**International Journal of Innovation in Management and Organizational Behavior**
**Vol. 1, No. 4 (Serial Number 4), 2021, Pp: 15-24**

IJIMOB
International Journal of Innovation Management and Organizational Behavior

# Predicting vulnerability to stress based on psychological capitals and personality traits in the treatment staff of Corona

**Mehnoosh Yousefi[1], Azam Fattah Andabil[2]* & Maryam Mashayekh[3]**

**Keywords:** *Vulnerability to stress, capital and psychological, personality traits*

**Article Type:** Research Article

Corresponding author's Email: aazamfatahandabil@yahoo.com

## Abstract

**Background and purpose:** Considering the importance of maintaining the medical force and keeping this group healthy as people who protect the health and well-being of other members of society, it is necessary to investigate the level of their anxiety and psychological pressure as well as the relative factors so that based on the results, steps can be taken to maintain and improve their mental health. Therefore, the present study aimed to predict vulnerability to stress based on psychological capital and personality traits in the treatment staff of Corona. **Methodology:** The research method was a correlation-descriptive type. The statistical population of the present study included all the treatment staff of the hospitals dealing with Corona in Tehran in 2020, and 228 people were selected as a statistical sample using the convenience sampling method. The data collection tool included the short-form Neo McCree and Costa (1985) personality questionnaire, the Luthans et al. (2007) psychological capital questionnaire, and the Seyed Khorasani and Sediqani (2008) stress syndrome measurement scale. **Results:** Pearson's correlation coefficient and regression analysis showed that personality traits and psychological capital have a correlation coefficient of 0.62 with the vulnerability to the stress of corona treatment staff. This means that 39% of the total variance of the stress vulnerability of the Corona treatment staff is explained by personality traits and psychological capital ($P<0.05$). **Conclusion:** The results showed that among the personality traits, neuroticism, openness to experience, agreeableness, and conscientiousness, and among the psychological capitals, self-efficacy and optimism could predict the vulnerability to stress of the corona treatment staff.



*How to Cite:*
Yousefi, M., Fattah Andabil, A., & Mashayekh, M. (2021). Predicting vulnerability to stress based on psychological capitals and personality traits in the treatment staff of Corona. International Journal of Innovation in Management and Organizational Behavior, 1(4), 15-24.

1. Master's degree, Educational Sciences Department, Science and Research Branch, Islamic Azad University, Tehran, Iran
2. ***Correponding Author:** Assistant Professor, Department of Educational Sciences, Roudhen Branch, Islamic Azad University, Roudhen, Iran.
3. Assistant Professor, Educational Sciences Department, Science and Research Branch, Islamic Azad University, Tehran, Iran.

## Introduction

Since the end of December 2019, the coronavirus pandemic (Covid-19) has occurred through human-to-human transmission and has now affected many countries (Perry, 2020). Infectious disease not only threatens the physical health of society and, in some cases, is deadly, but pandemics also create uncertainty and confusion in people (World Health Organization, 2005). This disease has brought unbearable psychological pressure to the involved communities, such as stress, anxiety, depression, unresolved grief, and post-traumatic stress disorder (Farnoosh et al., 2019).

The global situation (pandemic) of the covid disease has affected almost all the important economic, political, social, and even military aspects of all the world countries and, in other words, paralyzed it. Therefore, discussing this viral disease's psychological effects on people's mental health at different levels of society is very important (Li, Wang, Xue, Zhao, and Zhu, 2020). On the other hand, since healthcare workers are at the frontiers of fighting infectious diseases and covid-19, they are the first to be exposed to this virus. The findings of a study show that the percentage of contamination of medical care workers during an outbreak is 3.8%. Of course, the main reason for this high percentage of infection among medical workers is unprotected contact with infected patients at the beginning of the outbreak of the Covid-19 disease (Wu and McGugan, 2020). According to the results obtained from studies during the outbreak of SARS and Ebola, healthcare workers experience severe psychological disorders such as anxiety, fear, and labeling stress. It can significantly affect the quality of their activities and service delivery (Li, Wan, Ding, Li, Chen et al., 2015). On the other hand, healthcare and treatment workers must wear heavy protective clothing, which causes restriction of movement and difficulty performing medical procedures and practices compared to natural conditions. All these factors and the risk of being infected and infecting others increase the risk of psychological disorders among medical workers and colleagues (Li et al., 2020). Therefore, the mental and physical vulnerability level of health care workers and corona treatment is more than other people. Also, identifying the factors related to vulnerability to stress can effectively reduce the damage. The positive aspects of people's lives, which are based on their personal understanding and having a goal to achieve success and deal with problems, which is psychological capital, can be one of these factors.

