RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

Determining the Coronavirus-19 Phobia Level of a Group of University Students

Bir Grup Üniversite Öğrencisinin Koronavirüs-19 Fobi Düzeyinin Belirlenmesi

Bircan Kolcak[1], Emel Külekci[1], Kübra Aymelek Hacıosmanoglu[1], Fazilet Tamer[2]

[1]Yuksek Ihtisas University, Vocational School Of Health Services, Ankara, Turkey

[2]Atılım University, Faculty of Health Sciences Department of Nursing, Ankara, Turkey

ABSTRACT

Introduction: The COVID-19 pandemic has disrupted the daily lives of people across society, generating anxiety and concern. University students may have also experienced phobic reactions related to COVID-19. This study aims to ascertain and assess the prevalence of COVID-19 phobia amongst university students.

Materials and Methods: The study was performed on 247 students enrolled in the health services vocational school of a private university in Ankara during July and August 2020. To collect data, a form with 8 questions and the COVID-19 Phobia Scale (C19P-S) were applied. Data were analyzed using the IBM Statistical Package for Social Sciences (SPSS) for Windows statistical software. Statistical significance was defined as p<0.05.

Results: Of the study's participants, the majority (81.8%) resided in provincial centers, and a small proportion (16.2%) reported experiencing chronic illnesses. Only a minority (1.2%) were diagnosed with COVID-19 themselves, while a considerably higher proportion (20.6%) had friends or family members who got diagnosed. A more modest percentage (3.6%) had experienced the loss of friends or relatives due to the virus. Overall, the students surveyed indicated moderate levels of coronavirus phobia (54.51±16.97), with the psychological C19P-S subscale receiving the highest score. C19P-S scores were higher among students residing in provincial centers, with friends and relatives diagnosed with COVID-19, and with insufficient knowledge of this disease.

Conclusion: The COVID-19 pandemic may result in psychological and social phobic reactions. It is advisable to offer psychological and social assistance to university students as a measure to avoid undesirable effects of coronavirus phobia on mental health and academic achievement.

Keywords: Covid-19, phobia, education, university, mental health

ÖZET

Giriş: COVID-19 pandemisi, toplumun her kesimindeki bireylerin günlük rutinini değiştirerek endişe ve kaygıya neden olmuştur. Üniversite öğrencileri de COVID-19 ile ilgili fobik reaksiyonlar yaşamış olabilir. Bu çalışma, üniversite öğrencileri arasında COVID-19 fobisinin yaygınlığını tespit etmeyi ve değerlendirmeyi amaçlamaktadır.

Materyal ve Metot: Çalışma, 2020 yılının Temmuz ve Ağustos aylarında Ankara'da özel bir üniversitenin sağlık hizmetleri meslek yüksekokuluna kayıtlı 247 öğrenci üzerinde gerçekleştirilmiştir. Veri toplamak için 8 soruluk bir form ve COVID-19 Fobi Ölçeği (C19P-S) uygulanmıştır. Veriler Windows için IBM Sosyal Bilimlerde İstatistik Paket Programı (SPSS) kullanılarak analiz edilmiştir. İstatistiksel anlamlılık p<0,05 olarak tanımlanmıştır.

Bulgular: Çalışmaya katılanların çoğunluğu (%81,8) il merkezlerinde ikamet etmekteydi ve küçük bir kısmı (%16,2) kronik hastalıkları olduğunu bildirmiştir. Katılımcıların yalnızca küçük bir kısmına (%1,2) COVID-19 teşhisi konmuşken, oldukça yüksek bir kısmının (%20,6) tanı almış arkadaşları veya aile üyeleri vardı. Daha mütevazı bir yüzde (%3,6) virüs nedeniyle arkadaş veya akraba kaybı yaşamıştır. Genel olarak, ankete katılan öğrenciler orta düzeyde koronavirüs fobisi (54,51±16,97) göstermiş olup, psikolojik C19P-S alt ölçeği en yüksek puanı almıştır. C19P-S puanları il merkezlerinde ikamet eden, arkadaşları ve akrabalarına COVID-19 teşhisi konan ve bu hastalık hakkında yeterli bilgiye sahip olmayan öğrenciler arasında daha yüksekti.

