**ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE**

# Media Usage, Health Literacy, Health Anxiety, and Health Behaviors of University Students During the COVID-19 Pandemic

## COVID-19 Pandemi Döneminde Üniversite Öğrencilerinin Medya Kullanımı, Sağlık Okuryazarlığı, Sağlık Kaygısı ve Sağlık Davranışları

**Dilek DEMİRTEPE-SAYGILI**\* (iD)
**Elif EŞİYOK**\*\* (iD)
**Eda TURANCI**\*\*\* (iD)

**Abstract**

Living with the pandemic influenced people's lifestyles and health behaviors as well as their use of media. The aim of this study is to investigate the level of change in health behaviors of university students during the COVID-19 pandemic. The changes in health behaviors refer to changes of mainly eating and exercise behaviors to stay healthy. In this study, media use, health literacy and health perception are the determinants of change in health behaviors; health anxiety and healthy living skills are considered as mediating variables. Questionnaires were filled in by 392 university students in Ankara, Turkey within the second month of the pandemic. According to the findings, as the levels of positive perception of health, health literacy level, health anxiety level, and healthy life skills increase, the level of change in health behavior increases. The path analysis revealed that more positive perceptions of health and higher levels of health literacy are related to higher levels of change in health behaviors through the mediation of healthy life skills. In addition, the use of Twitter increases health anxiety during the pandemic and results in a higher level of change in health behaviors. The findings help to better understand the motivations to change health behaviors for self-protection against the COVID-19 among university students.

\*     Assist. Prof. Dr., Atilim University, Department of Psychology, Ankara, Turkey. E-mail: dilek.saygili@atilim.edu.tr. ORCID: https://orcid.org/0000-0002-4644-9570

\*\*    Assoc. Prof. Dr., Atilim University, School of Business, Public Relations & Advertising Department, Ankara, Turkey. E-mail: elif.esiyok@atilim.edu.tr. ORCID: https://orcid.org/0000-0001-9486-7067

\*\*\*   Assist. Prof. Dr., Hacı Bayram Veli University, Department of Public Relations and Publicity, Ankara, Turkey. E-mail: eda.turanci@hbv.edu.tr. ORCID: https://orcid.org/0000-0002-2539-8452

**Öz**

Pandemi süreci insanların yaşam tarzlarını ve sağlık davranışlarını etkilerken aynı zamanda medya kullanımlarını da etkilemiştir. Bu çalışmanın amacı, COVID-19 salgını sırasında üniversite öğrencilerinin sağlık davranışlarındaki değişimi incelemektir. Sağlık davranışındaki değişiklik, beslenme ve egzersiz alışkanlıklarındaki değişiklikler anlamına gelmektedir. Bu çalışmada medya kullanımı, sağlık okuryazarlığı ve sağlık algısı, sağlık davranışlarındaki değişimin belirleyicileri olarak; sağlık kaygısı ve sağlıklı yaşam becerileri ise aracı değişken olarak ele alınmıştır. Pandeminin ikinci ayında Ankara ilindeki üniversitelerde öğrenim gören 392 üniversite öğrencisine anket uygulanmıştır. Bulgulara göre olumlu sağlık algısı, sağlık okuryazarlığı düzeyi, sağlık kaygısı düzeyi ve sağlıklı yaşam becerileri arttıkça sağlık davranışlarındaki değişim de artmaktadır. Yol analizi bulgularına göre daha olumlu sağlık algısı ve yüksek sağlık okuryazarlığı düzeyi, sağlıklı yaşam becerileri aracılığı ile sağlık davranışlarında daha yüksek düzeyde değişiklik sağlamaktadır. Ayrıca, Twitter kullanımı pandemi sürecinde sağlık kaygısını arttırarak, sağlık davranışlarındaki değişimi arttırmıştır. Bulgular, üniversite öğrencilerinin COVID-19'dan korunmak için sağlık davranışlarını değiştirme motivasyonlarının daha iyi anlaşılmasına yardımcı olmuştur.

