHARE COVID-19 dataset released on 17 December 2020. Data was collected via Computer-Assisted Telephone Interviews (CATI) between June and August 2020. Methodological issues for the data collection are available in Scherpenzeel et al. (2020). The full description, availability, and updates of SHARE are available on the project website (SHARE 2020). Table 1 shows the countries and the number of respondents included in the sample. The satisfaction responses per country are presented in Table SM1, included in the Supplementary Material.

Table 1: Countries and numbers of respondents

1	Belgium	5,148	9	France	2,552	17	Malta	1,211
2	Bulgaria	1,068	10	Germany	3,113	18	Netherlands	946
3	Croatia	2,997	11	Greece	4,651	19	Poland	477
4	Cyprus	1,115	12	Hungary	1,385	20	Portugal	1,652
5	Czechia	3,353	13	Italy	5,031	21	Romania	2,325
6	Denmark	2,593	14	Israel	1,990	22	Slovakia	1,245
7	Estonia	5,726	14	Latvia	1,259	23	Slovenia	4,436
8	Finland	1,726	15	Lithuania	1,701	24	Spain	2,851
			16	Luxembourg	1,377	25	Sweden	1,652
						26	Switzerland	2,402

2.2. Variables

Dependent variables

The dependent variables are obtained from the following survey questions:

i) "Since the outbreak of Corona, have you been treated in a hospital?" Yes or No.

If Yes, then "How satisfied were you with your treatment? 1. very satisfied, 2. somewhat satisfied, 3. somewhat dissatisfied, or 4. very dissatisfied?"

ii) "Since the outbreak of Corona, have you gone to a doctor's office or a medical facility other than a hospital?" Yes or No.

If Yes "How satisfied were you with your appointment? 1. very satisfied, 2. somewhat satisfied, 3. somewhat dissatisfied, or 4. very dissatisfied?".

We named the first of these variables as "dissatisfaction with hospital treatment" and the second as "dissatisfaction with doctor appointment". The higher the value of these variables, the higher is dissatisfaction with the health care provided.

Descriptive variables

Descriptive variables are used to describe dissatisfaction in more detail. If a respondent answered with "somewhat dissatisfied" or "very dissatisfied" to question i) and ii) after trying the healthcare services, then the reasons for that response were asked. The following survey question was used for this:

"Why were you dissatisfied?" 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 risk of infection; 6. Other.

Independent variables

Independent variables are a set of controls used to explain the level of satisfaction reported by people in the survey. These variables are grouped as follows: demographic, economic, health and country characteristics. The country characteristics considered are i) the type of health system financing and ii) if the government has declared a national lockdown. The independent variables are described in Table 2.

Table 2: Independent variables

Variables	Description
Demographic	
male	Dummy variable. Takes value 1 if male; 0 if female. About 45% of the sample is male.
age	Number of years of age in 2020 (average is 63.8 years).
education	Number of years of education (average is 11.1 years).
Economic	
income	Natural logarithm of total household income per person before the pandemic outbreak obtained from Wave 7.
difmakends	Dummy variable. Takes value 1 if respondent says it is difficult to make ends meet with their monthly household income; 0 otherwise. About 36.8% people report difficulty in making ends meet.
Health	
SHA^-	Self-assessed health before pandemic is taken as a continuous variable. Ranges from 1 to 5, where 1 is excellent and 5 is poor.
worsehealth	Dummy variable. Takes value 1 if health got worse since the outbreak of the pandemic; 0 otherwise. About 8.9% of people report worse health.
chronic	Number of chronic diseases provided in Wave 7.
Health System type	
Beveridge	Dummy variable. Takes value 1 if health system is Beveridge type; 0 otherwise. Beveridge Health Systems: Sweden, Spain, Italy, Denmark, Portugal, Cyprus, Finland, Latvia, Malta. (European Observatory on Health Systems and Policies 2020).
Government Response	
nolockdown	Dummy variable. Takes value 1 if government response to COVID-19 during first wave of the pandemic does not include a national lockdown; 0 otherwise. Countries without lockdown: Malta, Latvia, Hungary and Sweden (Coronavirus Government Response Tracker 2020).

Empirical strategy

We begin to present descriptive statistics concerning the satisfaction with health services provided during the pandemic. We describe the dependent variables expressing satisfaction while also using additional information from the descriptive variables on the reasons for dissatisfaction with the healthcare provided. We then estimate two ordered logits to find the main drivers of satisfaction with hospital treatment and doctor appointments.

Results

We begin by describing the satisfaction expressed by respondents regarding hospital treatment and doctor appointments during the pandemic. Table 3 shows the distribution of satisfaction across four levels. In general, people receiving healthcare were satisfied, either somewhat or very.

