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THE IMPACT OF THE COVID-19 PHOBIA ON THE ANXIETY LEVELS OF ADOLESCENTS

ERGENLERDE GÖRÜLEN COVID-19 FOBİSİNİN ANKSİYETE DÜZEYLERİNE ETKİSİ

ABSTRACT

The Covid-19 pandemic has affected all segments of society around the world. This study aims to examine the impact of Covid-19 phobia on the anxiety levels of adolescents. Having a descriptive and relational survey design, this study was conducted with 334 high school students who were chosen by power analysis. The study deployed Personal Information Form, Coronavirus 19 Phobia Scale, and Depression, Anxiety, and Stress Scale (DASS-42) High School Form as data collection tools. Linear regression analysis was used to test the impact of coronavirus phobia on anxiety, and an independent sample t-test to determine the difference across the mean scores in terms of having Covid-19. The mean score of the Coronavirus 19 Phobia Scale, the related factors, and the factor of Anxiety was found to be significantly higher among adolescents who had Covid-19 compared to those who did not ($p<.05$). The results also suggested that coronavirus phobia had a statistically significant impact on anxiety ($t=8,963$, $p<0.05$). The results of the study implicated that high school students' coronavirus phobias affected their anxiety levels. 19.5% of the change in anxiety was explained by coronavirus-19 phobia.

Keywords: Adolescent, Covid-19, anxiety.

ÖZET

Tüm dünyayı etkisi altına alana Covid-19 pandemisi toplumun tüm kesimini etkilenmiştir. Bu çalışmanın amacı ergenlerde görülen Covid-19 fobisinin anksiyete düzeylerine etkisini incelemektir. Tanımlayıcı ve ilişkisel olan bu çalışma, örnekleme güç analizi ile belirlenen 334 lise öğrenci ile gerçekleştirilmiştir. Araştırmada, veri toplama aracı olarak araştırmacılar tarafından hazırlanan Kişisel Bilgi Formu, Koronavirüs 19 Fobisi Ölçeği ve Depresyon, Anksiyete ve Stres Ölçeği (DASS-42) Lise Formu kullanılmıştır. Koronavirüs fobisinin anksiyete üzerine etkisini test etmek için doğrusal regresyon analizi, Covid-19 geçirme durumuna göre puan ortalamaları arasındaki farkın tespitinde independent sample t test uygulanmıştır. Covid-19 geçiren ergenlerin Covid-19 fobisi toplam puan ve alt boyut puan ortalamaları ile anksiyete alt boyut puan ortalamasına ait puan ortalamasının geçirmeyenlere göre anlamlı düzeyde yüksek olduğu belirlenmiştir ($p<.05$). Araştırmada koronavirüs fobisinin anksiyete üzerinde istatistiksel olarak anlamlı bir etkisinin olduğu görülmektedir ($t=8,963$, $p<0.05$). Araştırma sonucunda; lise öğrencilerinin koronavirüs fobilerinin anksiyete düzeylerini etkilediği saptanmıştır. Anksiyete boyutu üzerindeki değişimin %19,5'ini açıkladığı görülmektedir.

Anahtar Kelimeler: Ergen, Covid-19, anksiyete.

1. INTRODUCTION

Adolescence is a dynamic period of development and transition between childhood and adulthood. This period is considered a high-stress period that includes complex neurological changes in teens' emotional processes, social interactions and behaviors. Thus, peer relationships and social pressures influence adolescents and lead to unexpected results (Blakemore & Mills, 2014; Stirrups, 2018). Adolescence is a period of mental health disorder with high prevalence compared to other individuals at other stages of the life cycle. Nearly 20% of adolescents are likely to experience mental health problems. Depression and anxiety are the most common mental health problems among adolescents (Aguirre Velasco, Cruz, Billings, Jimenez & Rowe, 2020; Knoll, Magis-Weinberg, Spekenbrink & Blakemore, 2015). Mental health problems not only significantly affect the development of children