**Anahtar Kelimeler:** COVID-19, Sağlık Kaygısı, Sağlık Algısı, Sağlık Okuryazarlığı, Sağlıklı Yaşam Becerileri, Üniversite Öğrencileri

**Introduction**

COVID-19 was first identified in Wuhan, China in December 2019, but spread to the world. COVID-19 pandemic increased the anxiety level and emotional distress of individuals (Fiorillo & Gorwood, 2020) and, people's lifestyles and behaviors have also changed (Gornicka, Drywien, Zielinska & Hamulka, 2020). The pandemic had an impact on people's health behaviors and changes in daily life habits, such as nutrition, taking supplements, exercise habits, paying attention to hygiene, and keeping a distance from people in social settings. In addition, it was found that during the pandemic healthy living behaviors and protective behaviors were related to each other (Nudelman, Peleg & Shiloh, 2021).

During the pandemic, healthy eating tendency has increased, people started to cook and eat at home, leisure behaviors increased, and anxiety level also increased (Flanagan, Beyl, Fearnbach, Altazan, Martin & Redman, 2021). Another study showed that the perception of weight gain was observed in the majority of the population; 3.3% of smokers decided to quit smoking; physical activity levels also increased, and people started to buy organic foods and vegetables (di Renzo et al., 2020).

Not only the lifestyle habits but also media usage habits started to change during the pandemic. Especially social media usage habits changed due to the restrictions on going out and precautions on staying at home. It is also known that in the past few years, social media has changed the way of seeking and sharing health information (Li, Wang, Lin & Hajli, 2018). Moreover, social media has become a significant source of receiving health information during the pandemic (Dadaczynski et al., 2021). As there is too much information on social media, this has caused an increased level of anxiety, fear-related emotions (Banerjee & Rao, 2020) which resulted in the importance of health

literacy. In this study, the change in health behaviors was investigated in relation to health anxiety, media use, perception of health, health literacy, and healthy life skills in a university sample.

### Health Anxiety and Media Usage

Health anxiety includes the fear of having and being harmed by a serious illness in the presence of little or no symptoms (Abramowitz, Olatunji& Deacon, 2007). Health anxiety is associated with controlling the body, frequent requests for reassurance, and browsing on social media, within a cycle of increased anxiety, more misinterpretation, and greater symptomatology (Tyrer, 2020; Vannucci, Flannery & Ohannessian, 2017). During the COVID-19 pandemic, health anxiety levels started to increase (Tull et al., 2020), because the changes in people's lives made them feel anxious and unsafe during the pandemic (Usher, Bhullar & Jackson, 2020). In those times, individuals who have high health anxiety are vulnerable to misinterpret their harmless body sensations and believe that they got infected (Asmundson & Taylor, 2020), whereas individuals with low-level anxiety are more likely to ignore or minimize their body sensations (Asmundson, Taylor, Carleton, Weeks & Hadjstavropoulos, 2012). Gender is one of the determinant factors that affect the level of anxiety, as such, women reported higher levels of anxiety during the pandemic (Antunes et al., 2020; Jungmann & Witthöft, 2020). Potential risks for loved ones and looking up information on the media were found as independent predictors for the fear of COVID-19 (Mertens, Gerritsen, Duijndam, Salemink & Engelhard, 2020). There are several reasons that increase health anxiety, such as media exposure (Garfin, Silver & Holman, 2020).

The COVID-19 pandemic increased media use around the world (Zheng, Goh & Wen, 2020). During social isolation, people have monitored the media more frequently (Liu & Liu, 2020). Both traditional and social media had become important tools to access information (Muñiz, 2020). During a health crisis, the need to get precise and recent information to make decisions on protecting health is one of the reasons that increase the use of media (Garfin, Silver & Holman, 2020). Increased use of media exposure can also increase the level of anxiety (Garfin, Silver & Holman, 2020; Gao et al., 2020). Especially social media posed a higher risk than traditional media due to the rapid spread of false information to large masses (Abdel-Latif, 2020) and the misinformation might result in increased fear (Ng, Yang, & Vishwanath, 2018). Both internet usage (Jungmann & Witthöft, 2020) and media sharing on social media are found as a determinant factor that predicts anxiety (Franco & Carrier, 2020).

