



## **New Tools in the Field of Measuring the Psychological Variables (Stress, Anxiety, Fear and Life Style) Affected by the Prevalence of Coronavirus**

**Tahereh Esmaili Bidhendi<sup>1</sup>, Sedigheh Heydari<sup>\*2</sup>, Mohammad Reza Yekta<sup>3</sup>, Beheshteh Niusha<sup>4</sup>**

1-PhD student in Assessment and Measurement, Department of Psychology, Islamic Azad University, Saveh Branch, Saveh, Iran.

2- (Corresponding author) PhD student in Assessment and Measurement, Department of Psychology, Islamic Azad University, Saveh Branch, Saveh, Iran.

3-Master student in family counseling, Department of counseling, Islamic Azad University, Roodehen Branch, Roodehen, Iran.

4-Associate Professor, Department of Psychology, Islamic Azad University, Saveh Branch, Saveh, Iran.

### **Abstract**

The Coronavirus (COVID-19) pandemic has been with us since the end of 2019 (World Health Organization, 2020) and has brought profound changes to the way we live. The aim of this Research was study of New Tools in the Field of Measuring the Psychological Variables Affected by the Prevalence of Coronavirus "systematic Review". Number of 33 article published peer-reviewed English language research studies examining the psychometric properties, interpretability and feasibility of instruments measure of Psychological Variables Affected by the Prevalence of Coronavirus were considered for inclusion in the review. Unpublished manuscripts, reviews, guidelines, commentaries and other descriptive articles were excluded. Published abstracts were also not included as the information provided in abstracts is limited and frequently non-peer reviewed. Studies published in languages other than English were also excluded due to time and financial constraints (translation costs). Finding shown that The number of questionnaires made about the psychological effects of this disease on humans, especially in our country, is very small. It is better to take a stronger and more efficient step in preventing the psychological effects of this disease by studying more carefully and in principle and preparing questionnaires or interview principles.

**Keywords:** Stress, Anxiety, Fear, Life Style, Coronavirus, Psychometric Tools.



## Introduction

The Coronavirus (COVID-19) pandemic has been with us since the end of 2019 (World Health Organization, 2020) and has brought profound changes to the way we live. These changes seem to have led to a surge of pandemic-related psychological distress including fear, anxiety, perceived threat, and stress. About ten months have passed since World Health Organization (WHO) declared the COVID-19 (SARSCOV-2) outbreak and there are over 70 million confirmed cases and more than 1,6 million deaths around the globe (WHO, 2020). In Iran over 1 million confirmed cases and more than 53000 deaths recorded (Tasnim News Agency, 2021).

The present pandemic represents the third known outbreak of a coronavirus (CoV)-associated severe human disease due to spillover of an animal coronavirus to humans (Wu, Fang, Guan, Fan et al., 2020). The first time this group of viruses entered the public spotlight was in 2002 during the Severe Acute Respiratory Syndrome (SARS) epidemic caused by SARS-CoV. Subsequently, in 2012 the Middle East respiratory syndrome (MERS)-CoV was identified in patients (Schönrich, Raftery & Samstag, 2020). Finally, SARS-CoV-2 was discovered and associated with severe coronavirus disease 2019 (COVID-19) (Wu et al., 2020).

The COVID-19 outbreak poses a threat not only to physical health, but to mental health as well. Due to the unknown and complex nature of the disease, people around the globe face unprecedented uncertainties and life changes that have resulted in prolonged stress and increased risk for psychological dysfunction. Indeed, recent studies have documented increased anxiety (Wang, Pan, Wan, Tan et al., 2020), depression (Wang et al., 2020), and fear and anxiety about COVID-19 (Ahorsu, Lin, Imani, Saffari et al); also Evidence from past outbreaks has shown that as a pandemic evolves it has substantial impact on the lifestyle related behaviors, which in turn pose a challenge in the maintenance of health and nutritional status. The measures taken to contain the virus such as confinement and self-isolation might promote psychological dysfunction (stress, anxiety & lifestyle change) that can potentially cause Disruption of daily life.

