International Journal of Business & Economic Studies
Year: 2023, Vol: 5, No: 3, pp.208-224
https://doi.org/10.54821/uiecd.1343533

Financial Wellbeing during Covid-19 Pandemic: Concerns about Medical Costs

Covid-19 Salgını Sırasında Finansal Refah: Tıbbi Maliyetlerle İlgili Endişeler

Esra KARAPINAR KOCAĞ
Assist. Prof. Dr., Gümüşhane University
esrakkocag@gumushane.edu.tr
https://orcid.org/0000-0002-2239-0519

Received : 15.08.2023
Revised : 15.09.2023
Accepted : 24.09.2023
Type of Article : Research

Keywords:

Financial Wellbeing, Medical Costs, COVID-19, Individual Wellbeing, Microdata

Jel Codes:

I31, I19, C81

ABSTRACT

Financial wellbeing which represents a great concern for individuals regardless of their social status or their current employment situation constitutes an important element of overall individual wellbeing. Within a broader structure of financial wellbeing, concerns about medical costs have gained a vital importance particularly following the pandemic. Identifying what factors influence this growing concern is critical to tackle with the problem and improve individual wellbeing. Hence, this study is expected to shed light on such an important individual and national concern. To that end, this paper utilizes Global Financial Inclusion Database which is based on national representative surveys of about 128,000 adults across more than 120 countries. Empirical analysis in which ordered probit model was applied aims to investigate if there exists an association between financial concerns about medical costs and COVID-19. Findings of the empirical investigation reveal that being in the group of those who are very worried about financial hardship due to Covid-19 outbreak increases the probability of reporting being very worried about medical cost payments by about 34.5 percentage points. Therefore, it is seen that pandemic detrimentally related to individuals' increased concerns over medical costs. These findings are expected to guide policy makers on the management of healthcare system and measures to improve individual wellbeing.

Anahtar Kelimeler:

Finansal Refah, Tıbbi Maliyetler, COVID-19, Bireysel Refah, Mikro Veri

Jel Kodları:

I31; I19; C81

ÖZET

Sosyal statüleri veya mevcut istihdam durumları ne olursa olsun bireyler için büyük bir endişe kaynağı olan finansal refah, genel bireysel refahın önemli bir unsurunu oluşturmaktadır. Finansal refahın daha geniş olan yapısı içinde, tıbbi maliyetlere ilişkin endişeler özellikle pandemi sonrasında hayati bir önem kazanmıştır. Bu büyüyen endişeyi hangi faktörlerin etkilediğini belirlemek, sorunla mücadele etmek ve bireysel refahı artırmak açısından kritik öneme sahiptir. Dolayısıyla bu çalışmanın böylesine önemli bir bireysel ve ulusal meseleye ışık tutması beklenmektedir. Bu amaçla bu çalışma, 120'den fazla ülkede yaklaşık 128.000 yetişkinin katıldığı ulusal temsili anketlere dayanan Global Financial Inclusion Database (Global Findex, 2021)'i kullanmaktadır. Sıralı probit modelinin uygulandığı ampirik analiz, tıbbi maliyetlere ilişkin finansal endişeler ile COVID-19 arasında bir ilişki olup olmadığını araştırmayı amaçlamaktadır. Ampirik araştırmanın bulguları, Covid-19 salgını nedeniyle maddi sıkıntıdan çok endişe duyanlar grubunda yer almanın, tıbbi masraf ödemeleri konusunda çok endişeli olduğunu bildirme olasılığını yaklaşık 34,5 puan artırdığını ortaya koymaktadır. Bu nedenle, pandeminin bireylerin tıbbi maliyetlerle ilgili artan endişeleri ile zararlı bir şekilde ilişkili olduğu görülmektedir. Bu bulguların, politika yapıcılara sağlık sisteminin yönetimi ve bireysel refahı iyileştirmeye yönelik önlemler konusunda rehberlik etmesi beklenmektedir.

Suggested Citation: Karapınar Kocağ, E. (2023). Financial wellbeing during Covid-19 pandemic: Concerns about medical costs. *International Journal of Business and Economic Studies*, 5(3), 208-224, Doi: https://doi.org/10.54821/uiecd.1343533

1. INTRODUCTION

As a very important element of overall wellbeing, financial wellbeing is a great concern for majority of people at both individual level and national level for developed and developing countries. This term might be defined as "…a condition where an individual is satisfied and comfortable with his or her financial situation. This condition is reached when an individual is satisfied with his or her ability to meet the basic needs of life. This includes, among other things, the ability to (i) meet current expenses from current income; (ii) save; (iii) maintain debt at sustainable levels; (iv) deal with financial problems; and (v) being generally satisfied with one's financial condition …" (Agyei et al., 2019:224). Financial wellbeing constitutes an essential aspect of overall wellbeing of individuals (Rahman et al., 2021).

Researchers in the field attempt to define what financial wellbeing is, how to measure it, and what factors influence it across different case studies. As one of these attempts, Taft et al. (2013) investigated the relationship between financial wellbeing, financial concerns, and financial literacy in Iran with a sample of 103 university professors. A questionnaire was used to examine these concepts in which a five-point Likert scale was used to measure financial literacy and financial concerns, while a ten-point scale was used to measure financial wellbeing. Apart from the demographic variables involved in the analysis, findings showed that there is a positive relationship between financial wellbeing and financial literacy; a higher level of financial wellbeing is followed by financial literacy; higher financial wellbeing reduces financial concerns.

