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Mental wellbeing and perception of health in the era of COVID-19 pandemic: A cross-sectional study in the general population

İsa Gül PhD[1] ⬤ | Aysun Yeşiltaş PhD[2] ⬤

[1]Department of Health Management, Faculty of Health Sciences, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey

[2]Department of Health Management, Faculty of Health Sciences, Necmettin Erbakan University, Konya, Turkey

Correspondence
İsa Gül, Department of Health Management, Faculty of Health Science, Afyonkarahisar Health Sciences University, Afyonkarahisar 03100, Turkey.
Email: isagul233@gmail.com and isa.gul@afsu.edu.tr

Abstract

Purpose: This study was aimed at evaluating mental wellbeing and health perception in the general population during the coronavirus disease 2019 (COVID-19) pandemic and at highlighting the correlation between them and selected variables.

Design and Methods: This descriptive and cross-sectional study was carried out in 374 individuals, who were remotely administered two scales ("Perception of Health Scale [PHS]" and "Warwick-Edinburgh Mental Wellbeing Scale [WEMWBS]") and a demographic and clinical questionnaire.

Findings: PHS mean score was 53.24 ± 7.69 and the total WEMWBS score was 52.95 ± 10.75. A positive statistically significant correlation was found between PHS and WEMWBS ($p < 0.05$). Gender, marital status, and education levels conditioned mental wellbeing in a statistically significant. Suffering from a chronic disorder, COVID-19 symptoms, or having a family member affected by COVID-19 infection influenced the health perception.

Practical Implications: Exposing the factors affecting the health and mental wellbeing perceptions of individuals, especially during the pandemic period, can guide policymakers.

KEYWORDS
COVID-19, mental health, mental wellbeing, pandemic, perception of health

1 | INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic has significantly influenced all aspects of society, including mental and physical health.[1] Not only the economic effects but also the mental effects of the social isolation implemented in various ways during the pandemic period should be taken into consideration.[2] Concerns about mental health and behaviors risky to health increased during the pandemic process, while individual's belief in their own health decreased.[3] Measuring the perception of health, which is defined as an individual's assessment of their health, includes evaluating the biological dimensions of health as well as perceived wellbeing and physical, mental, and social functionality and pain.[4] Wellbeing can be defined as having positive feelings about oneself, having good relationships with other people, and living with a sense of belonging to society. Mental wellbeing is

a concept that includes different criteria of psychological health.[5,6] It indicates a positive state in which an individual can realize their abilities, cope with the normal stress of life, work productively and efficiently, and contribute to the community. Mental wellbeing thus forms the basis for the wellbeing and effective functioning of individuals and societies.[7]

Negative news about COVID-19 and its possible consequences during the pandemic period increased individuals' anxiety levels and led to negative emotions. COVID-19-related emotions have included fear, grief, despair, anxiety, loneliness, and a chronic sense of suffocation.[8] Accordingly, two important health problems have arisen due to COVID-19. The first problem is the disease caused by the virus, especially in people at risk, such as elderly individuals and people with chronic diseases. The second problem is the anxiety and panic triggered in almost everyone who heard about the virus.[9] Improving mental wellbeing is an

important issue given the negative effects on mental health, especially in older adults, caused by the restrictions imposed during the pandemic.[10]

To reveal how health behaviors affect individuals' health status, several conceptual models have been built. These models include the Health Belief Model, the Theory of Reasoned Action, and Social Learning Theory. In these models, beliefs, attitudes, and perceptions are considered as factors that affect health behaviors.[11,12] Perception of health is expressed as a combination of one's personal emotions, thoughts, prejudices, and expectations about one's health.[4] Perception of health is an important factor in an individual's willingness to receive healthcare services.[13] Perception of health can be used to evaluate individuals' health beliefs, values, and expectations. Moreover, perception of health data can be useful in identifying health inequalities within society and helping policymakers monitor changes in the health of a particular population.[14] In the perception of health, which indicates a person's beliefs about and evaluations of their general health status, the more focus is on the physical and mental components.[15] For instance, in a qualitative study conducted on the perceptions of health and disease of Jordanian mothers, the mothers emphasized their children's general psychological and mental wellbeing as an indicator of the children's health.[16]

