Original Article

Determining the Relationship Between Coronavirus Anxiety Level and Physical Activity in Adults

Ergin Emine[1]
Lök Neslihan [2]
Lök Sefa [3]*
[1] *İstanbul Aydın University, 34295, Turkey*
[2] *Selcuk University, Konya, 42130, Turkey*
[3] *Selcuk University, (Corresponding author), Konya, 42130, Turkey*

Abstract

The aim of this study is to determine the coronavirus anxiety level of individuals, their physical activity levels and to evaluate the relationship between them. The study was carried out in Konya city center, Selçuklu district. Individuals who resided in all neighborhoods of Selçuklu district of Konya province and had not been diagnosed with Covid-19 before or who did not enter contact quarantine due to Covid-19 constituted the study. When the physical activity level of the individuals was evaluated, it was determined that 64.8% of them were not physically active, 19% of them had a low physical activity level and 16.2% had sufficient physical activity level. The coronavirus anxiety scale mean score of the individuals was found to be 11.87 ± 3.85. As a result, while women were in the risk group in terms of physical activity, perceiving their health badly and having any chronic diseases were determined as risk factors.

1. Introduction

Coronaviruses (CoV) are a large family of viruses that phenotypically and genotypically cause more serious diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV) (WHO, 2020; SB, 2020). The virus, which was first detected in Wuhan, the capital of China's Hubei region, has spread worldwide since the day it was detected and was declared a global epidemic by the World Health Organization (WHO). The coronavirus disease called COVID-19 has emerged as a newly discovered infectious disease type (WHO, 2020). The COVID-19 pandemic has had a very wide impact on health, social and economic areas all over the world, causing

---

* *E-mail*: sefalok@selcuk.edu.tr

restrictions in many parts of the world. The main feature that distinguishes this virus from other viruses is that it spreads very easily and quickly. It is stated that psychological problems such as anxiety and depression increase in individuals in the society as a result of many cases that result in death (Duan & Zhu, 2020).

Anxiety is defined as a feeling that people experience in certain periods and resembles fear. The individual feels or defines this situation as a feeling of distress and anxiety for no apparent reason. In the pandemic period, concerns in society can affect every individual globally to various dimensions (Roy et al., 2020). The ongoing coronavirus epidemic creates feelings of fear, uncertainty and anxiety in the society. People have become more worried about their own and others' health and even their possible death (Trzebiński, Cabański, & Czarnecka, 2020).

As a result of the COVID-19 pandemic, people have experienced disruptions in their work and lives, and this has had negative effects on physical and mental health. With the new number of cases and deaths announced every day, individuals started to experience anxiety, panic, stress and anxiety (Chevance et al, 2020; Zang, Wang, Rauch, & Wei, 2020). According to a systematic review by Brooks et al. (2020); When quarantines continue and the end date of the epidemic cannot be predicted, they have more negative psychological effects on individuals. In such cases, psychological resilience and mental health should be protected and developed in individuals. In order for individuals to effectively cope with the coronavirus anxiety that they may experience during this period, their psychological health should be a priority. Physical activity is among the primary suggestions for maintaining and improving mental health. There are studies investigating the effects of physical activity on physical and mental health. It has also been found that individuals who do physical activity are less suicidal and physical activity is protective against depression (Sfendla, Malmstro¨m, Torstensson & Kerekes, 2018; Tran et al, 2020; Vancampfort et al, 2018). Along with the measures implemented to combat the COVID-19 pandemic, the number of studies evaluating the relationship between individuals' coronavirus anxiety level and physical activity behavior is limited. It is necessary to determine the anxiety level of the individuals in the society, to support them with changes suitable for their lifestyles, and to develop appropriate suggestions. The aim of this study is to determine the relationship between coronavirus anxiety level and physical activity in adult individuals and to contribute to taking measures to protect and improve mental health.

2. Material and methods

Purpose of research and questions of the research
In this descriptive relational study, the relationship between coronavirus anxiety level and physical activity in adult individuals will be evaluated.

1. What are the socio-demographic characteristics of adults?

2. Does physical activity level change according to the socio-demographic characteristics of adult individuals?

3. Does the coronavirus anxiety level change according to the socio-

demographic characteristics of adult individuals?

4. Is there a relationship between physical activity level and coronavirus anxiety?

The procedures

The study was carried out in Konya city center, Selçuklu district. Selçuklu district is one of the central districts of Konya with the largest population. For this reason, Selçuklu district was chosen.