and young people, but they can also have an enduring effect on their health and social functions in the later stages of life. Adolescents with mental health problems may also face various challenges such as stigma, isolation, difficulty in accessing health services, exclusion and discrimination (Kowalenko & Culjak, 2018). In addition to physical threats and destructions caused by Covid-19, individuals' disease-related traumatic experiences necessitate making an in-depth analysis of the psychological effects during and after the disease process (Ladikli, Bahadir, Yumusak, Akkuzu, Karaman & Turkkan, 2020). The unknown side of the treatment of Covid-19 can cause fear and anxiety among people. People's fear and anxiety reactions to the Covid-19 pandemic may result from the extraordinary nature of the disease (Sumer & Ozorhon, 2021). The Covid-19 pandemic affecting all segments of society has led to social interaction and communication problems along with social restrictions. Especially adolescents have been influenced by the negative conditions of the pandemic process. Adolescents' infected relatives and their anxiety about the inadequate protective measures cause them to experience fear of infection and infecting their family members. These negative life experiences stimulate the emergence of uncertainty, fear, loneliness, panic, stress, depression and anxiety in adolescents (Brooks, Webster, Smith, Woodland, Wessely, Greenberg & Rubin, 2020; Duan, Shao, Wang, Huang, Miao, Yang & Zhu, 2020; Singh, Roy, Sinha, Parveen, Sharma & Joshi, 2020; Xiang, Yang, Li, Zhang, Zhang, Cheung & Ng, 2020). While an increase was noted in adolescents' anxiety, depression and loneliness when they were infected and quarantined, a decrease was found in their quality of life (Hossain, Tasnim, Sultana, Faizah, Mazumder, et. al., 2020; Loades, et. al., 2020; Ravens-Sieberer, Kaman, Otto, Adedeji, Devine, et. al., 2020; Xiong, Lipsitz, Nasri, Lui, Gill, et. al., 2020). A longitudinal survey study evaluating the mental state of adolescents before and after the Covid-19 quarantine concluded that adolescents were more concerned about quarantine and restrictions rather than being infected. Besides, the results revealed an increase in anxiety and depression symptoms and a decrease in the level of life satisfaction in the pre/post-quarantine period comparison (Magson, Freeman, Rapee, Richardson, Oar & Fardouly, 2021). The Covid-19 pandemic has forced adolescents to struggle with phobia. Society may encounter psychological, and economic obstacles due to the covid-19 phobia. Based on the studies on the prevalence of mental health problems such as fear, anxiety, and stress caused by the Covid-19 pandemic and quarantine among adolescents, this study attempts to examine the effect of adolescents' coronavirus-19 phobia on their anxiety levels.

2. METHOD

2.1. Research Design

This study employed a relational survey model.

2.2. Population and Sample

This study was conducted with adolescents learning in high schools affiliated with the Ministry of National Education between September and October 2021 in Muş, Turkey. The sample size was calculated through G-power analysis. The analysis results revealed that the sample held a total of 334 adolescents with a 95% confidence interval at 0.05 error level and 95% power to represent the population at 0.5 effect size. The sample consisted of 334 adolescents who were suitable for the research criteria and who were chosen by simple random sampling method. 24.2% of the adolescents were 14 years old, 24.5% were 15, 28.1% were 16, and 27.4% were 17 years old. 25.2% of the participants were in the first-grade, 26% in the second-grade, 26.9% in the third-grade, and 21.9% in the fourth-grade. 19.5% of the adolescents were determined to experience Covid-19 disease, while 80.5% did not.

2.2.1. Inclusion Criteria

Being between the ages of 14-17 and having no communication problems.

2.3. Data Collection Tools

This study deployed the Personal information form, Coronavirus 19 Phobia Scale, and Depression, Anxiety, and Stress Scale (DASS-42) High School Form as data collection tools.

2.3.1. Personal Information Form

The Personal Information Form was developed by researchers in order to obtain socio-demographic information regarding the participants. This form includes age, whether s/he had Covid-19, and whether his/her relative had Covid-19.

2.3.2. COVID-19 Phobia Scale (C19P-S)

This scale was developed by Arpacı, Karataş and Baloğlu (2020) to assess the levels of coronavirus phobia (Arpacı, Karataş and Baloğlu, 2020). It is a self-report evaluation tool including four factors: Psychological (1st, 5th, 9th, 13th, 17th, 20th items), Psycho-Somatic (2nd, 6th, 10th, 14th, 18th items), Social (3rd, 7th, 11th, 15th, 19th items) and Economic (4th, 8th, 12th, 16th items). Cronbach alpha coefficient for the overall score was 0.925. The scores on the instrument range between 20 and 100. A higher score refers to a greater coronavirus phobia.

