

Gülden Erden*
Sami Çoksan** 
Asil Ali Özdoğru***
Aysun Ergül-Topçu****
Yakup Azak*****
Gözde Kıral Uçar*****
Hale Ögel-Balaban*****
İlkiz Altınoğlu Dikmeer****
Yeşim Yasak****

Turkish University Students' Social Support, Daily Activities, Self-Supportive and Health Risk Behaviors During COVID-19 Pandemic

Abstract: The present study investigated the relationship between social support, self-supportive behaviors, health risk behaviors, and daily activities of Turkish university students during the first wave of the Coronavirus Disease 2019 pandemic. We aimed to reveal how an unexpected global crisis may affect the association between social indicators and health risk behaviors among university students. As part of a large international study, a total of 7,125 university students (71% female) with a mean age of 23.50 ($SD = 6.08$) from eight universities in Türkiye responded to an online survey during May 2020. Having a romantic relationship and significant other made a difference in students' health risk behaviors and daily activity indicators before and during the pandemic. Self-supportive behaviors and social contact predicted health risk behaviors and daily activity indicators, which differed according to residence location during the pandemic. Findings showed that Turkish university students' health risk behaviors and daily activity choices were influenced not only by the limitations of the pandemic but also individual behaviors and conditions as well as social relationships.

Keywords: *University students, COVID-19, social support, health risk*

COVID-19 is an infectious viral disease that has left its mark on our day with 6,170,283 deaths, which has rapidly turned into a pandemic since its emergence (World Health Organization, WHO, 2022). Comprehensive measures to prevent disease and its spread have affected the psychological and physical well-being of individuals of all ages. University students were also affected by the pandemic, with the closure of dormitories and campuses, the move to distance education, age-related restrictions, and the loss of friends and family members. Many reported

negative experiences of university students concerning the pandemic (e.g., Evans et al., 2021; Flaudias et al., 2021). University students in Türkiye also reported stress, anxiety, and depression during the pandemic (e.g., Akdeniz et al., 2020; Çam et al., 2021; Van de Velde et al., 2021). This study investigates the relationship between social support, self-supportive behaviors, health risk behaviors, and daily activities among university students in Türkiye during the first phase of the COVID-19 pandemic.

* Ankara University, Ankara, Turkey

** Erzurum Technical University, Erzurum, Turkey

*** Üsküdar University, Istanbul, Turkey

**** Çankırı Karatekin University, Çankırı, Turkey

***** İstanbul University, İstanbul, Turkey

***** Çanakkale Onsekiz Mart University, Çanakkale, Turkey

***** Bahçeşehir University, İstanbul, Turkey

HEALTH RISK BEHAVIORS

Health risk behaviors such as tobacco use, binge drinking (six glasses or more at a time), unhealthy diets, and physical inactivity have a considerable negative impact on individuals' current and future health status. WHO (2009) reported that they are the common risk factors for cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases, causing 35 million deaths yearly. Health risk behaviors also cause various mental and behavioral disorders and injuries (WHO, 2018). University students are particularly at risk of unhealthy behaviors because of changes in social networks, environments, and increased freedom (Keller et al., 2008). Studies reported that tobacco and alcohol use and physical inactivity were prevalent among university students in many countries (Peltzer & Pengpid, 2017). In Türkiye, Atlam et al. (2017) found that the lifetime smoking rate was 54.3% (24.2% regular smokers), and alcohol use was 62.4% (2.4% everyday consumption). Savcı et al. (2006) revealed that 72% of the students refrained from vigorous physical activity, 68% moderate physical activity, and 1% adequate walking activity.

Researchers highlighted that the COVID-19 pandemic resulted in increased health risk behaviors. For example, Lechner et al. (2020) reported an increase in the amount and frequency of alcohol consumption in the days following university campus closure compared to the week before in the U.S., Russian and Belarusian universities; students stated that their use of alcohol, tobacco, and cannabis increased during the COVID-19 pandemic (Gritsenko et al., 2020). Recent studies also revealed that the increase in anxiety, depression, and stress in response to COVID-19 was associated with increased alcohol use (e.g., Flaudias et al., 2021; Lechner, 2020). On the other hand, some studies indicated a decrease in alcohol consumption and tobacco use among university students (Evans et al., 2021; Jaffe et al., 2021). Jaffe et al. (2021) showed that the reduction in alcohol consumption was larger for students who changed their place of residence due to the pandemic (49% reduction) than those who did not move (21% reduction). Furthermore, studies conducted within the scope of a project carried out in 26 countries showed that while smoking remained unchanged, alcohol use decreased (Busse et al., 2021; Rabiee-Khan & Biernat, 2021; Stathopoulou et al., 2020).

COVID-19 also disrupted participation in regular physical activity. A systematic review by López-Valenciano et al. (2021) showed reduced walking, moderate, vigorous, and total physical activity in university students of Australia, Croatia, England, Hungary, Italy, Mexico, Spain, and the USA. Few studies have been conducted on health behaviors during COVID-19 in Türkiye. They showed a decrease in alcohol and cigarette use (Arpacioğlu & Ünübol, 2020) and insufficient physical activity in the general population (Tural, 2020), and an inactive lifestyle among students (Korkut-Gençalp, 2020).

SOCIAL SUPPORT AND HEALTH RISK BEHAVIORS

Another vital change experienced during the COVID-19 was decreased perceived social support due to the decrease in social interaction and the increase in psychological distance (Zheng et al., 2020). Students stated lack of companionship, isolation from others, and loneliness; their contact with friends decreased, and contact with parents increased; their interactions were extensive via video or phone call rather than face-to-face (Rabiee-Khan & Biernat, 2021; Stathopoulou et al., 2020), and single students suffered more loneliness (Stathopoulou et al., 2020).

As previous research revealed, social support is a protective factor for mental health problems and health risk behaviors. Romantic relationships were found to be a protective factor against tobacco consumption among Spanish female university students (Sánchez-López et al., 2013). Peers were more influential on the health risk behaviors of university students in comparison to significant other individuals or family members (Varela & Pritchard, 2011). Similarly, during the COVID-19 pandemic, many studies showed that social support was protective against psychological distress. For example, decreased communication with friends and family, the lack of a close significant other to talk about private and personal issues, and feeling isolated or lacking companionship were associated with increased depression (Rabiee-Khan & Biernat 2021; Stathopoulou et al., 2020). Students with lower levels of social support also reported higher stress (Flaudias et al., 2021), anxiety, and depression (Kaya et al., 2021) levels. Those who perceive more social support consume less alcohol (Flaudias et al., 2021; Lechner, 2020) and perform more physical activity (Busse et al., 2021).