Study group of the research

The sample size in the study was calculated in G * Power 3.1.9.2 analysis program. With an effect size of 0.5, a power of 80%, a margin of error of 5%, the average score of the "Coronavirus Anxiety Scale" in the study of Altun (2020) was calculated as 179 by taking into account (2.90 ± 3.58). The inclusion criteria of the study consisted of individuals who reside in all neighborhoods of Selçuklu district of Konya province and have not been diagnosed with Covid-19 before or who have not entered contact quarantine due to Covid-19.

Data collection methods and tools

The data of the research were collected through Google Forms between April 1-15, 2021. The questionnaires were delivered to the participants via social media; After reaching the sufficient number of samples, the data collection process was terminated. In collecting data; The personal information ¸Coronavirus Anxiety Scale Short Form and the International Physical Activity Questionnaire, which question the socio-demographic characteristics and prepared by the researchers, were used.

International Physical Activity Questionnaire (UFAA): Physical activity levels of individuals were determined by the International Physical Activity Questionnaire (UFAA). The validity and reliability study of the questionnaire was conducted in Turkey (Saglam et al., 2010). In our study, the short form of the questionnaire, which can be administered by itself and includes "last seven days", was used to evaluate the level of physical activity. This short form consists of seven questions and provides information about sitting, walking, moderately vigorous activities and time spent in vigorous activities. The calculation of the total score for the short form includes the total duration (minutes) and frequency (days) of walking, moderate vigorous activity, and vigorous activity. The sitting score (sedentary behavior level) is calculated separately. In the evaluation of all activities, the criterion is that each activity is done at least 10 minutes at a time. Multiplying the minute, day, and MET value (multiples of resting oxygen consumption) a score is obtained as "MET-minute / week". The walking time (minutes) was multiplied by 3.3 MET in calculating the walking score. In the calculation, 4 METs were taken for moderate activity and 8 MET values were taken for vigorous activity. Physical activity levels are classified as physically inactive (3000 MET-min / week) (Öztürk, 2005).

Coronavirus Anxiety Scale Short Form: The Turkish validity and reliability of the scale developed by Lee, Mathis, Jobe, & Pappalardo (2020) were made by Bicer, Cakmak, Demir, & Kurt (2020). The scale consists of five questions, there is no sub-dimension. In the Turkish validity and reliability study of the scale, the

Cronbach Alpha reliability coefficient was found to be 0.832. The scoring of the scale is "0-never", "1-rare, less than one or two days", "2-few days", "3 to more than seven days" and "4-almost every day in the last two weeks". The highest score obtained from the scale is 20. Scores of 9 and above are interpreted as a high level of anxiety (Bicer et al., 2020).

Data evaluation

The data of the study were evaluated using the SPSS for Windows 22.0 (Statistical Package for Social Science) statistical package program. Unit number (n), percentage (%), mean ± standard deviation (mean (SD)) values were used as summary statistics. Normal distribution of data was evaluated by Shapiro-Wilk test and Q-Q graph. Since the data conformed to normal distribution, t-test in independent groups for paired groups, Anova test and chi-square analysis were used for more than two groups. Results were evaluated at 95% confidence interval and $p < 0.05$ significance level.

Ethical procedure

Ethical permission was obtained from the Faculty of Sport Sciences Ethics Committee (Date: 25.03.2021 / Decision number: 51) for the ethical permission of the study. Before starting the research, online permissions of individuals were obtained.

3. Results and Discussions

The average age of the individuals is 37.21 ± 7.91, 55.9% of them are female, 44'1% are male, 54'2% are married, 45.8% are single, 31.8% associate degree, 27.4% undergraduate degree, 21.2% primary school and 19.6% high school graduates, 40.2% had medium income, 31.8% poor and 27.9% It was determined that the flour perceived as good, 43% perceived their health as bad, 30.2% as moderate and 26.8% as good, and 58.7% had any chronic disease.

When the physical activity level of the individuals was evaluated, it was determined that 64.8% were not physically active, 19% had a low physical activity level and 16.2% had sufficient physical activity level. In addition, the coronavirus anxiety scale mean score of the individuals was found to be 11.87 ± 3.85 (Table 1).