2.3.3. Depression, Anxiety, and Stress Scale (DASS-42) High School Form

Validity and reliability studies of the scale were carried out by Akkuş Çutuk and Kaya (2018) so that high school students can make self-assessments related to their depression, anxiety, and stress levels (Akkuş Çutuk and Kaya, 2018). The instruments include 42 items and 3 factors: depression (3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, 42), anxiety (2, 4, 7, 9, 15, 19, 20, 23, 25, 28, 30, 36, 40, 41) and stress (1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39). The Cronbach Alpha Reliability Coefficients for each factor of DASS-42 were: Stress .86; Anxiety .84 and Depression .91. The total score of the scale ranges from 0 to 42 for each factor. The factors (depression, anxiety, and stress) are classified into five categories normal, mild, moderate, severe, and extremely severe. This study only used the anxiety factor of the scale.

2.4. Ethics Committee Approval

The necessary approval was obtained from the Scientific Research and Publication Ethics Committee in Muş Alparslan University with decision number 20 of the meeting numbered 15 and dated 29.12.2020. The permission of the relevant institution was accessed from the institution where the study would be conducted.

2.5. Data Collection

The data were collected through the online form prepared by the researchers. The participants were informed about the conditions of the participation and the study.

2.6. Data Analysis

The data were analyzed through the use of the Statistical Package for Social Sciences (SPSS) 25.0. package program. Frequency (n) and percentage (%) were used as descriptive statistics during the analysis of demographic information. Descriptive statistical methods (number, percentage, min-max values, mean, standard deviation) were used when evaluating data. In order to compare the quantitative variables, this study initially investigated whether this data set was modeled for parametric tests. The skewness and kurtosis values between ± 3 indicate the normal data distribution. Linear regression analysis was used to test the effect of coronavirus phobia on anxiety, and an independent sample t-test to determine the difference across the mean scores in terms of having Covid-19. The significance level was accepted as 0.05. In this study, the Cronbach's Alpha reliability coefficient of the scales was determined as 0.932 for Coronavirus phobia and 0.908 for the Anxiety factor of the Depression, Anxiety, and Stress Scale, respectively.

3. FINDINGS

This section presents the findings obtained as a result of the study.

Table 1. Descriptive statistics regarding the scales and factors

Scales and Factors	Min	Max	Median	\bar{x}	SD
Coronavirus phobia	20,00	98,00	49,00	49,75	15,39
Psychological	6,00	30,00	18,00	18,27	5,70
Psycho-somatic	5,00	24,00	10,00	9,69	3,93
Social	5,00	25,00	13,00	13,44	4,79
Economic	4,00	20,00	8,00	8,35	3,10
Anxiety	0,00	42,00	9,00	10,25	8,54

Table 1 depicts descriptive statistical methods (number, percentage, min-max values, mean, and standard deviation) regarding the data evaluation of the scales. The mean of the Coronavirus 19 Phobia Scale was 49.75 ± 15.39 , and the means of the factors were: Psychological was 18.27 ± 5.70 , Psycho-somatic dimension was 9.69 ± 3.93 , Social was 13.44 ± 4.79 , Economic was 8.35 ± 3.10 . The mean depression factor regarding the DASS-42 High School Form was identified as 16.29 ± 11.91 , the anxiety factor as 10.25 ± 8.54 , and the stress factor as 18.07 ± 10.32 .