Sonuç: COVID-19 pandemisi psikolojik ve sosyal fobik tepkilere yol açabilir. Koronavirüs fobisinin ruh sağlığı ve akademik başarı üzerindeki istenmeyen etkilerinden kaçınmak için bir önlem olarak üniversite öğrencilerine psikolojik ve sosyal yardım sunulması tavsiye edilmektedir.

Anahtar Sözcükler: Covid-19, fobi, eğitim, üniversite, ruh sağlığı

YIU Saglik Bil Derg 2023;4:36–41

Kolcak et al. Determining the Coronavirus-19 Phobia Level of a Group of University Students

Introduction

Novel Coronavirus (COVID-19) spread from Wuhan city of China at the end of December 2019 and was declared pandemic by the World Health Organization (1,2). High speed of transmission led people from all segments of the society to feel the effects of COVID-19 and led to anxiety and phobia by changing daily routines (3–5). Phobia is defined as intensive, irrational fear from an object or a situation, and persistent anxiety disorder in the literature (6,7). Previous studies noted that natural disasters, including as earthquake or tsunami, man-made disasters, such as explosions, wars or terrorism, and pandemics, including MERS (Middle East Respiratory Syndrome), SARS (Severe Acute Respiratory Syndrome) and EBOLA virus disease, may lead to phobia, anxiety, depression, hopelessness and enmity, in the short or the long run (8–10). COVID-19 phobia is defined as a persistent and extreme fear of the novel coronavirus, which can be classified as a specific type of mental disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (11). University students are academically skilled, socially engaged, and highly active adolescents. They are typically perceived as one of the most susceptible groups to mental health difficulties. The increased risk of contracting COVID-19 and the ubiquitousness of infection can result in heightened levels of anxiety (12). The classification of COVID-19 as a pandemic has induced negative psychological consequences for university students, manifesting in the form of fear (13). As the pandemic increases, we may expect an increase in psychopathological problems due to high mortality rates and transmission potential of COVID-19 and the absence of any therapy methods (3,14).

Given the increasing concerns about the COVID-19 pandemic, universities around the world took various measures to protect their staff and students from this highly contagious disease, including termination or cancellation of conferences, sport or any other events in their campuses (15). Regarding the distant education, lecturers and students were anxious about the new education method, universities without the necessary technological infrastructure faced with various problems and some of the students had internet access problems (16). Furthermore, high speed of transmission around the world created anxiety and stress about the future among the university staff and students. This stress may have negative effects on learning skills and mental health of university students (17).

COVID-19 pandemic may also have impacts on the careers of the students that would graduate during the pandemic, including the delay of graduation due to the suspension of the final exams and the global recession that may have an impact on their careers (15). Due to this reason, determining COVID-19 phobia is important to provide psychological support to the university students with higher potential to be affected by the negative effects of pandemic (3,10). Furthermore, we believe that evaluating the COVID-19 phobia is important since the subject is novel. This study deals with the development of coronavirus phobia among the university students due to the changing conditions caused by COVID-19, including living together with family members, distant education and being unable to leave home for socialization. We believe that the findings of this study may help to provide psychological support to university students and take necessary measures to improve the quality of life for the university students during the pandemic. This study analyses the level of coronavirus phobia of university students.

Materials and Methods

Participants and Sample Size

The universe of this descriptive study was composed of 396 associate degree students studying at a Vocational School of Health Services of a Foundation University in the 2019–2020 academic year. The study was completed with a total of 247 students who voluntarily agreed to participate in the study.

Inclusion and Exclusion Criteria

Students in their first and second year of the associate degree program who agreed to participate voluntarily were included in the research. Those who did not volunteer, were excluded from the study.