Table 3: Health care satisfaction levels

Satisfaction level (number of responses and percentage)	4	3	2	1	
	Very dissatisfied	Somewhat dissatisfied	Somewhat satisfied	Very satisfied	Total responses
Hospital treatment (nr)	73	143	1,017	2,662	3,895
%	1.9	3.7	26.1	68.3	
Doctor appointment (nr)	117	346	3,476	10,122	14,061
%	0.8	2.5	24.7	72.0	

About 5.6% and 3.3% of respondents reported dissatisfaction (means very dissatisfied and somewhat dissatisfied) with their hospital treatment and doctor appointment. These respondents have listed some non-exclusive reasons for their dissatisfaction, included in Table 4. The majority of dissatisfied people indicated other unspecified reason in both of these healthcare scenarios. While dissatisfaction with hospital treatment is largely attributed to the doctors' and nurses' lack of time availability, dissatisfaction with doctor appointments is largely explained by time unavailability of health professionals and by the long waiting time.

Table 4: Reasons for dissatisfaction

Reasons for dissatisfaction	Number of responses and percentage			
	Hospital treatment	%	Doctor appointment	%
Long waiting time	56	26.0	141	30.0
Overcrowded	19	9.0	41	9.0
Doctors and nurses short of time	99	46.0	136	29.0
Shortage of equipment	17	8.0	25	5.0
Insufficient safety measures	25	12.0	38	8.0
Other	116	54.0	266	57.0
Total dissatisfaction responses	216		463	

The ordered logit results to find the main drivers of satisfaction are next presented. These results are shown in Table 5, where o.r. means odd ratio. In Table A1, included in the appendix, the ordered logit results include country controls but exclude the independent variables "Beveridge" and "nolockdown" due to multicolinearity. The results in grey have no statistical significance and results in black have a statistical significance of at least 5%.

Table 5: Ordered logits results

	Ssatisfaction with hospital treatment		Satisfaction with doctor appointment	
	o.r.	P>z	o.r.	P>z
male	1.170	0.093	1.190	0.001
age	0.988	0.024	0.995	0.090
education	0.988	0.273	0.986	0.031
income	0.820	0.001	0.882	0.000
difmakends	1.265	0.030	1.311	0.000
SHA-	1.273	0.000	1.260	0.000
worsehealth	1.287	0.015	1.422	0.000
chronic	1.035	0.192	1.013	0.418
Beveridge	1.043	0.689	1.642	0.000
nolockdown	0.932	0.666	1.019	0.847
Number of obs	2,303		8,863	
LR chi2(10)	114.280		346.960	
Prob > chi2	0.000		0.000	
Pseudo R2	0.031		0.028	
Log likelihood	-1797.455		-6129.313	

The results for hospital treatment satisfaction indicate that older people and those with higher incomes are more likely to be more satisfied. On the other hand, people with small monthly budgets and worse health status tend to report lower levels of satisfaction. For instances, people who have reported that their health has deteriorated after the break of the pandemic or people reporting lower health status before the outbreak are nearly 1.3 times more likely to report lower satisfaction than those who did not report worsening of their health or reporting good health status before.

The results for doctor appointment satisfaction are identical to those obtained for the hospital treatment. Some differences may be noticed, specifically, being female and having higher education decreases satisfaction with the service provided.

Finally, we also found that in Beveridge health systems, the satisfaction with doctor appointments tends to be higher than in Bismark health systems. The odds that people in Beveridge-type of health systems report less satisfaction than in Bismark-type health systems is about 1.6 times higher. Lastly, we found no difference in satisfaction in countries with or without national lockdowns.

4. Discussion

The COVID-19 pandemic has placed considerable pressure on European health systems (and worldwide). Not only did COVID patients need care, but non-COVID patients also required healthcare. The aim to describe the satisfaction with hospital treatment and doctor appointments across Europe, to find the main drivers of satisfaction, and test the differences of satisfaction between Beveridge and Bismark-type of health systems and between countries which have adopted lockdown measures and those who did not. In general, people reported satisfaction with the health care received during the first wave of COVID-19 and a minority of people reported dissatisfaction.

The main results concerning the country characteristics point to no difference in satisfaction with healthcare services between countries with and without a national lockdown during the first wave of the COVID pandemic. Additionally, there is partial evidence that in Beveridge health systems there tends to be a lower satisfaction, particularly with doctor appointments. This last evidence does follows previous results which showed higher satisfaction in Bismark health systems concerning the coverage of the health system (Tavares and Ferreira 2020).

Concerning the results obtained for individual characteristics, we found that older people tend to be more benevolent in their assessment of the services provided in hospitals. This may reflect the fact that older people may have a different frame of reference when assessing quality or maybe lower expectations.