Perception of health is thus a concept which involves individual beliefs about health and the perception of being healthy. The Perception of Health Scale (PHS) is one of the scales that aims measure individuals' perception of health. It was developed based on previous studies that focused on the Health Belief Model. The scale was developed by adapting different sources investigating individuals' health beliefs and attitudes. It has been stated that PHS is appropriate for measuring perceptions about health rather than providing a specific diagnosis.[11,17]

A number of studies have been carried out on the perception of health and mental health. Leite et al.,[18] mentioned the two-way relationship between psychological wellbeing and perception of health. Another study associated self-perceived health with mental health and mental wellbeing.[19] In the study of Ozen and Rittersberger-Tilic[20] urban lower-income individuals expressed their health and wellbeing as "bad," "moderate," or "good," and generally associated physical health with mental health. Travers et al.,[21] examined the differences in the physical health, mental health, and health-related quality of life of elderly individuals who were receiving long-term care and support services. Some studies on mental health and perception of health have focused on sick individuals, Lum et al.,[22] evaluated the relationship between changes in mental wellbeing and the perceived health of individuals with type-2 diabetes living in the community. Another study examined the mental health status of hemophilia patients using a number of different variables.[23]

Although some studies have been conducted in Turkey on mental wellbeing[6,24] and perception of health,[4,25] no study was found that determined the correlation between these two concepts. Determining the relationship between these two concepts is especially important for the protection and improvement of individuals' physical and mental health during the COVID-19 process. Therefore, this study was aimed at evaluating mental wellbeing and health perception in the general population during the COVID-19 pandemic and at highlighting the correlation between them and other selected variables. In this context, the following hypotheses were formulated:

Hypothesis 1 (H1): There is a positive and significant correlation between perception of health and mental wellbeing.

Hypothesis 2 (H2): Exposure to COVID-19 symptoms affects the relationship between perception of health and mental wellbeing.

2 | METHODS

2.1 | Design and sampling

The design of this study was cross-sectional and descriptive. The research population consisted of individuals aged 18 and overliving in different cities in Turkey. According to the results of the address-based population registration system, there are 60,278,199 individuals aged 18 and over in Turkey.[26] In the study, a minimum of 384 people was required with an error margin of 0.05 according to the formula $n = Nt^2pq/d^2(N - 1) + t^2pq$, which is used in cases where the population size is known.[27] However, the sample in this study was composed of 374 individuals residing in different provinces of Turkey due to the pandemic restrictions and the principle of voluntarism.

2.2 | Data collection

An online survey form created with Google Forms was employed as a data collection tool in the study. This online survey form was sent to the participants through social media channels (WhatsApp, Facebook, Instagram, etc.) due to the pandemic restrictions. The data were collected between May 27 and June 20, 2020.

This form for collecting demographic and clinical information and the two scales for evaluating the perception of health and mental wellbeing were all administered online.

The Perception of Health Scale (PHS) was developed by J. Diamond et al.[11] The scale has 15 items and four subdimensions: "center of control," "certainty," "importance of health," "self-awareness." The *center of control sub-dimension* (five items) focuses on an individual's evaluation of being healthy on the basis of luck, fate, or religious beliefs (an example statement: "Good health is a matter of good luck"). The *certainty sub-dimension* (four items) includes an individual's knowledge and understanding about what to do to be and remain healthy (an example statement: "I am often confused about what I should do to stay healthy"). The *importance of health sub-dimension* (three items) indicates the importance placed on health by the individual and includes three statements (an example statement: "My health is the most important consideration in my life"). The *self-awareness sub-dimension* (three items) explains an individual's own role in being healthy (an example statement: "It is up to me whether I am healthy or not"). The scale has a 5-point Likert-type scoring system and the statements are ranked "Strongly agree" (5), "Agree" (4), "Neither Agree nor Disagree" (3), "Disagree" (2), and "Strongly Disagree" (1). The 1st, 5th, 9th, 10th, 11th, and 14th items are positive and the 2nd, 3rd, 4th, 6th, 7th, 8th, 12th, 13th, and 15th statements are negative statements. Negative statements are reverse-scored. The lowest score obtainable

from the scale is 15 and the highest score is 75. A high total score indicates that the individual has a high level of perception of health whereas a low score indicates that the level of perception of health is low. In J. Diamond et al.'s[11] study, the Cronbach alpha values of the scale were determined to be 0.90 for the center of control subdimension, 0.91 for the self-awareness subdimension, 0.91 for the certainty subdimension, and 0.82 for the importance of health subdimension. The Turkish validity and reliability study of the PHS was conducted by Kadioglu and Yildiz.[12] In the Turkish sample, the Cronbach alpha coefficient of the scale was found to be 0.77 in nursing students and 0.70 in students' families. Kadioglu and Yildiz,[12] thus found lower reliability values in the scale than J. Diamond et al.,[11] which they argued was due to intercultural differences. In this study, the Cronbach alpha value was determined to be 0.71.

The Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) was developed by Tennant et al.[28] The scale, which includes both psychological and subjective wellbeing, consists of 14 positive statements. The scale has a 5-point Likert-type scoring system. The total scale score ranges between 14 and 70 points. Higher scores on the scale indicate an increase in mental wellbeing. The level of agreement with the statements is measured as 1 = "Strongly disagree," 2 = "Disagree," 3 = "Slightly agree," 4 = "Agree," 5 = "Strongly agree." The scale includes statements such as "I've been feeling relaxed" and "I've been feeling cheerful." Tennant et al.,[28] found the Cronbach alpha coefficient of the scale to be 0.89. The Turkish validity and reliability study of the scale was conducted by Keldal.[29] In the Turkish validity and reliability study, the Cronbach alpha internal consistency reliability coefficient was found to be 0.92.[29] Similarly, in this study, the Cronbach alpha value was determined to be 0.92.

2.3 | Data analysis

The IBM SPSS version 24 statistics program was employed in the analysis of the research data. Values for frequency, percentage distribution, and standard deviation of the data were given. The t-test and one-way analysis of variance (ANOVA) were used to determine the significant differences between demographic variables and scale means. Cohen's d and η^2 (eta squared) effect size values were calculated for the p values that differed significantly. Following Cohen's criteria, the effect size was considered a small effect if d = 0.20 and η^2 = 0.01, a moderate effect if d = 0.50 and η^2 = 0.06, and a large effect if d = 0.80 and η^2 = 0.14 (Cohen, 1988). Pearson's correlation analysis and multiple linear regression analysis were performed to uncover the relationship between the perception of health and mental wellbeing scales. The significance level in the analyses was accepted as $p < 0.05$.

2.4 | Ethical consideration

Ethics committee approval was obtained from the Ethics Committee of the Social and Humanities Scientific Research and Publication (Meeting no. 04, 05.27.2020). The participants voluntarily took part in this study. On the first page of the online questionnaire form, information was given about the purpose of the research and the participants were informed that the research would only commence if approval was given.

3 | RESULTS

3.1 | Demographic and clinical characteristics of participants

The mean age of the individuals participating in the study was M_{age} = 30.86, SD_{age} = 12.25. Of the participants, 63.1% were female, 57.8% were single, 53.2% were undergraduates, 76.2% had a middle-income family, and 40.9% worked in the public sector. In addition, it was determined that 85.6% of the participants did not have any chronic diseases, although 42.8% had an individual with a chronic disease in their family. The 77.5% of the participants did not have a healthcare worker in their family. The 88.8% did not have any symptoms of COVID-19, while for 92% no one else in their family showed symptoms of COVID-19. For 64.4% neither they, nor anyone in their family, nor any of their acquaintances had been tested for COVID-19, while for 14% of the participants they, or a member in their family had symptoms of COVID-19 (see Table 1). The mean total PHS score was 53.24 (SD = 7.69, range: 19.00–71.00), and the mean total WEMWBS score was 52.95 (SD = 10.75, range: 17.00–70.00). The scores for each subdimension in the PHS and WEMWBS were added up and then divided by the total number of items in the subdimension. The mean total PHS item score of the participants was 3.54 (SD = 0.51) and the mean total WEMWBS item score of the participants was 3.78 (SD = 0.76). In the PHS, the highest item mean score was 3.81 (SD = 0.72) in the importance of health sub-dimension, while the lowest item mean score was 2.39 (SD = 0.71) in the certainty subdimension.

In the study, the t-test and one-way ANOVA were conducted to identify the significant differences between demographic variables and scale means. The results of this analysis are shown in Table 2.

3.2 | Mental wellbeing and perception of health

When Table 2 was evaluated, it was seen that the mental wellbeing levels of the male participants were significantly higher than those of the female participants (t = 4.571, p < 0.05; effect size = 0.489). Similarly, the mental wellbeing levels of married individuals were significantly higher than those of single individuals (t = 2.160, p < 0.05 effect size = 0.226). The mental wellbeing levels of the participants with an undergraduate education were significantly lower than those at other education levels (t = 5.021, p < 0.05; effect size = 0.040).

