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**THE PSYCHOLOGICAL STRESS LEVEL IN MONGOLIAN PEOPLE
QUARANTINED DURING THE COVID-19 OUTBREAK**

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Abstract

The WHO has identified Mongolia as one of the countries with the highest risk of infection. All registered cases of coronavirus infection in Mongolia were imported from abroad. In Mongolia, all visitors who entered from countries with foci of COVID-19 infection were assigned 21-days of quarantine. Our principal aim was to investigate the stress levels in people who are in quarantine of COVID-19 infection using a PSM-25 scale. Our secondary aim was to determine the needs of respondents for psychological assistance. Methods: The 130 respondents of the study, who crossed the Mongolian border and were in 21 days quarantine during COVID-19 infection, were asked to fill out the psychological stress scale (PSM-25). The assessment of the internal consistency of the original stigma questionnaire was performed by using Cronbach's $\alpha = 0.71$. When we assessed the stress levels, the respondents identified with 42.9% low, 53.7% average and 10.7% high stress levels. The study determined that the most urgent, frequently repeated psychological questions among the respondents are 47.6%, feeling of anxiety 33.1%, insomnia 22.3% emotional imbalance, impaired attention concentration, feeling of loneliness and 6.9% constant anxiety. The 10.7% of the

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quarantined respondents during COVID-19 infection in Darkhan have a high stress level. To overcome these problems, relieve stress and create a feeling of comfortability, people in quarantine need psychological care.

Keywords

Stress – Covid-19 – Quarantine – Insomnia – Score

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Introduction

Humanity is joining forces fighting the COVID-19 pandemic. The World Health Organization (WHO) declared on March 11, 2020 that the spread of COVID-19 has become outbreak a pandemic¹, according to the International Health Rule (2005), during the outbreak of COVID-19 infection all countries of the world began to take quarantine measures². The WHO has identified Mongolia as one of the countries with the highest risk of infection. The Commission on Emergency Situations of Mongolia in connection with the acceptance of their citizens from countries with foci of coronavirus infection has approved "On temporary quarantine measures and monitoring of citizens during coronavirus infection"³ and following these measures continues to protect its citizens from infection. As a result of the adoption by the Government of the country of effective preventive measures against coronavirus infection, Mongolia has become one of the few countries in the world that do not have an infection within the country. All registered cases of coronavirus infection in Mongolia were imported from abroad⁴.

In our country, all visitors from countries with foci of COVID-19 infection were in 21-days solitary quarantine. It is necessary to pay special attention to the mental health aspects of the people during COVID-19 pandemic⁵.

The direct and indirect psychological and social effects of the COVID-19 pandemic are pervasive and could affect mental health now and in the future⁶.

Stress, distress, and a variety of psychiatric illnesses are associated with immunosuppression and may predispose to medical illness, depending on the age, gender and type of higher nervous system can be manifested by various reactions⁷.

Since peace plays an important role both for the health of the individual and the social community, during a pandemic, WHO constantly advises us to spiritually relieve ourselves from stress and be calm. Therefore, it is necessary to investigate the need for reliable psychological assistance for persons in quarantine.

Our principal aim was to investigate the stress levels in people who are in quarantine of COVID-19 infection using a PSM-25 scale. Our secondary aim was to determine the needs for psychological assistance of respondents.

¹ Yeqing Xu; Yang Shao and Jingjing Huang, "Mental health services in Shanghai during the COVID-19 outbreak", *Forensic Science International: Mind and Law*. Vol: 1 (2020): 100022. DOI: <https://doi.org/10.1016/j.fsimpl.2020.100022>

² WHO, Terms of COVID-19 infection. Geneva.2020.02.11 WHO. Description of cases of COVID-19 infection. Geneva. 2020.02.28.

³ "The Emergency Commission of Mongolia. Temporary procedure for isolation and observation of citizens in case of coronavirus infection (Covid-19)", UB, 2020.03.14.

⁴ The Ministry Health of Mongolia. Information on the status of COVID-19 infection, UB. 2020.03.

⁵ Danny Epstein; Wisam Andrawis; Ari M. Lipsky; Hiba Abu Ziad y Moshe Matan, "Anxiety and Suicidality in a Hospitalized Patient with COVID-19 Infection". *European journal of case reports in Internal medicine* Vol: 7 num 5 (2020): 001651. DOI: 10.12890/2020_001651

⁶ E. A. Holmes; Rory C. O'Connor; V. Hugh Perry; et all., "Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science", *The Lancet Psychiatry* num 6 (2020): 547-560

⁷ C. Sandi, "Stress and cognition. *Wiley Interdisciplinary Reviews*", *Cognitive Science* num 4 (2013): 245–261.

Hypothesis. In people, who are in quarantine for 21 days during a COVID-19 infection, the psychological state is severe.