In the measurement of the financial wellbeing, objective measures such as income level may not reflect the truth because of the fact that individuals' consumption values, habits, or their perceptions about their finances may differ, even though they have the same level of income (Prawitz et al., 2006). In their both qualitative and quantitative research, Netemeyer et al. (2018) aimed to explain the subjective financial wellbeing of US consumers. The qualitative part of the research was based on one-to-one interviews of 59 adult in six states, while quantitative part was based on hierarchical regression modelling for estimation of the effects. Financial wellbeing is conceptualized via stress that is related to the management of money today and a sense of security in one's financial future. Findings revealed that perceived financial wellbeing is one key predictor of overall wellbeing.
Individuals' values tend to change over years. Materialism is one of those on the rise. Literature provides evidence on the association between materialism and financial wellbeing. In this respect, Garðarsdóttir & Dittmar (2012) examined this relationship in the case of Iceland through an online survey technic. The sample consisted of 271 Icelandic non-student adults. Findings showed that higher materialism was associated with a greater tendency to spend, greater financial worries, higher compulsive buying scores, and less self-reported skills to manage money. Shim et al. (2009) question the relationship between financial wellbeing of young adults and positive financial behavioral intention, and association between financial wellbeing of this group and psychological and physical wellbeing, overall life satisfaction, and academic success. The findings of their cross sectional study suggested that parental education that can contribute to child's perception of behavioral control is important, while financial education at school alone is not.

Brüggen et al. (2017) defined financial wellbeing as "the perception of being able to sustain the current and anticipated desired living standard and financial freedom" (p.229), and highlighted its importance as it has a positive impact on happiness, quality of life, general wellbeing, quality of interpersonal relationships, and mental health. Individual characteristics such as self-control and other non-cognitive factors are explored by Strömbäck et al. (2017), if they have any effect on it. Using a representative sample of 2,063 Swedish respondents whose age was between 20 and 75, they showed that individuals who are good at self-control were less anxious about financial matters and more secure in their current and future financial situation.

Sub groups of society may perceive financial wellbeing differently. Malone et al. (2010) investigated the financial wellbeing of American women with a distinction of those with children, without children, in marriage, in cohabitation, in stepfamilies, and single. To do so, they used a nationwide survey of 368 women who were aged between 30 and 65 and with an income of $ 40,000 or more. Findings of the research reveal that single mothers, cohabiting women, and women in stepfamilies, which constitutes non-traditional family structure, are more worried about their financial future than those women in first marriage. Also, cohabiting women are significantly more likely to express fears of becoming a burden.

Using Chinese Survey of Consumer Finance (2014) data, Chu et al. (2017) consider positive investment return as referring financial wellbeing of households. Their empirical analysis reveals that there is an association between financial literacy and asset investing behavior, and households with higher financial literacy are more likely to get positive returns.

Financial wellbeing is also likely to influence the health of individuals. Through interviews of 9,731 households who are 16 and above, Arber et al. (2014) measure subjective wellbeing via two survey questions that are 1-Thinking of your household's total monthly or weekly income, is your household able to make ends meet, that is pay your usual expenses.. with great difficulty, with difficulty, with some difficulty, fairly easily, easily, or very easily, and 2- …whether your household could afford the following?-To pay for a week's annual holiday away from home?-To eat meat, chicken or fish (or vegetarian equivalent) every second day? -To pay an unexpected, but necessary, expense of £500? -To keep your home adequately warm? Findings of logistic regression in this study with participants in the UK show that economic strain and perceived material deprivation that are two indicators of subjective financial wellbeing were strongly associated with health, particularly in older ages. In a similar way, O'Neill et al. (2005) investigated financial wellbeing, health, and financial practices that were expected to guide educators and financial counsellors. Using a large national sample of 3,121 individuals who are financially distressed adults from the US, they concluded that financial distress and poor health are related.

Given the importance of the subject, this paper highlights concerns about medical costs that gain a vital importance particularly following the pandemic. The way of tackling with the pandemic was not identical across the world as some countries immediately introduced lockdown and other strict measures to hamper the spread of the virus, while some others preferred a softer approach, at least for a while. Barrafrem et al. (2020) examined Sweden and the United Kingdom on the individual assessments of 2021 cases about economic situation in household, nation, and the world. Study shows that an important number of people believes that their household economy will do better than national and global economy. Moreover, pessimism about household's economic situation in the future and being financially ignorant are associated with lower financial wellbeing, however, the national economic situation is not associated with that. During the pandemic, governments played a crucial role in the management of this outbreak. Trust in government, in this respect, became important for wellbeing of individuals. Barrafrem et al. (2021)'s study with more than a thousand online survey participants showed that distrust in the government to handle financial difficulties due to the pandemic was negatively associated with feeling financial security.

Botha et al. (2021) investigated individuals' perceived financial wellbeing in the case of Australia, using data from 2,078 residents. Authors argue that labor market shocks that are caused by COVID-19 are likely to be related to lower financial wellbeing via several channels such as lower income, lower credit ratings and borrowing ability, volatility, and psychological effects. Study shows that about 36 percent of Australians reported having at least one labor market shock as a result of the pandemic, and considerable portion of them reported having problems on their financial wellbeing. More clearly, having a given pandemic-related labor market shock is significantly associated with a 29 percent reduction in the financial wellbeing. Related to the labor market shocks during the pandemic, Vieira et al. (2021) highlight differences between private sector employment and public sector employment. Accordingly, it was concluded that public servants perceive fewer financial wellbeing losses and anxiety than private sector workers. The study suggests that countries with a large percentage of employment on temporary and informal jobs need to intervene in the economy via income transfers and reduction of unemployment to reduce losses in the wellbeing.