The participants who did not have any chronic diseases had a significantly higher self-awareness of health (t = −2.064, p < 0.05; effect size = 0.303). Participants who had had no symptoms of COVID-19 had significantly higher self-awareness of health (t = −2.901, p < 0.05; effect size = 0.475), whereas the participants whose family members had no symptoms of COVID-19 had a significantly higher overall perception of health (t = −2.627, p < 0.05; effect size = 0.500). In the study, two separate groups emerged, namely those with symptoms of COVID-19 (n = 54) and

TABLE 1 Demographic characteristics of participants

Characteristic	Frequency N	%
Gender		
Male	138	36.9
Female	236	63.1
Marital status		
Married	158	42.2
Single	216	57.8
Education		
High School	68	18.2
Associate Degree	51	13.6
Undergraduate	199	53.2
Graduate	56	15.0
Income status		
Low	64	17.1
Middle	285	76.2
High	25	6.7
Sector		
Public sector	17	4.3
Private sector	50	12.6
Student	85	21.5
Not employed	127	32.1
Do you have a chronic disease?		
Yes	54	14.4
No	320	85.6
Is there anyone in your family with a chronic disease except you?		
Yes	160	42.8
No	214	57.2
Do you have a health worker in your family?		
Yes	84	22.5
No	290	77.5
Have you had COVID-19 symptoms?		
Yes	42	11.2
No	332	88.8
Has anyone in your family had symptoms of COVID-19?		
Yes	30	8.0
No	344	92.0
Is anyone in your family or community been tested for COVID-19?		
Some have tested positive	55	14.7

TABLE 1 (Continued)

Characteristic	Frequency N	%
Some have tested negative	78	20.9
No one in the family or community has been tested	241	64.4

Abbreviation: COVID-19, coronavirus disease 2019.

those without these symptoms ($n = 320$). According to the results of the t-test, self-awareness ($t = -2.719$; effect size $= 0.400$), the general perception of health ($t = -2.742$; effect size $= 0.403$), and mental wellbeing ($t = -2.210$; effect size $= 0.325$) were found to be significantly greater in participants who had no symptoms of COVID-19 or had no family member who had these symptoms ($p < 0.05$).

Pearson's correlation analysis was conducted to statistically determine the relationship between the PHS and its subdimensions and mental wellbeing. From the results of this analysis it was concluded that all sub-dimensions of the PHS had a positive, significant but low-level correlation with the WEMWBS ($p < 0.05$). It was also found that there was a positive and significant correlation between the general perception of health and mental wellbeing ($r = 0.324$, $p = 0.000 < 0.05$). As a result, *H1* was supported. In addition, it was determined that the mean values of the PHS ($M = 3.54$, $SD = 0.51$) and the WEMWBS ($M = 3.78$, $SD = 0.76$) were above the middle level (see Table 3).

Two more correlation analyses were conducted to determine the correlation between perception of health and mental wellbeing in the groups with (self or family member) COVID-19 symptoms and without these symptoms. The Split File option in the SPSS program was used for these analyses. The first correlation analysis was performed in the sample group with the 54 participants with symptoms of COVID-19 or with a family member with these symptoms. As a result of the analysis, the correlation coefficient between the two variables was found to be $r = 0.471$. The second correlation analysis was conducted with the sample group with 320 participants who did not show symptoms of COVID-19 or who had a family member who did not have symptoms of COVID-19. As a result of this analysis, the correlation coefficient between the two variables was calculated as $r = 0.291$. When the findings were evaluated, it was seen that the correlation coefficient between the perception of health and mental wellbeing was higher in the sample with the symptoms of COVID-19. As a result, *H2* was supported (see Table 4).

3.3 | Multiple linear regression analysis between WEMWBS score and selected variables

Multiple linear regression analysis was performed to show the effect of perception of health on mental wellbeing. Table 5 shows the regression analysis results regarding the effect of the subdimensions of the PHS on mental wellbeing.