Ethical statement. The study was performed in accordance with the World Medical Association Declaration of Helsinki (2013). Approval was obtained from the Council of Scientists of the Darkhan Medical School of MNUMS on March 10, 2020.

We contacted all respondents using an on-line platform, who were quarantined during the COVID-19 infection, acquainted them with the purpose of the study, then received their consent to the processing of personal data.

Methodology and methods

The methods of cross-sectional, qualitative and quantitative analysis were used. The research data was obtained from an on-line survey from March 10 to April 15, 2020. The 130 respondents of the study, who crossed the Mongolian border and were in 21 days quarantine during COVID-19 infection, were asked to fill out the psychological stress scale (PSM-25) via the online platform, Google forms, in 25 minutes. The state of current stress levels was evaluated by discussion and confirmed by PSM-25 (Psychological stress Measure PSM-25)⁸.

The respondents rated their psychological feelings over the past 7 days, choosing appropriate scores from 1 to 8 on a (PSM-25) scale. Numbers 1 to 8 show the frequency of a particular psychological feeling.

1 - "never"; 2 - "almost never"; 3 - "rarely"; 4 - "sometimes"; 5 - "occasionally"; 6 - "usually"; 7 - "often"; 8 - "constantly (daily)"

The stress levels are determined by the total amount of points.

Question 14 is given a reverse assessment. If the total amount is less than 100 points. Low stress levels. Indicator of psychological adaptation to the stress. From 100-154 points: Stress levels is average. Above 155 points: High stress levels. Needs psychological care to reduce stress, lifestyle change is needed.

Statistical analysis. The analysis was performed with SPSS-20. The average indicators of stress levels, standard deviations and correlation coefficients are defined. The assessment of the internal consistency of the original stigma questionnaire was performed by using Cronbach's $\alpha = 0.71$

Results

From 130 surveyed respondents, 38 (29.2%) were men and 92 (70.8%) were women.

⁸ Mounia N. Hocine; Karim Aït Bouziad; Patrick Légeron; William Dab y Gilbert Saporta, "How to Identify and Prioritize Psychosocial Factors Impacting Stress Level" June 15, 2016. <https://doi.org/10.1371/journal.pone.0157078>

| Indicators | | Students n (%) | Salaried personnel n (%) | Total n (%) |
|--|---------------|-------------------|--------------------------------|----------------|
| age (average) | | 21.0 | 37.1 | 29,1 |
| sex | men n(%) | 36(29.7) | 2(22.3) | 38(29.2) |
| | women n(%) | 85(70.2) | 7(77.8) | 92(70.7) |
| SPM-25 scale score | max score | 172 | 155 | |
| | min score | 30 | 68 | |
| the average score of the one question | | 4.1 | 4.3 | |

Table1
The demographic indicators

From the surveyed respondents were 121 (93.1%) students, 9 (6.9%) employees and the average age was 29.1.

| Stress levels | Students n=121 | | Salaried personnel n=9 | |
|---------------|-------------------|------|---------------------------|------|
| | (n) | (%) | (n) | (%) |
| Low | 52 | 42.9 | 5 | 55.5 |
| Average | 56 | 46.4 | 4 | 44.5 |
| High | 13 | 10.7 | 0 | 0 |

Table 2
The stress levels of the respondents

When we assessed the stress levels, the respondents identified with 52 (42.9%) low, 70 (53.7%) average and 13 (10.7%) high stress levels.

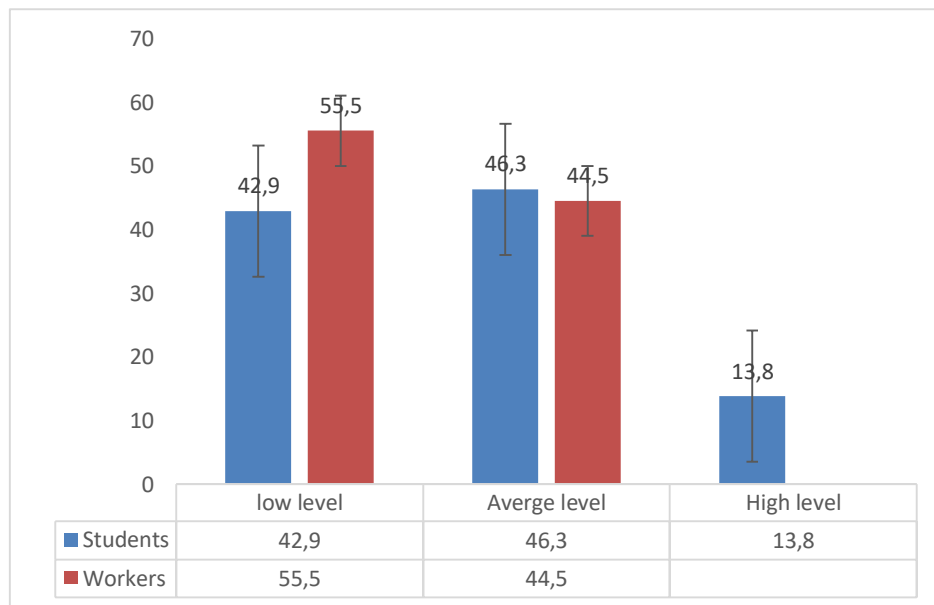


Fig 1
The stress levels are correlated with the scores

The stress levels are correlated with the scores ($p < .000$).