Table 2. Adolescents' Mean Scores Regarding Coronavirus Scale, Its Factors and Anxiety Factor in terms of Having Covid 19

Feature	N	%	Covid-19 Phobia	Psychological	Pscho-Somatic	Social	Economic	Anxiety
Having Covid 19								
Yes	65	19.5	51.83 ± 15.11	19.29 ± 5.85	10.60 ± 4.31	13.46 ± 4.82	8.60 ± 3.00	11.84 ± 9.17
No	269	80.5	49.24 ± 15.44	18.02 ± 5.64	9.46 ± 3.80	13.33 ± 4.67	8.29 ± 3.12	9.85 ± 8.35
Test value			t=0.162	t=0.357	t=1.564	t=0.099	t=0.132	t=0.734
P			p=.025	p=.037	p=.046	p=.022	p=.034	p=.016

Table 2 displays the mean scores of the adolescents in terms of having Covid-19. Independent samples t-test was used to determine the mean score. Accordingly, the total scale's and factors' mean scores for Covid-19 phobia and that of the anxiety factor related to adolescents who had Covid-19 were significantly higher than those who did not ($p < .05$).

Table 3. The effect of the coronavirus 19 phobia scale on the factor of anxiety

Dependent Variable	Independent Variable	B	Standard Error	Beta	t	P	F	Model (p)	R2	Durbin Watson
Anxiety	Stable	-1.940	1.423	-	-1.363	0.174	80.327	0.000*	0.195	1.661
	Coronavirus Phobia Scale	0.245	0.027	0.441	8,963	0.000*				

Table 3 suggests a simple linear regression analysis to determine the effect of the coronavirus-19 phobia scale on the factor of anxiety. The regression analysis results revealed that the model was statistically significant ($F=80.327$; $p < 0.05$) considering the significance level corresponding to the F value. Taking into account the beta coefficient value, t value, and significance level of the independent variable, the coronavirus phobia scale was noted to have a statistically significant impact on the factor of anxiety ($t=8,963$, $p < 0.05$). The coronavirus phobia scale explained 19.5% of the change in the factor of anxiety (Adjusted $R^2=0.195$). One unit increase in the coronavirus phobia scale leads to an increase of 0.245 on the factor of anxiety ($\beta = 0.245$). The model was free from an autocorrelation problem. Durbin W value was between 1.5 and 2.5 ($DW=1,661$).

4. DISCUSSION

The results of this study, which aims to determine the impact of Covid-19 phobia on adolescents' anxiety levels, were discussed in line with the relevant literature.

The results pointed to a statistically significant difference across the adolescents' mean scores regarding the Coronavirus 19 Phobia Scale and the factor of Anxiety in terms of those who had Covid-19 and those who did not ($p < .05$). Adolescents having Covid-19 were more fearful and had higher levels of anxiety. It is most likely that Covid-19 has medical consequences and social as well as psychological effects. This may be due to the symptoms such as cough, fever, and shortness of breath, fatigue, and muscle pain among adolescents during Covid-19, and the long-term curfew because of isolation and disruptions in education. Covid-19 was reported to lead young people to experience psychological problems such as helplessness, anxiety, stress, and fear (Garcia de Avila, Hamamoto Filho, Jacob, Alcantara, Berghammer, Jenholt Nolbris, Olaya-Contreras and Nilsson, 2020; Liang, Ren, Cao, Hu, Qin, Li and Mei, 2020). Duan, Shao, Wang, Huang, Miao, Yang and Zhu (2020) concluded that adolescents showed higher levels of depressive and anxiety symptoms. Another study conducted by Zhou, Zhang, Wang, Guo, Wang, Chen, Liu, Chen and Chen (2020) with children aged 12-18 years reported that anxiety was observed in 37% of the participants with the emergence of Covid-19, while 31% had both anxiety and depressive symptoms. Gao, Zheng, Jia, Chen, Mao, Chen, Wang, Fu and Dai (2020), implicated that more attention should be paid to mental health problems, especially anxiety while combating Covid-19.

Another result of our study demonstrated a statistically significant impact of the Coronavirus 19 phobia scale on the factor of anxiety ($p < 0.05$). In their study, Satici, Saricali, Satici and Griffiths (2020) determined that the rapid flow of information concerning Covid-19 leads to confusion and uncertainty; therefore, individuals may experience more fear and anxiety about the COVID-19

