

# Coronavirus Pandemic

# SARS-CoV-2 pandemic and beyond: The impact of the SARS-CoV-2 pandemic on Turkish youth and their attitude toward future prospects

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#### **Abstract**

Introduction: The impact of SARS-CoV-2 is intergenerational, and although it affects everyone differently, its effects on young people have been systematic, violent, and disproportionate compared to many social groups. This study aims to understand the impact of the SARS-CoV-2 pandemic on Turkish youth and their attitude toward future prospects.

Methodology: This cross-sectional study was carried out between March 15 and May 20, 2022, with young people aged 18–29 living in Turkey. The data was collected using an online survey tool. In descriptive statistical analyses, categorical variables were presented as frequency and percentage, and continuous variables as mean (M) and standard deviation (SD). The independent samples t-test and the one-way analysis of variance (ANOVA) were used to test between-group differences in continuous variables.

Results: In total, 696 participants responded to the online survey. For the majority of Turkish young people, SARS-CoV-2 has not impacted their physical health (55.7%) and mental health (57.8%). In contrast, youth believe that the SARS-CoV-2 pandemic will negatively or strongly affect their future in terms of educational opportunities (58.7%), job prospects (58.6%), physical (58.1%), or mental health well-being (56.9%), economic stability (65.1%), financial stability (65.1%), and their overall future (58.2%).

Conclusions: Our findings pointed to adverse effects that would last longer than the pandemic. Priority should be given to strategies that reduce the long-term impact of the pandemic on young people and provide them with a sense of optimism that the future they desire is still achievable.

**Key words:** SARS-CoV-2; pandemic; young people; youth; attitude; future perception.

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#### Introduction

Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was initially identified at the end of 2019 in Wuhan, China [1]. On January 30, 2020, the World Health Organization (WHO) declared that the outbreak constitutes a public health emergency of international concern (PHEIC) [2] and characterized SARS-CoV-2 as a pandemic on March 11, 2020 [3].

SARS-CoV-2 is highly variable, ranging from asymptomatic infection to pneumonia and lifethreatening complications [4]. The most common symptoms of SARS-CoV-2 are fever, fatigue, cough, and difficulty breathing; less common symptoms are fatigue, headache, anosmia, ageusia, cutaneous manifestations, and gastrointestinal symptoms [4-8]. Symptoms may change with the new SARS-CoV-2 variants and can vary depending on vaccination status [8]. SARS-CoV-2 is a multi-systemic disease that can present with complications or develop during the acute phase of the illness. These complications may be gastrohepatic, autoimmune, neurological,

cardiovascular, renal, gastrohepatic, thromboembolic, respiratory, cardiovascular, renal, or autoimmune [7].

The SARS-CoV-2 pandemic has changed and shaped the world, impacting people's lives in an unprecedented way [9-19]. The current pandemic, which started as a health crisis in 2019, quickly turned into a deep economic and social crisis [9,10]. Although the SARS-CoV-2 pandemic has affected everyone differently, its impact on young people has been systematic, profound, and disproportionate compared to many social groups [11]. SARS-CoV-2's alarming effects on youth have been accompanied by increased unemployment, financial pressure, education and training inequality, social isolation, and mental health problems [11-18]. All of these are interconnected and can aggravate each other [16,17]. As we have seen, the SARS-CoV-2 pandemic has caused both a health and socioeconomic crisis in Turkey as well as around the world [19-25]. SARS-CoV-2 and the measures resulting from efforts to contain it have had significant and detrimental effects on many aspects of Turkish youth's lives [20-24].

The crisis's effects on young people have been multifaceted, including significant disruptions in education and training and job and income losses [11,12,14-17,21,22].

The SARS-CoV-2 pandemic has brought economies around the world to a sudden halt [11,12]. This recession demonstrated that younger generations are more vulnerable than older generations [11,12–16,18,21,22].

During the pandemic, young people also faced thriving and often challenging economic and employment environments in Turkey [19,21,22]. The available evidence shows that Turkey, one of the developing countries, is among the countries most affected by the economic crisis and that the real repercussions of this effect will be seen in the long run [19]. Unfortunately, young people face Turkey's challenging economic and employment environment [21,22]. In the economic crisis caused by SARS-CoV-2, as in previous crises, young people with less work experience and less educated people were more affected. In this period, the unemployment rate among the youth, who represent the population between the ages of 15 and 24, who can work in Turkey, is around 26%. This rate is well above the Organization for Economic Co-operation and Development (OECD) averages [22].

At the same time, the SARS-CoV-2 pandemic had a universal impact on education systems, causing the largest education disruption in history. In 2020, nearly 1.6 billion students worldwide were affected by school closures [14–18,21–23]. Education systems have been forced to adapt to the new reality of distance and online learning. At the same time, this crisis has exposed the many inadequacies and inequities in education systems. These effects include but aren't limited unpreparedness to deliver online learning, loss of instructional skills time, and often a lack of equipment and time for homeschooling [14-18,21-23]. For example, approximately 6 million students in Turkey could not fully participate in the education process or had to drop out due to financial problems and a lack of technological opportunities for distance education and training applications [15]. On the other hand, prolonged school closures due to the lack of face-to-face interaction have disrupted school-based services such as nutrition, mental health, and social support, increasing student stress and anxiety [21,23]. These experiences are expected to significantly affect this generation's earnings and life opportunities [15].

One of the immediate and problematic effects of SARS-CoV-2 was on young people's mental health and

well-being [13,16,18–20]. Global evidence shows that young people have increased mental health concerns due to the SARS-CoV-2 pandemic compared to other age groups [13,16,18-20]. Indeed, the SARS-CoV-2 pandemic has led to a parallel pandemic of mental health problems, putting young people at higher risk and with worrying consequences for their emotional and social functioning [12,13]. Studies have identified a wide number of risk factors that increase a young person's vulnerability to mental health issues during the pandemic, including loneliness, lower educational attainment, unemployment, economic stress, and financial hardship [16-18]. Heightened rates of mental health concerns among young people have also been recorded in Turkey [19,20,24,25]. For example, an online survey of young people in Turkey (n = 607) showed that 81% of young people rated their psychological state as either negative or very negative [24]. Similarly, another youth study based in Turkey (n = 2437) confirmed that 75.6% of youth were anxious during the pandemic [25].

