

Did healthy life awareness affect the behavioral or cognitive avoidance attitude from COVID-19? An observational study

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ABSTRACT

Aim: This study purposed to evaluate the healthy life awareness (HLA) level versus the COVID-19 avoidance attitudes. **Materials and Methods:** A single-centered observational study was conducted in the Family Medicine Clinics of a tertiary hospital between April 30, 2021 and July 30, 2021. The HLA scale was used to determine the participants' HLA levels. In addition, the avoidance attitudes from the COVID-19 scale score assessed attitudes toward avoiding COVID-19. Data were analyzed with E-Picos (MediCRES) Statistical Programme. **Results:** Of the 311 participants aged 30.79 ± 8.37 years, 58.52% ($n = 182$) were female and 41.48% ($n = 129$) were male. A negative relationship between the HLA and cognitive avoidance scores ($r = -0.255$, $P < 0.001$) and a positive relationship between HLA and behavioral avoidance scores ($r = 0.119$, $P = 0.036$) have been indicated. The results of a binary logistic regression, taking the presence of a higher HLA score as the dependent variable, have shown that high awareness was observed in women, approximately 1.7 times more than in men [odds ratio (OR): 1.684, 95% confidence interval (CI) = 1.058-2.696; $P = 0.030$]. Participants with high HLA had 1.06 times higher behavioral avoidance scores than others (OR: 1.066, 95% CI = 1.012-1.455; $P = 0.049$). As the cognitive avoidance score increased, the presence of high HLA decreased by nearly 33%. (OR: 0.666, 95% CI = 0.512-0.867; $P = 0.002$). **Conclusion:** This study emphasized that a higher HLA was associated with increased behavioral avoidance and decreased cognitive avoidance from COVID-19. HLA has led to doing what needed to be done without being affected by negative discourses.

Keywords: Attitude, awareness, COVID-19, health

Introduction

Throughout history, people have tried to calm down their fear of the unknown and intolerance of uncertainty related to disease outbreaks through voluntary or involuntary behaviors.^[1] Easy droplet contamination of COVID-19 from person to person^[2] has brought strict precautions together, and many decisions were taken that would change people's social life.^[3] Including what

to do, to eat, to avoid, etc., during the outbreak, the pandemic divided people into three groups: media organizations/journalists, public health officials giving information about COVID-19, and citizens who feared the spread of the pandemic and struggled to make sense of it.

Some perceptions of COVID-19 affect avoidance behavior and that personal control has a mediating role.^[4] Consumers preferred online marketing or consumed fresh vegetables, fruits, animal-based products, and pulses.^[5] Informing society about the infectious agent causing the disease and developing avoidance is the most basic way to control epidemics.^[6] Another way may be a positive approach, including general well-being and a healthy

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Received: 22-10-2022

Revised: 10-12-2022

Accepted: 27-07-2023

Published: 21-11-2023

Access this article online

Quick Response Code:



Website:
<http://journals.lww.com/JFMPC>

DOI:
10.4103/jfmpe.jfmpe_2066_22

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How to cite this article: Şen A, Mercan Başpınar M, Basat O. Did healthy life awareness affect the behavioral or cognitive avoidance attitude from COVID-19? An observational study. J Family Med Prim Care 2023;12:2911-5.

life offer. A healthy lifestyle involves regular exercise, getting enough sleep, avoiding stress, better eating habits, stopping smoking, etc.^[7,8] Life expectancy is growing as health awareness is rising.^[9] If members of the public know about the disease and its symptoms, they are more likely to take steps to prevent it from happening to them or to go to a healthcare provider.^[8]

Being affected by negative discourses was highly possible during the pandemic. This study has searched for a relationship between healthy life awareness (HLA) and avoidance attitudes of COVID-19 disease. It has been sought to describe HLA among outpatients and demonstrate the behavioral and cognitive avoidance attitudes from COVID-19.