Covid-19 is likely to create huge financial pressures on individuals regarding healthcare costs. Therefore, this study examines if there exists an association between financial concerns about medical costs and COVID-19, utilizing Global Financial Inclusion Database (Global Findex, 2021) which is based on national representative surveys of about 128,000 adults across more than 120 countries. Addressing both the affordability of this cost and exposure concerns is necessary to ensure that individuals receive the health care as needed during the pandemic (Gonzalez et al., 2020). To do so, it is needed to clearly identify the determinants of these financial concerns. Hence, this study is expected to shed light on such an important individual and national concern.

The remaining sections of this paper are as follows: Subsequent to this section is Section 2 which presents the materials that are used in the empirical investigation and the methodology of the study while Section 3 provides the results and presents the findings of the investigation. Section 4, eventually, draws conclusions and policy recommendations.

2. MATERIALS AND METHODS

This paper uses the Global Financial Inclusion Database (Global Findex, 2021) which is based on national representative surveys of about 128,000 adults across more than 120 countries. Global Findex provides a rich source of information on saving, borrowing, making payments, managing financial risk, financial health and resilience, and digital payment adaption to understand how individuals accesses/used financial services during

Covid-19 (Demirgüç-Kunt et al., 2022). The survey contained six questions about the financial worries of individuals as follows:

How worried are you right now about each of the following? Are you very worried, somewhat worried, or not worried at all at the present time?

1. Not having enough money for your old age
2. Not being able to pay for medical costs in case of a serious illness or accident
3. Not having enough money to pay for monthly expenses or bills
4. Not being able to pay school fees or fees for education
5. Among the financial issues you mentioned, which one are you most worried about?
6. Are you very worried, somewhat worried, or not worried at all that you will experience, or continue to experience, severe financial hardship as a result of the disruption caused by Covid-19?

Question 1, Question 2, Question 3, Question 4, and Question 6 are questions with categorical answers. Those answer categories are as follows:

1. Very worried
2. Somewhat worried
3. Not worried at all

Answer categories to Question 5 which about prioritizing these concerns is different than the previous ones and it is as follows:

1. Money for your old age
2. Paying for medical costs in case of a serious illness or accident
3. Money to pay for monthly expenses or bills
4. Paying school or education fees

The distribution of responses across four options to Question 5 is presented in Figure 1. This figure is presented to show the importance of medical costs which is the subject of this paper. Accordingly, it is seen that about 43 per cent of the respondents picked medical concerns as their greatest financial worry. This very high level of worry in the sample draws our attention to investigate determinants of it. For this purpose, Question 2 above was utilized asking "How worried are you right now about not being able to pay for medical costs in case of a serious illness or accident?" as the dependent variable of this paper.

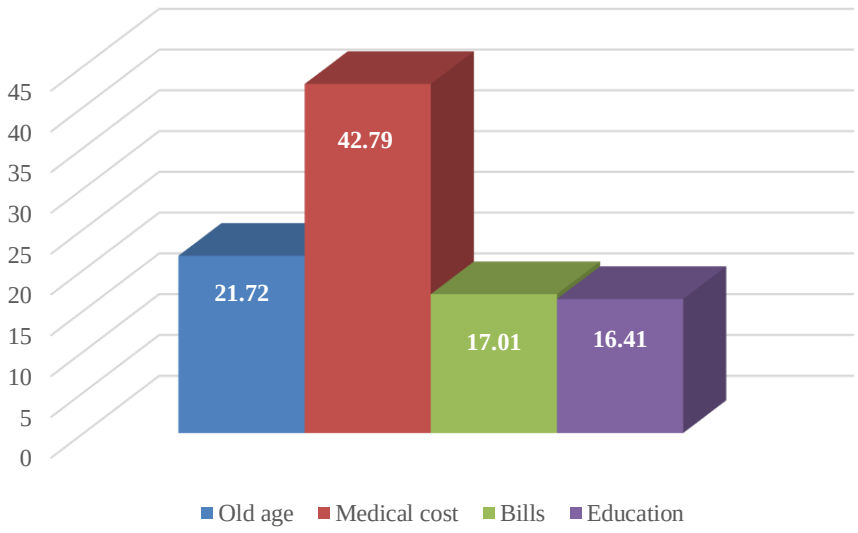

Figure 1. Financially Most Worried about, percentage
Source: Author's own calculation based on Global Findex data

More than 42 per cent of the sample expressed they are most worried about not being able to pay for medical costs in case of a serious illness or accident. Individuals' financial worries on medical cost is likely to be increased during the ongoing Covid-19 pandemic process. Therefore, this study focuses on the relationship between worries due to Covid-19 and worries due to medical cost. In other words, if the outbreak contributed individuals' financial concerns over medical costs is considered as a research question of this paper. Based on this question, following hypotheses is formulated:

H_0: There is no significant relationship between financial worries due to Covid-19 and worries about medical costs.

H_1: There is a positive significant relationship between financial worries due to Covid-19 and worries about medical costs.