Psychological capital is one of the psychological indicators of positivism, which is the components of hope, resilience, optimism, and self-efficacy (Amirkhani & Arefnejad, 2013). Moreover, it is defined by characteristics such as believing in one's abilities to achieve success, being persistent in pursuing goals, creating positive self-attributions, and enduring adversity (Luthans, Luthans, & Luthans, 2004). The components of psychological capital give meaning to a person's life in an interactive and valuable process and continue the person's efforts to change stressful situations and prepare him to enter the action scene

(Bono, 2010). Therefore, high psychological capital enables a person to cope better in stressful situations and be less affected by daily stressful events. Psychological capital includes a person's self-understanding, having a goal to achieve success, and persistence in encountering problems (Jaafari and Hessampour, 2016).

Personality traits can also play a role in people's vulnerability and exposure to stress. Personality traits are important factors that determine how people will adapt to stressful events and how they will recover from these events. Personality traits reflect patterns of thoughts, feelings, and actions that are relatively stable over time and situations (Ander, 2012, quoted by Davarniya, Shakarami, Ezazi Bojnourdi, 2013). Bishop and his colleagues (2001) introduced five types of personality, which were previously introduced by Costa and McCree, neuroticism, openness, extroversion, adaptability, and conscientiousness. The adaptability dimension of personality shows the characteristics of trust, honesty, friendliness, ability to follow, shyness, compassion, and sensitive thinking. Dutifulness is related to competence, order, conscientiousness, striving for progress, self-discipline, and measurement and examination. Neuroticism is another one of the five big personality factors indicating anxiety, hostility, depression, shyness, impulsiveness, self-pity, self-destructive defense, nervousness, contradiction, irritability, instability, and mood swings. Extroversion shows warmth, collectivism, courage, excitement, and positive emotions. Finally, openness to new experiences shows dimensions of imagination, aesthetics, feelings, actions, thoughts, and values. In sum, considering the relationship of these variables with each other and the coronavirus epidemic and the vulnerability of the treatment staff to deal with the corona in the face of stress, as well as the fact that this disease does not last a long time in the world and the research done in the field of the vulnerability of the treatment staff, is limited; therefore, the present study was conducted to predict vulnerability to stress based on the components of psychological capital and personality traits in the Corona treatment staff.

## Methodology

The present research method is descriptive and correlational. The distribution and relationships between the predictor variables and the research criteria will be investigated using the correlation method. Finally, the multivariate regression method will be used to predict the criteria variable. Our statistical population is all the employees of the government departments of Ilam province, 164 of whom were selected as a sample through Cochran's sampling formula. In order to analyze the data, descriptive statistics and inferential statistics such as t-test, analysis of variance tests with a significance level of 05%, and Pearson's correlation coefficient were used to correlate the variables using SPSS software.

## Materials

**1-Questionnaire for assessing stress symptoms.** This scale was created by Seyed Khorasani and Sadighani in 2008 and has 51 items and measures four types of stress indicators; Cognitive (7 items), emotional (9 items), behavioral (12 items) and physical (23 items) indicators. Cronbach's alpha value for the whole test is reported as 0.86. Cronbach's alpha was reported as 0.90 for the physical subscale, 0.88 for the emotional subscale, 0.80 for the cognitive subscale, and 0.78 for the behavioral subscale. The items of this scale are of 6-point Likert type and its scoring is from zero (never) to 5 very much.