It is important to note that the effects of SARS-CoV-2 on youth are complex and not yet fully understood. The impact of SARS-CoV-2 can be dynamic; when circumstances change (such as introducing or easing restrictions), outcomes change rapidly (for example, mental health). Many of the effects of SARS-CoV-2 will be interrelated and may take some time to become apparent. The sooner we understand these effects, the sooner we can begin to address them [9,10,17,26].

Studies evaluating attitudes toward SARS-CoV-2 in Turkey so far represent the general population, and studies on Turkish youth are lacking. Therefore, the purpose of this study was to investigate the impact of the SARS-CoV-2 pandemic on Turkish youth and their attitude toward future prospects.

# Methodology

Study design

We conducted an anonymous, self-administered, web-based survey of the attitudes of Turkey's resident young people. The terms "young people" and "youth" in this survey refer primarily to those aged 18–29 years old. This wide age range was chosen because Turkish youth are more likely to participate in higher education and the labor market. Inclusion criteria; The participants were residing in Turkey, aged between 18-29, and willing to participate in the research.

# Study instruments

This cross-sectional study was conducted between March 15 and May 20, 2022, during the "return to normal" process in Turkey. "Return to normal" refers to the period when the Turkish government started to implement the decision of May 17, 2021, and the restrictions and other interventions for the pandemic were reduced [27]. The survey was adapted from one used in a global, similar study [28].

Research questions revised. It was translated from English to Turkish. Expert linguists checked for accuracy. To reduce nonresponse bias and increase completion rates, the online survey is designed to encourage respondents to move on to the next question.

A pilot study was conducted with a sample of 30 people to test the reliability and validity of the questionnaire. Following the pilot, a final questionnaire consisting of 15 questions was approved. The selfadministered questionnaire prepared in the Google form was sent to the participants via WhatsApp and email. The survey link was sent to the common WhatsApp groups between the lecturer and students and to the email addresses listed in the student records. We used a snowball sampling technique, asking participants to share the survey link with others within their network. We used OpenEpi 3.01 (http://www.openepi.com) to calculate the sample size [29]. The sample size was determined at 664 people at a 99% confidence level, 5% confidence limits, 50% expected frequency, and a 1.0 design effect value, and this number was increased to 696 people in order to reach the targeted confidence level.

# Study Measures

The questionnaire was divided into two sections, with all the questions being mandatory. The first section of the questionnaire includes information on the sociodemographic characteristics of study participants, such as age, gender, education level, occupation, employment status, and income.

The second section included the attitudes of youth towards SARS-CoV-2. Concern about being infected with SARS-CoV-2 was assessed using a single question with ratings ranging from "strongly disagree" to "strongly agree." The highest score was 5, and the lowest score was 1. A higher score indicates a higher level of SARS-CoV-2-related worry. The current impact of SARS-CoV-2 on young people has been evaluated with two statements: "How has SARS-CoV-2 affected your physical health and well-being?" and "How has SARS-CoV-2 affected your mental health and well-being?" a 5-point Likert scale, whose responses ranged from "strongly negatively affected" to "strongly positively affected." Lower scores indicate more negative experiences. Cronbach's alpha was 622. Participants were also asked to rate seven statements on the same scale that assessed the impact of the SARS-CoV-2 pandemic on their future. (a) "I believe SARS-CoV-2 will have an impact on my relationships with my friends and family in the future." (b) "I believe SARS-CoV-2 will have an impact on my physical health and well-being in the future." (c) "I believe SARS-CoV-2 will have an impact on my mental health and well-being in the future." (d) "I believe SARS-CoV-2 will have an impact on my job prospects in the future." (e) "I believe SARS-CoV-2 will have an impact on my educational opportunities in the future." (f) "I believe SARS-CoV-2 will have an impact on my financial stability in the future,"(g) "I believe SARS-CoV-2 will have an impact on my overall life in the future." a 5-point Likert scale, whose responses ranged from "strongly negatively affected" to "strongly positively affected." The highest score was 5, and the lowest score was 1. Lower scores indicate a more negative attitude toward the future. The Cronbach's alpha value was 8.86.

An English version of the questionnaire is available in Supplementary Table 1 at the end of the present paper.

**Table 1.** Measures of absolute skewness and kurtosis of mean values for attitudes scales.

	Skewness	Kurtosis
I am worried about getting infected by SARS-CoV-2	0.124	-0.842
SARS-CoV-2 has affected my physical health	0.225	-0.623
SARS-CoV-2 has affected my mental health	0.178	-1.118
I feel that SARS-CoV-2 will affect my relationships with friends and family in the future	0.262	0.247
I feel that SARS-CoV-2 will affect my physical health and well-being in the future	0.550	0.653
I feel that SARS-CoV-2 will affect my mental health and well-being in the future	0.558	0.629
I feel that SARS-CoV-2 will affect my job prospects in the future	0.809	0.911
I feel that SARS-CoV-2 will affect my education in the future	0.730	1.099
I feel that SARS-CoV-2 will affect my economic stability in the future	0.817	0.594
I feel that SARS-CoV-2 will affect my future overall	0.497	0.287

# Statistical Analysis

For data statistics, the Statistical Package for Social Sciences software, version 23.0 (IBM SPSS Corp., Armonk, NY, USA) was used. The analysis of the data relies on both descriptive and inferential statistics. In descriptive statistical analyses, categorical variables were presented as frequency and percentage, and continuous variables as mean (M) and standard deviation (SD). The means were interpreted as follows: in the point range of "Strongly disagree" (1.00-1.80), Disagree" (1.81-2.60), "Neutral" (2.61-3.40), "Agree" (3.41-4.20), and "Strongly agree" (4.21-5.00) [30]. Before performing inferential statistical analyses, normality assumptions were checked for skewness and kurtosis for each item. Skewness and kurtosis values for all items were found to be between -1.5 and +1.5 [31]. Skewness and Kurtosis values are presented in Table 1. Accordingly, all Likert-type questions met the criteria for normal distribution. A Tukey HSD ("Honestly Significant Difference") post hoc test was applied to indicate which groups differed significantly from the others. A p value < 0.05 was considered significant for all tests.

#### Ethical Consideration

The study is consistent with the Declaration of Helsinki. The study was approved by the University of Gazi Research Ethics Committee (Ref: 2022-277).