TABLE 2 Analysis of the difference between demographic variables and scale averages

Variables	Groups	N	Center of control M ± SD	Certainty M ± SD	Importance of health M ± SD	Self awareness M ± SD	Perception of health M ± SD	Mental wellbeing M ± SD
Sex	Male	138	3.54 ± 0.79	2.37 ± 0.68	3.82 ± 0.69	3.76 ± 0.70	3.57 ± 0.50	4.01 ± 0.63
	Female	236	3.44 ± 0.78	2.40 ± 0.73	3.81 ± 0.74	3.68 ± 0.79	3.53 ± 0.51	3.64 ± 0.80
	p value		0.254	0.738	0.834	0.368	0.555	**0.000**
	Effect size[a]		0.122	0.035	0.022	0.096	0.063	0.489
Marital status	Married	158	3.45 ± 0.80	2.36 ± 0.69	3.73 ± 0.68	3.65 ± 0.74	3.49 ± 0.49	3.88 ± 0.71
	Single	216	3.50 ± 0.79	2.41 ± 0.73	3.87 ± 0.74	3.76 ± 0.78	3.58 ± .52	3.70 ± 0.79
	p value		0.491	0.478	0.062	0.163	0.090	**0.031**
	Effect size[a]		0.07	0.07	0.196	0.146	0.177	0.226
Education level	High School[1]	68	3.29 ± 0.95	2.34 ± 0.81	3.79 ± 0.75	3.67 ± 0.83	3.43 ± 0.51	3.95 ± 0.72
	Associate Degree[2]	51	3.49 ± 0.83	2.51 ± 0.86	3.96 ± 0.72	3.71 ± 0.80	3.62 ± 0.48	3.92 ± 0.88
	Undergraduate[3]	199	3.53 ± 0.75	2.41 ± 0.63	3.80 ± 0.72	3.76 ± 0.75	3.57 ± 0.53	3.64 ± 0.76
	Graduate[4]	56	3.54 ± 0.63	2.26 ± 0.70	3.75 ± 0.69	3.61 ± 0.68	3.51 ± 0.42	3.95 ± 0.61
	p value		0.168	0.266	0.443	0.581	0.156	**0.002**
	Post Hoc							1 > 3; 4 > 3
	Effect size[b]		0.009	0.011	0.006	0.005	0.012	0.040
Do you have a chronic disease?	Yes	54	3.47 ± 0.81	2.37 ± 0.78	3.67 ± 0.72	3.51 ± 0.81	3.46 ± 0.51	3.81 ± 0.72
	No	320	3.48 ± 0.79	2.39 ± 0.70	3.84 ± 0.72	3.75 ± 0.75	3.56 ± 0.51	3.77 ± 0.77
	p value		0.884	0.841	0.128	**0.040**	0.186	0.740
	Effect size[a]		0.021	0.029	0.224	0.303	0.194	0.048
COVID-19 Symptoms (self)	Yes	42	3.41 ± 0.61	2.27 ± 0.57	3.80 ± 0.72	3.39 ± 0.82	3.40 ± 0.47	3.56 ± 0.64
	No	332	3.49 ± 0.81	2.40 ± 0.72	3.82 ± 0.72	3.75 ± 0.74	3.56 ± 0.51	3.81 ± 0.77
	p value		0.568	0.276	0.875	**0.004**	0.057	0.053
	Effect size[a]		0.093	0.178	0.025	0.475	0.312	0.318
COVID-19 Symptoms (Family member)	Yes	30	3.28 ± 0.65	2.19 ± 0.73	3.67 ± 0.77	3.45 ± 0.61	3.31 ± 0.50	3.59 ± 0.61
	No	344	3.50 ± 0.80	2.41 ± 0.71	3.83 ± 0.72	3.73 ± 0.77	3.57 ± 0.50	3.79 ± 0.77
	p value		0.140	0.108	0.270	0.051	**0.009**	0.153
	Effect size[a]		0.281	0.307	0.210	0.372	0.500	0.272

(Continues)

TABLE 2 (Continued)

Variables	Groups	N	Center of control M±SD	Certainty M±SD	Importance of health M±SD	Self awareness M±SD	Perception of health M±SD	Mental wellbeing M±SD
COVID-19 symptom (self or family member)	Yes	54	3.32±0.64	2.22±0.65	3.78±0.74	3.45±0.78	3.37±0.48	3.57±0.67
COVID-19 non-symptom	No	320	3.51±0.81	2.42±0.72	3.82±0.72	3.76±0.75	3.57±0.51	3.81±0.77
	p value		0.111	0.065	0.708	0.007	0.006	0.028
	Effect size[a]		0.234	0.272	0.055	0.400	0.403	0.325

Note: Statistical analysis: t-test and one-way ANOVA; post hoc test (Tukey HSD); effect size a: Cohen's d, b:η² (eta squared).
Abbreviations: ANOVA, analysis of variance; COVID-19, coronavirus disease 2019; SD, standard deviation.