pandemic. Since no clear results can be obtained from the discussions regarding the duration of the virus, the transmission route, the treatment process, and the effective vaccine, the Covid-19 pandemic causes anxiety, desperation, and fear among people, and such feelings can negatively affect people's behavior and mental state. A study conducted in Hong Kong showed that young people wear facemasks more than older age during the outbreak of SARS (Wong & Tang, 2004). This finding may be related to young people's signs of anxiety by taking more precautions against the Covid-19 pandemic. Shafran, Whittal and Coughtrey (2021) outlined that the fear of being infected by Covid-19 may trigger an anxiety-related disorder, especially in those who had anxiety before the pandemic, who were intolerant, and who had a lot of responsibility. On that point, pre-existing anxiety could be exacerbated by the fear of Covid-19. Besides, advances in the treatment of viral infection and the introduction of a vaccine were emphasized to reduce fear of illness and alleviate anxiety-related disorders. In the study conducted by Nearchou, Flinn, Niland, Subramaniam and Hennessy (2020), Covid-19 was found to have an impact on youth mental health, particularly associated with anxiety (Shevlin, McBride, Murphy, Miller, Hartman & et. al., 2020; Kohls, Baldofski, Moeller, Klemm & Rummel-Kluge, 2021).

The results of our study are congruent with these results.

5. CONCLUSION

The results showed that the mean score of the Coronavirus 19 Phobia Scale was 49.75 ± 15.39 , and that of the anxiety factor in the DASS-42 High School Form was 10.25 ± 8.54 .

The mean score of the Coronavirus-19 Phobia Scale and the factor of Anxiety was found to be significantly higher among adolescents who had Covid-19 compared to those who did not ($p < .05$).

The coronavirus-19 phobia scale did not have a statistically significant impact on the factor of Anxiety ($p < 0.05$).

Interventions concerning fear of coronavirus and anxiety should be developed for adolescents. Stakeholders working with adolescents may carry out preventive and interventional behavioral studies to minimize their exposure to fear and anxiety. Policymakers should manage the process in coordination with the relevant institutions to obey the rules regarding masks, distance, and cleaning, which will reduce the pandemic, rather than prohibitions during the pandemic process.

Conflict of Interest

The researchers do not state any conflict of interest for this study.

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REFERENCES

- Aguirre Velasco, A., Cruz, I.S.S., Billings, J., Jimenez, M. & Rowe, S. (2020). What are the barriers, facilitators and interventions targeting help-seeking behaviours for common mental health problems in adolescents? A systematic review. *BMC Psychiatry*, 20(1), 1-22. Published 2020 Jun 11.
- Akkuş Çutuk, Z. & Kaya, M. (2018). Depresyon, anksiyete ve stres ölçeği (dass-42) lise formu: Türkçe geçerlik ve güvenilirliği. *Electronic Journal of Social Sciences*, 17(68), 1327–1336. <https://doi.org/10.17755/esosder.320376>.
- Arpacı, İ., Karataş K. & Baloğlu, M. (2020). The development and initial tests for the psychometric properties of the COVID-19 Phobia Scale (C19P-S). *Personality and Individual Differences*, 164(1), 110108.
- Blakemore, S.J. & Mills, K.L. (2014). Is adolescence a sensitive period for sociocultural processing? *Annu Rev Psychol*, 65(1), 187- 207.
- 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), 912-20.