#### Results

In total, 696 participants responded to the online survey. The response rate was 100%. Most participants (82.8%) were aged 18–24; 69.0% were female; and

**Table 2.** Demographic characteristics of participants.

8 1						
Characteristics	n (%)					
Gender						
Female	216 (31.0)					
Male	480 (69.0)					
Age (years)						
18-24	576 (82.8)					
25-29	120 (17.2)					
<b>Education level</b>						
Primary education	36 (5.2)					
Upper secondary education	159 (22.8)					
Associate Degree	339 (48.7)					
Bachelor's degree	162 (23.3)					
Occupation						
Student	567 (81.5)					
Other occupational sectors	129 (18.5)					
Income (Monthly)						
Less than \$106.34	75 (10.8)					
\$106.34 - \$265.81	303 (43.5)					
\$265.81 - \$531.63	222 (31.9)					
> \$531.63 or more	96 (13.8)					
<b>Employment status</b>	. ,					
Employment	81 (11.6)					
Unemployed	615 (88.4)					

88.4% were unemployed. Nearly half of the participants (48.7%) had an associate's degree. The majority of study participants (81.5%) were students, with only 18.5% coming from other occupational sectors. In addition, the monthly income of most participants (43.5%) was within the range of \$106.34 to \$265.81. Participants' demographic characteristics are presented in Table 2.

#### Attitudes about SARS-CoV-2

In this study, the perception of the risk of being infected with SARS-CoV-2 was measured with a single

Table 3. The attitude scores of the participants according to the 5-point Likert scale

Statements	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	Mean	SD
I am worried about getting infected by SARS-CoV-2 <sup>a</sup>	108 (15.5)	293 (42.1)	190 (27.3)	82 (11.8)	23 (3.3)	2.45	0.92
SARS-CoV-2 has affected my physical health <sup>b</sup>	129 (18.5)	180 (25.9)	249 (34.5)	102 (14.7)	45 (6.5)	2.64	1.13
SARS-CoV-2 has affected my mental health <sup>b</sup> I feel that SARS-CoV-2 will affect my	168 (24.1)	126 (18.1)	192 (27.6)	102 (14.7)	108 (15.5)	2.79	1.37
relationships with friends and family in the future <sup>b</sup>	84 (12.1)	198 (28.4)	330 (47.4)	51 (7.3)	33 (4.7)	2.64	0.95
I feel that SARS-CoV-2 will affect my physical health and well-being in the future <sup>b</sup>	120 (17.2)	285 (40.9)	243 (34.9)	27 (3.9)	21 (3)	2.34	0.91
I feel that SARS-CoV-2 will affect my mental health and well-being in the future <sup>b</sup>	120 (17.2)	276 (39.7)	249 (35.8)	27 (3.09)	24 (3.4)	2.37	0.93
I feel that SARS-CoV-2 will affect my job prospects in the future <sup>b</sup>	87 (12.5)	321 (46.1)	219 (31.5)	36 (5.2)	33 (4.7)	2.44	0.94
I feel that SARS-CoV-2 will affect my education in the future <sup>b</sup>	84 (12.1)	324 (46.6)	240 (34.5)	24 (3.4)	24 (3.4)	2.40	0.87
I feel that SARS-CoV-2 will affect my economic stability in the future <sup>b</sup>	156 (22.4)	297 (42.7)	174 (25)	33 (4.7)	36 (5.2)	2.28	1.02
I feel that SARS-CoV-2 will affect my future overall <sup>b</sup>	102 (14.7)	303 (43.5)	222 (31.9)	48 (6.9)	21 (3)	2.40	0.92

SD: standard deviation; a indicates: 1: Strongly Disagree to 5: Strongly Agree; b indicates: 1. Strongly negatively affected to 5. Strongly positively affected.

question: "I am worried about getting infected by SARS-CoV-2."The mean score was 2.45 (SD = 0.92), which represents a rating of "disagree." The higher mean score indicates a high level of concern.

The mean scores of physical health and well-being were 2.64 (SD = 1.13) and mental health and well-being were 2.79 (SD = 1.37) between 2 and 3, which represents the rating of "Neutral". The option indicates that the current SARS-CoV-2 pandemic has had no impact, either positively or negatively (Table 3).

The seven items were used to measure youth perceptions of the impact on their future due to the SARS-CoV-2 pandemic. Table 3 shows the mean score and standard deviation score of each indicative variable in future perception. The mean scores of "Physical health and well-being 2.34 (SD = 0.91), "Mental health and well-being" 2.37 (SD = 0.93), "Job prospects" 2.44 (SD = 0.94), "Education opportunities" 2.40 (SD = 0.87), "Financial stability" 2.28 (SD = 1.02), and "Future overall" 2.40 (SD = 0.92) were between 1 and 2, which represents the rating "Negatively affected". Low scores indicate more negative attitudes toward the future due to SARS-CoV-2. The mean scores of "Relationship with Friends and Family" were 2.64 (SD = 0.95) and were between 2 and 3, which represents the rating of "Neutral." The option indicates that SARS-CoV-2 has had no effect on their relationships with friends and family, either positively or negatively (Table 3).

Results of an independent sample t-test

An independent sample t-test indicates that 25–29-year-old youth demonstrated more positive attitudes for all statements about the future impacts of SARS-CoV-2 compared to 18–24-year-olds. The t-value and *p* value of the participants are presented in Table 4.

According to the t-test analyses, females (x = 2.28) feel more than males (x = 2.51) that their future mental health has been negatively or strongly negatively affected due to SARS-CoV-2 (p = 0.002). Furthermore, females (x = 2.34) feel more than males (x = 2.54) that their future overall life has been negatively or strongly negatively affected due to SARS-CoV-2 (p = 0.007) (Table 4).

Finally, as shown in Table 4, there was a significant difference in scores for employment status. Employed youth (x = 2.04) feel more than unemployed youth (x = 2.39) that their future physical health and well-being has been negatively or strongly negatively affected due to SARS-CoV-2 (p = 0.001).