According to Table 5, the subdimensions of the PHS, which are certainty ($\beta = 0.201$, $p < 0.05$), the importance of health ($\beta = 0.271$, $p < 0.05$), and self-awareness ($\beta = 0.115$, $p < 0.05$), were found to be predictors of mental wellbeing. While, the four subdimensions explained 15% of the variance in mental wellbeing, the model was statistically significant ($F = 17.808$, $p = 0.000$). It was concluded that the center of control subdimension of the PHS was not a predictor of mental wellbeing ($\beta = 0.014$, $p = 0.790$). The independent variables which had an effect on mental wellbeing in the model were the importance of health, certainty, and self-awareness, respectively.

3.4 | Multiple linear regression analysis between PHS score and selected variables

The regression model created to identify the effect of a general perception of health on mental wellbeing is shown in Table 6. It can be seen that general perception of health was a significant predictor of mental wellbeing ($\beta = 0.324$, $p = 0.000$). The general perception of health explained 10% of the variance in mental wellbeing.

4 | DISCUSSION

The aim of this study was to examine the mental wellbeing and perception of the health of individuals during the pandemic according to a number of variables and determine the relationship between these two variables.

In the present study, the total PHS score was 53.24 ± 7.69. In studies conducted using the PHS, Cetinkaya et al.,[30] determined the mean total PHS score as 48.8 ± 6.3 during a pre-COVID-19 period, whereas the PHS score was determined as 52.68 ± 6.8 during the COVID-19 period in the study by Genc and Yigitbas[31] and Leung et al.[32] stated that perceived health status differed according to the criteria used and ethnic origin. In the results of this study, no significant difference was found in the PHS and its subdimensions according to gender, marital status, and educational status. Kolac et al.[33] reported no significant difference in terms of gender and marital status. Ozdemir and Arpacioglu[34] conducted a study during the COVID-19 period and reported that perception of health did not differ in terms of gender and that participants who were single and had high education levels had a higher perception of health. The findings of this study showed that the participants who did not have any chronic diseases had a significantly higher self-awareness-related perception of health. Ture Yilmaz et al.[35] found that the variable of having a chronic disease negatively affected the perception of health. In a study conducted in Spain, a high number of depressive symptoms and chronic diseases were associated with poor perceived health status.[36] Chronic diseases obstruct the treatment of COVID-19 and increase mortality rates. As a matter of fact, those who have chronic diseases are in the risk group for COVID-19.[37] In this study, the self-awareness-related perception of the health of the participants who had no symptoms of COVID-19 was found to be high, whereas the general perception of the health of the participants who had no family member with symptoms of COVID-19 was found to be significantly higher. The effect size values for the significant difference were moderate. Furthermore, self-

TABLE 3 Correlation analysis between perception of health scale, its sub-dimensions and mental wellbeing (N = 374)

Scale/subscale	M (SD)	1	2	3	4	5	6
1. Center of control	3.48 (0.79)	–	0.312**	0.011	0.280**	0.760**	0.112*
2. Certainty	2.39 (0.71)		–	0.031	0.067	0.627**	0.222**
3. Importance of health	3.81 (0.72)			–	0.404**	0.427**	0.324**
4. Self-awareness	3.71 (0.76)				–	0.596**	0.242**
5. PHS	3.54 (0.51)					–	0.324**
6. WEMWBS	3.78 (0.76)						–

Abbreviations: PHS, Perception of Health Scale; SD, standard deviation; WEMWBS, Warwick–Edinburgh Mental Wellbeing Scale.

*$p < 0.05$ (two-tailed); **$p < 0.01$.

TABLE 4 Correlation analysis between PHS and WEMWBS for the groups with and without the symptoms of COVID-19

Group with the symptoms of COVID-19 (self or family member)		Group without the symptoms of COVID-19	
Scale	WEMWBS	Scale	WEMWBS
PHS Pearson correlation	0.471**	PHS Pearson correlation	0.291**
N	54	N	320

Abbreviations: COVID-19, coronavirus disease 2019; PHS, Perception of Health Scale; WEMWBS, Warwick–Edinburgh Mental Wellbeing Scale.