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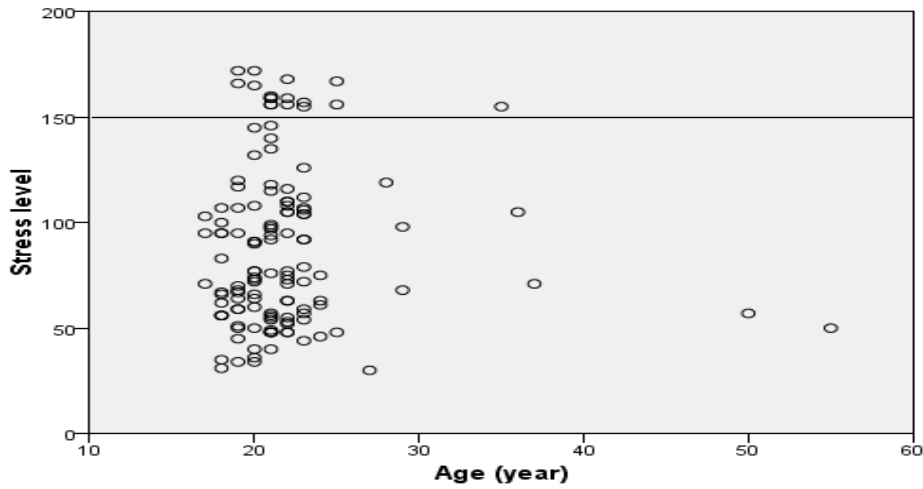


Fig 2

The distribution of stress among respondents quarantined during COVID-19 infections

Out of all respondents, 93.1% are students. People with an increased level of stress are more prone to panic attacks.

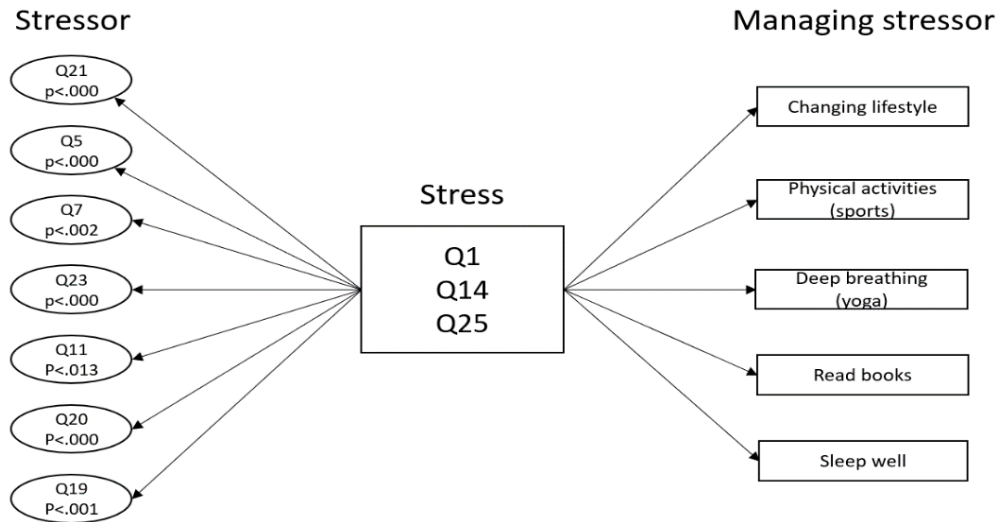


Fig. 3
Stress management

The study determined that the most urgent, frequently repeated psychological questions among the respondents are q14 62 (47.6%) feeling of anxiety, q19 43 (33.1%) insomnia, q11 29 (22.3%) emotional imbalance, impaired attention concentration, q6 15 (11.5%) feeling of loneliness and q25 9 (6.9%) constant anxiety.

Respondents under quarantine for COVID-19 infections need to carry out effective methods of stress relief.

Discussion

Psychological services were urgently needed to help ease the nerves amid the coronavirus epidemic both for the public and the medical workers battling the coronavirus⁹.

Evidence-based evaluations and mental health interventions targeting front-line health care workers are relatively scarce¹⁰.