Results of a one-way analysis of variance (ANOVA)

As shown in Table 5, the results show a significant difference in "future relationships with friends and family" among young people with different levels of education [F = 9.841, p < 0.01]. Post hoc analysis indicated that primary school graduates (x = 2.00) felt SARS-CoV-2 had a more negative impact on their future relationships with friends and family than other educational groups. In addition, bachelor's degree graduates (x = 2.89) feel more that their future physical health and well-being have been negatively affected

**Table 4.** T-test results of participants' future perceptions of SARS-CoV-2 related.

Statements	Age				Gender		Employment status		
Statements	18-24 (X)	25-29 (X)	t	Male (X)	Female (X)	t	Yes	No	t
I feel that SARS-CoV-2 will									
affect my relationships with	2.61	2.80	-2.003*	2.57	2.68	NS	2.48	2.66	NS
friends and family in the future.									
I feel that SARS-CoV-2 will									
affect my physical health and	2.26	2.78	-5.817**	2.36	2.34	NS	2.04	2.39	3.627**
well-being in the future									3.027
I feel that SARS-CoV-2 will									
affect my mental health and well-	2.32	2.53	-2.218*	2.51	2.28	3.080**	2.23	2.37	NS
being in the future									
I feel that SARS-CoV-2 will									
affect my job prospects in the	2.36	2.78	-4.405**	2.40	2.45	NS	2.37	2.44	NS
future									
I feel that SARS-CoV-2 will	2.31	2.80	-5.707**	2.43	2.38	NS	2.41	2.40	NS
affect my education in the future	2.31	2.80	-3.707	2.43	2.36	No	2. <del>4</del> 1	2.40	IND
I feel that SARS-CoV-2 will									
affect my economic stability in	2.15	2.90	-7.612**	2.35	2.24	NS	2.19	2.29	NS
the future									
I feel that SARS-CoV-2 will	2.28	2.98	-7.799**	2.54	2.34	2.710**	2.44	2.40	NS
affect my future overall	2.20	2.90	-1.199	2.34	2.34	4./10	Z. <del>74</del>	2.40	1/10

<sup>\*:</sup> p < 0.05; \*\*: p < 0.01; NS: Non statistically significant correlations found.

due to SARS-CoV-2 than upper-secondary school (x = 2.57) and associate degree (x = 2.63) graduates. Furthermore, income scores differed statistically between groups [F = 3.445, p < 0.01]. Post hoc analysis indicated that young people with an income of > \$531.63 (x = 1.87) would have more negative feelings about mental health and well-being than those with an income of < \$106.34 (x = 2.46).

As shown in Table 5, there is a significant difference in "future physical health and well-being" among young people with different education levels [F = 3.400, p < 0.05]. Post hoc analysis showed that primary school graduates (x = 2.00) thought their "future physical health and well-being" would be more negatively affected by SARS-CoV-2 than secondary school graduates (x = 2.49). Income level did not produce differences.

As shown in Table 5, "future mental health and well-being" differ according to different education levels [F = 5.825, p < 0.01]. Post hoc analysis showed that undergraduates (x = 2.17) felt more negatively impacted by SARS-CoV-2 on their future mental health and well-being than upper-secondary school graduates (x = 2.59). A statistically significant difference according to income scores [F = 3.628, p < 0.01]. Furthermore, there was a statistically significant

difference between the groups in terms of income [F = 3.628, p < 0.01]. Post-hoc analysis showed that young people with an income of > \$531.63 (x = 1.87) have more negative feelings about "future mental health and well-being" compared to other income groups.

As shown in Table 5, the results show a significant difference in "future job prospects" between different levels of education [F = 5.669, p < 0.01]. Post hoc analysis showed that primary school graduates (x = 2.00) had a more negative impact on their "future job prospects" due to SARS-CoV-2 than upper-secondary school graduates (x = 2.47) and associate degree graduates (x = 2.54). In addition, bachelor's degree graduates (x = 2.28) have a more negative perception than associate degree graduates (x = 2.54).

As shown in Table 5, the results show a significant difference in "future educational opportunities" between different levels of education [F = 5.921, p < 0.01]. Post hoc analysis suggests that associate degree (x = 2.25) and bachelor's degree (x = 2.28) graduates would be more negatively affected by "future educational opportunities" due to SARS-CoV-2 than primary school graduates (x = 2.75). In addition, associate degree graduates (x = 2.25) had more negative feelings about future educational opportunities than associate degree graduates (x = 2.49). There was also a

Table 5. One-Way ANOVA results of participants' future perceptions of SARS-CoV-2 related.

	Education level						Income					
Statements	1	2	3	4	F	Difference	1	2	3	4	F	Differenc e
I feel that SARS-CoV-2												
will affect my	2.00	2.57	2.63	2.89	0 841**	1-2,3,4 / 4-2,3	2.60	2.77	2.58	2.31	3.445**	1-4
relationships with friends	2.00	2.57	2.03	2.07	7.041	2,3	2.00	2.11	2.30	2.51	5.775	1-4
and family in the future												
I feel that SARS-CoV-2												
will affect my physical	2.00	2.49	2.35	2.28	3.400*	1-2	2.48	2.41	2.24	2.25	NS	
health and well-being in the future												
I feel that SARS-CoV-2												
will affect my mental												
health and well-being in	2.25	2.59	2.35	2.17	5.825**	2-4	2.38	2.37	2.39	1.87	3.628**	4-1,2,3
the future												
I feel that SARS-CoV-2												
will affect my job	2.00	2.47	2.54	2.28	5.669**	1-2,3 / 3-4	2.68	2.37	2.41	2.50	NS	
prospects in the future												
I feel that SARS-CoV-2												
will affect my education in	2.75	2.25	2.49	2.28	5.921**	1-2,4 / 2-3	2.52	2.46	2.20	2.44	4.954**	2-3
the future												
I feel that SARS-CoV-2	2.75	2.15	2.28	2.28	3.382*	1-2	2.08	2.31	2.11	2.60	6.948**	112
will affect my economic stability in the future	2.73	2.13	2.28	2.28	3.382"	1-2	2.08	2.31	2.11	2.69	0.948	4-1,3
I feel that SARS-CoV-2												
will affect my future	3.00	2.36	2.31	2.50	7.060**	1-2,3,4	2.32	2.42	2.28	2.88	4.440**	4-1,2,3
overall	2.00	2.50		2.50		,-, .			0	2.00		. 1,2,5

<sup>\*:</sup> p < 0.05; \*\*:p < 0.01; F: ANOVA test; NS: non statistically significant correlations found. Education level: 1. Primary education, 2. Upper secondary education, 3. High school (college) 4. Bachelor's degree. Income: 1. < \$106.34, 2. \$106.34-\$265.81, 3. \$265.81-\$531.63, 4. > \$531.63.

significant difference based on income (F = 4.954, p < 0.01). Post hoc analysis showed that youth with an income of \$265.81-\$531.63 (x = 2.20) have more negative feelings about "future educational opportunities" than young people with an income of \$106.34-\$265.81 (x = 2.46).