**2- short form neo personality questionnaire.** The NEOPI-R personality questionnaire is a substitute for the NEO test, which McCree and Costa prepared in 1985. This questionnaire measures 5 main factors of personality and 6 characteristics in each factor, or in other words, 30 characteristics, and based on this, it provides a comprehensive evaluation of personality. This questionnaire has two forms, one (S) for self-reports and contains 240 five-point questions from completely agree to completely disagree, which are rated by the subject and are suitable for men and women of all ages. The other is called the (R) or revised form and is based on observer ratings. This form also has the same 240 questions with the difference that it starts with the third person pronoun. Form (R) can be used independently for personality assessment and can be used as a supplement for personal reports of the form (S) or its validity (Garosi Farshi, 2001). In Iran, the long form was validated by Garosi, Mehriar, and Tabatabai (2010) and similar results were obtained. In this test, Costa (1992) showed that the correlation of 5 subscales of the short form with the long form is from 0.77 to 0.92. Also, the internal consistency of its sub-scales was found in the range of 0.68 to 0.86.

**3- Psychological capital questionnaire.** The Psychological Capital Questionnaire (PCQ) by Luthans et al. (2007) will be used to measure psychological capital. This questionnaire contains 24 questions and 4 subscales of hope, resilience, optimism and self-efficacy. Each subscale contains 6 items and the subject answers each item on a 6-point Likert scale (from completely disagree to completely agree). Questions 1 to 6 are related to the self-efficacy subscale, questions 7 to 12 are related to hope subscale, questions 13 to 18 are related to the resilience subscale, and questions 19 to 24 are related to the optimism subscale. To obtain the psychological capital score, first, the score of each subscale was obtained separately, and then their total was calculated as the total score of psychological capital. The chi-square ratio of this test is 24.6, and the CFI and RMSEA statistics in this model are 0.97 and 0.08, respectively.

## Results

The information collected from the subjects was analyzed by the research tool using appropriate statistical tests and the research hypotheses were tested. For this purpose,

descriptive statistics indices were used to describe and classify the data collected from the sample. Pearson's correlation and multivariate regression were used to test and analyze the hypotheses.

The statistical sample of this research consisted of 158 women (69.3%) and 70 men (30.7%). Among them, 15.4% had a diploma and postgraduate education, 67.5% had bachelor's degrees, 15.4% had master's degrees, and 1.8% had Ph.D.

**Table 1: Descriptive statistics of the main variables of research hypotheses**

| Variable | | Mean | Standard deviation | Min score | Max score |
|---|---|---|---|---|---|
| Personality traits | Neurosis | 37/26 | 7/82 | 19 | 54 |
| | Extroversion | 36/18 | 5/52 | 22 | 48 |
| | Openness to experience | 41/09 | 6/08 | 25 | 56 |
| | Agreeableness | 36/73 | 6/52 | 19 | 54 |
| | Conscientiousness | 39/92 | 6/20 | 24 | 57 |
| Psychological capital | Efficacy | 28/68 | 4/48 | 15 | 36 |
| | Hope | 29/56 | 4/35 | 17 | 36 |
| | Resilience | 28/04 | 3/89 | 13 | 36 |
| | Optimism | 26/04 | 4/16 | 17 | 36 |
| Vulnerability to stress | | 161/83 | 44/71 | 22 | 241 |

As can be seen in the above table, in the field of personality traits, the average score of the treatment staff of hospitals dealing with Corona in the sample group in the personality trait of openness to experience (41.09) is higher than the average score of other personality traits, and then in the order of personality traits Conscientiousness (39/92), neuroticism (37/26), agreeableness (36/73) and extroversion (36/18) are obtained. In the field of psychological capital, the average and standard deviation of the score of the treatment staff of the hospitals dealing with Corona in the sample group in Omdeari (29.56) is higher than the average of other psychological capitals. After that, there are self-efficacy (28/68), resilience (28/04), and optimism (26/04). Also, the average score of the treatment staff of hospitals dealing with Corona in the sample group is (161/83) in vulnerability to stress.

