

Letter to the Editor

COVID-19 PTSD Predicts Positive Effects among Healthcare Professionals in Iran: Investigating the Roles of Self-Efficacy and Resilience in a Follow-Up Study

Remya Lathabhavan¹, Zohreh Hosseini Marznaki^{2*}

Dear Editor,

The COVID-19 pandemic has affected the wellbeing of people globally, regardless of their occupation (1). Healthcare professionals, in particular, have experienced severe negative effects on their mental health due to their direct involvement in witnessing and experiencing the pandemic's calamitous effects, while also grappling with personal concerns (2). However, their profession requires them to remain calm and mindful to instill hope in the community. Therefore, an understanding of the mental health issues and coping mechanisms of healthcare professionals is crucial to creating a healthy environment and maintaining positive mental health. This research explored the mediating role of self-efficacy in the association between Post-Traumatic Stress Disorder (PTSD) and positive emotions among health professionals in Iran. The article also examined the moderating effects of resilience in the association between self-efficacy and positive emotions. Data were collected in three waves – April 2021 (T1), May 2021 (T2), and July 2021 (T3) – from a sample of 1050 health professionals, including 797 women (75.9%) and 253 men (24.1%). The average age of the respondents was 33.58 (SD = 8.02). Participation in the survey was open and non-mandatory. We collected informed consent from all participants.

Standardized scales, including the Impact of Event Scale-Revised (IES-R) for PTSD (3), positive affectivity scale (4), Response to Stressful Experiences Scale (RSES-4) for resilience (5), and self-efficacy (6), were used in the study.

The Iranian version of the instruments was used, and these instruments were validated for the Iranian population. We used structural equation modelling to analyze the research model. For the statistical analyses, we used AMOS 24.0 and SPSS 25.0. The Cronbach's alpha values for constructs were more than the threshold value of 0.70, indicating robust internal reliability.

The study revealed significant relationships among constructs over time. PTSD showed significant negative relationships across the waves with self-efficacy ($\beta T1 = -0.37, P < 0.001$; $\beta T2 = -0.25, P < 0.001$; $\beta T3 = -0.11, P < 0.01$), and positive affectivity ($\beta T1 = -0.34, p < 0.01$; $\beta T2 = -0.28, P < 0.05$; $\beta T3 = -0.09, P < 0.001$). The significance of the model was evaluated using the bootstrap estimation procedure, with a bootstrap sample of 2000 specified for conducting a mediation analysis of self-efficacy.

1. Indian Institute of Management, Bodh Gaya, Bihar, India.

2. Imam Ali Hospital, Mazandaran University of Medical Sciences, Sari, Iran.

***Corresponding Author:**

Address: Imam Ali Hospital, Mazandaran University of Medical Sciences, Sari, Iran, Postal Code: 4617141497.

Tel: 98-911 6253589, Fax: 98-11 44264661, Email: zhosseinimarznaki@gmail.com

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The values of mediation effects were represented with lower limit 95% CI/upper limit 95% CI and were as follows for the three waves: $\beta_{T1} = 0.02$, ns. (0.01/0.05); $\beta_{T2} = 0.08$, $P < 0.001$ (0.02/0.14); $\beta_{T3} = 0.09$, $P < 0.001$ (0.03/0.17). In the moderation analysis, it was found that resilience significantly moderated the relationship between self-efficacy and positive affectivity except during the first wave ($\beta_{T1} = 0.07$, ns.; $\beta_{T2} = 0.11$, $P < 0.001$; $\beta_{T3} = 0.21$, $P < 0.001$). Thus, resilience strengthened the positive relationship between self-efficacy and positive affectivity in T2 and T3. Table 1 describes the results of the study.

The study's findings suggest that, among healthcare professionals, PTSD was associated with reduced self-

efficacy and positive affectivity. However, the strength of these relationships appeared to be weaker in waves 2 and 3, possibly due to increased awareness and lower infection rates. The study also revealed that self-efficacy mediated the relationship between PTSD and positive affectivity, except in the first wave, which may have been caused by the sudden surge of COVID-19 variants during that time. The study also highlighted the moderating role of resilience, except in the first wave. Overall, the study shows the existence of hope and positive beliefs among healthcare professionals after the pandemic. Future studies may consider exploring additional variables to extend these findings.

Table 1. Path Analysis of Mediation and Moderation Effects

Relationships	Path coefficient		
	β_{T1}	β_{T2}	β_{T3}
Direct relationships			
PTSD → self-efficacy	-0.37***	-0.25***	-0.11**
PTSD → positive affectivity	-0.34**	-0.28*	-0.09***
Mediation (LL 95%CI /UL 95%CI)			
PTSD → self-efficacy → positive affectivity	0.02 ^{ns} (0.01/0.05)	0.08*** (0.02/0.14)	0.09*** (0.03/0.17)
Moderation			
Self-efficacy x resilience → positive affectivity	0.07 ^{ns}	0.11***	0.21***

Note: Bootstrap sample size = 2000; LL Lower limit; UL Upper limit; CI Confidence interval
 * $p < 0.5$, ** $p < 0.01$, *** $p < 0.001$, ns: Non Significant

References

- Lathabhavan R, Vispute S. Examining the Mediating Effects of Stress on Fear of COVID-19 and Well-being Using Structural Equation Modeling. *Int J Ment Health Addict.* 2022;20(5):2681-9.
- Zandifar A, Karim H, Qorbani M, Badrfam R. Mental Health Care for Medical Staff in Iran during the COVID-19 Pandemic; Different Performance in Alborz Province. *Iran J Psychiatry.* 2020;15(3):243-7.
- Hosey MM, Leoutsakos JS, Li X, Dinglas VD, Bienvenu OJ, Parker AM, et al. Screening for posttraumatic stress disorder in ARDS survivors: validation of the Impact of Event Scale-6 (IES-6). *Crit Care.* 2019;23(1):276.
- Price, J.L. (2001), "Reflections on the determinants of voluntary turnover", *Int J Manpow.* 22(7): 600-24.
- De La Rosa GM, Webb-Murphy JA, Johnston SL. Development and Validation of a Brief Measure of Psychological Resilience: An Adaptation of the Response to Stressful Experiences Scale. *Mil Med.* 2016;181(3):202-8.
- Chesney MA, Neilands TB, Chambers DB, Taylor JM, Folkman S. A validity and reliability study of the coping self-efficacy scale. *Br J Health Psychol.* 2006;11(Pt 3):421-37.