As shown in Table 5, there is a significant difference in future financial stability between educational levels [F = 3.382, p < 0.05]. Post hoc analysis indicated that primary school graduates (x = 2.75) felt less that SARS-CoV-2 had negatively impacted their future financial stability than uppersecondary education graduates (x = 2.15). Also, income scores were statistically different between groups [F = 6.948, p < 0.01]. Youth with an income of > \$531.63 (X = 2.69) feel less that their future financial stability has been negatively affected due to SARS-CoV-2 than those with < \$106.34 (X = 2.08) and \$265.81-\$531.63 (x = 2.11).

Finally, as shown in Table 5, there is a significant difference in perception of the overall life future across education levels [F=7.060, p<0.01]. Post-hoc analysis showed that primary school graduates (x=2.75) were less negatively affected by SARS-CoV-2 in their future overall than other education groups. Also, income scores were statistically different between groups [F=4.440, p<0.01]. Youth with an income of > \$531.63 (x=2.88) feel that their overall future has been negatively affected more by SARS-CoV-2 than other income groups.

# **Discussion**

This study has provided comprehensive data on Turkish youth and their attitude toward future prospects for the first time.

The impacts of SARS-CoV-2 on health and well-being have not been felt uniformly across society [17]. Emerging evidence suggests that young people are less susceptible to SARS-CoV-2 infection and have a lower risk of serious effects when infected [32,33]. Similarly, Turkish youth are less likely to be hospitalized or die than older adults [34]. It is important to note that there is uncertainty about the longer-term consequences of SARS-CoV-2 on the health and well-being of young people [16, 17, 18]. Consistent with global and Turkish data, the results of this survey show that for the majority of youth (55.7%), SARS-CoV-2 has not had a major impact on their physical health and well-being.

Mental health status is associated with behavior at all stages of life. Physical health and mental health are closely associated through various mechanisms; the importance of mental health in the maintenance of good physical health is now well substantiated [35]. As noted in the introduction, globally, studies show that, compared to other age groups, young adults have experienced heightened mental health concerns due to the SARS-CoV-2 pandemic [35].

Survey results show that 57.8% of youth feel that SARS-CoV-2 has not had a major impact on their mental health. Our findings are more promising than studies in this area [20,24,25]. Durbas et al. reported that anxiety and stress associated with the SARS-CoV-2 pandemic have increased among university students and are now among the social, academic, and physical burdens of their university years [20]. A study conducted by the Community Volunteers Foundation (TOG) showed that young people evaluate their psychological state as either negative or very negative [24]. Similarly, another youth survey based in Turkey (n = 2,437) reported that 75.6% of youth were anxious during the pandemic [25]. Numerous international studies have also reported increased mental health problems among young people [11-13,16-18,28,36]. An online survey of US college students (n = 2,031) showed that 71.2% of students had increased stress and anxiety levels during SARS-CoV-2. In addition, 30.2% of those surveyed stated that their mental health and well-being were positively and strongly affected by SARS-CoV-2. In general, mental health and mental illness, as well as physical health and illness, are influenced by various interrelated social, psychological, and biological factors [35]. This may be a reflection of psychological beliefs such as optimism, self-control, and a sense of meaning, which are known to protect mental and physical health [36]. This study provides a snapshot of the impact of the SARS-CoV-2 pandemic on young people. We note that a dynamic relationship exists between human development and mental health, determined by multiple and interacting social, psychological, and biological factors [35].

Although it is not surprising that a pandemic might lead to physical and mental health issues, understanding how people react to SARS-CoV-2 and protect themselves from it can help us better understand how to manage the outbreak [37].

Studies have shown that people's perceptions of SARS-CoV-2 risk significantly impact their ability to protect themselves and engage in preventive behaviors [37-39].

This survey shows that most young people (57.6%) are not worried about getting sick with SARS-CoV-2. This can be explained in several ways. First, this study was conducted at a time when the impact of the pandemic in Turkey was decreasing and pandemic

measures were decreasing. Therefore, young people may underestimate the risk of SARS-CoV-2 infection. Second, it may have to do with not having had a direct negative experience with the virus [39]. Third, it may be due in part to the current understanding of the perception that younger age groups are less likely to experience complications and risks with SARS-CoV-2 [33,34].

Risk is dynamic, and public perception of risk may be underestimating or exaggerating (panicking) real risk at different times [38]. People who perceive risk as low are more likely to engage in risky behaviors or reduce preventative measures [38,39]. To prevent future public health crises, we emphasize the need for governments to develop effective communication techniques that raise awareness of health concerns at all pandemic stages [38].

Even if the complete disappearance of SARS-CoV-2 is still uncertain, what is certain is that this pandemic will have long-lasting effects and shape the future of the world [16,17]. Accordingly, this study presented Turkish youths' perceptions of how SARS-CoV-2 will impact their future.

This study shows that over half of the participants (58.1%) were concerned about their future physical health and well-being due to SARS-CoV-2. This may be related to bad experiences such as stressful working conditions, unhealthy lifestyles, and health disparities during the pandemic [11,12,16-18]. In addition, we found that primary school graduates surveyed also reported a more negative impact on their future physical health and well-being due to SARS-CoV-2 compared to upper secondary graduates. This finding strengthens the link between low education and poor health outcomes [40-43]. Upper secondary graduation can offer opportunities for people to change their socioeconomic status and, in turn, reduce the likelihood of these adverse health outcomes [41,42].

A positive sense of mental health is the foundation for well-being and effective functioning for individuals and communities [35].

This present study demonstrated that more than half (56.9%) of youth feel that SARS-CoV-2 will negatively or strongly negatively impact their future mental health and well-being. This is in line with previous studies showing increased concerns about mental health and well-being among young people [11-13,16-18,20,25,28]. Our data highlighted the differential relationships between youth perceptions of future mental health and well-being and between education and income. Unexpectedly, young people with higher education and income were more concerned about the

negative impact of SARS-CoV-2 on their future mental health and well-being than other groups. This data seems to weaken the link between the positive effects of higher education and higher income on health and well-being [40-42]. The literature offers some explanations for this interesting finding. According to Braveman and Gottlieb, a higher level of a certain social factor (for example, income) may not lead to better health. This is not surprising because the effects of any one factor depend on the presence of numerous other factors such as social, economic, psychological, environmental, genetic, and epigenetic [40]. Taken together, these findings suggest that a significant proportion of Turkish youth may experience disadvantages that are likely to be associated with longterm physical and mental health outcomes. In addition, it is clear that young people's perceptions of their future health do not coincide with basic social variables such as income, income inequality, and education level.