DAILY ACTIVITIES

Research on the daily activities of Turkish university students points out various findings. Studies on leisure, book reading activity show that even though the students read more than the general population, its frequency is much lower than activities such as watching TV, listening to music, or using computers (Odabaş et al., 2008). University students were found to have low levels of social media addiction changing depending on gender (İnce & Koçak, 2017), and depression level (Balçı & Baloğlu, 2018). Playing computer games is very popular among university students (Topal & Aydın, 2018). There was a negative relationship between leisure time satisfaction and loneliness (Siyataş & Donuk, 2021). University students' motivation to engage in physical activity were found to be influenced by their important relationships with family, friends, and significant others (Fletcher, 2016). The COVID-19 changed daily activities in many communities (e.g., Szczuka et al., 2021). However, there is not much research on how daily activities and social

support interact in the lives of university students during the pandemic.

Due to negative health outcomes, identifying the determinants of health risk behaviors in university students is of great importance in terms of developing preventive programs. Although health risk behaviors of university students during the COVID-19 have been studied in various countries, no study was conducted in Türkiye. It seems crucial to understand how the social support from different sources during the COVID-19 has a relationship with the health risk behaviors of university students. This current study examined the associations of health risk behaviors and daily activities with social support and self-supporting behaviors among Turkish university students.

Self-supportive behaviors can be conceptualized as daily leisure and recreation activities in individuals' lives. Leisure and recreation activities refer to a wide variety of daily self-selected activities such as hobbies, socialization, fitness, and basketball. These activities can improve individuals' physical and mental health with their capacity to provide feelings of support, freedom, control, competence, and motivation (Coleman & Iso-Ahola, 1993). Studies show that these activities changed in their content and value during COVID-19 (van Leeuwen et al., 2020) and were helpful for women (Ray et al., 2022) and university students (Yan et al., 2022) in managing stress through feelings of self-determination, positive emotions, and connectedness.

Health risk behaviors included tobacco and alcohol use and physical inactivity variables (moderate and vigorous physical activity). Social support was examined in the context of COVID-19 as a stressful life event. As underlined by Cunningham and Barbee (2000), social support network includes all people that a person can expect to receive support when needed. From this point of view, this study focused on different sources of social support, including social contact (with parents and friends), involvement in a romantic relationship, and the presence of a significant other. In Türkiye, where family and social ties are strong (Kağıtçıbaşı, 2010), it was thought that relations with family and friends would be supportive in terms of students' health behaviors at the time of full quarantine. Besides, two separate studies conducted at the same period of our study during COVID-19 (Rabiee-Khan & Biernat 2021; Stathopoulou et al., 2020) showed that decreased communication with friends and family, the lack of a close significant other to talk about private and personal issues and feeling isolated or lacking companionship were associated with increased depression. Additionally, place of residence during the COVID-19 included student hall, accommodation with others, accommodation alone or those who did not live with the parents before but stayed with their parents during the COVID-19.

Research questions were as follows: 1) Do participants who are and are not in a romantic relationship differ in terms of the levels of health risk behaviors before and during the COVID-19? 2) Do participants who are and are not in a romantic relationship differ in terms of the daily activity indicators? 3) Do participants who have and do

not have a significant other differ in terms of the levels of health risk behaviors before and during the COVID-19? 4) Do participants who have and do not have a significant other differ in terms of the daily activity indicators? 5) Do self-supportive behaviors and social contact predict the levels of health risk behaviors and daily activity indicators? 6) Do the levels of health risk behaviors and daily activity indicators of the participants during the COVID-19 differ according to place of residence during the COVID-19?

METHODS

Participants

A total of 7,125 university students (71% female, 28% male, 1% other) who were enrolled in six state and two foundation universities in Türkiye participated in the research. The mean age of the participants was 23.50 ($SD = 6.08$). Demographic information is summarized in Table 1.

MEASURES¹

Social Support. Social support included the average of contacts with family and friends after the onset of the COVID-19 pandemic (2 items, $r = .17$, $p < .01$) and measured via a 3-point Likert type scale (1 = more, 2 = about the same, 3 = less). Moreover, participants were asked whether they had significant other in their life (1 = yes, 2 = no). Significant other was defined as a friend, peer, spouse, relatives or family member with whom they share mutual bond of affection and trust for emotional and practical support or discuss any intimate or personal matters in crises. Another indicator of social support for romantic relations, whether participants had romantic partners, measured with three categories (1 = single, 2 = yes, 3 = complicated). Additionally, participants were asked to state where they resided during the COVID-19 pandemic (1 = moving in with parents, 2 = student hall, 3 = accommodation with others, 4 = accommodation online). It has been evaluated that those who have a significant other, those who have a romantic relationship, and those who moved back to the parents' home, perceived more social support.

Self-supportive Behaviors. We evaluated self-supportive behaviors using the total score obtained from nine activities in the past week during COVID-19 (1 = walk, 2 = bike ride, 3 = drinks/picnic, 4 = talk on street, 5 = recreational class online, 6 = game/quiz, 7 = video call, 8 = talk over phone, 9 = chatted) ($KR-20 = .59$). Higher scores indicate more self-supportive behaviors (see for similar measurements, Dong & Bouey, 2020; Van de Velde et al., 2021).

¹ Questionnaires focused on social support, self-supportive behaviors and health risk behaviors were based on Abel et al. (2013), Brooks et al. (2020), Jowell et al. (2018), and Special Eurobarometer 472 of European Commission (2018). For detailed information please see Van de Velde et al. (2021).