Data Collection Tools

Participant students were asked to complete the Data Collection Form and the COVID-19 Phobia Scale (C19P-S) after obtaining their online consent. This form included 8 questions on gender, place of residence, chronic diseases, diagnosis of COVID-19 for the participant and their relatives & friends and having adequate information (symptoms, prognosis, treatment, transmission routes and prevention measures) about the disease. The form was prepared by the researchers by using the relevant literature (11,18). COVID Phobia Scale (C19P-S) which was developed by Arpaci et al. (11). in order to measure the COVID-19 phobia, was a five-point Likert type (1=strongly disagree to 5=strongly agree) self-administered scale with a Cronbach's alpha of 0.92. The scale was comprised of the psychological (items 1, 5, 9, 13, 17 and 20), psychosomatic (items 2, 6, 10, 14 and 18), social (items 3, 7, 11, 15 and 19) and economic (items 4, 8, 12 and 16) subscales. C19P-S score ranged between 20 and 100, with higher scores indicating greater phobia of COVID-19. Cronbach alpha coefficient in our study was 0.93.

Data Collection

The data were collected online by the principal investigator in July-August 2020.

Statistical Analysis

For data analysis, we used IBM Statistical Package for Social Sciences (SPSS) program version 22.0 for Windows. Number, percentage, mean, standard deviation and minimum and

Kolcak et al. Determining the Coronavirus-19 Phobia Level of a Group of University Students

YIU Saglik Bil Derg 2023;4:36–41

maximum values were used for descriptive analysis. Shapiro-Wilk test was used for test of normality. For difference analysis, we used Mann-Whitney U test for two independent variables and Kruskal-Wallis test for more than two independent variables. Statistical significance was set at $p<0.05$.

Ethical Approval

Prior to the research, we obtained permission from the university that the study was conducted and from the researchers that developed the C19P-S. We also obtained permission from the non-invasive research ethics committee of Yuksek Ihtisas University (decision no: 2020/07/12, date: 03.07.2020). Participants were informed about the aim and scope of the research and online informed consent was obtained.

Results

77.7% of the participants were female and 22.3% were male. 81.8% lived in provincial centers, whereas 17.8% lived in district centers and 0.4% in villages. A great majority of the participants (83.8%) did not have any chronic diseases. Only 1.2% of the participants were diagnosed with COVID-19, 20.6% had friends and relatives diagnosed with COVID-19 and 3.6% had friends and relatives that died from COVID-19. Nearly all of the participants (96.4%) expressed that they had adequate information about the disease. Official websites were stated as the primary source of information for 57.9% of the participants (Table 1).

We did not find a statistically significant relationship between gender and C19P-S scores ($p>0.05$). C19P-S scores were higher for the participants that lived in provincial centers (55.72±17.09) and the difference was statistically significant ($p<0.05$). Participants with chronic diseases obtained higher score from C19P-S (65.52±17.43) and the difference was statistically significant ($p<0.05$). On the other hand, we did not find any statistical significance between C19P-S scores and characteristics, such as, being diagnosed with COVID-19, having friends and relatives that died from COVID-19 and the source of information about COVID-19 ($p>0.05$). Finally, the C19P-S scores of the participants lacking sufficient information regarding COVID-19 were significantly higher ($p<0.05$) (Table 2).