Academic and learning opportunities that were delayed or disrupted during SARS-CoV-2 had a profound and negative impact on Turkish students [23]. Our findings showed that over half of the youth (58.7%) feel that SARS-CoV-2 will negatively or strongly negatively impact their education opportunities in the future. Our results are in line with global and national data showing that disruption and loss of learning are a concern for many young people [14-18,21,23].

The study further showed that upper-secondary school and bachelor's degree graduates had more negative feelings about their future educational opportunities compared to primary school and associate degree graduates. This result may be explained by the fact that young people who will start post-secondary academic education are more worried about their future careers due to their negative experiences during the pandemic and the uncertainties about education. On the other hand, the decrease in the required educational experience, the increase in debt and other academic changes in future barriers, and educational opportunities may have increased the anxiety of undergraduate students making career plans.

This study showed that young people's insecurity about their job opportunities (58.6%) and financial future (65.1%) increased due to SARS-CoV-2. This indicates that financial pressure significantly impacts young people's prospects.

As mentioned in the introduction, in Turkey, measures such as social distancing, lockdowns, and isolation had major socioeconomic consequences (for example, job insecurity, rising unemployment, loss of revenue, and increased inequalities) [21,22]. Due to the

SARS-CoV-2 pandemic, one out of every three young people in Turkey has been unemployed, and there has been a serious increase in the number of those who have given up hope of finding a job [22]. Given these unprecedented circumstances, we can understand how the pandemic has impacted job prospects and financial stability. In addition, we found significant differences related to educational level and employment status. Participants with a primary school education and bachelor's degree graduates reported being more concerned than other levels of education. Considering that graduates with low education may suffer more from job insecurity, loss of revenue, and increased inequalities, more negative feelings are to be expected [21,22]. On the other hand, the reasons for this trend among undergraduate students are challenging to explain, given the benefits of higher education such as lower unemployment rates, better job prospects,a higher social status, increased social support, and increased access to employment [40,44]. In addition to potential direct economic consequences, social and psychological outcomes may help us explain this finding [19-22].

As noted above, the impact of unemployment on young Turkish people is clear, and it is important to develop strategies that focus on providing quality jobs to young people. In addition, the most vulnerable young people's access to financial aid and the encouragement of easier upward mobility toward more secure professions that fit young people's education and skills could help them be more resilient during the next crisis [12].

In this study, more than half of the youth (58.2%) were extremely concerned about the impact of the pandemic on their overall life in the future. The data on this shows that those with low education levels were generally less concerned about the future than those with higher education levels.

This may be related to the personality traits of young people. The data show that a high level of satisfaction with various aspects of an individual's life (economics, health, and family relationships) is associated with a higher level of life satisfaction [39,40,43]. Also, higher-income young people were more likely to be optimistic about their overall life in the future. This may reflect the fact that higher incomes may have the potential to improve people's quality of life [35].

The findings from this survey differ varyingly based on age, gender, and employment status. This study showed that young people aged 18–25 have a more negative view of their future than those aged 25–

29. There may be several reasons for this finding. First, young people's transitional experiences are affected by all the physical, emotional, behavioral, and social developmental changes that occur in the 12–24 age range [41]. Second, the economic recession and disruptions in education may have negatively affected young people who have not yet completed their education and have not transitioned from education to the workforce [21-23,41]. Third, rising unemployment and financial pressure during SARS-CoV-2 may have made them feel more negative [22].

Additionally, consistent with previous studies, females' perceptions of their future mental health and well-being were more negative than males' [11,12]. Females were also more concerned about the overall impact of SARS-CoV-2 on the future than males. Given the social inequalities that Turkish women face (for example, wage inequality, low income, and low education), it is understandable that they are more concerned about their overall future and mental health and well-being [21-23].

This study's unexpected finding was related to employment status. Unemployed youth were relatively less worried about their future physical health and wellbeing than employed youth. This can be seen as weakening the link between employment and high quality of life. Employment is one of the most important determinants of physical and mental health. The long-term unemployed, in particular, have a lower life expectancy and worse health than workers [41]. However, we note that income inequality should not be interpreted as unimportant for individuals or public health, considering that circumstances differ from individual to individual.

There were some limitations to the present study. The first limitation is that, by nature, data from cross-sectional studies are collected at a single point in time, so our findings will not reflect any ongoing changes in perception and behavior as the pandemic progresses. Second, the higher response rate from females could potentially have caused a selection bias in the data. Finally, due to the nature of qualitative studies, the findings of this study do not represent the perception of all young people living in Turkey.

### **Conclusions**

This survey shows that for the majority of Turkish young people, SARS-CoV-2 has not had an impact on their physical health and mental health. In contrast, our findings pointed to adverse effects that would last longer than the pandemic. Accordingly, youth feel that the SARS-CoV-2 pandemic negatively or strongly

affected their future in terms of educational opportunities, job prospects, physical and mental health and well-being, financial stability, and overall life.

Finally, this study concluded that policies and programs should be prioritized to reduce the long-term effects of the current pandemic on young people. Strategies should be considered that give young people a sense of optimism that the future they desire is still achievable [45].