Table 1 Summary Characteristics of the Study Population

Characteristics	Category	n	%
Gender	Female	5081	71,3
	Male	2004	28,1
	Other	40	0,6
Romantic partner	Yes	2701	37,9
	No	3928	55,1
	Complicated	496	7
Chronic diseases	No chronic disease	6031	84,6
	A chronic disease	766	10,7
	More than one chronic disease ¹	135	1,9
	Prefer not to say	193	2,7
COVID-19 infection	Yes, a lab confirmed	20	0,3
	Yes, a health professional confirmed	43	0,6
	Yes, but not confirmed	289	4,1
	No	6773	95,1
COVID-19 symptoms	Yes	1615	22,7
	No	4640	65,1
	Not sure	870	12,2
COVID-19 entourage	Yes	1726	24,2
	No	5399	75,8

Note. ¹ Including lung diseases, obesity, hearth diseases, diabetes, kidney diseases, high blood pressure, immune system diseases and cancer.

Health Risk Behaviors. To measure health risk behaviors' change beliefs, we focused on its two indicators. The first one included tobacco and alcohol use. participants were asked in a 5-point Likert type scale (1 = hardly ever, 5 = almost every day) what extent tobacco (cigarette, cigar) and alcohol (six glasses or more at a time) they used before the pandemic (2 items, $r = .31, p < .01$) and in the past week during the COVID-19 (2 items, $r = .22, p < .01$). The high difference between the measurements indicates more binge drinking and smoking behaviors during the COVID-19 pandemic. The second covered some physical activities. Participants were asked in a 5-point Likert type scale (1 = hardly ever, 5 = almost every day), what extent vigorous (weightlifting, running) and moderate (walking) exercises they had done before the pandemic (2 items, $r = .36, p < .01$) and in the past week during the COVID-19 (2 items, $r = .45, p < .01$) to measure physical inactivity. The high difference between the measurements indicates more moderate or vigorous exercise during the COVID-19.

Daily Activities. Compared to the pre-COVID-19 period, the number of time participants spent on daily activities, including reading a book, praying, playing an electronic game, spending time on social media, and watching TV during the COVID-19 pandemic was measured on a 5-Likert type scale (1 = much less, 5 = much more). These indicators mainly covered daily leisure, and

a previous study conducted by Odabaş et al. (2008) revealed them by asking university students which kind of daily activities they prefer during their everyday leisure. The higher score indicates more time spent on relevant daily activity during the COVID-19 pandemic than before.

The Context and Procedure

After obtaining the IRB approval, an online invitation including relevant information about the study was sent to all students at the universities that participated in the current study. One week later, a second invitation as a reminder was sent through emails, student information systems, in-class messaging systems, or text messages. Students who volunteered to participate in the study were directed to the questionnaire through a link. Informed consent was obtained beginning of the survey questions from all participants included in the study. The completion of the questionnaire in the Qualtrics survey tool lasted approximately 10 minutes. This study was conducted as part of an international research project. The initiating research institution was one of the European University. There were 28 participating countries, resulting in 134,000 university student participants. Data in Türkiye were collected between 11 and 31 May 2020. The participants stated both the information about pre-COVID-19 measurement and the information about the pandemic period, when the data was obtained, which means both data on pre-

COVID 19 and during-COVID 19 evaluations of the participants were collected at the same time via online link of the study.

In Türkiye, the first coronavirus case was announced on March 11th, 2020, immediately after, restrictions which included the closure of K-12 schools and universities (including dormitories, libraries, and cafeterias on campus) and the switch to the online education were implemented. Then, the closure of the workplaces, shops and restaurants, and the implementation of social distance and mask rules began. The data collection period coincided with the period of the total lockdown for all citizens (March - June 2020). It also coincides with the Muslim holy month of Ramadan (24 April-26 May 2020). Türkiye is a predominantly Muslim country and during Ramadan, one-month of fasting period ends with a 3-day holiday, Bayram or Eid al-Fitr.

RESULTS

Group Comparisons

In order to examine if students who were and were not in a romantic relationship differ in terms of the health risk behaviors before and during the COVID-19, ANOVAs for repeated measures were used. The results showed that students who were and were not in a romantic relationship differed in terms of performing vigorous exercises $F(1, 1000) = 8.507, p = .004, \eta^2 = .001$; performing moderate exercises $F(1, 1000) = 8.664, p = .003, \eta^2 = .001$; and smoking $F(1, 1000) = 4.941, p = .026, \eta^2 = .001$, but not binge drinking $F(1, 1000) = .892, p = .345, \eta^2 = .001$. In order to examine if students who had a significant other differ in terms of the health risk behaviors before and during the COVID-19, ANOVAs for repeated measures were used. The results showed that students who did and did not have a significant other differed in terms of performing vigorous exercises $F(1, 7123) = 33.175, p = .001, \eta^2 = .045$; performing moderate exercises $F(1, 7123) = 15.705, p = .001, \eta^2 = .002$; but not smoking $F(1, 6924) = 0.432, p = 0.511, \eta^2 = .001$, and binge drinking $F(1, 7018) = 3.514, p = .061, \eta^2 = .001$ (see Table 2 for *M*s and *SD*s).

Independent-samples t-tests were conducted to compare the students who were in a romantic relationship with those that were not in terms of daily activities. As seen in Table 3, while there was no significant difference between the two groups in playing e-games, using social media, and watching TV-series, those not in a romantic relationship had significantly higher scores in leisure reading and religious activities. Independent-samples t-tests were conducted to compare the students who had a significant other with those who did not have in terms of daily activities. While there was no significant difference between the two groups in playing e-games, as shown in Table 3, those who had a significant other had significantly higher scores in leisure reading, religious activities, use of social media, and watching TV-series.