**Table 2: Correlation coefficients of personality traits and psychological capital with vulnerability to stress**

| Treatment staff | | Criterion variable | | |
|---|---|---|---|---|
| | | Vulnerability to stress | | |
| Statistical indicies | | r | p | N |
| Predictive variables | | | | |
| Personality traits | Neurosis | 0/48 | P < 0/001 | 228 |
| | Extroversion | -0/21 | P < 0/001 | 228 |
| | Openness to experience | -0/34 | P < 0/001 | 228 |
| | Agreeableness | -0/33 | P < 0/001 | 228 |
| | Conscientiousness | -0/43 | P < 0/001 | 228 |
| Psychological capital | Efficacy | -0/38 | P < 0/001 | 228 |
| | Hope | -0/28 | P < 0/001 | 228 |

| | | | | |
|---|---|---|---|---|
| | Resilience | -0/32 | P < 0/001 | 228 |
| | Optimism | -0/44 | P < 0/001 | 228 |

The above table shows simple correlation coefficients of personality traits and psychological capitals with vulnerability to the stress of the treatment staff. The Pearson's correlation coefficient results showed that the personality trait of neuroticism has a significant positive relationship with the vulnerability to stress of the treatment staff (r<0.48, p<0.01). However, the personality traits of extraversion (r<-0.21, p<0.01), openness to experience (r<0.34, p<0.01), agreeableness (p<0.33, 0.01) (r<-0/0), and conscientiousness (r<-0.43, p<0.01) have a significant negative relationship with the vulnerability to the stress of the treatment staff. Also, the results showed that psychological capitals, namely self-efficacy (p < 0.38, r < 0.01), hope (p < 0.28, r < 0.01), resilience (p < 0.01, 32 r<-0/0), and optimism (r<-0.44, p<0.01) have a significant negative relationship with the vulnerability to the stress of the treatment staff.

**Table 3: Results of simultaneous multivariate regression analysis to investigate the ability to predict vulnerability to stress by personality traits and psychological capital**.

| Variables | B | Standard error | Beta | T | p | Model summary | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | R | $R^2$ | F | p |
| Neurosis | 1/11 | 0/23 | 0/32 | 4/89 | P < 0/001 | 0/62 | 0/39 | 9/06 | P < 0/001 |
| Extroversion | -0/22 | 0/19 | -0/09 | -1/19 | 0/235 =p | | | | |
| Openness to experience | -0/40 | 0/14 | -0/18 | -2/83 | 0/005 =p | | | | |
| Agreeableness | -0/40 | 0/16 | -0/17 | -2/47 | 0/014 =p | | | | |
| Conscientiousness | -0/77 | 0/14 | -0/29 | -4/13 | P < 0/001 | | | | |
| Efficacy | -0/38 | 0/15 | -0/18 | -2/59 | 0/009 =p | | | | |
| Hope | -0/26 | 0/23 | -0/05 | -1/14 | 0/254 =p | | | | |
| Resilience | -0/19 | 0/12 | -0/08 | -1/62 | 0/106 =p | | | | |
| Optimism | -0/75 | 0/19 | -0/28 | -4/03 | P < 0/001 | | | | |

According to the above table, the results of multivariable regression analysis using the simultaneous method showed that personality traits and psychological capital are correlated with the vulnerability to the stress of the corona treatment staff at a rate of 0.62. This means that 39% of the total variance of the stress vulnerability of the Corona treatment staff is explained by personality traits and psychological capitals (p<0.01). The results showed that among the personality traits, neuroticism (T=4.89, p<0.01), openness to experience (T=2.83, p<0.01), agreeableness (T=2.47, p<0.05) and conscientiousness (T=-3.62, p<0.01) and among psychological capitals, self-efficacy (T=-2.59, p<0.05) and optimism