These hypotheses are tested through an ordered probit model as underlying model is based on a latent variable:

$$Y_i^* = C_i\beta_0 + X_i\beta_1 + \varepsilon_i \ , \ i = 1,2,\dots.n \quad (1)$$

Where Y_i^* is the latent measure of individual i's financial concerns about medical costs. C_i presents individual i's concerns due to Covid-19, and β_0 is a vector of the coefficient to be estimated. X_i is the vector of observable characteristics, and β_1 is a vector of coefficients to be estimated. ε_i presents a white noise error term. Y_i is the observed outcome.

$$Y_i = a \ if \ \mu_a < Y_i^* < \mu_{a+1}, a = 1,2,\dots,A \quad (2)$$

where a is the category selected by the respondent. μ_a presents the threshold parameters to be estimated. It is assumed that ε_i is a zero-mean error term that is assumed to be distributed identically and independently. If an individual's Y_i^* falls within a certain range, their Y_i is assigned a numerical value that reflects the category in which their unobserved concerns lies. The threshold parameters are not observed, however, they can be statistically estimated.

An ordered probit model allows for the calculation of predicted probabilities for each concern category and marginal effects. When calculated at the means of the data, predicted probabilities indicate the chance of the average individual being financially worried about medical costs falling within each of the categorical worry levels. These provide valuable insight into individuals' wellbeing. Furthermore, parameter estimates might be used to calculate the marginal effects of explanatory variables on the predicted probabilities that indicates how a change in a particular explanatory variable influences the predicted probability of an individual's concern level for each category of it.

Following the presented methodological framework, this paper draws on the relevant literature and the data set to identify explanatory variables that might be used as indicators of financial concerns about medical costs. The initial specification covers basic socio-economic and demographic variables (i.e., gender, age, education level, income level, employment statues, and residential area), in addition to the main explanatory variable of COVID to measure if those financial concerns are significantly related to this outbreak. Specification 2 also includes financial indicators of having an account and having a debit card. Finally, Specification 3 involves mobile phone ownership and internet access as well. All of the specifications include a country dummy in order to control country-specific factors. Definition and summary statistics of all of the variables used across specifications are presented in Table 1 below.

Omitting observations with missing values for the relevant variables used in the empirical specification yields a sample of 120,106 adults from 122 countries. The distribution of the responses in the sample is presented in Figure 2.

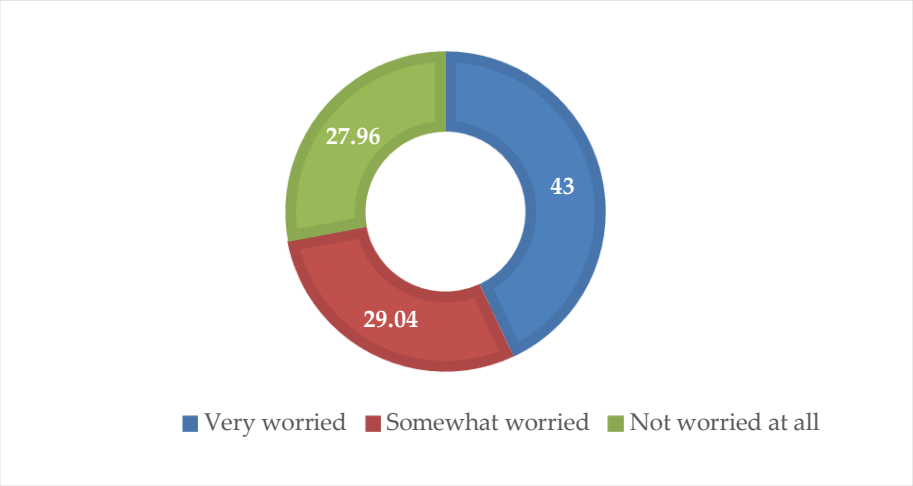

Figure 2. How Worried You Are About Medical Costs, Percentage
Source: Author's own calculation based on Global Findex data

According to Figure 2, 43 per cent of the sample expressed that they are very worried about medical costs. Those who are somewhat worried and not worried at all consist of about 28-29 per cent of the responses. It is seen that there is a very high level of concern about affording medical expenses. This very high concern draws our attention to investigate the determinants of it.

Descriptive statistics of the variables used in the empirical investigation are presented in Table 1 below. As mentioned earlier, it is seen that more than 43 percent of the respondents were very worried about medical costs. 62 percent of them are worried about COVID-related financial difficulties. 47 percent of the sample is male, while 53 percent is female. Individuals from 15 to 99 were included in the sample, and the mean age is 41 years. slightly more than a half of the sample completed secondary education, while a quarter of them completed primary or less, an another quarter completed tertiary education or more. 26 percent of the sample which is the largest share consists of the richest income quintile; 66 percent is in workforce; almost 69 percent has an account at a financial institution; 64 percent has a debit card; almost 90 percent has a mobile phone; and 73 pecent of them has internet access.

Table 1. Definitions and Summary Statistics for Selected Variables

Variable	Definition	Obs	Mean	SD	Min	Max
MedCost	How worried are you right now about not being able to pay for medical costs in case of a serious illness or accident					
	Very worried	120106	.435	.496	0	1
	Somewhat worried	120106	.287	.453	0	1
	Not worried at all	120106	.277	.448	0	1
COVID	Are you very worried that you will experience, or continue to experience, severe financial hardship as a result of the disruption caused by Covid-19					
	No	120106	.622	.485	0	1
	Yes	120106	.378	.485	0	1
Female	Gender dummy					
	Male	120106	.47	.499	0	1
	Female	120106	.53	.499	0	1
Age	Age in years	120106	41.787	17.459	15	99
Edu	Education level					
	Completed primary school or less	120106	.248	.432	0	1
	Completed secondary	120106	.511	.5	0	1
	Completed tertiary education or more	120106	.241	.427	0	1
Inc_q	Income quintile					
	Poorest 20%	120106	.160	.367	0	1
	Second 20%	120106	.172	.378	0	1
	Middle 20%	120106	.191	.393	0	1
	Fourth 20%	120106	.216	.411	0	1
	Richest 20%	120106	.260	.439	0	1
Emp	Employment					
	out of workforce	120106	.335	.472	0	1
	in workforce	120106	.665	.472	0	1

Table 1. Definitions and Summary Statistics for Selected Variables (Cont.)