### Health Perception, Healthy Life Skills, and Health Literacy

Health perception is a subjective perception and individual assessment of one's own personal physical and mental health (Saravia & Chau, 2017; Leite, Ramirez, De Moura, Souto & Maroco, 2019) which is determined by the individual's level of knowledge on health/disease (Özdelikara, Ağaçdiken-Alkan & Mumcu, 2018). It includes having health-related knowledge, considering the importance of health, and perceiving control over health (Grotz, Hapke, Lampert & Baumeister, 2011). Health perception is linked with increased attempts on improving or maintaining health

status (Rathbun, Loerzel & Edwards, 2020). For example, it is related to tobacco use habits, food preferences, and physical exercise (Szwarcwald et al., 2015; de-Mateo-Silleras et al., 2019).

Healthy life skills can be evaluated through four dimensions; paying attention to health, healthy nutrition, access to health-related sources, and prioritize health (Genç & Karaman, 2019, Arı et al., 2020). During the COVID-19 pandemic, individuals are engaged more with physical activities according to researchers (Antunes et al., 2020; Romero-Blanco et al., 2020). In contrast, Gallo and colleagues (2020) showed that the level of physical activity is reduced during the pandemic among university students. Besides, staying at home during the pandemic resulted in changes of dietary behaviors (Flanagan et al., 2020). Similarly, a detailed food selection habit is reported by Portuguese adults during pandemics (Antunes et al., 2020). In the present study, health behavior change is expected in terms of better eating habits and exercise during the pandemic.

Pandemics, such as the COVID-19 show that health literacy is important in terms of public health (Abel & McQueen, 2020; Harnett, 2020; Xu, Zhang & Wang, 2020). Health literacy, having various definitions (Berkman, Davis, & McCormack, 2010) is generally defined as the ability to evaluate, understand, and applying health information to make decisions or take an action to improve one's health and prevent disease (CDC, 2020). Limited health literacy skills end with spread misinformation or disinformation on social media (Harnett, 2020). A high level of health literacy is linked with health information access and health behaviors (von Wagner, Knight, Steptoe & Wardle, 2007; Suka et al., 2015); healthy life skills (Vozikis, Drivas & Milioris, 2014), healthy lifestyle (Yokokawa et al., 2016) and healthy eating habits (Zoellner et al., 2011). Despite the high level of health literacy, participants reported having difficulty coping with coronavirus information in a German sample (Okan et al., 2020). Considering the importance of health literacy and health outcomes during the pandemic, it was hypothesized that there is a relationship between healthy life skills and the level of change in health behaviors during the pandemic.

## Methodology

### Aim of the Study

This study aims to investigate the relationship between health anxiety, media use, perception of health, health literacy, and healthy life skills during the COVID-19 pandemic.

### Universe and Sample of the Study

The universe of this research covers university students in Turkey. Convenience sampling was preferred, which is a nonprobability sampling method, due to the time and cost constraints. For convenience sampling, people are sampled because they are "convenient" sources of data for researchers (Lavrakas, 2008, p. 149). Since the universe of this study is high, through convenience sampling only the students in Ankara University, Haci Bayram Veli University, and Atilim University were included in this study. Therefore, the results of the research cannot be generalized to the universe. In total these three universities have 74,215 students by December 2020. Thus, with a %95 confidence level and a %5 margin of error, 392 university students (294 females, 98 males) from three

universities in Ankara, Turkey participated in this study. Since the typical sample size in marketing studies are between 300-500 within the range (Naresh & Birks, 2000 p. 351 as cited in Kılıç Taran & Babür Tosun, 2020) this sample size was found acceptable.