(T=-4.03, p<0.01) were able to predict the vulnerability to stress of the corona treatment staff. Also, the beta coefficients to show the role of each variable in predicting the vulnerability to stress of the corona treatment staff showed that primarily the personality trait of neuroticism positively (0.32) can predict the vulnerability to stress of the corona treatment staff. After that, the personality traits of conscientiousness (-0.29), optimism (-0.28), openness to experience (-0.18), self-efficacy (-0.18) and agreeableness (-0.17) could negatively predict the vulnerability to stress of the corona treatment staff. The personality traits of extroversion, resilience and hope did not have a significant role in predicting the vulnerability to the stress of the corona treatment staff.

## Discussion and Conclusion

The present study aimed to predict vulnerability to stress based on psychological capital and personality traits in the Corona treatment staff. The main hypothesis of the research was that "components of psychological capital and personality traits predict vulnerability to stress in the corona treatment staff." The results of the data analysis showed that the personality traits and psychological capital are correlated with the vulnerability to the stress of the corona treatment staff at a rate of 0.62. This means that personality traits and psychological capital explain 39% of the total variance of the stress vulnerability of the Corona treatment staff. Also, the results showed that among the personality traits, neuroticism, openness to experience, agreeableness, and conscientiousness, and among the psychological capitals, self-efficacy and optimism could predict the vulnerability to stress of the corona treatment staff.

Alrabiyah et al. (2020) and colleagues reported in their study that first-line treatment staff is affected by psychological pressures. It is also possible that this group is much more vulnerable than other members of the research sample and has a higher level of depression and anxiety, which cause mental and physical distress.

In explaining this hypothesis, it can be said that psychological capital includes a person's understanding of himself, having a goal to achieve success, and persistence in encountering problems. Its components, i.e. hope, optimism, resilience, and spontaneity in an interactive and evaluative process, give meaning to a person's life and continue the person's efforts to change stressful situations and prepare him to enter the scene of action. Therefore, the medical staff in the pandemic era, having psychological capital, have the appropriate ability to face stressful situations because the hopeful, optimistic, resilient, and efficient medical staff have coping resources for stressful situations. The medical staff, who have high psychological capital, cope better with the current stressful conditions, and their psychological and social well-being increases. Therefore, having a high psychological capital enables them to cope better in stressful situations and be less affected by current stressful events in the workplace. Therefore, such people have more psychological health.

One of the components of psychological capital is resilience, a person who has resilience and the power to find solutions and flexibility, adapts according to environmental changes and quickly returns to the recovery state after eliminating stressful factors. People who are at the lower end of the resilience level (on the continuum of high resilience and low resilience) adapt themselves to new situations to a small extent, they slowly return from stressful situations to a normal and normal state. Another component is self-efficacy; employees with a high sense of self-efficacy believe they can effectively deal with events and situations. These people exert more perseverance in work and often perform at a high level, and in comparison with those who have low self-efficacy, they have more confidence in their abilities and show little self-doubt. They see such problems as a challenge instead of a threat and are actively looking for new opportunities. The feeling of high self-efficacy reduces the fear of failure, raises the level of aspirations, and improves the ability to solve problems and analytical thinking and problem-solving; therefore, the treatment staff with self-efficacy can deal with stressful and stressful situations. Also, each person's personality is a determining factor that casts a shadow on all human behaviors and tendencies; due to incompatible traits and characteristics can make him suffer from some psychological and even physical problems. Neurotic people often emotionally face events, resort to denial, distraction, and narcotic drugs, and use less problem-solving and acceptance. As a result, they experience more stress in life. On the other hand, extroverts use more cognitive restructuring, problem-solving and seeking support, so extroverted people experience less stress in life due to being sociable and more inclined to social relations and seeking support. One of the limitations of the current research is its non-causal nature; it was of the correlation type and unable to show the causal relationships between the variables. Another limitation of the present study was the critical conditions of Corona and its effect on the collection of questionnaires. There was a possibility that the stressful conditions of Corona affected the responses to the questionnaires. In fact, due to the critical situation of the corona epidemic and the difficult conditions of the treatment staff, it is possible that the answers were affected by these conditions. Considering the selected sample, limited to the Corona treatment staff, caution should be observed in generalizing the results to people outside the research community.