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#### References

- Gorbalenya AE, Baker SC, Baric RS, de Groot RJ, Drosten C, Gulyaeva AA, Haagmans BL, Lauber C, Leontovich AM, Neuman BW, Penzar D, Perlman S, Poon LLM, Samborskiy DV, Sidorov IA, Sola I, Ziebuhr J, Coronaviridae Study Group of the International Committee on Taxonomy of Viruses (2020) The species Severe acute respiratory syndrome-related coronavirus: classifying 2019-nCoV and naming it SARS-CoV-2. Nat Microbiol 5: 536–544. doi: 10.1038/s41564-020-0695-z.
- World Health Organization (2020) COVID-19 public health emergency of international concern (pheic) global research and innovation forum: towards a research roadmap. Available: https://www.who.int/publications/m/item/covid-19-publichealth-emergency-of-international-concern-(pheic)-globalresearch-and-innovation-forum. Accessed: 1 September 2022.
- World Health Organization (2020) Archived: WHO timeline -COVID-19. 27 April 2020 Available: https://www.who.int/news/item/27-04-2020-who-timeline---covid-19. Accessed: 1 September 2022.
- Struyf T, Deeks JJ, Dinnes J, Takwoingi Y, Davenport C, Leeflang MM, Spijker R, Hooft L, Emperador D, Dittrich S, Domen J, Horn SRA, Van den Bruel A, Cochrane COVID-19 Diagnostic Test Accuracy Group (2020) Signs and symptoms to determine if a patient presenting in primary care or hospital outpatient settings has COVID-19 disease. Cochrane Database Syst Rev. 7: CD013665. doi: 10.1002/14651858.CD013665.
- De Vito A, Fiore V, Princic E, Geremia N, Panu Napodano CM, Muredda AA, Maida I, Madeddu G, Babudieri S (2021) Predictors of infection, symptoms development, and mortality in people with SARS-CoV-2 living in retirement nursing homes. PLoS One 16: 1-14. doi: 0.1371/journal.pone.0248009
- 6. Vaira LA, Hopkins C, Salzano G, Petrocelli M, Melis A, Cucurullo M, Ferrari M, Gagliardini L, Pipolo C, Deiana G, Fiore V, De Vito A, Turra N, Canu S, Maglio A, Serra A, Bussu F, Madeddu G, Babudieri S, Giuseppe Fois A, Pirina P, Salzano FA, De Riu P, Biglioli F, De Riu G (2020) Olfactory and gustatory function impairment in COVID-19 patients: Italian objective multicenter-study. Head Neck 42: 1560-1569. doi: 10.1002/hed.26269
- Aiyegbusi OL, Hughes SE, Turner G, Rivera SC, McMullan C, Chandan JS, Haroon S, Price G, Davies EH, Nirantharakumar K, Sapey E, Calvert MJ, TLC Study Group (2021) Symptoms, complications and management of long COVID: a review. J R Soc Med 114: 428-442.
- 8. The Centers for Disease Control and Prevention (2022) Symptoms of COVID-19. Available:

- https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html. Accessed: 13 September 2023.
- World Health Organization (2020) COVID-19 Strategy. Available: https://www.who.int/publications/i/item/covid-19-strategy-update---14-april-2020. Accessed: 1 March 2022.
- 10. United Nations (2020) COVID-19 and human rights: We are all in this together, Policies brief. Available: https://www.un.org/victimsofterrorism/sites/www.un.org.victimsofterrorism/files/un -
  - \_human\_rights\_and\_covid\_april\_2020.pdf. Accessed: March 2022.
- International Labour Organization (2020) Youth and COVID-19: Impacts on jobs, education, rights and mental well-being. Available: https://www.ilo.org/global/topics/youth-employment/publications/WCMS\_753026/lang-en/index.htm. Accessed: 5 March 2022.
- Eurofound (2021) Impact of COVID-19 on young people in the EU, Publications Office of the European Union, Luxembourg. Available: https://www.eurofound.europa.eu/sites/default/files/ef\_public ation/field\_ef\_document/ef20036en.pdf. Accessed: 5 March
- World Health Organization (2022) Mental health and COVID-19: Early evidence of the pandemic's impact scientific brief. Available: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci\_Brief-Mental\_health-2022.1. Accessed: 5 March 2022.
- 14. United Nations (2020) Policy Brief: Education during COVID-19 and beyond. Available: https://unsdg.un.org/sites/default/files/2020-08/sg\_policy\_brief\_covid-19 and education august 2020.pdf. Accessed: 5 March 2022.
- 15. Hanushek EA, Woessmann L (2020) The economic impacts of learning losses education working papers. No. 225, OECD
- learning losses.education working papers, No. 225, OECD Publishing, Paris. Available: The-economicimpacts-of-coronavirus-covid-19-learning-losses.pdf (oecd.org). Accessed: 12 March 2022.
- 16. Moxon D, Bacalso C, Şerban A (2021) Beyond the pandemic: The impact of COVID-19 on young people in Europe. Brussels. European Youth Forum. Available: https://www.youthforum.org/files/European20Youth20Forum 20Report20v1.2.pdf. Accessed: 12 March 2022.
- 17. The British Academy (2021) The COVID decade: understanding the long-term societal impacts of COVID-19. Available: https://www.thebritish academy.ac.uk/documents/3238/COVID-decade-understanding-longterm-societal-impacts-COVID-19.pdf. Accessed: 2 May. 2022. doi: 10.5871/bac19stf/9780856726583.001
- 18. Samji H, Dove N, Ames M, Barbic S, Sones M, Leadbeater B (2021) British Columbia centre for disease control young adult task force. impacts of the COVID-19 pandemic on the health and well-being of young adults in British Columbia. Available: http://www.bccdc.ca/Health-Professionals-Site/Documents/COVID-Impacts/BCCDC\_COVID-19\_Young\_Adult\_Health\_Well-being\_Report.pdf. Accessed: 2 May. 2022.
- Köprülü G, Ak M (2022) Evaluation of the political psychological reflections of the COVID-19 process in the context of Turkey. J Clin Psy 25: 209-218.doi: 10.5505/kpd.2022.16779
- Durbas A, Karaman H, Solman CH, Kaygisiz N, Ersoy Ö
  (2021) Anxiety and stress levels associated with COVID-19 pandemic of university students in Turkey: A year after the