Comparison of the scores obtained from the psychological, psychosomatic, social and economic subscales of C19P-S with the descriptive characteristics of the participants found a significant difference between gender and psychological subscale ($p<0.05$). Mean score obtained by the female participants (21.88±5.52) from the psychological subscale was significantly higher than male participants (19.56±7.34). We also found a significant difference between the participants with chronic disease and all subscales of C19P-S ($p<0.05$). Furthermore, mean score obtained by the participants that did not have adequate information about COVID-19 from the

Table 1. Sociodemographic and descriptive characteristics about COVID-19 (n=247)

Descriptive Characteristics	n	%
Gender		
Female	192	77.70
Male	55	22.30
Place of residence		
Provincial center	202	81.80
District center	44	17.80
Village	1	0.40
Chronic disease		
Yes	40	16.20
No	207	83.80
COVID-19 diagnosis		
Yes	3	1.20
No	244	98.80
Friends & relatives diagnosed with COVID-19		
Yes	51	20.60
No	196	79.40
Friends & relatives died from COVID-19		
Yes	9	3.60
No	238	96.40
Had adequate information about COVID-19		
Yes	238	96.40
No	9	3.60
Source of information about COVID-19		
Social media	67	27.10
Official websites	143	57.90
Television	37	15.00

n: number; %: percentage.

Table 2. Comparison of the descriptive characteristics and mean C19P-S scores

Descriptive characteristics		C19P-S		
		Mean ± SD	Test statistics	p
Gender	Female	55.36±15.65	-1.81[a]	0.06
	Male	51.52±20.84		
Place of residence	Provincial center	55.72±17.09	6.36[b]	0.04
	District center	48.68±15.46		
	Village	65.00±0.00		
Chronic diseases	Yes	65.52±17.43	-3.94[a]	0.00
	No	52.57±16.22		
Diagnosed with COVID-19	Yes	62.00±15.87	-0.89[a]	0.36
	No	54.41±17.00		
Friends & relatives diagnosed with COVID-19	Yes	50.35±16.95	-1.89[a]	0.05
	No	55.59±16.85		
Friends & relatives died from COVID-19	Yes	52.66±14.04	-0.23[a]	0.81
	No	54.57±17.09		
Had adequate information about COVID-19	Yes	54.12±16.94	-1.89[a]	0.05
	No	64.77±15.25		
Source of information about COVID-19	Social media	54.62±15.72	0.03[b]	0.98
	Official websites	54.51±17.11		
	Television	54.29±18.99		

SD: Standard Deviation; a: Mann-Whitney U Test; b: Kruskal-Wallis Test.

psychological subscale (25.44±4.79) was higher than those with adequate information (21.2±6.03) and the difference was statistically significant (p<0.05). Similarly, mean score of the participants without adequate information about COVID-19 (18.88±4.07) was higher than those with adequate information (15.49±5.31) and the difference was statistically significant (p<0.05).

Mean score obtained from the C19P-S was 54.51±16.97 (min-max=20–100). Mean score was the highest for psychological subscale (21.36±6.04), which was followed by social, psychosomatic and economic subscales, respectively (Table 3).

Table 3. C19P-S scores in total and obtained from the subscales

Scale		Min	Max	Mean ± SD
C19P-S		20	100	54.51±16.97
Subscales	Psychological	6	30	21.36±6.04
	Psychosomatic	5	25	9.03±4.49
	Social	5	25	15.61±5.30
	Economic	4	20	8.49±3.80

SD: Standard Deviation; Min-Max: Minimum – Maximum.

Discussion

Psychological effects of pandemics on health professionals, patients, children and elders have already been noted by various studies (19–21). Similarly, pandemics may create stress and have negative effects on the mental health and academic success of students (17). Fast spread of COVID-19, easy transmission of the disease, absence of therapy and high mortality rates are expected to increase psychopathological problems (3,14). This study aimed to analyze COVID-19 phobia among the university students so that necessary measures may be taken. Experiences of universities and students during the pandemic should be analyzed so that they may be used to provide psychological care for students in case of a new pandemic or disasters (22).

COVID-19 phobia of the participants was at medium level (54.51±16.97). Lee et al. conducted a study in Japan, China, and Korea in 2023 that found university students' phobia of COVID-19 was moderate (13). In a study carried out by Salman et al. in 2022, it was found that there is a high level of COVID-19 phobia among university students (23). A study, which analyzed the psychological state of the university students and the factors affecting their concerns, found that 24.9% of the students suffered from anxiety due to COVID-19 pandemic (18). COVID-19 phobia and anxiety may stem from the change in routine education practices (15) and economic problems caused by the COVID-19 pandemic (22). On the other hand, anxiety of the students may be related with increasing social distance among the people due to lockdowns (18). Studies in the literature shows that anxiety increases in case of lack of interpersonal communication (24,25).