For people with a high level of anxiety, medical care should be aimed at helping to get out of the situation, to prevent the development of mental illness¹¹ and should be based on credible data of research¹².

During COVID-19 infections, most people undergo self-isolation at home and in specially developed clinics and experience psychological problems such as anxiety, depression and stress¹³.

In a study, 99.8% of respondents experienced stress due to COVID-19 infection. The average stress value was 104.9 ± 34.4 points, 35% had a high degree of risk, most of them were young people (20 years old), unemployed, single people. Relationship with COVID-19 infection needs assistance in stress management¹⁴.

The surveyed nurses found that the main manifestations were decreased appetite or indigestion (59%), fatigue (55%), difficulty sleeping (45%). If these psychological problems are not solved effectively, they may lead to a decline in their immunity and increase the chances of COVID-19 infection¹⁵.

⁹ H. Yao; J. Chen y Y.F. Xu, "Patients with mental health disorders in the COVID-19 epidemic", *Lancet. Psychiatr* Vol: 7 num 4 (2020): e21. doi: 10.1016/S2215-0366(20)30090-0

¹⁰ J. Lai; S. Ma; Y. Wang et al., "Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019". *JAMA Netw Open* num 3 (2020): e203976.

¹¹ Post-traumatic Stress Disorder. NICE Guideline 116 (National Institute for Health and Care Excellence, 2018). www.nice.org.uk/ng116 (14 April 2020, date last accessed); N. Greenberg; M. Docherty; S. Gnanapragasam y S. Wessely, "Managing mental health challenges faced by healthcare workers during covid-19 pandemic", *Br Med J* num 368 (2020): 1211; UKPTS. Traumatic Stress Management Guidance: For Organizations Whose Staff Work in High Risk Environments. UK Psychological Trauma Society (European Society of Traumatic Stress Studies, 2014). <http://www.ukpts.co.uk/site/assets/UKPTS-Guidance-Document-120614.pdf> (14 April 2020, date last accessed); M. Richins; L. Gauntlett; N. Tehrani; H. Carter y R. Amlot, Early Post-trauma Interventions in Organizations: A Scoping Review (Public Health England and the British Psychological Society, 2019) y S. K. Brooks; R. K. Webster; L. E. Smith; L. Woodland; S. Wessely; N. Greenberg; et al. "The psychological impact of quarantine and how to reduce it: rapid review of the evidence", *Lancet* Vol: 395 num 10227 (2020): 912–920.

¹² Jo Billings; Talya Greene; Tim Kember; Nick Grey; et al., "Supporting Hospital Staff During COVID-19: Early Interventions", *Occupational Medicine* Vol: 70 num 5 (2020): 327–329. DOI: <https://doi.org/10.1093/occmed/kqaa0980>.

¹³ Y.T. Xiang; Y. Yang; W. Li; L. Zhang; Q. Zhang; T. Cheung; et al., "Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed", *Lancet Psychiatry* Vol: 7 num 3 (2020): 228–229.

¹⁴ M. Yu. Sorokin; E. D. Kasyanov; G. V. Rukavishnikov; O. V. Makarevich; N. G. Neznanov; N. B. Lutova; G. E. Mazo; V. M. Bekhterev y I. P. Pavlov, Structure of anxiety associated with the COVID-19 pandemic in the Russian-speaking sample: results from on-line survey (2020). DOI: <https://doi.org/10.1101/2020.04.28.20074302>

¹⁵ Xin Shen, Xiaoyue Zou, Xiaofeng Zhong, Jing Yan & Li Li, "Psychological stress of ICU nurses in the time of COVID-19". *Crit Care*, Vol: 24 num 1 (2020):200

Among students, a low stress level was observed in 56.13%, an average stress level was 40.97%, and only 2.9% of students showed a high stress level. The differences between the sexes for this indicator was minimal¹⁶ Sleep (> 90%) is important for health, education and human behavior¹⁷.

Researchers at the time of SARS infection found that stress is highly dependent on negative influences. 25% of patients (n = 20) wanted to undergo psychological monitoring¹⁸. German researchers concluded that quarantine measures were regularly associated with negative social-psychological consequences, including depressive symptoms, anxiety, anger, social isolation, loneliness¹⁹. In our study, people with high levels of stress showed the most relevant and frequently recurring symptoms of 62 (47.6) depression, anxiety, 29 (22.3) emotional instability, 43 (33.1) insomnia, and 15 (11.5) loneliness that are similar to the findings of German researchers.

Conclusions

13 (10.7%) of the quarantined respondents during COVID-19 infection in Darkhan have a high stress level. To overcome these problems, relieve stress, and create a feeling of comfort, people in quarantine need psychological care.

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¹⁷ National Sleep Foundation. *Sleep in America Poll – Sleep in the Modern Family: Summary of Findings* (2014)

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