- Duan, L., Shao, X., Wang, Y., Huang, Y., Miao, J., Yang, X. & Zhu, G. (2020) An investigation of mental health status of children and adolescents in china during the outbreak of COVID-19. *J Affect Disord* 275, 112–118.
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., ...& Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS One*, 15(4), e0231924.
- Garcia de Avila, M.A., Hamamoto Filho, P.T., Jacob, F., Alcantara, L.R.S., Berghammer, M., Jenholt Nolbris, M., ...& Nilsson, S. (2020). Children's anxiety and factors related to the COVID-19 pandemic: an exploratory study using the children's anxiety questionnaire and the numerical rating scale. *Int J Environ Res Public Health* 17(16), 5757.
- Hossain, M.M., Tasnim, S., Sultana, A., Faizah, F., Mazumder, H., Zou, L., ...& Ma, P. (2020). Epidemiology of mental health problems in COVID-19: a review. *F1000Res* 9, 636.
- Knoll, L.J., Magis-Weinberg, L., Speekenbrink, M. & Blakemore, S-J. (2015). Social influence on risk perception during adolescence. *Psychol Sci* 26(5), 583-92.
- Kohls, E., Baldofski, S., Moeller, R., Klemm, S-L. & Rummel-Kluge, C. (2021) Mental Health, Social and Emotional Well-Being, and Perceived Burdens of University Students During COVID-19 Pandemic Lockdown in Germany. *Frontiers in Psychiatry*, 12, 643957.
- Kowalenko, N. M. & Culjak, G. (2018). Workforce planning for children and young people's mental health care. *The Lancet Public Health*, 3(6), 266-67.
- Ladikli, N., Bahadir, E., Yumusak, F., Akkuzu, H., Karaman, G. & Turkkan, Z. (2020). Reliability and validity study of the COVID-19 fear scale in Turkish. *Uluslararası Sosyal Bilimler Dergisi*, 3 (2), 71-80.
- Liang, L., Ren, H., Cao, R., Hu, Y., Qin, Z., Li, C. & Mei, S. (2020). The effect of COVID-19 on youth mental health. *Psychiatric quarterly*, 91(3), 841-852.
- Loades, M.E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., ...& Crawley, E. (2020). Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *J Am Acad Child Adolesc Psychiatry*, 59(11), 1218-39.
- Magson, N.R., Freeman, J.Y.A., Rapee, R.M., Richardson, C.E., Oar, E.L. & Fardouly, J. (2021). Risk and protective factors for prospective changes in adolescent mental health during the COVID-19 pandemic. *J Youth Adolesc*, 50(1), 44-57.
- Nearchou, F., Flinn, C., Niland, R., Subramaniam, S.S. & Hennessy, E. (2020). Exploring the impact of COVID-19 on mental health outcomes in children and adolescents: A systematic review. *Int. J. Environ. Res. Public Health*, 17(22), 8479.
- Ravens-Sieberer, U., Kaman, A., Otto, C., Adedeji, A., Devine, J., Erhart, M., ...& Hurrelmann, K. (2020). Mental health and quality of life in children and adolescents during the COVID-19 pandemic-results of the COPSY study. *Dtsch Arztebl Int*, 117(48), 828-9.
- Satici, B., Saricali, M., Satici, S.A. & Griffiths, M.D. (2020). Intolerance of uncertainty and mental wellbeing: serial mediation by rumination and fear of COVID-19. *Int J Ment Health Addict*, 20, 2731-42.
- Shafran, R., Whittal, M. & Coughtrey, A. (2021). Fear and anxiety in COVID-19: Preexisting anxiety disorders. *Cognitive and Behavioral Practice*, 28(4), 459-67.
- Shevlin, M., McBride, O., Murphy, J., Miller, J. G., Hartman, T. K., Levita, L., ...& Bentall, R. P. (2020). Anxiety, depression, traumatic stress and COVID-19- related anxiety in the UK general population during the COVID-19 pandemic. *BJPsych Open*, 6(6), E125.
- Singh, S., Roy, D., Sinha, K., Parveen, S., Sharma, G. & Joshi, G. (2020). Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Res*, 293, 113429.
- Stirrups, R. (2018). The storm and stress in the adolescent brain. *Lancet Neurology*, 17(5), 404.

- Sumer, L. & Ozorhon, B. (2021). Investing in gold or REIT index in Turkey: evidence from global financial crisis, 2018 Turkish currency crisis and COVID-19 crisis. *Journal of European Real Estate Research*, 14(1), 84-99.
- Wong, C. Y. & Tang, C. S. K. (2005). Practice of habitual and volitional health behaviors to prevent severe acute respiratory syndrome among Chinese adolescents in Hong Kong. *Journal of Adolescent Health*, 36(3), 193-200.
- 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.
- Xiong, J., Lipsitz, O., Nasri, F., Lui, L.M.W., Gill, H., Phan, L., ...& McIntyre, R.S. (2020). Impact of COVID-19 pandemic on mental health in the general population: a systematic review. *J Affect Disord*, 277, 55-64.
- Zhou, S.J., Zhang, L.G., Wang, L.L., Guo, Z.C., Wang, J.Q., Chen, J.C., ...& Chen, J.X. (2020) Prevalence and socio-demographic correlates of psychological health problems in Chinese adolescents during the outbreak of COVID-19. *Eur Child Adolesc Psychiatry* 29(6), 749–58.