Analysis of the subscales of the C19P-S shows that participants obtained the highest score from the psychological subscale, which was followed by social, psychosomatic and economic subscales, respectively. This finding implies that the participants were mostly affected in psychological terms and isolated themselves from social environment. These results were supported with our finding that most of the participants followed official websites to receive information about COVID-19 and considered their level of knowledge as adequate.

We did not find a difference between the coronavirus phobia levels of female and male students (p>0.05). Similarly, Cao et al. (18). found no significant relationship between gender and anxiety levels of the college students. This finding implies that both male and female university students suffered from similar stress and negative feelings due to the pandemic. On the other hand, analysis of the relationship between gender and the subscales of C19P-S shows that the scores obtained by female participants from the psychological subscale were significantly higher. This finding indicated that female students suffered from higher anxiety in psychological terms although emotions and stress of the students from both genders were similar.

Comparison of place of residence with coronavirus phobia of the participants shows that the students that lived in provincial centers had higher phobia. This finding may be explained with reference to higher risk of interaction in crowded provincial centers and strict rules about lockdown and social distance in these centers. Although the study of Cao et al. (18). found a significant relationship between the place of residence and anxiety levels of college students, living in urban areas was more conductive to reducing anxiety. This finding may be explained with reference to the imbalance of cultural, economic and education resources between urban and rural areas.

We compared C19P-S scores and the existence of chronic diseases among the participants and found that C19P-S scores were significantly higher for the participants with chronic diseases. People with chronic diseases have higher risk of serious disease and mortality (2,26). Consequently, we may suggest that the participants with chronic diseases, which had higher risks during the COVID-19 pandemic, had higher COVID-19 phobia.

We did not find any significant difference between C19P-S scores, being diagnosed with COVID-19, and having friends and relatives that died from COVID-19. This finding may be explained with reference to the fact that only 1.2% of the participants were diagnosed with COVID-19 and 3.6% had friends and relatives that died from COVID-19. Nevertheless, C19P-S scores were higher for the participants that had friends and relatives diagnosed with COVID-19 (20.6%). Similar to our study, Cao et al. (18). found that college students with friends and relatives infected with COVID-19 had higher anxiety levels. Being more sensitive to close friends and relatives and facing with the severity of the disease when these people got infected

Kolcak et al. Determining the Coronavirus-19 Phobia Level of a Group of University Students

YIU Saglik Bil Derg 2023;4:36–41

and received therapy may explain the increase in coronavirus phobia of the participants.

The present systematic review and meta-analysis revealed that tertiary students experienced a moderate degree of anxiety due to COVID-19, with females experiencing a higher level of anxiety than males. Variations in COVID-19 anxiety prevalence across different countries may be attributed to cultural backgrounds and healthcare accessibility (27).

Finally, we did not find any statistically significant difference between the type of source of information about COVID-19 and C19P-S scores. However, the comparison between information about COVID-19 and C19P-S scores revealed that the participants that did not consider themselves as having adequate information about COVID-19 had higher COVID-19 phobia. This finding may be related with the obstacles on true and reliable information for these students. Students without adequate information about COVID-19 may feel insecure and inadequate about the measures to be taken against the pandemic. A study on the experiences of health professionals during the H1N1 influenza pandemic found a negative relationship between information sufficiency and anxiety levels and noted the importance of meeting the demand for information in current and future pandemics (28). Within this context, we may suggest that information on COVID-19 should be provided to the university students and education on protective and preventive measures should be given. Besides, the study of Chen et al. (19). found a negative relationship between anxiety of the students and social support programs (18). Due to this reason, we may suggest that social and artistic platforms that enable the students to gather in online platforms may decrease their COVID-19 phobia.