Variable	Definition		Obs	Mean	SD	Min	Max
Acc	Has an account at a financial institution						
		No	120106	.311	.463	0	1
		Yes	120106	.689	.463	0	1
Debit	Has a debit card						
		Yes	120106	.542	.498	0	1
		No	120106	.458	.498	0	1
MO	Do you have a mobile phone that you use to make and receive personal calls?						
		Yes	120106	.899	.301	0	1
		No	120106	.101	.301	0	1
IA	Do you have access to the Internet in any way, whether on a mobile phone, a computer, or some other device?						
		Yes	120106	.731	.443	0	1
		No	120106	.269	.443	0	1

Note: Sample covers 122 economies and all of the specifications include a country dummy in order to control country-specific factors.

If the findings of this research is to be used to generalise to the population wholly, the coefficients then must be representative of the population values. To better reflect the population, we use the weight provided in the Global Findex data set. Therefore, all of the findings presented below is to be considered nationally representative.

3. FINDINGS

Estimates of the ordered probit model are presented in Table 2. Because the ordered probit model is not linear, the estimated coefficients are not marginal effects. Even though the sign and statistical significance of the parameter estimates are meaningful, they are not directly interpretable in terms of the magnitude. Therefore, marginal effects are calculated and given in the table that enables the interpretation of the coefficients in a meaningful way. As the probabilities for categories of MedCost must sum to one, while the change in probabilities for those categories must sum to zero.

It's been observed that nine coefficients (COVID, Female, Age, Edu, Inc_q, and Emp) in the first specification reveal statistically significant (at 1 per cent level) association with the dependent variable (i.e., worry about medical costs). The results indicate that being in the group of those who are very worried about financial hardship due to the Covid-19 outbreak increases the probability of reporting being very worried about medical cost payments by about 34.5 percentage points. Therefore, it is seen that the pandemic is detrimentally related to individuals' increased concerns over medical costs.

Compared to being male, being female increases the probability of being very worried by 3.5 percentage points. This effect might be stronger in countries where men are treated as the main breadwinner such as eastern countries. Some literature (see for example, Gray, 2014; Plagnol, 2011) shows that financial satisfaction increases when people get old. This is explained by lower revised expectations, adaptation, and lower debt level in later ages. However, later life is also characterized by a higher probability of experiencing severe illnesses and dependency which endures higher healthcare costs. Our findings indicate that 1 more year of age increases the probability of being very worried of medical costs by 1 percentage point

Those with the higher education level or higher income level (i.e., richer income quintile) are less likely to report being very worried about medical costs than those with lower education level or lower income level. This finding of lower concerns of high-educated or high-income individuals is in line with the existing literature, for example Weissman et al. (2020). Moreover, being a part of the workforce rather than out of it increases the probability of reporting being very worried about medical costs. Finally, we couldn't find any significant association between residential areas (i.e., rural, and urban) and worries about medical costs. The relationships between the explanatory variables in Specification 1 and the dependent variable are consistent across specifications.

Specification 2 and 3 includes additional explanatory variables about accessing digital technologies and the financial inclusion of individuals. While we couldn't find any significant effect of financial inclusion variables (i.e., having an account or having a debit card), access to the internet and owning a mobile phone reveal significant effect on such worry. Those who do not have a mobile phone rather than those with a mobile phone are less likely to be very worried about medical costs. Contrarily, having access to the internet increases to report of being very worried about medical costs.

Table 2. Findings of Ordered Probit Estimate, Marginal Effects

	Specification 1			Specification 2			Specification 3		
Variables	**Very worried**	**Somewhat worried**	**Not worried**	**Very worried**	**Somewhat worried**	**Not worried**	**Very worried**	**Somewhat worried**	**Not worried**
COVID	0.354***	-0.104***	-0.250***	0.354***	-0.104***	-0.250***	0.353***	-0.104***	-0.249***
	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)
Female	0.042***	-0.006***	-0.036***	0.042***	-0.006***	-0.036***	0.042***	-0.006***	-0.036***
	(0.003)	(0.000)	(0.002)	(0.003)	(0.000)	(0.002)	(0.003)	(0.000)	(0.002)
Age	0.001***	-0.000***	-0.001***	0.001***	-0.000***	-0.001***	0.001***	-0.000***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Edu (Base:Completed primary school or less)									
Secondary	-0.022***	0.004***	0.019***	-0.023***	0.004***	0.019***	-0.021***	0.004***	0.018***
	(0.004)	(0.001)	(0.003)	(0.004)	(0.001)	(0.003)	(0.004)	(0.001)	(0.003)
Tertiary or more	-0.055***	0.008***	0.047***	-0.055***	0.008***	0.047***	-0.053***	0.007***	0.045***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Inc_q (Base: Poorest 20%)									
Second 20%	-0.024***	0.006***	0.018***	-0.024***	0.006***	0.019***	-0.024***	0.005***	0.018***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Middle 20%	-0.053***	0.011***	0.042***	-0.053***	0.011***	0.042***	-0.052***	0.011***	0.041***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Fourth 20%	-0.083***	0.016***	0.067***	-0.083***	0.016***	0.067***	-0.082***	0.015***	0.067***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Richest 20%	-0.140***	0.020***	0.120***	-0.140***	0.020***	0.120***	-0.139***	0.020***	0.119***
	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)

Table 2. Findings of Ordered Probit Estimate, Marginal Effects (Cont.)