In general, COVID-19 is an acute fatal disease that may end up with death due to progressive respiratory complications (Huang, Wang, Li, Ren et al. 2020; Wu et al. 2020). There is a wide literature base that has shown that those suffering from pandemic-related psychological distress tend to exhibit elevated levels of post-traumatic stress, general stress, anxiety, health anxiety, and suicidality.

### Stress and anxiety in during of COVID-19

Emerging findings from China suggest that more than 25 % of the general population experienced moderate to severe levels of stress- or anxiety-related symptoms in response to COVID-19 (Qiu, Shen, Zhao, Wang et al., 2020; Wang et al., 2020). Studies of previous epidemics and pandemics show that anxiety, or the lack thereof, is an important driver of behavior (Taylor, 2019).

People with too little anxiety about a viral outbreak are less likely to engage in hygiene behaviors (e.g., handwashing), less likely to adhere to physical distancing mandates, and are less likely to get vaccinated if a vaccine is available (Taylor, 2019). On the other hand, people with excessive anxiety are more likely to engage in socially disruptive behaviors, such as panic buying and surging unnecessarily into hospitals and clinics when they misinterpret their minor ailments as signs of serious infection (Asmundson & Taylor, 2020a, 2020b)

Given the role that anxiety plays in shaping behavioral responses to viral outbreaks -both behaviors that can mitigate as well as those that can facilitate the spread of infection- it is critical that public health decision-makers, health officials, and health care providers understand the nature and degree of adverse psychological responses to the current COVID-19 crisis. Therefore, it is necessary to have tools to measure stress and anxiety. Another psychological factor that causes this virus is fear.

### fear in during of COVID-19

Phobias are special forms of anxiety disorders defined by a persistent and excessive fear of an object or a situation and are classified into three groups (APA, 2013): Social phobia, agoraphobia, and specific phobia. Five specific phobia types are listed in DSM-V: Natural-environment, animal, blood-injection-injury (fear of injections and transfusions, fear of blood, fear of injury, fear of medical care), situational,



and others. Thus, we purpose “corona phobia” as a persistent and excessive fear of the novel coronavirus, which can be classified as a particular type of the DSM-V specific phobia.

Research indicates that specific phobias are the most frequently observed psychiatric disorders worldwide (Bandelow & Michaelis, 2015; Wardenaar, Lim, Al-Hamzawi, Alonso et al., 2017).

Specific phobias can trigger other anxiety disorders and are reported to comorbid with suicidal tendency, major depression, anxiety disorders, and physical, mental, or mood disorders (Ausín, Muñoz, Castellanos, & García, 2020; Corchs, Mercante, Guendler, Vieira et al., 2006; Keyes, Deale, Foster, & Veale, 2020).

The COVID-19 pandemic disrupts people's routines and therefore elicits anxiety and phobic reactions (Li, Yang, Liu, Zhao et al., 2020; Duan & Zhu, 2020; Wang, Cheng, Yue, & McAleer, 2020; Xiao, 2020). On the other hand, it is often noted in anecdotal experiences that people are afraid of being infected with COVID-19. Previous studies show that natural disasters such as earthquakes or tsunamis; man-made catastrophes such as explosions, wars, or terrorism; or epidemics such as MERS, SARS, or Ebola lead to detrimental emotions such as phobia, anxiety, depression, hopelessness, and hostility in the short and long terms (Qi, Yang, Tan, Wu, & Zhou, 2020).

Therefore, as expected, people have already started experiencing phobic reactions in the face of the COVID-19 pandemic. As the pandemic spreads quickly, COVID-19 is expected to lead to increased psycho-pathological problems due to the potential for easy transmission, lack of treatment, and higher levels of the virus-related deaths (Rothan & Byrareddy, 2020). One of Another psychological factor that causes this virus is life style.

#### **lifestyle in during of COVID-19**

COVID pandemic has led to life-changing challenges among people across the globe. Terms like “social distancing” and “selfisolation” have become a reality. As people are trying to get accustomed with this, the confinement has drastically impacted citizens’ lives bringing about a sudden and radical change in their daily routine and lifestyle (Di Renzo, Gualtieri, Pivari, Soldati, & Attinà, 2020).