Materials and Methods

This single-centered observational study was conducted between April 30, 2021 and July 30, 2021 among 311 patients who were screened for healthy life behaviors in a Family Medicine Clinic of Gaziosmanpaşa Training and Research Hospital in Istanbul, Turkey. Exclusion criteria included the need for protective conditions such as immunosuppressive medications, cancer treatment, renal failure requiring dialysis, or organ transplant. In the study sample calculation, type 1 error was 5% (bidirectional) and type 2 error was 5% (power 95%). Since the general HLA percentage was unknown, the effect size (*d*): 0.5 was accepted, and the minimum sample size was calculated as 210 ± 21. We reviewed sociodemographic data and the health status of each participant through a face-to-face interview using the Demographic Information Form, followed by their consent. In addition, the HLA scale was used to determine the healthy living awareness levels of the participants, and the COVID-19 avoidance attitudes scale was applied to determine the attitudes toward avoiding COVID-19. The Clinical Research Ethics Committee of Gaziosmanpaşa Training and Research Hospital accepted the study protocol by 17/03/2021, approval no = 223.

The outcome variable was the relationship between the HLA score and the COVID-19 behavioral and cognitive avoidance attitudes score. Secondly, the Cronbach alpha values of the scales were recalculated in our study, and the scales' reliabilities were corrected.

HLA scale: The HLA scale, including a five-point Likert structure consisting of 15 items and four dimensions, was developed by Özer and Yılmaz in 2020. The Cronbach's alpha value was 0.813, and the test-retest reliability coefficient was found to be 0.849.^[10] The score range is between a minimum of 15 points and a maximum of 75 points.^[10] A high score on the scale is considered a high level of healthy living awareness.^[10]

Avoidance attitudes from COVID-19 (AA-COVID-19) scale: AA-COVID-19 scale has ten items and is in a five-point Likert structure. It has two sub-dimensions, cognitive avoidance (items 1–5) and behavioral avoidance (items 6–10). The cognitive avoidance sub-dimension includes cognitive avoidance, such as

changing attention, drifting away from the subject, or thinking about other things in the news about COVID-19. Behavioral avoidance includes avoidance behaviors such as not participating in social activities, not shaking hands, kissing, and not using public transportation. A value between 1 and 5 is obtained by dividing the total score obtained by summing the item scores in the scale sub-dimension by the number of items in that sub-dimension. High sub-dimension scores indicate high levels of avoidance in the relevant domain.^[6]

Statistical analysis

Normality was checked by the Kolmogorov–Smirnov test. Data were given as mean, standard deviation, median, frequency, and percentage. Mean scores between the groups were analyzed using the *t*-test and Mann-Whitney *U* test. A binary logistic test was performed to determine factors related to the presence of high HLA. *P* < 0.05 was considered statistically significant. Analyses were performed using the E-Picos (MediCRES) software program.

Results

The study included 311 participants (aged 30.79 ± 8.37 years, female/male ratio 182:129). Of the individuals, 60 (19.29%) had a positive COVID-19 history, and 251 (80.71%) had negative history. The marriage rate was 46.62% (*n* = 145). Participants were divided into two age groups (18–30, >30 years) and two graduation levels of education. Non-educated, or primary school, or elementary school, or high school were grouped in the same group and named as high school or below education. The University graduation rate was 68.17%. The frequency of volunteers under the aged 30 years was 54.66%.

Table 1 indicates the mean scores and reliability analyses for cognitive and behavioral avoidance attitudes from COVID-19 subscales and HLA scale scores. Cronbach alpha values of cognitive avoidance attitudes from COVID-19, behavioral avoidance attitudes from COVID-19 subscales, and HLA scales were 0.863, 0.846, and 0.841, respectively. All scales in this present search were found statistically reliable, reflecting over 0.70 values of Cronbach alpha.

Table 2 shows the evaluation of the comparisons among group scores based on cognitive avoidance attitudes, behavioral avoidance attitudes subscales' scores, and HLA scale scores.

Table 1: Evaluation of the scores and Cronbach's alpha values of avoidance attitudes from COVID-19 (AA-COVID-19) scale/subscales and HLA scale/subscales

Scales and subscales	Mean±standard deviation (n=311)	Cronbach's alpha values
Avoidance attitudes from COVID-19 (AA-COVID-19) scale	2.99±0.72	0.777
Cognitive avoidance subscale	2.59±0.92	0.863
Behavioral avoidance subscale	3.40±1.07	0.846
HLA scale	57.94±6.99	0.841

Table 2: Evaluation of the difference among groups based on cognitive and behavioral avoidance attitudes from COVID-19 scales and HLA scale scores