REGRESSION ANALYSES

In order to test the associations of students' daily activities and health risk behaviors during the COVID-19 with their self-supportive behaviors, multiple regression analyses were performed by regressing each of the criterion variables on self-supportive behaviors and social support. The results are depicted in Table 4. Self-supportive behaviors explained 2% of the variance in vigorous exercises, %4 in moderate exercises, %004 in cigarette consumption, %002 in alcohol consumption, %1 in leisure reading, %1 in playing e-games, %1 in social media usage, and %1 in TV-serial watching. Only religious activities were significantly explained by both self-supportive behaviors and social support, and the contribution of these variables to the variance was %1. That is, the more the students engaged in the self-supportive activities such as walking, cycling, picnicking, chatting on the street, playing or chatting online, and talking to friends via video or audio, the more likely they were to perform a vigorous physical activity such as lifting weights and running and moderate physical activity such as jogging. Self-supportive activities were also associated with more cigarette and binge drinking during the COVID-19, more leisure reading, social media usage, and TV-serial watching. Finally, those students who had contacts

Table 2 Comparison of the Health Risk Behavior Levels Before and During COVID-19 in terms of the Romantic Relationship Status and Having a Significant Other

	Not in a romantic relationship		In a romantic relationship		No significant other		Have a significant other	
	Before C19	During C19	Before C19	During C19	Before C19	During C19	Before C19	During C19
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Vigorous exercises	2.53(1.38)	2.12(1.37)	2.50(1.38)	2.22(1.44)	2.54(1.40)	1.95(1.31)	2.53(1.38)	2.22(1.40)
Moderate exercises	3.50(1.46)	2.08(1.32)	3.38(1.49)	2.08(1.32)	3.45(1.52)	1.90(1.25)	3.46(1.46)	2.12(1.33)
Cigarette consumption extent	1.97(1.62)	1.69(1.43)	2.36(1.79)	2.01(1.65)	2.24(1.74)	1.91(1.58)	2.16(1.72)	1.85(1.56)
Binge drinking	1.24(0.59)	1.07(0.39)	1.28(0.64)	1.11(0.48)	1.25(0.59)	1.09(0.46)	1.28(0.63)	1.09(0.44)

Note. C19 states Covid-19

with family and friends after the onset of the COVID-19 pandemic, as well as those who engaged in self-supportive activities were more likely to worship.

One-way between-subjects ANOVAs were conducted to compare the effect of where students were living during the COVID-19 on their health risk behaviors and daily activity indicators (see Table 5). Tukey post hoc tests were

conducted to examine the multiple group comparisons. The results showed that the students living in dormitories during the COVID-19 performed vigorous and moderate exercises in the past week more than those who lived in the dormitories, stayed with their friends, or lived alone before the COVID-19 ($p = .0345$; $p = .001$ respectively). The former group also performed vigorous exercises in the past

Table 3 Descriptive Statistics and Mean Differences in Activity Levels Based on the Romantic Relationship Status and Having a Significant Other

Daily activities	Not in a romantic relationship			In a current romantic relationship			t	df
	n	M	SD	n	M	SD		
Leisure reading	3895	3,19	1,23	2676	3,11	1,25	2.46*	6569
Religious activities	3511	3,05	1,13	2374	2,93	1,14	4.06***	5883
E-games	3856	3,4	1,26	2673	3,35	1,31	1,6	5606
Social media	3902	3,93	1,1	2692	3,94	1,11	-0,56	6592
TV series watching	3902	4,01	1,09	2692	3,99	1,13	0,71	6592
	Have a significant other			No significant other			t	df
	n	M	SD	n	M	SD		
Leisure reading	5632	3,18	1,23	1430	3,06	1,26	3.18**	7060
Religious activities	5037	3,03	1,13	1285	2,86	1,14	4.68***	1979
E-games	5595	3,38	1,27	1421	3,43	1,34	-1,12	2124
Social media	5647	3,97	1,08	1439	3,89	1,18	2.33*	2095
TV series watching	5656	4,02	1,08	1440	3,93	1,19	2.67**	2082

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

Table 4 Regression of Daily Activities and Health Risk Behaviors on Self-supportive Behavior and Social Support

Criteria	Predictors	R ²	β (r)	Constant	F _{total}
Vigorous exercises during the COVID-19	Self-supportive behavior	0,02	.13 (.13)**	65.010**	(2,7122) = 65.010**
	Social support		.01 (.03)		
Moderate exercises during the COVID-19	Self-supportive behavior	0,04	.20 (.21)**	156.829**	(2,7122) = 156.829*
	Social support		.01 (.04)		
Cigarette consumption during the COVID-19	Self-supportive behavior	0,004	.07 (.06)**	14.562**	(2,6970) = 14.562**
	Social support		-.01 (.01)		
Binge drinking during COVID-19	Self-supportive behavior	0,002	.05 (.05)**	8.561**	(2,7062) = 8.561**
	Social support		-.01 (.01)		
Leisure reading	Self-supportive behavior	0,01	.08 (.09)**	27.773**	(2,7059) = 27.773**
	Social support		.02 (.03)		
Religious activities	Self-supportive behavior	0,01	.06 (.07)**	16.016**	(2,6319) = 16.016**
	Social support		.03 (.04)*		
E-games	Self-supportive behavior	0,01	.11 (.11)**	46.943**	(2,7013) = 46.943**
	Social support		.01 (.03)		
Social media	Self-supportive behavior	0,01	.08 (.08)**	24.275**	(2,7083) = 27.275**
	Social support		-.01 (.01)		
TV series watching	Self-supportive behavior	0,01	.11 (.11)**	41.804**	(2,7093) = 41.804**
	Social support		.01 (.02)		

Note. * $p < .05$, ** $p < .001$. Significances are shown for βs.

Table 5 Scores of Health Risk Behaviors and Daily Activities in Terms of Place of Residence

Health risk behaviors	Place of residence									
	Moving in with parents		Living in dormitories		Living with friends		Living alone		F	p
	(n=2822)		(n=82)		(n=237)		(n=308)			
M	SD	M	SD	M	SD	M	SD			
Vigorous exercises during COVID-19	2,08	1,37	2,39	1,4	2,33	1,47	2,12	1,39	3,619	0,013
Moderate exercises during COVID-19	2	1,27	2,61	1,45	2,29	1,45	2,16	1,32	9,762	0,001
Cigarette consumption during COVID-19	1,88	1,61	1,77	1,48	2,75	1,93	2,66	1,91	37,674	0,001
Binge drinking during COVID-19	1,12	0,62	1,18	0,71	1,36	0,92	1,29	0,89	13,851	0,001
Daily activities	M	SD	M	SD	M	SD	M	SD	F	p
Leisure reading	3,14	1,28	3,34	1,18	3,38	1,14	3,08	1,25	3,634	0,012
Religious activities	3,35	1,43	3,49	1,56	3,26	1,57	3,23	1,65	1,086	0,354
E-games	3,49	1,31	3,21	1,36	3,3	1,4	3,31	1,43	3,992	0,008
Social media	4,03	1,1	3,87	1,12	3,81	1,14	3,78	1,19	7,385	0,001
TV series watching	4,08	1,09	3,91	1,21	3,94	1,15	3,84	1,18	5,298	0,001

week more than students who lived alone during the COVID-19 ($p = .026$). Students who stayed with their friends during the COVID-19 performed vigorous exercises in the past week more than those who lived in the dormitories, stayed with their friends, or lived alone before the COVID-19 ($p = .006$).