The comparison of individuals' physical activity level with their sociodemographic characteristics is presented in Table 2. It was observed that women were more inactive than men, and the difference was statistically significant ($p < 0.05$). It was observed that there was a significant difference between health status and physical activity level, and the difference was due to those who perceived their health as bad ($p < 0.05$). It was observed that those with any chronic disease were more inactive than those without any chronic diseases, and the difference was found to be statistically significant ($p < 0.05$). There was no statistically significant difference between education, marital status, perceived income status and physical activity level ($p > 0.05$) (Table 2).

Table 1. *Evaluation of individuals' physical activity level and coronavirus anxiety levels*

Scales	Number (n)	Percent (%)
Physical Activity Questionnaire		
Physically inactive (Inactive) (<600 MET-min / week)	116	64.8
With a low level of physical activity (600-3000 MET-min / wk) (Less Active)	34	19.0
Sufficient physical activity level (> 3000 MET-min / week) (Very active)	29	16.2
Coronavirus Anxiety Scale	**Mean±SD**	
	11.87±3.85	

Table 2. *Distribution of ındividuals' physical activity level by sociodemographic characteristics*

Variable	Physical Activity Level			
	Inactive n (%)	**Minimal Active n (%)**	**Very active n (%)**	**Test value p value**
Gender				
Female	40 (%22.3)	37 (%20.7)	23 (% 12.8)	X^2: 3.389
Male	33 (%18.4)	36 (%20.1)	10 (%5.6)	p:0.03*
Education Status				
Primary education	18 (%10.1)	12 (%6.7)	8 (% 4.5)	
High school	12 (%6.7)	15 (%8.4)	8 (%4.5)	X^2: 6.900
Associate Degree	18 (%10.1)	29 (%16.2)	10 (%5.6)	p:0.33
License	25 (%14)	17 (%9.5)	7 (% 3.9)	
Marital status				
Married	36 (%20.1)	43 (%24)	18 (%10,1)	X^2: 1.354
Single	37 (%20.7)	30 (%16.8)	15 (%8.4)	p:0.508
Perceived Income Level				
Good	16 (%8.9)	22(%12.3)	12(%6.7)	X^2: 4.010
Middle	32(%17.9)	26(%14.5)	14(%7.8)	p:0.405
Bad	25(%14.0)	25(%14.0)	7(%3.9)	
Perceived Health Level				
Good	15(%8.4)	25(%14.0)	8(%4.5)	X^2: 9.900
Middle	25(%14.0)	24(%13.4)	5(%2.8)	p:0.042*
Bad	33(%18.4)	24(13.4)	20(%11.2)	
Presence of Chronic Disease				
Yes	47(%26.3)	41(%22.9)	17(%9.5)	X^2: 1.868
No	26(%14.5)	32(%17.9)	16(%8.9)	p:0.031*
X^2: Chi-Square test, *p<0,05				

The comparison of individuals' coronavirus anxiety level with their sociodemographic characteristics is presented in Table 3. It was observed that the coronavirus anxiety level of women was higher than that of men, and the difference was statistically significant (p <0.05). A statistically significant difference was observed between the educational status and coronavirus anxiety level, and it was determined that the difference was due to the undergraduate graduates (p <0.05). It was observed that the coronavirus anxiety level of married people was higher than that of singles, and the difference was statistically significant (p <0.05). While there was a significant difference between perceived health and coronavirus anxiety level, it was observed that the difference was caused by those who perceived their health as bad (p <0.05). While there was a significant difference between the perceived income status and coronavirus anxiety level, it was observed that the difference was due to those who perceived their health as bad (p <0.05). The coronavirus anxiety level of those with any chronic disease was found to be higher than those without a chronic disease, and the difference was found to be statistically significant (p <0.05) (Table 3).