**$p < 0.01$ (two-tailed).

TABLE 5 Regression analysis results of perception of health scale sub-dimensions for the prediction of mental wellbeing (N = 374)

Model	B	SE B	B	t	p	95.0% CI for B	R^2	ΔR^2
(Constant)	1.693	0.270		6.262	0.000	1.162–2.225	0.16	0.15
Center of control	0.014	0.051	0.014	0.267	0.790	−0.086 to 0.114	F = 17.808	
							p = 0.000	
Certainty	0.216	0.054	0.201	4.011	0.000	0.110–0.322		
Importance of health	0.287	0.056	0.271	5.158	0.000	0.177–0.396		
Self-awareness	0.115	0.055	0.115	2.104	0.036	0.008–0.223		

Note: Dependent variable: WEMWBS.

Abbreviations: CI, confidence interval; SE, standard error; WEMWBS, Warwick–Edinburgh Mental Wellbeing Scale.

TABLE 6 Regression analysis results of general perception of health for the prediction of mental wellbeing (N = 374)

Model	B	SE B	B	t	p	95.0% CI for B	R^2	ΔR^2
(Constant)	2.061	0.264		7.821	0.000	1.543–2.579	0.10	0.10
General perception of health	0.485	0.073	0.324	6.602	0.000	0.341–0.630	F = 43.590	
							p = 0.000	

Note: Dependent variable: WEMWBS.

Abbreviations: CI, confidence interval; SE, standard error; WEMWBS, Warwick–Edinburgh Mental Wellbeing Scale.

awareness and perception of health levels were significantly higher in the group who did not have symptoms of COVID-19 or who had no family member with symptoms of COVID-19, and the effect size was nearly moderate. It has been stated that individuals' perception of their health becomes more positive as the score obtained from the PHS increases.[25] According to Souto et al.,[38] individuals perceive their health negatively during the presence of any symptoms or the obvious occurrence of a disease. In other words, the absence of any symptoms or diseases allows for a positive evaluation of one's health. Having physical symptoms or multimorbidity, specifically for COVID-19, leads to greater effects both on mental health and physical health.[39–41]

In this study, the total WEMWBS score was 52.95 ± 10.75. In the pre-COVID-19 period, the WEMWBS score was 53.41 ± 8.92 in the studies conducted in Turkey[24] whereas, in a study conducted during the COVID-19 period in New Zealand, the WEMWBS score was determined as 49.1 ± 8.7.[42] In the study, it was found that the male participants had significantly higher levels of mental wellbeing than female participants. In studies conducted in Turkey and the UK, it was found that women had lower levels of mental health.[40,43] Another finding of the present study was that the mental wellbeing levels of the married participants were higher than those of single participants. Studies on mental health have shown that single individuals experience more mental health problems.[39,43] Other studies highlighted that being married can be a protective factor for many psychiatric disorders, favoring a positive attitude towards therapy.[44,45] In the present study, the mental wellbeing levels of participants who had a bachelor's degree were found to be lower than those at other education levels. In some studies examining mental health in terms of education level, it was reported that those with a medium education level[39] and those with a low education level experience more mental health problems.[46] In the present study, it was seen that the participants who had the symptoms of COVID-19 or who had a family member with the symptoms of COVID-19 had lower levels of mental wellbeing; however, the effect size was small. The COVID-19 pandemic affects not only the physical but also the mental health of individuals.[47] In a study conducted with 775 participants, more than half of the participants stated that COVID-19 had affected their mental health.[48] It is thought that the mental health and psychosocial consequences of the COVID-19 pandemic are having serious implications, especially for those who are in contact with the virus, those who are susceptible to biological or psychosocial stress factors, healthcare workers, and those who follow the news through multiple media channels.[49] Another study conducted during the COVID-19 period reported that psychological problems were more common among those whose friends or family members were infected or who had died due to COVID-19.[50]