Study limitations
This study was conducted between July and August 2020 in a single center. Due to this reason, the findings may not be generalizable to all students of vocational school of health services.

Conclusion
Pandemics have negative impacts on mental health and academic lives of university students so that these students should be provided psychological and social support during these periods. Mental health can be protected by determining and removing the factors that cause phobia. In order to fill the information deficiency, which is one of the primary reasons of COVID-19 phobia, universities should conduct online seminars, webinar and similar programs to answer the questions of the university students about COVID-19. Besides, students should frequently gather in online platforms for not only academic but also social and artistic events. These events may decrease the stress caused by social isolation and prevent COVID-19 phobia among the university students.

References

1. Wickramasinghe NC, Steele EJ, Gorczynski RM, Temple R, Tokoro G, Wallis DH, et al. Growing evidence against global infection-driven by person-to-person transfer of COVID-19. Virol Curr Res. 2020;4(1). https://doi.org/10.37421/Virol Curr Res.2020.4.110

2. World Health Organization. COVID-19 significantly impacts health services for noncommunicable diseases; 2020. Availible at: https://www.who.int/news-room/detail/01-06-2020-covid-19-significantly-impacts-health-services-for-noncommunicable-diseases

3. Duan L, Zhu G. Psychological interventions for people affected by the COVID-19 epidemic. Lancet Psychiatry. 2020;7(4):300–302. https://doi.org/10.1016/S2215-0366(20)30073-0

4. Li W, Yang Y, Liu, ZH, Zhao YJ, Zhang Q, Zhang L, et al. Progression of mental health services during the COVID-19 outbreak in China. Int J Biol Sci. 2020;16(10):1732. https://doi.org/10.7150/ijbs.45120

5. Wang C, Cheng Z, Yue XG, McAleer M. Risk management of COVID-19 by universities in China. In: Multidisciplinary Digital Publishing Institute. 2020;13(36). https://doi.org/10.3390/jrfm13020036

6. Diagnostic and Statistical Manual of Mental Disorders, 5th ed. American Psychiatric Association. Arlington VA.; 2013. p. 612–613. Available at: https://repository.poltekkes-kaltim.ac.id/657/1/Diagnostic%20and%20statistical%20manual%20of%20mental%20disorders%20_%20DSM-5%20(%20PDFDrive.com%20).pdf

7. Butcher JN, Mineka S, Hooley JM. Abnormal psychology. India: Pearson Education; 2017.

8. Colorado EE. A mixed-method study of aid workers in Sierra Leone during the 2014-2015 ebola epidemic: exploring psychological distress, trauma, resilience, and coping the Chicago School of Professional Psychology; 2017. Availible at: https://search.proquest.com/docview/2014377787?pq-origsite=gscholar&fromopenview=true

9. Liu T, Chen X, Miao G, Zhang L, Zhang Q, Cheung T. Recommendations on diagnostic criteria and prevention of SARS-related mental disorders. J Clin Psychol Med. 2003;13(3):188–191.

10. Qi J, Yang X, Tan R, Wu X, Zhou X. Prevalence and predictors of posttraumatic stress disorder and depression among adolescents over 1 year after the Jiuzhaigou earthquake. J Affect Disord. 2020;261:1–8. https://doi.org/10.1016/j.jad.2019.09.071

11. Arpaci I, Karataş K, Baloğlu M. The development and initial tests for the psychometric properties of the COVID-19 Phobia Scale (C19P-S). Pers Individ Dif. 2020;164:110108. https://doi.org/10.1016/j.paid.2020.110108

12. Zhao, Kong F, Nam E. W. Relationship between eHealth, perceived risk, and phobia of COVID-19 among Chinese university students in Korea and China. Health Soc Care Community. 2023;2755354:12. https://doi.org/10.1155/2023/2755354