**The Scales and Reliability**

The questionnaire consisted of two parts. In the first part, demographic characteristics of the participants (e.g., age, gender, faculty, and the year at school) and their level of media involvement were included. The use of traditional media (television, radio, and newspaper) and social media (Twitter, Instagram, YouTube, and Facebook) were explored, and total traditional media scores and total social media scores were calculated.

*The Health Anxiety Scale* is developed by Salkovskis and colleagues (2002) and adapted to Turkish by Aydemir and colleagues (2013). The scale consists of 18 items, each of which is rated between 0 and 3. The higher the total score, the higher the health anxiety level. Two factors represent the sensitivity to bodily symptoms and anxiety toward physical illnesses. The internal consistency coefficient of the scale was .91 (Aydemir, Kırpınar, Satı, Uykur & Cengisiz, 2013). In this sample, the internal consistency coefficient was .83. The total scores of the participants ranged between 3 and 47 ($M = 17.62$, $SD = 7.02$).

*Health Perception Scale* was developed by Diamond and colleagues in 2007, and translated to Turkish by Kadıoğlu and Yıldız (2012). The scale consists of 15 items and four subscales namely; center of control, self-awareness, certainty, and importance of health. The respondents evaluate themselves on a 5-point Likert type scale range from "strongly agree=5" to "strongly disagree=1". Higher total scores indicate a more positive perception of health with awareness, importance, and internal control over health. The total scores of the participants ranged between 15 and 75 ($M = 52.34$, $SD = 7.47$). The internal consistency coefficient of the entire scale was .77 (Kadıoğlu & Yıldız, 2012). For the present sample, the internal consistency coefficient was .78.

*Health Literacy Scale* was adapted from Health Literacy Index (Sørensen et al., 2013) by Toçi and colleagues (2013). It was adapted to Turkish by Aras and Bayık Temel (2017) with an internal consistency coefficient of .95. Respondents rate themselves on a 5-point scale in terms of their difficulty levels in accessing, interpreting, and using health-related information. The scale consists of 25 items, in which higher total scores indicate higher levels of health literacy. The total scores of the participants ranged between 56 and 125 ($M = 104.02$, $SD = 12.9$). For the present sample, the internal consistency coefficient was .91.

*The Healthy Life Skills Scale* was developed by Genç and Karaman (2019) to assess the healthy life skills of university students. Respondents rate themselves a four-point Likert type scale ranges between 1 and 4 in terms of 21 items attributed to four subscales, namely, the importance of health, healthy nutrition, access to health-related sources, and health priority. Higher total scores indicate higher levels of healthy life skills. The total scores of the participants ranged between 21 and 84 ($M = 62.80$, $SD = 13.7$). The internal consistency coefficient of the entire scale was .90 (Genc & Karaman, 2019). For the present sample, the internal consistency coefficient was .94.

*Measurement of the change in health behaviors during the pandemic* was evaluated by a form prepared by the authors to assess the change in health behaviors during pandemic due to the lack of a scale prepared for this aim at the time of the study. Questions included the presence of a change in the participants eating and exercise behaviors as well as taking supplements. The scores ranged between 0 "no change" and 3 "high level of change" ($M = 1.06$, $SD = .93$).

### Procedure

Ethical approval was obtained from the Atilim University Ethics Committee (E-59394181-604.01.02-3630). The link of the online survey was announced by instructors from web pages of the courses during online education. Informed consent for the voluntary participation of the students was obtained by checking a box after reading the informed consent section. Then, it was made possible to see the questions. It took approximately 15 minutes to fill in the questionnaires. Data were collected 2 months after the diagnosis of the first case with COVID-19 in Turkey. At the time of data collection, partial lock-down and online education were applied. The data collected from 405 students were checked for missing values and random answers. Thirteen forms were excluded from the analyses. Thus, the analyses were conducted with a sample of 392.

### Proposed Model of the Study

To investigate the predictors and mediators of change in health behaviors of university students, the present study hypothesized that;

H1. The use of media, health literacy, and perception of health will predict the level of change in health behaviors.

H2. Health anxiety will mediate the relationship between media use and the level of change in health behaviors relationship.