Students who stayed with their friends ($p = .001$) and students who lived alone during the COVID-19 ($p = .001$) smoked more cigarettes than those who lived in the dormitories, stayed with their friends, or lived alone before the COVID-19. Students who lived in the dormitories during the COVID-19 smoked less cigarettes than those who stayed with their friends ($p = .001$) and those who lived alone ($p = .001$). Students who lived in the dormitories, stayed with their friends, or lived alone before the COVID-19 drank less alcohol than those who stayed with their friends ($p = .001$) and those who lived alone ($p = .001$) groups.

Students who stayed with their friends during the COVID-19 period engaged more in leisure reading than students who lived in the dormitories, stayed with their friends, or lived alone before the COVID-19 ($p = .024$) and those who lived alone ($p = .029$). Students who lived in the dormitories, stayed with their friends, or lived alone before the COVID-19 used more social media than those who stayed with their friends ($p = .016$) and those who lived alone ($p = .001$) groups. They also watched TV-series more than those who lived alone ($p = .003$). Moreover, paired-samples t-tests were conducted to compare vigorous and moderate exercises before and during the COVID-19. Both vigorous exercises ($M_{pre} = 2.53$, $SD_{pre} = 1.39$; $M_{post} = 2.12$, $SD_{post} = 1.39$) and moderate exercises ($M_{pre} = 3.58$,

$SD_{pre} = 1.45$; $M_{post} = 2.05$, $SD_{post} = 1.30$) decreases during the COVID-19 ($t(3448) = 13.754$, $p < .001$; $t(3448) = 50.996$, $p < .001$, respectively).

DISCUSSION

This study investigated the relationship between social support, self-supportive behaviors, health risk behaviors, and daily activities of Turkish university students during the first wave of the COVID-19 pandemic. According to the findings, romantic relationship status made a difference in terms of the levels of health risk behaviors and daily activity indicators before and during the COVID-19. Having a significant other in their lives also made a difference in health risk behaviors and daily activity indicators before and during the COVID-19. Self-supportive behaviors were related to increased daily activities and social contact and more religious activities. Lastly, levels of health risk behaviors and daily activity indicators differed according to the place of residence during the COVID-19. Compared to the pre-pandemic period, 38% of the participants spent less time on vigorous exercise, while approximately 21% increased the duration of vigorous exercise. About 62% of the participants devoted less time to vigorous exercise, while only about 9% started doing more moderate exercises.

Binge drinking was reported to have not changed between the students who have a romantic relationship and those who have not. On the other hand, a significant decrease in tobacco consumption was reported among both groups of students. Parallel with previous studies on university students (Sokolovsky et al., 2021); the reason might be that the

independent living spaces of the students have changed, and they have started to live with their parents.

In terms of group comparisons, students without a romantic relationship were more involved in religious or leisure reading activities than before the pandemic compared to those in a romantic relationship. On the other hand, results also showed that there were no significant differences between these groups in terms of e-games, social media, and watching TV-series. Both having a romantic relationship and religiousness are sources of social support in lowering the effect of stressful life events (Kiecolt-Glaser & Wilson, 2017; Lorenz et al., 2019). Furthermore, quality of relationships is also crucial in the supporting role of romantic relationships (Holt-Lunstad et al., 2008; Leach et al., 2013). The reason why those without a romantic relationship perform religious activities more than those who do have might be that they are more likely to not prefer a romantic relationship before marriage due to their religious values. The cultural values of the participants may be effective in this preference. According to a study with Turkish university students, the group with the highest perception of religiosity had the highest negative stereotypical attitudes about romantic relationships (Okutan & Büyükşahin-Sunal, 2010).

We observed that participants whether they have a significant other or not, have behavior that triggers health risk during the COVID-19 compared to the pre-COVID-19 in terms of vigorous or moderate exercise routine. Studies show that social support is a protective factor for health risk behaviors (Lai & Ma, 2016; Peltzer & Pengpid, 2017). Despite the positive contributions of social support, individuals might feel fear and anxiety due to the uncertain durations of the COVID-19, the social restrictions, and financial problems. All these effects may have caused psychological stress, and it may have been difficult for individuals to organize their lives with vigorous or moderate exercise (Taylor, 2019).

Substantial changes in the frequency of daily activities during the COVID-19 were noted between the students with and without a significant other. Students who have a significant other were more involved in leisure reading, religious activities, social media, and watching TV and series than those who have not. The reason why the participants who have significant others practiced these daily activities more, might be that they are trying to cope with the stressful life experiences caused by the COVID-19 together with their significant others by transferring these routines to each other.

Studies showed that believing in higher power was negatively associated with psychological stress, indicating that religious beliefs could be an essential resource to cope with life stressors (Tan et al., 2021). The reason why those who have significant others were more involved in religious activities than those who do not have may be that they are members of the strong-ties communities. Strong-ties communities with intimate connections with kinship and close friends capitalize on externally oriented religious expression in social space (e.g., rituals and ceremonies with social gatherings). The weak-ties com-

munities would privilege internally oriented religious expression in private space (e.g., praying and meditation alone). Inaccessibility to collaborative practices (e.g., social gatherings in mosques) during lockdown are reported to create psychological stress for the members of the religious groups and transform the practice of believers from communal and externally oriented religious expression to internal private spaces (Ting et al., 2021). Strong-ties community members who have intimate connections can cooperate with each other to cope with the psychological distress of the pandemic by getting involved in religious activity.