	Specification 1			Specification 2			Specification 3		
Variables	**Very worried**	**Somewhat worried**	**Not worried**	**Very worried**	**Somewhat worried**	**Not worried**	**Very worried**	**Somewhat worried**	**Not worried**
Emp (Base: out of workforce)									
in workforce	0.035***	-0.005***	-0.030***	0.035***	-0.005***	-0.030***	0.033***	-0.005***	-0.029***
	(0.003)	(0.000)	(0.003)	(0.003)	(0.000)	(0.003)	(0.003)	(0.000)	(0.003)
Acc (Base:No)									
Yes				-0.001	0.000	0.001	-0.002	0.000	0.002
				(0.005)	(0.001)	(0.004)	(0.005)	(0.001)	(0.004)
Debit (Base: Yes)									
No				-0.003	0.000	0.002	-0.003	0.001	0.003
				(0.004)	(0.001)	(0.004)	(0.004)	(0.001)	(0.004)
MO (Base: Yes)									
No							-0.034***	0.004***	0.030***
							(0.005)	(0.001)	(0.005)
IA (Base: Yes)									
No							0.021***	-0.003***	-0.018***
							(0.004)	(0.001)	(0.004)
Observations	120,106	120,106	120,106	120,106	120,106	120,106	120,106	120,106	120,106
Pseudo R2		0.196			0.196			0.196	

Note: All of the specifications are weighted, and include country dummies to reflect country-specific factors across 122 economies in the sample. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The analyses above cover 122 economies across the world. The effect of Covid-19 on individual worries about medical costs may vary across different parts of the world. To see if there exists any difference across regions, we run Specification 1 across eight regions, that are South Asia, Europe & Central Asia (excluding high income), Middle East & North Africa (excluding high income), Latin America & Caribbean (excluding high income), High income: OECD, Sub-Saharan Africa (excluding high income), High income: non-OECD, and East Asia & Pacific (excluding high income).

Table 3 presents the findings of the ordered probit model for the eight sub-regions mentioned above. These analyses include the explanatory variables given in Specification 1. To make the presentation simpler, we only present the marginal effects of the category of being 'very worried about medical costs'. Therefore, the coefficient of COVID implies the size of the worry of being in the group of those who are very worried about financial hardship due to Covid-19 outbreak on the reporting being very worried about medical cost payments for each region. The effect is positive and statistically significant at 1 per cent significance level or all of the regions. The largest effect is found in Latin America & Caribbean (excluding high-income) with 0.478. This is followed by High income: non-OECD and East Asia & Pacific (excluding high income) with 0.404 and 0.402, respectively. The smallest effect of COVID is found in High income: OECD (with 0.295), Sub-Saharan Africa (excluding high-income) (with 0.297), and South Asia (with 0.298).

Table 3. Findings Ordered Probit Estimate across Eight Regions, Marginal Effects

Variables	South Asia	Europe & Central Asia (excluding high income)	Middle East & North Africa (excluding high income)	Latin America & Caribbean (excluding high income)	High income: OECD	Sub-Saharan Africa (excluding high income)	High income: non-OECD	East Asia & Pacific (excluding high income)
COVID	0.298***	0.381***	0.337***	0.478***	0.295***	0.297***	0.404***	0.402***
	(0.013)	(0.009)	(0.012)	(0.010)	(0.015)	(0.008)	(0.023)	(0.014)
Observations	7,780	17,301	8,866	14,041	31,351	24,077	7,786	7,918
Pseudo R2	0.134	0.156	0.120	0.177	0.118	0.108	0.076	0.170

Note: These analyses include the explanatory variables of Specification 1 mentioned above. All of the coefficients of COVID across regions refer to the category of being very worried.

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4. DISCUSSION AND CONCLUSIONS

Medical costs are important for healthcare (Banegas et al., 2019) on its own, yet, its importance has been increased when the world has faced a very fast spreading and deadly virus, COVID-19 since the beginning of 2020. Thinking of an overall wellbeing, financial wellbeing consists of a crucial component of it. A healthy and functioning body is essential to maintain a decent life. Therefore, healthcare costs become an indispensable item that can affect financial wellbeing. In this respect, this study examined the impact of financial worries due to the COVID-19 pandemic on the concerns over medical costs. Global Financial Inclusion Database (2021) that provides a rich source of data at the individual level is utilized to investigate if there exists an association between those two.

Findings of the probit estimation indicate that being in the group of those who are very worried about financial hardship due to the Covid-19 outbreak increases the probability of reporting being very worried about medical cost payments by about 34.5 percentage points. This implies that H0 hypothesis which refers to no significant relationship between financial worries due to Covid-19 and worries about medical costs was rejected. It is seen that the pandemic is detrimentally associated with individuals' increased concerns over medical costs. Apart from the main independent variable of interest, there are several other independent variables that reveal a significant relationship with worries about medical costs. Being a male, older, low educated, and low income level increases the probability of being very worried about these costs. Additionally, having a mobile phone and access to the internet also increases the probability to report such worry. Last but not the least, there are regional differences on the effect of financial hardship due to COVID-19 with respect to individual worries about medical costs. Although all of the specifications reveal significant and positive associations of the variable of COVID, the coefficient for Latin America & Caribbean (excluding high income) is larger in magnitude. This implies that individuals in this region seem to be affected more because of the financial hardship as a result of COVID-19.