Table 3. *Distribution of İndividuals' coronavirus anxiety level by sociodemographic features*

Variables	Coronavirus Anxiety Levels Mean±SD	Test value p value
Gender		
Female	13.06±3.96	t: 0.206
Male	10.72±3.78	p:0.02*
Education Status		
Primary education	9.55±4.38	
High school	10.22±4.00	F: 0.921
Associate Degree	11.50±3.36	p:0.02*
License	15.93±3.48	
Marital status		
Married	14.50±3.78	t: 1.354
Single	9.12±3.83	p:0.008*
Perceived Income Level		
Good	11.68±4.20	F: 2,873
Middle	11.72±3.67	p:0.09
Bad	12.22±3.80	
Perceived Health Level		
Good	8.37±3.97	F: 1.858
Middle	11.90±3.91	p:0.004*
Bad	15.15±3.75	
Presence of Chronic Disease		
Yes	14.28±3.81	t: 0.186
No	9.28±3.86	p:0.003*

F:One Way Anova, t: t test, *p<0,05

When individuals' physical activity and coronavirus anxiety levels are compared; The average coronavirus anxiety score of those who were not physically active was found to be higher than those with a low level of physical activity and sufficient level of physical activity, and the difference was found to be statistically significant (p <0.05). It was observed that those who did not do physical activity had higher levels of coronavirus anxiety (Table 4).

Table 4. *Comparison of İndividuals with physical activity and coronavirus anxiety level*

Physical Activity Questionnaire	Coronavirus Anxiety Levels Mean±SD	Test value P value
Physical Activity Questionnaire	15.00±3.58	
Physically inactive (Inactive) (<600 MET-min / week)	11.85±4.13	F: 1.143 p:0.01*
With a low level of physical activity (600-3000 MET-min / wk) (Less Active)	8.13±3.82	

F:One Way Anova, *p<0,05

Discussions

When looking at the studies examining the effects of the Covid pandemic on public health, it was seen that the focus was more on mental health. There are fewer studies examining health lifestyle behaviors (Chevance et al., 2020; Erdoğan Yüce & Banana 2021; Zang et al, 2020). In this study, it was aimed to address the physical activity levels, which is a healthy lifestyle behavior in adults, and the coronavirus anxiety level together. It is important in this respect. In this study, where more than half of the participants were women, it was found that 64.8% of the individuals were not physically active. In addition, a significant difference was found between men and women regarding the level of physical activity, and it was determined that women were more inactive than men. When looking at the study of Erdoğan Yüce and Banana (2021), who are among the current studies in the literature, although there is no statistically significant difference, it has been determined that more than half of the participants are inactive and men have higher physical activity levels than women (Erdoğan Yüce & Banana 2021). In another study conducted with adult individuals aged 19-65, 52% of the individuals were determined to be inactive by taking a score of <600 MET-min / hf from the International Physical Activity Questionnaire (Saatci, 2019).

While the effect of regular physical activity on protecting and improving health and preventing non-communicable diseases is known, the increasing number of physically inactive individuals is of concern. It is stated that inactive individuals increase in the society, especially with the mandatory restrictions made during the Covid period and the decrease in social activities. In another study evaluating the physical activity levels of individuals staying at their homes during the Covid pandemic period, it was found that more than half of the participants were women

and 51.2% were not physically active (Tural, 2020). Study findings are similar to the literature. It is thought that this is due to the fact that women stay more at home during the pandemic period and cannot participate in social life and their physical activity is restricted.

According to the data of this study, individuals who perceive their health badly and have chronic diseases were found to be physically inactive. This situation may also be due to population characteristics, it has been identified as a risk factor. It should not be forgotten that poor health and the presence of chronic diseases may also interfere with physical activity. It was determined that some of them did not exercise (Kitiş & Gümüş, 2015).

In this study, the average score of the individuals on the coronavirus anxiety scale was found to be 11.87 ± 3.85. 9 points and above are considered to be high. While job losses, isolation, and death and infection rates related to COVID-19 continue to rise, the mental health of most individuals is affected and anxiety is increasing. Although healthcare professionals acknowledge the growing fears and concerns of their patients and others around them, they know less about their fear-based reactions to this infectious disease epidemic (Lee, Jobe, & Mathis, 2020). High levels of depression, post-traumatic stress, anxiety, and insomnia have been reported among healthcare workers in China (Xiang et al., 2020). In a recent study on 775 adults living in the United States, functionally impaired individuals due to fear and anxiety of coronavirus were found to be more hopeless and suicidal (Lee, 2020). In this study, it was found that the coronavirus anxiety level of women was higher than that of men, and the difference was statistically significant. Similarly, Artan, Atak, Karaman, & Cebeci (2020) found that the anxiety levels of women in the COVID-19 pandemic were higher than men in their study with 525 individuals aged between 15 and 72 years. On the other hand, while they did not detect a difference between educational status, marital status and anxiety level (Artan et al,, 2020). In this study, a statistically significant difference was observed between the coronavirus anxiety level and educational status, marital status as well as perceived health, income status and the presence of illness.