The association between the self-supportive behaviors and health risk behaviors of the students was also investigated. In our study, we conceptualized daily activities such as walking, cycling, picnicking, chatting on the streets, playing online games, chatting online, talking with friends online via video or audio as self-supportive behaviors. The students' contact with family members and friends is also conceptualized as *contact with people*. It is found that the more the students engage in self-supportive behaviors, the more they are likely to perform vigorous and/or moderate exercises. Those self-supportive behaviors were also associated with more cigarette and alcohol consumption, leisure reading, social media usage, and watching TV/movies. University students who are engaged in self-supportive behaviors may have more motivation to keep themselves busy during the early days of the pandemic which might have a protective role against the psychological problems. The same group of students consumed more alcohol and cigarettes, which can be interpreted as a common socializing experience among university students, where they consumed as social drinkers/smokers.

Engaging in more self-supportive behaviors and also having more contact with family members and friends separately predicted more religious activities. Likely, religious activities might be also a way of keeping self away from COVID-related stress and parental control or pressure. It is also important to mention that the data were collected during Ramadan, where the number of religious activities usually increases.

Strengths & Limitations

The current study is vital in terms of investigating the possible effects of the COVID-19 pandemic on university students. The effects of perceived social support on health risk behaviors, daily activities are studied based on the data collected from a relatively high number of university students in Türkiye. The universities are both public and foundation universities located in various cities where they may well represent the universe of Turkish university students. Therefore, the generalization of the results is possible.

Collecting data at the very early stages of the pandemic is a strength in terms of getting information as early as possible and also not being subjected to confounding variables of later phases of the pandemic. On the other hand, not comparing early and later terms of the pandemic is a limitation of the study.

Another limitation is that the reliability score of self-supportive behavior measurement is low. This measure included physical behaviors such as walking or cycling and non-physical activities such as talking to friends. It may have low reliability because we conceptualized these items, which could mean different things in terms of the variable, under a structure. Studies evaluating the findings should consider this limitation.

As we mentioned in the method section, measurement tools were translated into Turkish in order to measure our variables from different studies. Moreover, we created some variables in line with the purpose. Hence, we are aware of the fact that it may be evaluated that not well-established validity of measurements may point out another limitation of the current study. Also, cross-sectional design of the study does not allow to causal interpretation; thus, all findings show only correlational directions. Further experimental and longitudinal studies may considerate this issue and focus on social support and health risk behaviors with high-valid measuring tools.

CONCLUSION

This study revealed that Turkish university students' health risk behaviors and differences in daily activities changed depending on their romantic relationships or whether they have a significant other, which are indicators of social support. There is no meaningful difference between indicator of significant others and romantic relationships in terms of social support. During the pandemic in Türkiye, the place of residence of university students shifted from more independent units to family homes living together with their parents. The classroom-based education models at universities have been replaced by a computer or mobile-based education at parental homes. Also, the study showed that students with more self-supportive behaviors have more exercise routines and more contact with family members and friends.

COMPLIANCE WITH ETHICAL STANDARDS

We state that IRB approvals were granted by the applicable institutional ethics committees (under 09.2020.482 number of Marmara University ethics committee, SWH-20-38 number of Antwerpen University ethics committee, and 2020.194.IRB3.074 number of Koç University ethics committee) and the study was performed in accordance with the ethical standards as set forth in the 1964 Declaration of Helsinki and its later amendments. Informed consent was obtained from all participants at the beginning of the study.

REFERENCES

Abel, T., Hofmann, K., & Schori, D. (2013). Social and regional variations in health status and health behaviours among Swiss young adults. *Swiss Medical Weekly*, 143, w13901. <https://doi.org/10.4414/smw.2013.13901>

- Akdeniz, G., Kavakçı, M., Gözügök, M., Yalçınkaya, S., Küçükay, A., & Sahutoğulları, B. (2020). A survey of attitudes, anxiety status, and protective behaviors of the university students during the COVID-19 outbreak in Turkey. *Frontiers in Psychiatry*, 11, 695. <https://doi.org/10.3389/fpsy.2020.00695>
- Arpacıoğlu, S., & Ünübol, B. (2020). Koronavirüs salgınında alkol-sigara kullanımındaki değişiklikler ve ilişkili durumların araştırılması [Investigation of changes in alcohol-cigarette use and related situations in the coronavirus pandemic]. *Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi*, 2(3), 128-138. <https://doi.org/10.35365/ctjpp.20.03.23>
- Atlam, D. H., Aldemir, E., & Altıntoprak, A. E. (2017). Üniversite öğrencilerinde riskli davranışların yaygınlığı ve madde kullanımı ile ilişkisi [The prevalence of risky behaviors in university students and their relationship with substance use]. *Düşünen Adam: Journal of Psychiatry & Neurological Sciences*, 30(4), 287-298. <https://doi.org/10.5350/dajpn2017300402>
- Balci, Ş., & Baloğlu, E. (2018). Sosyal medya bağımlılığı ile depresyon arasındaki ilişki: Üniversite gençliği üzerine bir saha araştırması [The relationship between social media addiction and depression: A field study on university youth]. *Galatasaray Üniversitesi İletişim Dergisi*, 29, 209-234. <https://doi.org/10.16878/gsuilet.500860>
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Busse, H., Buck, C., Stock, C., Zeeb, H., Pischke, C. R., Fialho, P. M. M., Wendt, C., & Helmer, S. M. (2021). Engagement in health risk behaviours before and during the COVID-19 pandemic in German university students: Results of a cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(4), 1410. <https://doi.org/10.3390/ijerph18041410>
- Coleman, D., & Iso-Ahola, S. E. (1993). Leisure and health: The role of social support and self-determination. *Journal of Leisure Research*, 25(2), 111-128. <https://doi.org/10.1080/00222216.1993.11969913>
- Cunningham, M. R., & Barbee, A. P. (2000). Social support. C. Hendrick & S. S. Hendrick (Eds.), *In Close Relationships: A Sourcebook* (pp. 273-285). Sage Publications.
- Çam, H. H., Üstüner Top, F., & Kuzlu Ayyıldız, T. (2021). Impact of the COVID-19 pandemic on mental health and health-related quality of life among university students in Turkey. *Current Psychology*. <https://doi.org/10.1007/s12144-021-01674-y>
- Dong, L., & Bouey, J. (2020). Public mental health crisis during COVID-19 pandemic, China. *Emerging Infectious Diseases*, 26(7), 1616-1618. <https://doi.org/10.3201/eid2607.200407>
- Evans, S., Alkan, E., Bhangoo, J. K., Tenenbaum, H., & Ng-Knight, T. (2021). Effects of the COVID-19 lockdown on mental health, well-being, sleep, and alcohol use in a UK student sample. *Psychiatry Research*, 298, 113819. <https://doi.org/10.1016/j.psychres.2021.113819>
- European Commission (2018). *Special Eurobarometer #472 report: Sport and physical activity*. <https://doi.org/10.2766/483047>
- Flaudias, V., Zerhouni, O., Pereira, B., Cherpitel, C. J., Boudesseul, J., De Chazeron, I., Romo, L., Guillaume, S., Samalin, L., Cabe, J., Bégué, L., Gerbaud, L., Rolland, B., Llorca, P.M., Naassila, M., & Brousse, G. (2021). The early impact of the COVID-19 lockdown on stress and addictive behaviors in an alcohol-consuming student population in France. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsy.2021.628631>
- Fletcher, J. (2016). Applying self-determination theory to college students' physical-activity behavior: Understanding the motivators for physical (in)activity. *Communication Studies*, 67(5), 489-508. <https://doi.org/10.1080/10510974.2016.1212911>
- Gritsenko, V., Skugarevsky, O., Konstantinov, V., Khamenka, N., Marinova, T., Reznik, A., & Isralowitz, R. (2020). COVID-19 fear, stress, anxiety, and substance use among Russian and Belarusian university students. *International Journal of Mental Health and Addiction*, 1-7. <https://doi.org/10.1007/s11469-020-00330-z>