H2b. Healthy life skills will mediate the relationship between health literacy and perception of health, and the level of change in health behaviors relationship (See Figure 1).
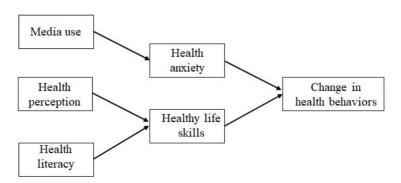
**Figure 1.** Model of the study

## Results

### Demographic Characteristics of the Participants

The students' age ranged between 17 and 28 with a mean of 21.41 ($SD$ = 2.67). The sample consisted of 85 freshmen, 45 sophomores, 111 juniors, 138 seniors, and 13 graduate students from various faculties. The most common three faculties were Faculty of Business ($N$ = 142), Faculty of Communication ($N$ = 103), and Faculty of Arts and Sciences ($N$ = 92). The remaining 55 students were from Faculties of Engineering, Education, Medicine, and Law. Nearly all the participants ($N$ = 385) reported using at least one social media platform during pandemic (50.8% one, 31.6 two, 13.5% three, 9% four or more social media platforms), while 7 participants (%1.8) reported having no social media account. The most common information source was Twitter (%68.8, $N$ = 269) followed by Instagram (%63.3, $N$ = 248). Participants' use of traditional media included most commonly television (%48, $N$ = 188), while radio (%1.8, $N$ = 7) and newspapers (%3.8, $N$ = 15) were used by only a small percentage.

### Preliminary Analysis

The data were examined for normality assumptions (Field, 2009). The skewness of the variables ranged between .10 (perception of health) and .69 (health anxiety), while kurtosis ranged between 1.09 (perception of health) and .04 (healthy life skills). Examination of the histograms also indicated no violation for the assumption of a normal distribution of the variables. Considering the sample size and normality assumptions, parametric tests were used accordingly. An alpha level of .05 was used for all statistical tests. Correlation coefficients and t-tests were used for investigations of the relationships between variables and mean differences by using SPSS version 21.0 (IBM Corp., 2012).

The relationship between study variables (Health anxiety, perception of health, health literacy, healthy life skills, and the change in health behaviors during pandemic), age, the year at school, total traditional media scores, and total social media scores were investigated with correlational analysis. As shown in Table 1, the number of social media followed is positively related to the perception of health, while the year at school was negatively related. The higher use of traditional media was related to higher levels of healthy life skills.

**Table 1.** Descriptive Statistics and Correlations among Study Variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Age | (21.41, 2.67 | | | | | | | | |
| 2.Year at school | .81*** | (2.87, 1.21) | | | | | | | |
| 3.Traditional media use | -.08 | -.01 | (.54, .60) | | | | | | |
| 4.Social media use | -.09 | -.10* | .09 | (1.64, .82) | | | | | |
| 5.Health literacy | .05 | .02 | .07 | .05 | (104.02, 12.9) | | | | |
| 6.Health anxiety | -.08 | -.04 | -.02 | .08 | -.13** | (17.62, 7.02) | | | |
| 7.Perception of health | -.08 | -.16** | .06 | .11* | .35*** | -.05 | (52.34, 7.47) | | |
| 8.Healthy life skills | .02 | .02 | .14** | .08 | .32*** | -.07 | .25*** | (62.80, 13.7) | |
| 9.Change in health behaviors | -.08 | -.03 | .02 | .09 | .12* | .16** | .10* | .25*** | (1.06, .93) |