From a policy point of view, these findings might suggest a few policies. First, it is obvious that this pandemic has not affected only the physical health of individuals, but it has also caused an economic disaster across the world. This unexpected shock has left millions of people who are severely affected by healthcare and labour market aspects. Therefore, reducing the effect of financial hardship and access to the healthcare system must be the government's priority. Governmental efforts in this way would relieve concerns over medical costs. Secondly, as different age cohorts may expose the risk differently, risk groups such as elderly citizens should be treated more carefully. Even if some countries introduced priorities on vaccination or work place arrangements for particular subgroups of society such as elderly, pregnant, or chronic patients, it has not been common for all countries affected. Furthermore, social protection programs should be used to improve wellbeing of those in lower-income groups as the lower level of income was found to be associated with higher worries about medical costs.

Covering thousands of individual observations from 122 countries with different healthcare systems, the level of exposure to the virus, governmental actions to tackle the pandemic, and public attitudes towards obeying measures, etc., this paper provides considerable insights into the individual wellbeing. Nevertheless, it is still worth mentioning a few limitations of this investigation. First, this is a time series analysis that does not take time-specific changes across variables included in the model. Secondly, further robustness checks might be useful to understand if the relationship is causal. Therefore, future research may address these limitations.

AUTHORS' DECLARATION

This paper complies with Research and Publication Ethics, has no conflict of interest to declare, and has received no financial support.

AUTHORS' CONTRIBUTIONS

All sections are written by the author.

REFERENCES

Agyei, S. K., Adam, A. M., & Agyemang, O. S. (2019). Financial literacy, cultural dominance, and financial well-being of sme owners in Ghana. *Poverty & Public Policy*, *11*(3), 222–237. https://doi.org/https://doi.org/10.1002/pop4.254

Arber, S., Fenn, K., & Meadows, R. (2014). Subjective financial well-being, income and health inequalities in mid and later life in Britain. *Social Science & Medicine*, *100*, 12–20. https://doi.org/https://doi.org/10.1016/j.socscimed.2013.10.016

Banegas, M. P., Dickerson, J. F., Friedman, N. L., Mosen, D., Ender, A. X., Chang, T. R., Runge, T. A., & Hornbrook, M. C. (2019). Evaluation of a novel financial navigator pilot to address patient concerns about medical care costs. *The Permanente Journal*, *23*.

Barrafrem, K., Tinghög, G., & Västfjäll, D. (2021). Trust in the government increases financial well-being and general well-being during COVID-19. *Journal of Behavioral and Experimental Finance*, *31*, 100514. https://doi.org/https://doi.org/10.1016/j.jbef.2021.100514

Barrafrem, K., Västfjäll, D., & Tinghög, G. (2020). Financial well-being, COVID-19, and the financial better-than-average-effect. *Journal of Behavioral and Experimental Finance*, *28*, 100410. https://doi.org/https://doi.org/10.1016/j.jbef.2020.100410

Botha, F., de New, J. P., de New, S. C., Ribar, D. C., & Salamanca, N. (2021). Implications of COVID-19 labour market shocks for inequality in financial wellbeing. *Journal of Population Economics*, *34*(2), 655–689. https://doi.org/10.1007/s00148-020-00821-2

Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, *79*, 228–237. https://doi.org/https://doi.org/10.1016/j.jbusres.2017.03.013

Chu, Z., Wang, Z., Xiao, J. J., & Zhang, W. (2017). Financial literacy, portfolio choice and financial well-being. *Social Indicators Research*, *132*(2), 799–820. https://doi.org/10.1007/s11205-016-1309-2

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. Washington, DC: World Bank.

Garðarsdóttir, R. B., & Dittmar, H. (2012). The relationship of materialism to debt and financial well-being: The case of Iceland's perceived prosperity. *Journal of Economic Psychology*, *33*(3), 471–481. https://doi.org/https://doi.org/10.1016/j.joep.2011.12.008

Gonzalez, D., Zuckerman, S., Kenney, G. M., & Karpman, M. (2020). Almost half of adults in families losing work during the pandemic avoided health care because of costs or COVID-19 concerns. *Urban Institute*, *11*. Washington, DC.

Gray, D. (2014). Financial concerns and overall life satisfaction: a joint modelling approach. Research Report. 2014008 . Department of Economics, University of Sheffield ISSN 1749-8368

Malone, K., Stewart, S. D., Wilson, J., & Korsching, P. F. (2010). Perceptions of financial well-being among American women in diverse families. *Journal of Family and Economic Issues*, *31*, 63–81.

Netemeyer, R. G., Warmath, D., Fernandes, D., & Lynch Jr., J. G. (2018). How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research*, *45*(1), 68–89. https://doi.org/10.1093/jcr/ucx109

O'Neill, B., Sorhaindo, B., Xiao, J. J., & Garman, E. T. (2005). Financially distressed consumers: Their financial practices, financial well-being, and health. *Journal of Financial Counseling and Planning*, *16*(1).

Plagnol, A. C. (2011). Financial satisfaction over the life course: The influence of assets and liabilities. *Journal of Economic Psychology*, *32*(1), 45–64. https://doi.org/https://doi.org/10.1016/j.joep.2010.10.006

Prawitz, A., Garman, E. T., Sorhaindo, B., O'Neill, B., Kim, J., & Drentea, P. (2006). InCharge financial distress/financial well-being scale: Development, administration, and score interpretation. *Journal of Financial Counseling and Planning*, *17*(1).