- İnce, M., & Koçak, M. (2017). Üniversite öğrencilerinin sosyal medya kullanım alışkanlıkları: Necmettin Erbakan Üniversitesi örneği [Social media usage habits of university students: The example of Necmettin Erbakan University]. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 7(2), 736-749.
- Jaffe, A., Kumar, S., Ramirez, J., & Di Lillo, D. (2021). Is the COVID-19 pandemic a high-risk period for college student alcohol use? A comparison of three spring semesters. *Alcoholism: Clinical and Experimental Research*, 45(4), 854-863. <https://doi.org/10.1111/acer.14572>
- Jowell, R., Fitzgerald, R., Harrison, E., Ryan, L., Villar, A., Butt, S., ... Scheuer, A. (2018). *European Social Survey round 6: Personal wellbeing and democracy database*. Centre for Comparative Social Surveys. <https://doi.org/10.21338/NSD-ESS6-2012>
- Kağıtçıbaşı, Ç. (2010). *Benlik, aile ve insan gelişimi: Kültürel psikoloji [Self, family and human development: Cultural psychology]*. Koç University Press.
- Kaya, H., Ayık, B., Tasdelen, R., Ercis, M., & Ertekin, E. (2021). Social support promotes mental health during the COVID-19 outbreak: A cross-sectional study from Turkey. *Psychiatria Danubina*, 33(2), 217-224. doi: 10.24869/psyd.2021.217.
- Keller, S., Maddock, J.E., Hannöver, W., Thyrian, J.R., Basler, H.D. (2008). Multiple health risk behaviors in German first year university students. *Preventive Medicine*, 46, 189-195. <https://doi.org/10.1016/j.ypmed.2007.09.008>
- Kiecolt-Glaser, J.K., & Wilson, S.J. (2017). Lovesick: How couples' relationships influence health. *Annual Review of Clinical Psychology*, 13(1), 421-443. <https://doi.org/10.1146/annurev-clinpsy-032816-045111>
- Korkut-Gençalp, D. (2020). COVID-19 salgını döneminde ilk ve acil yardım öğrencilerinin beslenme alışkanlıkları ve fiziksel aktivite durumlarının değerlendirilmesi [Evaluation of nutritional habits and physical activity status of first and emergency students during the COVID-19 pandemic]. *Paramedik ve Acil Sağlık Hizmetleri Dergisi*, 1(1), 1-15.
- Leach, L. S., Butterworth, P., Olesen, S. C., & Mackinnon, A. (2013). Relationship quality and levels of depression and anxiety in a large population-based survey. *Social Psychiatry and Psychiatric Epidemiology*, 48(3), 417-425. <https://doi.org/10.1007/s00127-012-0559-9>
- Lechner, W.V., Laurene, K.R., Patel, S., Anderson, M., Grega, C., & Kenne, D.R. (2020). Changes in alcohol use as a function of psychological distress and social support following COVID-19 related University closings. *Addictive Behaviors*, 110, 106527 <https://doi.org/10.1016/j.addbeh.2020.106527>
- López-Valenciano, A., Suárez-Iglesias, D., Sanchez-Lastra, M. A., & Ayan, C. (2021). Impact of COVID-19 pandemic on university students' physical activity levels: An early systematic review. *Frontiers in Psychology*, 11, 3787. <https://doi.org/10.3389/fpsyg.2020.624567>
- Lorenz, L., Doherty, A., & Casey, P. (2019). The role of religion in buffering the impact of stressful life events on depressive symptoms in patients with depressive episodes or Adjustment Disorder. *International Journal of Environmental Research and Public Health*, 16(7), 1238. <https://doi.org/10.3390/ijerph16071238>
- Odabaş, H., Odabaş, Z. Y., & Polat, C. (2008). Üniversite öğrencilerinin okuma alışkanlığı: Ankara Üniversitesi örneği [Reading habits of university students: Ankara University example]. *Bilgi Dünyası*, 9(2), 431-465. <https://doi.org/10.15612/BD.2008.313>
- Okutan, N., & Büyüksahin-Sunal, A. (2010). Romantik ilişkilerde bağlanım: Dindarlık algısı ve romantik ilişkilerle ilgili kalıpyargılar [Attachment in romantic relationships: Perception of religiosity and stereotypes about romantic relationships.]. *Türk Psikoloji Yazıları*, 13(26), 80-90.
- Peltzer, K., & Pengpid, S. (2017). Loneliness: Its correlates and associations with health risk behaviours among university students in 25 countries. *Journal of Psychology in Africa*, 27(3), 247-255. <https://doi.org/10.1080/14330237.2017.1321851>
- Rabiee-Khan, F., & Biernat, K. (2021, March 1). Student well-being during the first wave of COVID-19 pandemic in Birmingham, UK. <https://doi.org/10.5281/zenodo.4572408>
- Ray, L. A., Hopper, T. D., & Mchugh, T. L. F. (2022). "We could just be what we wanted to be": The role of leisure and recreation in supporting women's mental health during COVID-19. *Leisure Studies*, 1-15. <https://doi.org/10.1080/02614367.2022.2157465>
- Sánchez-López, M. P., Rivas-Diez, R., & Cuéllar-Flores, I. (2013). Masculinity and femininity as predictors of tobacco and alcohol consumption in Spanish university students. *Health and Addictions*, 13(1), 15-22. <https://doi.org/10.21134/haaj.v13i1.189>