		Cognitive avoidance attitude from COVID-19		P	Behavioral avoidance attitude from COVID-19		P	HLA scale		P
		Mean±standard deviation	t/F		Mean±standard deviation	t/F		Mean±standard deviation	U/X ²	
Age	≤30 years (n=170)	2.62±0.92	0.710	0.478	3.43±0.99	0.341	0.011	57.75±6.88	11323.5	0.401
	>30 years (n=141)	2.55±0.93			3.38±1.16			58.18±7.05		
Gender	Male (n=129)	2.62±0.96	0.515	0.611	3.33±1.11	-1.304	0.302	56.83±7.70	9750	0.018
	Female (n=182)	2.57±0.90			3.45±1.04			58.72±6.33		
Marriage	Single/divorced (n=166)	2.68±0.92	1.921	0.056	3.35±1.03	-0.744	0.460	57.53±7.08	10998.5	0.270
	Married (n=145)	2.48±0.92			3.45±1.11			58.41±6.88		
Education level	High school or below (n=99)	2.56±0.88	-0.340	0.727	3.11±1.26	-3.040	0.001	58.05±7.52	0.157	0.875
	University (n=212)	2.60±0.94			3.54±0.95			57.89±6.4		
Presence of chronic disease	Positive (n=23)	2.47±0.98	-0.649	0.517	3.44±1.17	0.202	0.840	58.74±6.62	3000	0.569
	Negative (n=288)	2.60±0.92			3.40±1.06			57.87±7.02		
COVID-19 history	Positive (n=60)	2.54±0.97	-0.496	0.621	3.57±0.94	1.374	0.133	57.01±6.30	7034	0.221
	Negative (n=251)	2.60±0.91			3.36±1.10			58.16±7.14		

A negative relationship between HLA and cognitive avoidance score ($r = -0.255, P < 0.001$) and a positive relationship between HLA and behavioral avoidance score ($r = 0.119, P = 0.036$) have been demonstrated.

The HLA scale's median value was 58 points. According to this value, the participants were divided into two groups as below and above the average HLA score. The participants with over 58 points were accepted as highly aware of healthy life. Table 3 evaluates the binary logistic test results of independent risk assessment for the presence of higher awareness of a healthy life versus lower awareness.

A high awareness rate of healthy life was observed in women, approximately 1.7 times more than in men (OR: 1.684, 95% CI = 1.058–2.696; $P = 0.030$), and had 1.06 times higher score on behavioral avoidance attitude from COVID-19 more than participants with low awareness (OR: 1.066, 95% CI = 1.012–1.455; $P = 0.049$). As the cognitive avoidance level increased, the presence of high HLA decreased by 33% (OR: 0.666, 95% CI = 0.512–0.867; $P = 0.002$).

Discussion

A total of 311 outpatients of a tertiary hospital family medicine clinic in this observational study demonstrated that higher HLA led to doing what needed to be done during the pandemic horizon. HLA was associated with an increased behavioral avoidance and decreased cognitive avoidance attitude from the COVID-19 pandemic.

Behavioral factors related to COVID-19 are distributed nonequally among people.^[11] Abdulmuhsin *et al.* have found that gender moderates the relationship between COVID-19 and avoidance behavior. Additionally, women are significantly more sensitive compared to men in perceiving COVID-19.^[4]

Table 3: Binary logistic test results of independent risk assessment for the presence of high awareness of a healthy life

Variables	Odds ratio	%95 Confidence interval (lower–upper limits)	P
Gender (Female)	1.684	1.058–2.696	0.030
Marriage (Married)	1.146	1.146–0.894	0.565
Education level (University)	0.733	0.733–0.444	0.226
Behavioral avoidance attitude from COVID-19 (score)	1.066	1.014–1.455	0.048
Cognitive avoidance attitude from COVID-19 (score)	0.666	0.512–0.867	0.002

Another study on Chinese undergraduate students revealed that gender and major affect students' attitudes and practices.^[12] In our study, we observed no difference in gender-specific cognitive or behavioral avoidance attitudes from COVID-19, although a higher HLA was observed in women, approximately 1.7 times more than in men. Avoidance attitudes from COVID-19 may lead to supplying a part of healthy life management. As a verifying finding, we found a positive relationship between behavioral avoidance and higher HLA.