We found that men tend to be less satisfied with doctor appointments than women. One possible explanation for this may be found in the reasons given by people for dissatisfaction. Both the long waiting times and short time availability of health professionals may bother women more often than men. Maybe men a less tolerant and less empathic with the ongoing difficulties faced by health professionals as suggested by some research (Schulte-Rüther et al. 2008).

Finally, previous results have demonstrated, larger incomes and better health status tend to increase the likelihood of satisfaction with the services provided. Our findings tend to go in similar direction. Results now also show that people with limited monthly budgets who find it difficult to make ends meet each month, tend to report dissatisfaction more often than others. While people with higher incomes are more likely to experience higher levels of satisfaction. This may indicate the stress and anxiety experienced by people in disadvantage economic situation. Not only do they face financial constraints but they also feel that for some reason the

health system is not completely responding to their needs, either due to long waiting times, time shortage from healthcare professionals, or any other reason.

Lastly, people who feel that their health has worsened during the pandemic also tend to report lower levels of satisfaction and identical to those reporting a lower health status before the outbreak of COVID pandemic. This is expected as these people are in a more fragile health situation and they may feel that it is harder to receive healthcare attention, either because it takes too long or because health professionals seem not to have the time to give their patients the necessary attention. This relationship between people's health and their satisfaction may be found elsewhere (Batbaatar et al.2017).

Concerning the health system characteristic and the government lockdown response to pandemic, the evidence found demonstrates that lockdowns have no effect on the way people assess health services but it partially finds lower satisfaction in Beveridge health systems.

This study does not include information on unmet health needs and in the future this issue may be related to the assessment of people who experienced worsening health and who had difficulty making ends meet. These people are vulnerable, whether in terms of their health or their household's financial situation. Local and community initiatives directed at these people may help to mitigate their difficulties and reduce their stress and anxiety during difficult times. Often simple initiatives make a difference such as those related to transportation (e.g. in London cancer patients are using cargo bikes to get to their treatments (BBC, 2020a)) or shopping (e.g. in Cardiff the local program "I can help" collects and distributes food around the city (BBC, 2020b)).

Another concern for future research, and which should be analysed for the improvement of the responsiveness of health systems, is the meaning of the response "other" given as a residual reason for dissatisfaction. Given the high percentage of people choosing this option, it is important to understand what other reasons may be implicitly hidden in this residual response. It could be related to what and how people felt towards the attention they were given by health professionals. Some these professionals were under stress and burnout (Giusti et al.2020; Martínez-López et al.2020) and it could be reflected on the way they were dealing with people. Future coping strategies offered by health care units may improve this sort of situation. But further research is needed to overcome this unspecified situation.

Finally, from a policy perspective, there may be room for improvement and reduce levels of dissatisfaction further. Telemedicine and ehealth alternatives may give some instruments to overcome some less positive assessment reported by people like shortening times of waiting,

guaranteeing safety, and ensuring full and caring attention by health providers (Bashshur et al.2020; Smith et al.2020).

References

Bashshur, R., Doarn, CR., Frenk, JM., et al. (2020). Telemedicine and the COVID-19 Pandemic, Lessons for the Future. Telemedicine and e-Health, 26(5), 571-573.

Batbaatar, E., Dorjdagva, J., Luvsannyam, A. et al. (2016). Determinants of patient satisfaction: a systematic review. Perspectives Public Health, 137, 89–101.

BBC (2020a) A ride that 'feels safer than a bus or a taxi'. https://www.bbc.com/news/av/uk-55548820. Accessed in 9th January 2021.

BBC (2020b) Coronavirus: Volunteer army helps those who are isolated. https://www.bbc.com/news/uk-wales-52559426 . Accessed in 9th January 2021.

Börsch-Supan, A. (2020a). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 7. Release version: 7.1.1. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w7.711.

Börsch-Supan, A. (2020b). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 8. COVID-19 Survey 1. Release version: 0.0.1. beta. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w8cabeta.001.

Coronovirus Government Response Tracker (2020). Oxford University and Blavatnik School of Government. Avaliable at https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker. Accessed 16th December 2020.

Donabedian, A. (2005). Evaluating the quality of medical care. Milbank Quarterly, **83**, 91–729.

European Observatory on Health Systems and Policies 2020 https://www.euro.who.int/en/about-us/partners/observatory/publications/country-health-profiles

Giusti, EM., Pedroli, E., D'Aniello, GE., et al. (2020). The Psychological Impact of the COVID-19 Outbreak on Health Professionals: A Cross-Sectional Study. Frontiers in **Psychology**, 11, 1684.

Ham, C. (2005). Money can't buy you satisfaction. British Medical Journal, 330, 597-599.

Hawthorne, G. Review of Patient Satisfaction Measures. Canberra, Australian Government Department of Health and Ageing, 2006.