- Savcı, S., Öztürk, M., & Arıkan, H., İnce, D.İ., & Tokgözoglu, L. (2006). Üniversite öğrencilerinin fiziksel aktivite düzeyleri [Physical activity levels of university students]. *Türk Kardiyoloji Derneği Arşivi*, 34(3), 166-172.
- Siyahtaş, A., & Donuk, B. (2021). Serbest zaman etkinliklerine katılan bireylerin yalnızlık düzeyleri ile doyum düzeylerinin incelenmesi [Investigation of loneliness levels and satisfaction levels of individuals participating in leisure time activities]. *İnönü Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 8(2), 1-18.
- Sokolovsky, A.W., Hertel, A.W., Micalizzi, L., White, H.R., Hayes, K.L., & Jackson, K.M. (2021). Preliminary impact of the COVID-19 pandemic on smoking and vaping in college students. *Addictive Behaviors*, 106783. <https://doi.org/10.1016/j.addbeh.2020.106783>
- Stathopoulou, T., Mouriki, A., & Papioliou, O. (2020, September 19th). Student well-being during the COVID-19 Pandemic in Greece. Results from The C19 ISWS Survey. <https://doi.org/10.5281/zenodo.4038321>
- Szczuka, Z., Abraham, C., Baban, A., Brooks, S., Cipolletta, S., Danso, E., Dombrowski, U., Gan, Y., Gaspar, T., Gaspar de Matos, M., Griva, K., Jongenelis, M., Keller, J., Knoll, N., Ma, J., Miah, M.A.A., Morgan, K., Peraud, W., Quintard, B... & Luszczynska, A. (2021). The trajectory of COVID-19 pandemic and handwashing adherence: Findings from 14 countries. *BMC Public Health*, 21(1), 1-13. <https://doi.org/10.1186/s12889-021-11822-5>
- Tan, M. M., Musa, A. F., & Su, T. T. (2021). The role of religion in mitigating the COVID-19 pandemic: the Malaysian multi-faith perspectives. *Health Promotion International*. daab041. <https://doi.org/10.1093/heapro/daab041>
- Taylor, S. (2019). *The Psychology of Pandemics*. Newcastle: Cambridge Scholars Publishing
- Ting, R. S. K., Aw Yong Y., Tan Min-M., & Yap Chee-K. (2021). Cultural responses to COVID-19 pandemic: Religions, illness perception, and perceived stress. *Frontiers in Psychology*, 12, 2815. <https://doi.org/10.3389/fpsyg.2021.634863>
- Topal, M., & Aydın, F. (2018). Üniversite öğrencilerinin bilgisayarda oyun oynama alışkanlıkları ve bilgisayar oyun tercihlerinin incelenmesi: Sakarya Üniversitesi örneği [Examining the computer game playing habits and computer game preferences of university students: The case of Sakarya University]. *ERPA: International Congress on Education Proceedings*, 203.
- Tural, E. (2020). COVID-19 pandemisi ev karantinasında fiziksel aktivite düzeyinin yaşam kalitesine etkisi [The effect of physical activity level on quality of life in the COVID-19 pandemic period home quarantine]. *Van Sağlık Bilimleri Dergisi*, 13(Supplement), 18-26.
- Van de Velde, S., Buffel, V., van der Heijde, C., Çoksan, S., Bracke, P., Abel, T., Busse, H., Zeeb, H., Rabiee-Khan, F., Stathopoulou, T., Van Hal, G., Ladner, J., Tavolacci, M., Tholen, R., Wouters, E., & for the C19 ISWS Consortium (2021). Depressive symptoms in higher education students during the first wave of the COVID-19 pandemic. An examination of the association with various social risk factors across multiple high- and middle-income countries. *SSM - Population Health*, 16, 100936. <https://doi.org/10.1016/j.ssmph.2021.100936>
- van Leeuwen, M., Klerks, Y., Bargeman, B., Heslinga, J., & Bastiaansen, M. (2020). Leisure will not be locked down – insights on leisure and COVID-19 from the Netherlands. *World Leisure Journal*, 62(4), 339-343. <https://doi.org/10.1080/16078055.2020.1825255>
- Varela, A., & Pritchard, M. E. (2011). Peer influence: Use of alcohol, tobacco, and prescription medications. *Journal of American College*

- Health*, 59(8), 751-756. <https://doi.org/10.1080/07448481.2010.544346>
- World Health Organization. (2009). 2008-2013 Action plan for the global strategy for the prevention and control of noncommunicable diseases. <https://www.who.int/nmh/publications/9789241597418/en/>
- World Health Organization. (2018, September 21). Alcohol. <https://www.who.int/news-room/fact-sheets/detail/alcohol>
- World Health Organization. (2022, April 8). WHO Coronavirus (COVID-19) Dashboard. <https://covid19.who.int/>
- Yan, Y., Wang, X., Zhang, R., & Zhang, Y. (2022). The relationship between leisure activities and the mental health of college students during the COVID-19 pandemic. *World Leisure Journal*, 1-24. <https://doi.org/10.1080/16078055.2022.2158924>
- Zheng, L., Miao, M., & Gan, Y. (2020). Perceived control buffers the effects of the COVID-19 pandemic on general health and life satisfaction: The mediating role of psychological distance. *Applied Psychology: Health and Well-Being*, 12(4), 1095-1114. <https://doi.org/10.1111/aphw.12232>