- pandemic. Front Psychiatry 12: 731348. doi: 10.3389/fpsyt.2021.731348.
- 21. International Labour Organization (2022) Youth employment in Turkey: Structural challenges and impact of the pandemic on Turkish and Syrian Youth. Available: https://www.ilo.org/wcmsp5/groups/public/---europe/---rogeneva/---ilo-ankara/documents/publication/wcms\_849561.pdf. Accessed: 15 Aug. 2022.
- Bulut R, Pınar C (2020) Employment and unemployment of Turkey in COVID -19 pandemic. Oguzhan Journal of Social Sciences 2: 217-225.
- Turkish Industry and Business Association (2021) Education in Turkey under the impact of COVID-19 Available: https://tusiad.org/tr/yayinlar/raporlar/item/10820-tusiad-ergcovid-19-etkisinde-turkiye-de-egitim. Accessed: 1 June 2022.
- 24. Community Volunteers Foundation (TOG) (2020) Coronavirus Pandemic Process and Youth Needs Research. Available: https://www.tog.org.tr/wp-content/uploads/2020/07/Koronavir%C3%BCs-Pandemi-S%C3%BCreci-ve-Gen%C3%A7lerin-%C4%B0htiya%C3%A7lar%C4%B1-Ara%C5%9Ft%C4%B1rmas%C4%B1.pdf . Accessed: 15 May 2022.
- Turkey Youth NGOs Platform (2020) Turkey's youth COVID-19: COVID-19 pandemic psycho-social and economic impacts of youth research report. Available: https://tgsp.org.tr/tr/frontend/storage/documents/x19kXW4zw gqdmeBWcoHsxogwpgHq1tS4xlmGhykg.pdf. Accessed: 15 May 2022.
- Australian Institute of Health and Welfare (2021) Australia's youth: COVID-19 and the impact on young people Available: https://www.aihw.gov.au/reports/children-youth/covid-19and-young-people. Accessed: 12 May 2022.
- Republic of Turkey Ministry of Interior (2021) Gradual normalization measures circular sent to 81 Provincial Governorships Available: https://www.icisleri.gov.tr/81-ilvaliligine-kademeli-normallesme-tedbirleri-genelgesigonderildi. Accessed: 8 April 2022.
- 28. World Health Organization (2020) COVID-19 youth survey: Report. Available: https://cdn.who.int/media/docs/default-source/epi-win/covid-19-survey\_report\_for\_who---final.pdf?sfvrsn=f23bd740 4 Accessed: March 1 2022.
- Dean AG, Sullivan KM, Soe MM. OpenEpi: Open source epidemiologic statistics for public health, version. Available: www.OpenEpi.com, updated 2013/04/06. Accessed: 5 February 2022.
- Pimentel JL (2010) A note on the usage of Likert Scaling for research data analysis. USM R&D Journal 18: 109-112.
- 31. Tabachnick BG and Fidell LS (2013). Using Multivariate Statistics, 6th edition.Boston: Allyn and Bacon.
- Hawke LD, Monga S, Korczak D, Hayes E, Relihan J, Darnay K, Cleverley K, Lunsky Y, Szatmari P, Henderson J (2021) Impacts of the COVID-19 pandemic on youth mental health among youth with physical health challenges. Early Interv Psychiatry 15: 1146-1153. doi: 10.1111/eip.13052
- 33. World Health Organization (2021) COVID-19 disease in children and adolescents Scientific brief 29 September 2021 Available: https://www.who.int/publications/i/item/WHO-2019-nCoV-Sci\_Brief-Children\_and\_adolescents-2021.1. Accessed: 12 March 2022.
- 34. Republic of Turkey Ministry of Health (2020) COVID-19 Weekly Status Report, 12/10/2020-18/10/2020, Turkey Available:

- https://covid19.saglik.gov.tr/Eklenti/39168/0/covid-19-haftalik-durum-raporu---42-haftapdf.pdf?\_tag1=710A3D148C11F8852B0DDC1FB4EE4 9DAE667F46D . Accessed: 5 Feb 2022.
- 35. World Health Organization (2004) Promoting mental health: concepts, emerging evidence, practice: summary report. Available: https://apps.who.int/iris/handle/10665/42940. Accessed: 12 July 2022.
- 36. Wang X, Hegde S, Son C, Keller B, Smith A, Sasangohar F (2020) Investigating mental Health of US college students during the COVID-19 pandemic: Cross-sectional survey study. J Med Internet Res 22: e22817. doi: 10.2196/22817
- 37. Cipolletta S, Andreghetti GR, Mioni G (2022) Risk perception towards COVID-19: A systematic review and qualitative synthesis. Int J Environ Res Public Health 19: 4649. doi: 10.3390/ijerph19084649
- Schneider CR, Dryhurst S, Kerr J, Freeman ALJ, Recchia G, Spiegelhalter D, van der Linden S (2021) COVID-19 risk perception: a longitudinal analysis of its predictors and associations with health protective behaviours in the United Kingdom. J Risk Res 24: 294-313. doi: 10.1080/13669877.2021.1890637
- 39. Dryhurst S, Schneider CR, Kerr J, Freeman ALJ, Recchia G, van der Bles AM, Spiegelhalter D, van der Linden S (2020) Risk perceptions of COVID-19 around the world. J. Risk Res 23: 994-1006. doi: 10.1080/13669877.2020.1758193
- Braveman P, Gottlieb L (2014) The social determinants of health: it's time to consider the causes of the causes. Public Health Rep 2 Suppl 129: 19-31. doi: 10.1177/00333549141291S206
- 41. Hagell A, Shah R, Viner R, Hargreaves D, Varnes L and Heys M (2018) The social determinants of young people's health: Identifying the key issues and assessing how young people are doing in the 2010s. Health Foundation Working Paper. London: Health Foundation. Available: https://www.health.org.uk/sites/default/files/The-social-determinants-of%20-young-peoples-health\_0.pdf. Accessed: 17 July 2022.
- 42. van Zon SKR, Reijneveld SA, Mendes de Leon CF, Bültmann U (2017) The impact of low education and poor health on unemployment varies by work life stage. Int J Public Health 62: 997-1006. doi: 10.1007/s00038-017-0972-7
- 43. Kahneman D, Deaton A (2010) High income improves evaluation of life but not emotional well-being. Proc Natl Acad Sci USA 107: 16489–16493. doi: 10.1073/pnas.1011492107
- 44. Amati V, Meggiolaro S, Rivellini G, Zaccarin S (2018) Social relations and life satisfaction: the role of friends. Genus 74: 1-18. doi: 10.1186/s41118-018-0032-z
- 45. Keating A, Melis G (2022) Youth attitudes towards their future: the role of resources, agency, and individualism in the UK. JAYS 5: 1–18. doi: 10.1007/s43151-021-00061-5

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# **Annex – Supplementary Items**

Supplementary Table 1. Likert Questions and Options.

Question	Likert Scale
I am worried about getting infected by COVID-19	Options
	1: Strongly Disagree
	5: Strongly Agree
How has COVID-19 affected the following:	Options:
My physical health and wellbeing	1. Strongly negatively affected
My mental health and wellbeing	2. Negatively affected
•	3. Not affected
	4. Positively affected
	5. Strongly positively affected
I feel that COVID-19 has affected my future in for the following	Options
(a) Relationship with friends and family	1. Strongly negatively affected
(b) Physical health and wellbeing	2. Negatively affected
(c) Mental health and wellbeing	3. Not affected
(d) Job prospects	4. Positively affected
(e) Education opportunities	5. Strongly positively affected
(f) Financial Stability	
(g) Overall	