It is important to understand the extent of changes in lifestyle related behaviors and its underlying COVID-19 specific reasons to counteract these changes for maintenance of optimal health status at individual and community level (Chopra, Ranjan, Malhotra, Sahu, & Dwivedi, 2020). This pandemic might take a long time to subside and its lasting impact on the individuals including lifestyle, stress, anxiety and fear is bound to be significant and it is necessary to have tools to measure them. In this study, we introduce a number of tools made in the world and Iran. Of course, it is necessary to say that in Iran, 6 tools have been made about stress, anxiety, coping style and burnout, of which we introduce only 3 tools.

#### **Material and Method**

In this research, we have searched for tools made in the field of measuring the psychological variables affected by the prevalence of coronavirus. Number of 10 articles (4 case of fear, 4 cases of stress and anxiety and 2 cases of lifestyle) were obtained in the searches, Which we will introduce in the following.

#### **Results**

##### **1- Fear of Disease Coronaviruses Scale (FDSC)**

This questionnaire was developed by Weiss, Imani, Behrooz and Imani (2016) in Iran, FDSC scale-5. It is rated on a 5-point Likert scale ranging. with Cronbach’s  $\alpha = .80$ , kmo= 0/80 and 57/22 variance. showing satisfactory goodness-of-fit indices as  $\chi^2/df = 1.55$ , RMSEA = 0.06, GFI = 0.92, NFI = 0.95, CFI = 0.97 and IFI = 0.94. scale-5 showed good psychometric properties among general populations.

##### **2- The Fear of COVID-19 Scale**

This questionnaire was developed by Daniel Kwasi Ahorsu & Chung-Ying Lin & Vida Imani & Mohsen Saffari & Mark D. Griffiths & Amir H. Pakpour. The participants indicate their level of agreement with the statements using a five-item Likerttype scale. Answers included “strongly disagree,” “disagree,” “neither agree nor disagree,” “agree,” and “strongly agree”. The minimum score possible for each question is 1, and the maximum is 5. A total score is calculated by adding up each



item score (ranging from 7 to 35). The higher the score, the greater the fear of coronavirus-19; with Cronbach's  $\alpha = .82$

### 3- COVID-19 Phobia Scale (C19P-S)

Made of by Ibrahim Arpaci, Kasım Karata, Mustafa Baloğlu. The questionnaire has 20 questions and 4 subscales called: Psychological, Psycho-somatic, Economic and Social. with Cronbach's  $\alpha = .85-.90$  for 4 subscales.

### 4- panic buying scale during COVID-19 pandemic

Made of by Samuel Lins, Sibe Aquino. with the statements using a five-item Likerttype scale. Cronbach's  $\alpha = .90$ ,  $kmo = 0/92$  and  $66/37$  variance. showing satisfactory goodness-of-fit indices as  $\chi^2/df = 2.83$ ,  $RMSEA = 0.07$ ,  $GFI = 0.97$ ,  $CFI = 0.99$ .

### 5- Corona Disease Anxiety Scale (CDAS)

Made of by Ahmad Alipour, Abolfazl Ghadami, Zahra Alipour, Hasan Abdollahzadeh. This questionnaire has 18 item and 2 factors. this 2 factor are called: psychological symptoms and physical symptoms. Cronbach's alpha coefficient for psychological symptoms as ( $\alpha = 0.879$ ), physical symptoms as ( $\alpha = 0.861$ ), and for the whole questionnaire as ( $\alpha = 0.919$ ).

### 6- the COVID Stress Scales

Steven Taylor, Caeleigh A. Landry, Michelle M. Paluszek, Thomas A. Fergus, Dean McKay, Gordon J.G. Asmundson. It is rated on a 5-point Likert scale ranging and have 36-item. Items were rated on a 5-point scale ranging from 0 (not at all) to 4 (extremely).

### 7- the obsession with COVID-19 scale and the Coronavirus anxiety scale

made of choi and lee. This questionnaire has 9 item with the statements using a five-item Likerttype scale.

### 8- The COVID-19 anxiety syndrome scale

By Ana V. Nikčević, Marcantonio M. Spada. has An 11-item two-factor structure. The measure is scored using a 7-point Likert scale (1 = Not true of me to 7 = Very true of me). Both the C-19ASS-P (6 items;  $\alpha = 0.86$ ) and the COVID-19ASS-A (3 items;  $\alpha = 0.77$ ) demonstrated acceptable levels of reliability.