**Notes.** *p <.05, **p <.01, ***p <.001. Numbers in parentheses represent means and standard deviations.
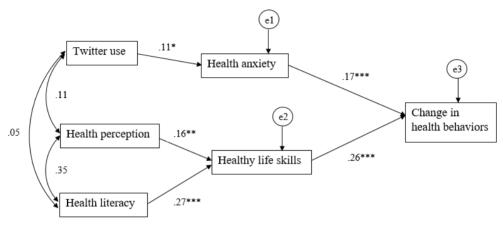
To compare the means of the study variables in terms of categorical variables, namely, gender, faculty differences, the use of different sources of media (TV, radio, newspapers), and social media (Twitter, Instagram, Facebook) were examined with independent samples t-tests. Significant gender differences were found in terms of health anxiety [$t(390) = 2.46$, $p < .05$] and the change in health behaviors during pandemic [$t(390) = 3.23$, $p < .001$]. Females ($n = 294$) had higher scores on health anxiety ($M = 18.12$, $SD = 7.20$) than males ($n = 98$, $M = 16.13$, $SD = 6.23$). Similarly, females had higher scores on the change in health behaviors during pandemic ($M = 1.14$, $SD = .94$) than males ($M = .80$, $SD = .85$). Among different social media applications, using Twitter showed differences in terms of health anxiety [$t(390) = – 2.28$, $p < .05$] and the change in health behaviors during pandemic [$t(390) = – 2.45$, $p < .01$]. Twitter users ($n = 269$) had higher scores health anxiety ($M = 18.16$, $SD = 7.22$) as compared to nonusers ($n = 123$, $M = 16.44$, $SD = 6.41$). Moreover, twitter users had higher scores on the change in health behaviors during pandemic ($M = 1.14$, $SD = .92$) than nonusers ($M = .89$, $SD = .93$).

**Hypothesis Testing**

Structural equation modeling with maximum likelihood estimation in SPSS Amos V.23 (Arbuckle, 2011) was used to test the hypothesized relationships. The initial model based on hypotheses was modified to achieve a better fit according to the relationships between variables. The goodness of fit of the modified model was assessed according to different fit indices: $\chi^2 (7) = 13.02$,

$p$ = .072, $\chi^2$/sd = 1.86, NFI= .92, CFI= .96, RMSEA = .05. Considering fit criteria recommendations (Hu & Bentler, 1999; Schweizer, 2010) $\chi^2$/sd below 2.50, NFI above .95, CFI above .95, RMSEA below .06, it can be assumed that the model fitted the data well.

**Figure 2.** Model of the study showing the predictors and mediators of the level of change in health behaviors during the pandemic.



*$p$ <.05, **$p$ <.01, ***$p$ <.001.

As shown in Figure 2, the use of Twitter was positively related to health anxiety ($\beta$ = .11, $p$< .05), and health anxiety were positively related to the change in health behaviors ($\beta$ = .17, $p$< .001). Moreover, both health literacy ($\beta$ = .27, $p$< .001) and health perception ($\beta$ = .16, $p$< .01) were positively related to healthy life skills. Lastly, healthy life skills were positively related to the change in health behaviors during pandemic ($\beta$ = .26, $p$< .001). Contrary to expectations, health perception was not related to the change in health behaviors during the pandemic. The indirect effects were evaluated with a Bootstrap method (Shrout, & Bolger, 2002). The use of Twitter ($\beta$ = .02, $p$< .05), health perception ($\beta$ = .04, $p$< .01), and health literacy ($\beta$ = .07, $p$< .001) were indirectly related to the change in health behaviors during pandemic.

**Discussion and Conclusion**

This study was designed to evaluate health-related variables as predictors of the change in health behaviors during the pandemic in university students. The findings revealed two routes to health behavior change during the pandemic. The first route is through health anxiety. That is, as the use of Twitter increased, health anxiety increased, as well. Moreover, the increments in health anxiety were related to more changes in health behaviors during the pandemic. It was also found that there was an indirect effect of the use of Twitter on the change in health behaviors during pandemic via increasing health anxiety. Social media was generally associated with greater health anxiety symptoms (Vannucci, Flannery & Ohannessian, 2017; Primack et al., 2017). Total usage of media was not related to the level of change in health behaviors during the pandemic, contrary to expectations.

Yet, studies conducted during the pandemic showed significant relations between social media use and health-related variables (Zhong, Huang & Liu, 2020). Social media usage had a positive indirect effect on health protection against COVID-19 through public health behavioral changes (Al-Dmour, Masa'deh, Salman, Abuhashesh & Al-Dmour, 2020).