13. Lee H, Kong F, Yuasa M, Aung MN, Shirayama Y, Zhao B, et al. COVID-19 Phobia among Korean, Chinese, and Japanese students: an international comparative study. Heliyon. 2023;9(4)). https://doi.org/10.1016/j.heliyon.2023.e15275

14. Gao J, Zheng P, Jia Y, Chen H, Mao Y, Chen S, et al. Mental health problems and social media exposure during COVID-19 outbreak. Plos One. 2020;15(4):e0231924. https://doi.org/10.1371/journal.pone.0231924

15. Sahu P. Closure of universities due to coronavirus disease 2019(COVID-19): impact on education and mental health of students and academic staff. Cureus. 2020;12(4). https://doi.org/10.7759/cureus.7541

16. Lim M. Educating despite the Covid-19 outbreak: Lessons from Singapore. Times Higher Education, 20. 2020. Availible at: https://www.timeshighereducation.com/blog/educating-despite-covid-19-outbreak-lessons-singapore

YIU Saglik Bil Derg 2023;4:36–41

Kolcak et al. Determining the Coronavirus-19 Phobia Level of a Group of University Students

17. Al-Rabiaah A, Temsah MH, Al-Eyadhy AA, Hasan GM, Al-Zamil F, Al-Subaie S, et al. Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. J Infect Public Health. 2020;13:687–691. https://doi.org/10.1016/j.jiph.2020.01.005

18. Cao W, Fang Z, Hou G, Mei Han, Xinrong Xu, Jiaxin Dong, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res. 2020;287:112934. https://doi.org/10.1016/j.psychres.2020.112934

19. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. Lancet Psychiatry. 2020;7(4):e15–e16. https://doi.org/10.1016/S2215-0366(20)30078-X

20. Li S, Wang Y, Yang Y, Lei X, Yang Y. Analysis of influencing factors of anxiety and emotional disorders in children and adolescents during home isolation during the epidemic of novel coronavirus pneumonia. Chinese J Child Health. 2020;28(3):1–9.

21. Yang Y, Li W, Zhang Q, Zhang L, Cheung T, Xiang YT. Mental health services for older adults in China during the COVID-19 outbreak. Lancet Psychiatry. 2020;7(4):e19. https://doi.org/10.1016/S2215-0366(20)30079-1

22. Zhai Y, Du X. Mental health care for international Chinese students affected by the COVID-19 outbreak. Lancet Psychiatry. 2020;7(4):e22. https://doi.org/10.1016/S2215-0366(20)30089-4

23. Salman M, Mustafa ZU, Javaid AW, Shehzadi N, Mallhi TH, Khan YH, et al. Assessment of corona-phobia in university students with the COVID-19 Phobia Scale (C19P-S): A cross-sectional analysis. Salud Mental. 2022;45(5):253–260. https://doi.org/10.17711/SM.0185-3325.2022.032

24. Kmietowicz Z. Rules on isolation rooms for suspected covid-19 cases in GP surgeries to be relaxed. In: British Medical Journal Publishing Group; 2020. https://doi.org/10.1136/bmj.m707

25. Xiao C. A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: structured letter therapy. Psychiatry Investig. 2020;17(2):175–176. Availible at: https://doi.org/10.30773/pi.2020.0047

26. Centers for Disease Control and Prevention (CDC). People with Certain Medical Conditions. 2020. Availible at: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html

27. Wang F, Zhang L, Ding L, Wang L, Deng Y. Fear of COVID-19 among college students: a systematic review and meta-analysis. Front Public Health. 2022;10:846894. https://doi.org/10.3389/fpubh.2022.846894

28. Goulia P, Mantas C, Dimitroula D, Mantis D, Hyphantis T. General hospital staff worries, perceived sufficiency of information and associated psychological distress during the A/H1N1 influenza pandemic. BMC Infect Dis. 2010;10(1):322. https://doi.org/10.1186/1471-2334-10-322