### 9- lifestyle related behaviors: eating habits, activity and sleep behavior

Sakshi Chopra, Piyush Ranjan, Anita Malhotra, Anamika Sahu, S.N. Dwivedi, Upendra Baitha, Astha Goel, Arvind Kumar. has An 24-item. The Cronbach's alpha value of the questionnaire is 0.72 suggesting its good internal consistency

### 10- A short questionnaire to assess changes in lifestyle-related behaviour during COVID 19 pandemic

By Archana Kumari, Piyush Ranjan, Naval K. Vikram, Divjyot Kaur, Anamika Sahu, Sada Nand Dwivedi, Upendra Baitha, Aastha Goel. A questionnaire with 20 items and used a 5-point Likert scale for the response option. The questionnaire shows a satisfactory validity and a good internal consistency with the Cronbach's alpha value of 0.72.

### Conclusion

Given the conditions that the corona virus has created for human life and the effects that it may have on the human psyche in the long run, better and more identification of these effects and principled and scientific planning to prevent the severity of these effects for Communities are very vital. The number of questionnaires made about the psychological effects of this disease on humans, especially in our country, is very small. It is better to take a stronger and more efficient step in preventing the psychological effects of this disease by studying more carefully and in principle and preparing questionnaires or interview principles.



## References

- [1] Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: development and initial validation. *International journal of mental health and addiction*, 1-9.
- [2] Alipour, A., Ghadami, A., Alipour, Z., Abdollahzadeh, H. (2020). Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample. *QUARTERLY JOURNAL OF HEALTH PSYCHOLOGY*, 8(32), 163-175. doi: 10.30473/hpj.2020.52023.4756
- [3] Arpacı, I., 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*, 110-108
- [4] Asmundson, G. J. G., & Taylor, S. (2020a). Coronaphobia: Fear and the 2019-nCoV outbreak. *Journal of Anxiety Disorders*, 70, 102196.
- [5] Asmundson, G. J. G., & Taylor, S. (2020b). How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know. *Journal of Anxiety Disorders*, 71, 102211.
- [6] Ausín, B., Muñoz, M., Castellanos, M.Á., & García, S. (2020). Prevalence and characterization of specific phobia disorder in people over 65 years old in a Madrid community sample (Spain) and its relationship to quality of life. *International Journal of Environmental Research and Public Health*, 17(6), 1915. <https://doi.org/10.3390/ijerph17061915>
- [7] Bandelow, B., & Michaelis, S. (2015). Epidemiology of anxiety disorders in the 21<sup>st</sup> century. *Dialogues in Clinical Neuroscience*, 17(3), 327-335
- [8] Choi, E., Lee, J., & Lee, S. A. (2020). Validation of the Korean version of the obsession with COVID-19 scale and the Coronavirus anxiety scale. *Death Studies*, 1-7.
- [9] Chopra, S., Ranjan, P., Malhotra, A., Sahu, A., Dwivedi, S. N., Baitha, U., ... & Kumar, A. (2020). Development and validation of a questionnaire to evaluate the impact of COVID on lifestyle related behaviors: eating habits, activity and sleep behavior. *Public health nutrition*, 1-24
- [10] Corchs, F., Mercante, J. P., Guendler, V. Z., Vieira, D. S., Masruha, M. R., Moreira, F. R., Peres, M. F. (2006). Phobias, other psychiatric comorbidities and chronic migraine. *Arquivos de Neuro-Psiquiatria*, 64(4), 950-953. <https://doi.org/10.1590/S0004-282X2006000600012>
- [11] Di Renzo, L., Gualtieri, P., Pivari, F., Soldati, L., Attinà, A., Cinelli, G., ... & De Lorenzo, A. (2020). Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of translational medicine*, 18, 1-15.
- [12] Di Renzo, L., Gualtieri, P., Pivari, F., Soldati, L., Attinà, A., Cinelli, G., ... & Esposito, E. (2020). Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of Translational Medicine*, 18(1), 1-15.
- [13] 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](https://doi.org/10.1016/S2215-0366(20)30073-0)
- [14] Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., ... Cheng, Z. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, 395(10223), 497-506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- [15] Keyes, A., Deale, A., Foster, C., & Veale, D. (2020). Time intensive cognitive behavioral therapy for a specific phobia of vomiting: A single case experimental design. *Journal of Behavior Therapy and Experimental Psychiatry*, 66, 101523. <https://doi.org/10.1016/j.jbtep.2019.101523>
- [16] Kumari, A., Ranjan, P., Vikram, N. K., Kaur, D., Sahu, A., Dwivedi, S. N., ... & Goel, A. (2020). A short questionnaire to assess changes in lifestyle-related behaviour during COVID 19 pandemic. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(6), 1697-1701.
- [17] Li, W., Yang, Y., Liu, Z. H., Zhao, Y. J., Zhang, Q., Zhang, L., ... Xiang, Y. T. (2020). Progression of mental health services during the COVID-19 outbreak in China. *International Journal of Biological Sciences*, 16(10), 1732-1738. <https://doi.org/10.7150/ijbs.45120>