## Ethics

This research observed ethical standards, including obtaining informed consent and ensuring privacy and confidentiality. Also, while completing the questionnaires while emphasizing completing all the questions, the participants were free to withdraw from the research at any time and provide individual information. They were assured that the information would remain confidential, which was strictly adhered to.

## Acknowledgement
The cooperation of all participants in the research is thanked and appreciated.

## Conflict of Interest
According to the authors, this article has no financial sponsor or conflict of interest.

## *References*
Amirkhani, T., & Arefnejad, M. (2013). The Impact of organizational citizenship behavior and psychological capital on social capital. Iranian journal of management sciences, 7(26), 89-112.

Bishop, G. D., Tong, E. M., Diong, S. M., Enkelmann, H. C., Why, Y. P., Khader, M., & Ang, J. C. (2001). The relationship between coping and personality among police officers in Singapore. *Journal of Research in Personality*, 35(3), 353-374.

Bono, J. (2010). Relationship of Core Self-Evaluations Traits – Self-Esteem, Generalized Self-Efficacy, Locus of Control, and Emotional Stability – With Job Satisfaction and Job Performance: A Meta-Analysis. *Journal of Applied Psychology*, 86(4):80-92.

Davarniya, R., Shakarami, M., & EzaziBojnourdi, E. (2014). Predicting Vulnerability to Stress Based on Social Support and Personality Traits. *J Mazandaran Univ Med Sci*, 24(113): 194-199.

Farnoosh, G., Alishiri, G., Hosseini Zijoud, S. R., Dorostkar, R., & Jalali Farahani, A. (2022). Understanding the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and Coronavirus Disease (COVID-19) Based on Available Evidence - A Narrative Review. *Military Medicine*, 22(1), 1-11.

Garoosi Farshi, M. (2001). *A new approach in personality assessment (application of factor analysis in personality studies).* Tabriz: Danial & Jamee Pajuh.

Jafari, A., & Hesampour, F. (2017). Predicting Life Satisfaction Based on Spiritual Intelligence and Psychological Capital in Older People. *Salmand: Iranian Journal of Ageing.* 12(1): 90-103.

Li, L., Wan, C., Ding, R., Liu, Y., Chen, J., Wu, Z., ... & Li, C. (2015). Mental distress among Liberian medical staff working at the China Ebola Treatment Unit: a cross sectional study. *Health and quality of life outcomes*, 13(1), 1-6.

Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. *International journal of environmental research and public health*, 17(6), 2032.

Liu, C. Y., Yang, Y. Z., Zhang, X. M., Xu, X., Dou, Q. L., Zhang, W. W., & Cheng, A. S. (2020). *The prevalence and influencing factors in anxiety in medical workers fighting COVID-19* in China: a cross-sectional survey. Epidemiology & Infection, 148.

Luthans, F., Luthans, K. W., & Luthans, B. C. (2004). Positive psychological capital: Beyond human and social capital. *Business Horizons*, 47(1), 45-50.

Luthans, F., Youssef, C., & Avoio, B. (2008). *Psychological capital: Developing the human competitive edge.* Oxford, England: Oxford University Press.

Organization WH. (2005). *WHO checklist for influenzapandemic preparedness planning.* World Health Organization.

Parry, J. (2020). *China coronavirus: cases surge as official admits human to human transmission.*

Wu, Z., & McGoogan, J. M. (2020). Characteristics of and important lessons from the coronavirus

disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *jama*, 323(13), 1239-1242.