Rahman, M., Isa, C. R., Masud, M. M., Sarker, M., & Chowdhury, N. T. (2021). The role of financial behaviour, financial literacy, and financial stress in explaining the financial well-being of B40 group in Malaysia.

Future Business Journal, *7*(1), 1–18.

Shim, S., Xiao, J. J., Barber, B. L., & Lyons, A. C. (2009). Pathways to life success: A conceptual model of financial well-being for young adults. *Journal of Applied Developmental Psychology*, *30*(6), 708–723. https://doi.org/https://doi.org/10.1016/j.appdev.2009.02.003

Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2017). Does self-control predict financial behavior and financial well-being? *Journal of Behavioral and Experimental Finance*, *14*, 30–38. https://doi.org/https://doi.org/10.1016/j.jbef.2017.04.002

Taft, M. K., Hosein, Z. Z., Mehrizi, S. M. T., & Roshan, A. (2013). The relation between financial literacy, financial wellbeing and financial concerns. *International Journal of Business and Management*, *8*(11), 63.

Vieira, K. M., Potrich, A. C. G., Bressan, A. A., & Klein, L. L. (2021). Loss of financial well-being in the COVID-19 pandemic: Does job stability make a difference? *Journal of Behavioral and Experimental Finance*, *31*, 100554. https://doi.org/https://doi.org/10.1016/j.jbef.2021.100554

Weissman, J., Russell, D., & Mann, J. J. (2020). Sociodemographic characteristics, financial worries and serious psychological distress in U.S. adults. *Community Mental Health Journal*, *56*(4), 606–613. https://doi.org/10.1007/s10597-019-00519-0

APPENDIX

Appendix 1. Countries Included in the Sample

Economy	Freq.	Percent	Economy	Freq.	Percent
Afghanistan	997	0.83	Lebanon	1,015	0.85
Albania	989	0.82	Liberia	974	0.81
Algeria	942	0.78	Lithuania	893	0.74
Argentina	986	0.82	Malawi	983	0.82
Armenia	942	0.78	Malaysia	965	0.8
Australia	954	0.79	Mali	972	0.81
Austria	870	0.72	Malta	972	0.81
Bangladesh	979	0.82	Mauritius	970	0.81
Belgium	977	0.81	Moldova	947	0.79
Benin	980	0.82	Mongolia	971	0.81
Bolivia	979	0.82	Morocco	956	0.8
Bosnia and Herzegovina	986	0.82	Mozambique	883	0.74
Brazil	967	0.81	Myanmar	999	0.83
Bulgaria	970	0.81	Namibia	982	0.82
Burkina Faso	955	0.8	Nepal	991	0.83
Cambodia	981	0.82	Netherlands	968	0.81
Cameroon	976	0.81	New Zealand	951	0.79
Canada	947	0.79	Nicaragua	981	0.82
Chile	990	0.82	Nigeria	967	0.81
Colombia	977	0.81	North Macedonia	977	0.81
Congo, Rep.	895	0.75	Norway	991	0.83
Costa Rica	983	0.82	Pakistan	947	0.79
Cote d'Ivoire	979	0.82	Panama	948	0.79
Croatia	965	0.8	Paraguay	993	0.83
Cyprus	1,003	0.84	Peru	980	0.82
Czech Republic	974	0.81	Philippines	999	0.83
Denmark	996	0.83	Poland	948	0.79
Dominican Republic	909	0.76	Portugal	985	0.82
Ecuador	983	0.82	Romania	924	0.77
Egypt, Arab Rep.	996	0.83	Russian Federation	1,985	1.65
El Salvador	943	0.79	Saudi Arabia	1,017	0.85
Estonia	964	0.8	Senegal	972	0.81
Finland	999	0.83	Serbia	978	0.81
France	986	0.82	Sierra Leone	980	0.82
Gabon	1,003	0.84	Singapore	976	0.81
Georgia	976	0.81	Slovak Republic	995	0.83
Germany	909	0.76	Slovenia	985	0.82
Ghana	977	0.81	South Africa	978	0.81
Greece	993	0.83	South Sudan	808	0.67
Guinea	954	0.79	Spain	965	0.8
Honduras	975	0.81	Sri Lanka	969	0.81
Hong Kong SAR, China	957	0.8	Sweden	993	0.83
Hungary	974	0.81	Switzerland	870	0.72
Iceland	492	0.41	Taiwan, China	986	0.82
India	2,897	2.41	Tajikistan	933	0.78
Indonesia	1,047	0.87	Tanzania	978	0.81
Iran, Islamic Rep.	996	0.83	Thailand	985	0.82
Iraq	1,008	0.84	Togo	977	0.81
Ireland	974	0.81	Tunisia	959	0.8
Israel	941	0.78	Türkiye	940	0.78
Italy	977	0.81	Uganda	987	0.82
Jamaica	438	0.36	Ukraine	967	0.81
Japan	990	0.82	United Arab Emirates	916	0.76
Jordan	1,002	0.83	United Kingdom	935	0.78
Kazakhstan	889	0.74	United States	993	0.83
Kenya	992	0.83	Uruguay	980	0.82
Korea, Rep.	1,003	0.84	Uzbekistan	973	0.81
Kosovo	981	0.82	Venezuela, RB	999	0.83
Kyrgyz Republic	944	0.79	West Bank and Gaza	992	0.83
Lao PDR	971	0.81	Zambia	961	0.8
Latvia	969	0.81	Zimbabwe	994	0.83
Total	**120,106**	**100**			