In the present study, there was a positive and significant correlation between general perception of health and mental wellbeing. It was found that the coefficient of the correlation between PHS and WEMWBS was higher in the group that had symptoms of COVID-19 or that had a family member with symptoms of COVID-19. It was thought that this result occurred due to those in this group being infected by COVID-19. Likewise, Teh et al.[51] found a positive correlation between perceived health status and mental wellbeing. Borim

et al.[52] explained that signs and symptoms, disabilities and limitations, mental health, and feelings of happiness are important variables in the self-evaluation of health among older adults. In their study conducted in Germany, Peters et al.[53] reported that the mental status and self-rated health scores of participants who were tested for severe acute respiratory syndrome coronavirus 2 became worse compared to those who were not tested. In the same study, it was stated that the COVID-19 pandemic and the protective measures during the first wave affected mental health and self-rated general health.[53] In one study, participants described a healthy individual as someone who had a balance between their physical health and mental wellbeing.[54] Mental health indicates how an individual or patient feels when all factors are taken into consideration. Healthy people often have a sense of wellbeing.[55] McAneney et al.[19] reported that self-rated health is associated with better mental health and mental wellbeing. Lum et al.[22] conducted a study with diabetic patients and showed that pharmaceutical care given in the community not only leads to clinical improvement but also improves the mental health of individuals, especially those with diabetes. Contrary to these findings in the literature, Negri et al.[23] stated that chronic diseases do not prevent mental health from being acceptable.

A study conducted in Malaysia during the COVID-19 period revealed that individuals with difficult health conditions experienced more mental health problems and that these became even worse in unhealthy individuals.[56] In a study conducted with Portuguese participants a two-way correlation was found between perception of health and psychological wellbeing. Current perception of health was determined as the strongest predictor for psychological wellbeing.[18] Diamond and Willan[57] stated that individuals with physical health problems experience more psychologically difficult consequences during the pandemic. The link between physical and mental health has never been more important or clearer to see than during the period of the COVID-19 pandemic. Health can be defined not only as the absence of a disease or disability but as a state of physical, mental, and social wellbeing. The COVID-19 era has once again highlighted the importance of both physical and mental health.[58] As Otu et al.[47] have suggested, it is very likely, given the rapid spread of the COVID-19 pandemic, that patients, healthcare professionals, and communities were not adequately able to address mental health care.

5 | LIMITATIONS

This study has some limitations. The data for the research were collected through an online survey form created with Google Forms. Due to the restrictions occasioned by the pandemic, the form was sent to the participants via social media. Only individuals using social media participated in the research and the study was conducted with 374 participants. The cross-sectional design and the lack of comparison with other samples did not permit any causal inferences to be made. In addition, since the results of the study were obtained from a Turkish sample, generalizations cannot be made because of the different conditions in which the pandemic was experienced in other countries.

6 | CONCLUSION

In light of our results, we conclude that mental wellbeing was higher in male participants and married individuals whereas it was low in under-graduate education people. The participants who did not have any chronic diseases or any COVID-19 symptoms had a high perception of health related to self-awareness as well as individuals who did not have any family member affected by COVID-19 symptoms. We highlighted a significant positive correlation between perception of health and mental wellbeing. The COVID-19 outbreak is thought to affect the mental health of many individuals with medium and long-term consequences. Therefore, we hope for strategies to protect everyone's mental well-being and health perception even in the COVID-19 pandemic emergency.

7 | IMPLICATIONS FOR PSYCHIATRIC NURSING PRACTICE

This study found a relationship between perception of health and mental wellbeing in accordance with the findings in the literature. As individuals' perception of health improves, their mental wellbeing levels also improve. From a social perspective, interventions can be made to improve the mental wellbeing of individuals with physical health problems. In Turkey, there are 163 Community Mental Health Centers in 78 cities. In particular, the psychiatric nurses working in these centers can provide support to middle-aged or elderly individuals about how to cope with physical, emotional, and social problems. Nurses should evaluate mental and physical health together and it should be taken into account that mental disorders may be an early symptom or factor of physical disease. It is thus necessary to evaluate the general health of patients and healthy individuals and to conduct risk analyses.

Psychiatric nurses can observe the interaction between the physical and mental states of an individual with a physical complaint or disease. They can help the individual with physical disease and their family to adjust psychologically, as well as to regain their adaptive functions. This can contribute to the individual's ability to cope with the current illness and the life problems caused by the disease, and to develop ways to cope. Leaders in the community can mobilize to help families and groups develop positive health behaviors. This study will also function as a guide in this area. Identifying the perception of health and mental wellbeing of individuals in the community may help to clarify the negative effects of the pandemic and the many factors accompanying it. During this period, nurses should consider these factors while preparing effective support programs and planning interdisciplinary measures to improve the perception of health throughout society and help people develop beliefs and attitudes that lead to better mental health.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ORCID

İsa Gül https://orcid.org/0000-0002-9419-4816

Aysun Yeşiltaş https://orcid.org/0000-0002-2023-1485

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