In this study, it was seen that those who do not do physical activity have higher coronavirus anxiety levels. Studies investigating the effects of physical activity on coronavirus anxiety are limited (Sfendla & Hadrya, 2020; Sfendla et al., 2018; Tran et al, 2020; Vancampfort et al, 2018). The coronavirus disease (COVID-19) epidemic can be devastating in every sense, especially psychologically. Physical activity (PA) is known to aid psychological health. More studies are needed in this area to determine whether physical activity has an impact on anxiety during this pandemic and whether it is a coping strategy.

4. Conclusions

As a result, while women were in the risk group in terms of physical activity, perceiving their health badly and having any chronic diseases were determined as risk factors. In terms of coronavirus anxiety, women and singles are in the risk

group, while being a primary school graduate, perceiving their health badly and having any chronic disease have been identified as risk factors.

References

1. ALTUN, Y. (2020). Covid-19 pandemisinde kaygı durumu ve hijyen davranışları, *Sürekli Tıp Eğitimi Dergisi, 29 (5*): 312-317. DOI: 10.17942/ sted. 777035.

2. ARTAN, T., ATAK, I., KARAMAN, M., & CEBECI, F. (2020). Koronavirüs (COVID-19) salgınında sosyodemografik özellikler, psikolojik sağlamlık ve kaygı düzeyleri arasındaki ilişki, *Electronic Turkish Studies, 15(6):* 79–94. DOI.org/10.7827/TurkishStudies.43882.

3. BIÇER, İ., ÇAKMAK, C., DEMIR, H. & KURT, M. E. (2020). Koronavirüs Anksiyete Ölçeği kısa formu: Türkçe geçerlik ve güvenirlik çalışması. *Anatolian Clinic the Journal of Medical Sciences, Anadolu Kliniği Tıp Bilimleri Dergisi (COVID 19 Özel Sayısı:* 216-225. DOI: 10.21673/anadoluklin.731092.

4. 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. *Lancet (London, England)*, *395*(10227): 912–920. DOI. org/10.1016 /S014 0-6736 (20)30460-8.

5. CHEVANCE A, GOURION D, HOERTEL N, LLORCA P-M, THOMAS, P., BOCHER, R., M-R MORO, M.R., LAPRÉVOTE, V., BENYAMINA, A., FOSSATI, P., MASSON, M., LEAUNE, E., LEBOYER, M., & GAILLARD, R. (2020). [Ensuring mental health care during the SARS-CoV-2 epidemic in France: A narrative review]. *L'encephale,46(3S):* S3-S13.DOI: 10.1016/j.encep.2020.03.001. PMID: 32312567; PMCID: PMC7130411.

6. DUAN, L., & ZHU, G. (2020). Psychological interventions for people affected by the COVID-19 epidemic. *The lancet. Psychiatry*, *7*(4):300–302. https://doi.org/10.1016/S2215-0366(20)30073-0.

7. ERDOĞAN YÜCE, G., MUZ, G. (2021). COVID-19 pandemisinin yetişkinlerin diyet davranışları, fiziksel aktivite ve stres düzeyleri üzerine etkisi. *Cukurova Medical Journal, 46(2021):* 283-291. Retrieved from https:// dergipark. org.tr/tr/pub/ cumj/issue/59504/794585.

8. KITIŞ, Y. & GÜMÜŞ, Y. (2015). 20 yaş ve üzeri kadınların fiziksel aktivite düzeyleri, fiziksel aktiviteye ilişkin inançları ve davranış aşamalarının belirlenmesi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi, 4 (3):* 399-411. Retrieved from https://dergipark .org.tr/tr/pub/ gumussagbil/ issue/23834 /253918.

9. LEE, S.A., JOBE, M.C., MATHIS, A.A. (2020). Mental health characteristics associated with dysfunctional coronavirus anxiety. *Psychological Medicine: 1–2.* DOI.org/10.1017/S003329172000121X.

10. LEE, S.A. (2020). Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. *Death studies*, *44*(7):393–401. DOI.org

/10.1080 /07481187.2020.1748481.

11. ÖZTÜRK, M. (2005) Üniversitede eğitim-öğretim gören öğrencilerde uluslararası fiziksel aktivite anketinin geçerliliği ve güvenirliği ve fiziksel aktivite düzeylerinin belirlenmesi. *[Yüksek Lisans Tezi].* Ankara: Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü.