Among different media tools, especially using Twitter was associated with a higher level of health anxiety in the present study. This could be related to the function of Twitter on creating awareness of the pandemic and raising the levels of risk from the virus and treatment methods (McNeill, Harris & Briggs, 2016). Moreover, there are 12.7 million Twitter users in Turkey (Statista, 2020), this wide use might be another reason of the significance of Twitter in this sample.

The second route to change in health behaviors in the present study was through healthy life skills. People having a higher level of health literacy and people with a positive perception of health reported higher levels of healthy life skills, which in turn helped them change their health behaviors to become even healthier during the pandemic. Similarly, health literacy was associated with people's health-related quality of life during the COVID-19 pandemic (Nguyen et al., 2020; Riiser, Helseth, Haraldstad, Torbjornsen & Richardsen, 2020). Studies before pandemic also supported the findings. For example, access to health information and health behavior were significantly associated with health literacy in a Japanese sample (Suka et al., 2015). Similarly, higher health literacy scores were positively correlated with a healthy lifestyle (Yokokawa et al., 2016).

In addition to the main findings, the preliminary findings showed that women had higher scores on health anxiety and the level of change in health behaviors. In previous studies, it was also found that females reported higher levels of anxiety during the COVID-19 Pandemic (Antunes et al., 2020; Jungmann & Witthöft, 2020; Özdin & Bayrak Özdin, 2020). Thus, the gender differences revealed in the present study are in line with the literature.

The findings of the study have some practical implications. For example, healthy life skills and health literacy can be improved via intervention studies. Many programs designed for developing healthy behaviors and skills are proven to give positive results especially with adolescents (Young, Phillips, Yu & Haythornthwaite, 2006). Similar programs can be adapted for COVID-19 implemented for people in need. Similarly, improving people's health literacy increases the potential to make informed decisions and reduce risks, it protects from diseases and improves the quality of life (Hashemi-Shahri et al, 2020), however, it was suggested that it is difficult to devote time to improving health literacy during this crisis as the Covid-19 pandemic requires an urgent response (Paakkari & Okan, 2020). Yet, considering the risk of misinformation both in social media and traditional media during the pandemic and its possible health risks (Spring, 2020), improving health literacy is an important area of interest to promote public awareness of media use and health. It can also be suggested that healthy life skills and health literacy can be developed during the pandemic to help people have a healthy life.

Promoting health-protective behaviors during the COVID-19 pandemic is important for the health care system as well as people themselves. Considering some people as more vulnerable for COVID-19, such as people with chronic illnesses or people over the age of 65, health care resources

have been canalized more to those people in need. Thus, keeping people healthy by health-protective behaviors will alleviate the workload of the health care system.

The study has shown that more use of Twitter predicted more change in health behaviors through the mediation of increased health anxiety. Moreover, a more positive perception of health and higher levels of health literacy was associated with more change in health behaviors through the mediation of better healthy life skills. The findings contribute to the understanding of the change in health behaviors in the presence of COVID-19, which may be of assistance to different targets, such as researchers, developers of skills interventions as well as health care workers and individuals with an aim of healthier behaviors.

### Limitations and Avenues for Future Research

The limitations of the present study should be acknowledged. Asking participants about their change in a self-report study is open to bias, because people may not evaluate themselves objectively. The participant characteristics limit the generalizability of the findings. University student sample with young age and better physical health may not represent a larger population living with the pandemic. For example, it was revealed that different variables predict health anxiety in young and old groups (Gerolimatos & Edelstein, 2012). A longitudinal investigation of the change in the behaviors by tracking their health behaviors would provide a better assessment of the study variables. Moreover, variables like the perception of health are open to change with life events. For example, it was found that risk perception changed in the first week of the pandemic in the United States, leading to a change in protective behaviors (Wise, Zbozinek, Michelini & Hagan, 2020). Thus, researchers should focus on the change in people's health perceptions should be monitored in relation to other variables and experiences of the pandemic.

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