In a study by Kırac *et al.*, the health-seeking behavior of the female gender was higher than that of the male gender.^[13] Similarly, in a study by Yaman *et al.*, both online and traditional health-seeking behaviors of the female gender were higher than that of males.^[14] On the contrary, Yılmaz *et al.* obtained no significant difference between gender and awareness of healthy living, but it was determined that the female gender had higher scores than males.^[15] We found that the female gender has an independent positive effect on high HLA. In addition, we observed that age made a change in avoidance attitudes from COVID-19. In our study, HLA mean score was 57.94 ± 6.99 points, and adults aged above 30 have a better behavioral avoidance attitude score than those under 30 years,

whether there was no difference in cognitive avoidance. In the study of Aydın *et al.*, women over 40 years of age were found to have a higher awareness of healthy living compared to individuals under 40 years of age, and HLA mean score was 62.63 ± 8.84 points.^[16] In the study of Khraim *et al.*, the health-seeking behaviors of elderly individuals were higher than those of young people.^[17] However, Lee *et al.* observed that adults aged 55 and above performed poorer behavior than adults in the younger age groups during the pandemic.^[11] Awareness of healthy life has become more important after the pandemic.

It has been found that decreased healthy life behaviors, such as physical activity, correlated with the fear of COVID-19 in the elderly.^[18] Diminished interest and avoidance of news about COVID-19 are related to younger age, greater post-traumatic stress symptoms, less fear of COVID-19, and less frequent use of professional healthcare devices. In addition, it has been shown that coronavirus anxiety may not increase as feared in the increased exposure to information from the media, and education level is the main risk factor.^[19] During this pandemic, people were caught up in the fear of contracting the virus, which brought many positive changes in their behavior. Self-motivation also played a critical role in changing people's behavior in the appropriate direction.^[20] In our study, it was indicated that decreased cognitive avoidance attitude from COVID-19 was related to higher HLA. It has been thought that cognitive differences in participants' attitudes toward avoiding COVID-19 were normalized because the study was conducted one year after the onset of the pandemic. So, time might have led to a decrease in cognitive avoidance due to decreased anxiety related to case numbers and vaccine development. We divided our study sample into graduates from the university and others. Behavioral avoidance attitude from COVID-19 was significant for participants who graduated from a university versus other education levels. It seems that a high education level may lead to behavioral attitude differences in future preventive health projects.

Mansur *et al.* have indicated the health awareness levels of patients with chronic diseases during the pandemic are higher than those without.^[21] Çiftçi *et al.* found that the contact with people suspected or diagnosed with COVID-19, the presence of a history of COVID-19 in the immediate environment, and the vaccination status for COVID-19 also affected the perception of health and health awareness.^[22] Our study indicated that HLA and avoidance scores did not change with a positive history of COVID-19 or the presence of a chronic disease. This result is possibly related to HLA as a choice independent of any condition. It may be summarized as "either you are aware or not," including the pandemic period.

Limitations

The main limitation of our study was the lack of data relating to personal anxiety level, disease knowledge, and mindfulness level that might affect cognitive avoidance. Nevertheless, we found a negative correlation for cognitive avoidance and a positive correlation for behavioral avoidance on HLA, possibly related

to higher knowledge, mindfulness, and lower disease anxiety. Our findings were interpreted as the participants did not listen to what was said about the pandemic and applied the necessary precautions related to HLA.

Conclusion

There is no such comparison of avoidance attitude from COVID-19 and higher HLA in the literature. It has been determined that there will be a need for studies measuring awareness and psychological health related to this relationship. Our study has demonstrated that a higher HLA supplied an increased behavioral avoidance attitude from COVID-19 with a decreased cognitive avoidance.

The importance of healthy living awareness in chronic diseases is known. Our study showed that awareness of healthy living was found to be associated with displaying positive behavior in an emergency such as a pandemic, as in chronic diseases. Since primary care physicians are the first and most frequently consulted physicians of patients, they have a key importance in spreading awareness. HLA has led to people doing what needs to be done without being affected by negative discourses. Therefore, primary care and disease prevention programs need to raise awareness of healthy living for a healthy life and fight against diseases and future pandemics.

Summary of key findings

- A higher HLA has been found as an independent factor related to a positive behavioral avoidance attitude from COVID-19.
- Females versus males, adults aged above 30 versus under 30 years, and university graduates versus others had a higher score of behavioral avoidance attitude during the pandemic.
- Both HLA and behavioral avoidance attitudes were better among women than men. So then, the next disease prevention projects should also be considered through women's health education and health awareness.

Acknowledgment

We thank all the participants.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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