12. ROY, D., TRIPATHY, S., KAR, S. K., SHARMA, N., VERMA, S. K., & KAUSHAL, V. (2020). Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian journal of psychiatry*, *51*, 102083. DOI.org/10. 1016/j.ajp.2020.102083.

13. SAATCI, M. (2019). "19-65 yaş grubu yetişkin bireylerin öğün sayısı, fiziksel aktivite düzeyi ve uyku düzeylerinin antropometrik ölçümlere olan etkisinin incelenmesi", *(Yayımlanmamış Yüksek Lisans Tezi),* Beslenme ve Diyetetik Anabilim Dalı, İstanbul Bilgi Üniversitesi

14. SAGLAM, M., ARIKAN, H., SAVCI, S., INAL-INCE, D., BOSNAK-GUCLU, M., KARABULUT, E., & TOKGOZOGLU, L.(2010). International physical activity questionnaire: reliability and validity of the Turkish version*, Percept Mot Skills, 111(1):*278-84. DOI: 10.2466/06.08.PMS.111.4.278-284. PMID: 21058606.

15. SFENDLA, A., MALMSTRÖM, P., TORSTENSSON, S., & KEREKES, N. (2018). Yoga practice reduces the psychological distress levels of prison inmates. *Frontiers in psychiatry*, *9*, 407. DOI. org/10. 3389/fpsyt. 2018.00407.

16. SFENDLA, A., & HADRYA, F. (2020). Factors associated with psychological distress and physical activity during the COVID-19 Pandemic. *Health security*, *18*(6), 444–453. DOI .org/10.1089 /hs.2020. 0062

17. TC SAĞLIK BAKANLIĞI. COVID-19 NEDIR? Retrieved September 20, 2020 from https://covid19bilgi.saglik.gov.tr/tr/covid-19-yenikoronavirus-hastaligi-nedir.html.

18. TRAN, B. X., HA, G. H., NGUYEN, L. H., VU, G. T., HOANG, M. T., LE, H. T., LATKIN, C. A., HO, C., & HO, R. (2020). Studies of novel coronavirus disease 19 (COVID-19) pandemic: A global analysis of literature. *International journal of environmental research and public health*, *17*(11: 4095. DOI.org/10.3390/ijerph17114095.

19. TRZEBIŃSKI, J., CABAŃSKI, M., & CZARNECKA, J. Z. (2020). Reaction to the COVID-19 pandemic: The influence of meaning in life, life satisfaction, and assumptions on world orderliness and positivity. *Journal of Loss and Trauma, 25(6-7):* 544-557. DOI:10.1080 /15325024.2020.1765098

20. TURAL, E. (2020). COVID-19 pandemi dönemi ev karantinasinda fiziksel aktivite düzeyinin yaşam kalitesine etkisi. *Van Sağlık Bilimleri Dergisi, COVID-19 Özel Sayı,10-18*.Retrieved from https://dergipark. org.tr/tr/pub /vansaglik / issue/56982 /738909.

21. VANCAMPFORT, D., HALLGREN, M., FIRTH, J., ROSENBAUM, S., SCHUCH, F. B., MUGISHA, J., PROBST, M., VAN DAMME, T.,

CARVALHO, A. F., & STUBBS, B. (2018). Physical activity and suicidal ideation: A systematic review and meta-analysis. *Journal of affective disorders*, *225*: 438–448. DOI.org/10.1016/j.jad.2017.08.070.

22. XIANG, Y. T., YANG, Y., LI, W., ZHANG, L., ZHANG, Q., CHEUNG, T., & NG, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The lancet. Psychiatry*, *7*(3): 228–229. DOI.org/10.1016/S2215-0366(20)30046-8.

23. WORLD HEALTH ORGANIZATION. (WHO). (2020). *Coronavirus disease (COVID-19) pandemic.* Retrieved September 20,2020 from https:// www.euro.who.int/en/health-topics/ health emergencies /coronavirus- covid-19/novel coronavirus -2019-ncov.

24. ZHANG, S. X., WANG, Y., RAUCH, A., & WEI, F. (2020). Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. *Psychiatry research*, *288*, 112958. DOI.org/10.1016/j.psychres.2020.112958.