- [18] Lins, S., & Aquino, S. (2020). Development and initial psychometric properties of a panic buying scale during COVID-19 pandemic. *Heliyon*, 6(9), e04746.
- [19] Nikčević, A. V., & Spada, M. M. (2020). The COVID-19 anxiety syndrome scale: Development and psychometric properties. *Psychiatry research*, 292, 113322
- [20] Qi, J., Yang, X., Tan, R., Wu, X., & Zhou, X. (2020). Prevalence and predictors of posttraumatic stress disorder and depression among adolescents over 1 year after the Jiuzhaigou earthquake. *Journal of Affective Disorders*, 261, 1–8. <https://doi.org/10.1016/j.jad.2019.09.071>
- [21] Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *General psychiatry*, 33(2).
- [22] Rothan, H. A., & Byrareddy, S. N. (2020). The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *Journal of Autoimmunity*, 109, 102433. <https://doi.org/10.1016/j.jaut.2020.102433>
- [23] Schönrich, G., Raftery, M. J., & Samstag, Y. (2020). Devilishly radical NETwork in COVID-19: Oxidative stress, neutrophil extracellular traps (NETs), and T cell suppression. *Advances in biological regulation*, 77, 100741
- [24] Taylor, S. (2019). *The psychology of pandemics: Preparing for the next global outbreak of infectious disease*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing
- [25] Taylor, S., Landry, C., Paluszek, M., Fergus, T. A., McKay, D., & Asmundson, G. J. (2020). Development and initial validation of the COVID Stress Scales. *Journal of Anxiety Disorders*, 102232
- [26] Wang, C., Cheng, Z., Yue, X. G., & McAleer, M. (2020). Risk management of COVID-19 by universities in China. *Journal of Risk and Financial Management*, 13(2), 36. <https://doi.org/10.3390/jrfm13020036>
- [27] Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*, 17(5), 1729.
- [28] Wardenaar, K. J., Lim, C. C., Al-Hamzawi, A. O., Alonso, J., Andrade, L. H., Benjet, C., Gureje, O. (2017). The cross-national epidemiology of specific phobia in the world mental health surveys. *Psychological Medicine*, 47(10), 1744–1760.
- [29] World Health Organization. (2020). WHO Director-General's opening remarks at the media briefing on COVID-19-11 March 2020.
- [30] Wu, F., Zhao, S., Yu, B., Chen, Y. M., Wang, W., Song, Z. G., ... & Yuan, M. L. (2020). A new coronavirus associated with human respiratory disease in China. *Nature*, 579(7798), 265-269
- [31] Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., Liu, X., Fuller, C.J., Susser, E., Lu, J., Hoven, C.W., 2009. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. *Can. J. Psychiatry* 54, 301–311. <https://doi.org/10.1177/070674370905400504>.
- [32] Xiao, C. (2020). A novel approach of consultation on 2019 novel coronavirus (COVID-19) related psychological and mental problems: Structured letter therapy. *Psychiatry Investigation*, 17(2), 175–176. <https://doi.org/10.30773/pi.2020.0047>