Martínez-López, JÁ., Lázaro-Pérez, C., Gómez-Galán,J., Fernández-Martínez, M. (2020). Psychological Impact of COVID-19 Emergency on Health Professionals: Burnout Incidence at the Most Critical Period in Spain. Journal of Clinical Medicine, 9(9), 3029.

Scherpenzeel, A., Axt, K., Bergmann, M., et al. (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(2), 217-221.

Schulte-Rüther, M., Markowitsch HJ., Shah NJ., Fink GR., Piefke, M. (2008). Gender differences in brain networks supporting empathy, NeuroImage, 42(1), 393-403.

SHARE (2020) SHARE project. Available at http://www.share-project.org. Accessed 5th December 2020.

Sitzia, J., Wood, N. (1997). Patient satisfaction: A review of issues and concepts. Social Science and Medicine, 45, 1829-1843.

Smith, WR., Atala, A., Terlecki, RP., et al. (20202). Implementation Guide for Rapid Integration of an Outpatient Telemedicine Program During the COVID-19 Pandemic. Journal of the American College of Surgeons, 231(2), 216-222.e2.

Tavares, A.I., Ferreira, P.L. (2020). Public satisfaction with health system coverage, empirical evidence from SHARE data. International Journal of Health Economics and Management. doi:10.1007/s10754-020-09279-x.

Thorlby, R., Tinson, A., Kraindler. J. (2020). COVID-19: Five dimensions of impact. Health Foundation, UK. Available at https://www.health.org.uk/news-and-comment/blogs/covid-19-five-dimensions-of-impact. Accessed 20th December 2020.

Ware, JE. Jr, Davies-Avery, A., Stewart, AL. (1977). The measurement and meaning of patient satisfaction: review of the literature. Health & Medical Care Services Review 1, 13–5.

Appendix

Table A1: Ordered logit for dissatisfaction with country controls

	Dissatisfaction with hospital treatment		Dissatisfaction with doctor appointment	
	o.r.	P>z	o.r.	P>z
male	1.133	0.192	1.192	0.001
age	0.990	0.055	0.996	0.136
education	1.006	0.619	1.006	0.391
income	0.817	0.042	0.848	0.002
difmakends	1.238	0.062	1.268	0.000
SHA-	1.223	0.000	1.214	0.000
worsehealth	1.275	0.024	1.345	0.000
chronic	1.043	0.124	1.029	0.069
country controls	yes		yes	
Number of obs	2,303		8,863	
LR chi2(33)	215.77		755.78	
Prob > chi2	0.000		0.000	
Pseudo R2	0.058		0.060	
Log likelihood	-1746.715		-5924.906	

SUPPLEMENTARY MATERIAL

Table SM1: Satisfaction responses by country

	Satisfaction with hospital treatment					Satisfaction with doctor appointment				
	Very Satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied		Very Satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied	
	1	**2**	**3**	**4**	Total	**1**	**2**	**3**	**4**	Total
Germany	169	62	12	9	252	1,405	341	18	15	1,779
Sweden	181	28	3	3	215	404	93	16	5	518
Netherlands	133	20	3	1	157	195	24	6	2	227
Spain	122	35	1	1	159	280	114	15	3	412
Italy	51	81	7	2	141	104	244	15	1	364
France	130	43	9	1	183	867	220	19	6	1,112
Denmark	301	31	6	7	345	666	77	19	10	772
Greece	38	11	3	1	53	401	120	32	10	563
Switzerland	126	56	5	1	188	418	201	9	2	630
Belgium	459	127	30	7	623	1,387	243	30	7	1,667
Israel	66	39	6	3	114	217	183	12	1	413
Czech Republic	97	47	6	2	152	711	234	17	5	967
Poland	105	42	7	3	157	448	233	25	7	713
Luxembourg	80	18	3	1	102	204	44	6	3	257
Hungary	22	12	0	3	37	118	40	4	4	166
Portugal	103	117	6	7	233	109	134	13	2	258
Slovenia	98	27	6	5	136	287	86	7	4	384
Estonia	63	47	5	2	117	284	140	9	6	439
Croatia	50	19	2	0	71	229	67	7	2	305
Lithuania	25	18	3	2	48	37	25	7	9	78
Bulgaria	39	10	5	3	57	287	59	6	1	353
Cyprus	21	4	0	0	25	87	15	0	1	103
Finland	80	29	3	0	112	428	189	17	5	639
Latvia	21	18	2	2	43	63	74	10	2	149
Malta	28	43	3	3	77	40	98	5	1	144
Romania	36	20	2	4	62	302	91	4	2	399
Slovakia	18	13	5	0	36	144	87	18	1	250
Total	**2,662**	**1,017**	**143**	**73**	**3,895**	**10,122**	**3,476**	**346**	**117**	**14,061**