

## Relationship between COVID-19 Anxiety, Professional Self-Efficacy, and Sense of Entrapment

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### Abstract

**Background and Aim:** Today, one of the most important anxieties in nursing profession is the anxiety of Covid-19, which has led to many problems. In this regard, it seems necessary to reduce anxiety related to this condition. This study aimed to investigate the relationship between Covid-19 anxiety, professional self-efficacy, and sense of entrapment among nurses working at educational hospitals in Bojnurd, capital of North Khorasan province, northeastern Iran in 2022.

**Materials and methods:** In this descriptive-correlational study, 139 nurses with written consent were randomly selected via a multi-stage method. Pisanti et al. standard professional self-efficacy questionnaires, Gilbert & Allan's entrapment scale and Corona Disease Anxiety Scale (CDAS) were used for data collection. Data were analyzed with descriptive statistics, Spearman's correlation coefficient, and Mann-Whitney's non-parametric test.

**Results:** Findings showed that Covid-19 anxiety had no significant relationship with professional self-efficacy ( $P < 0.1$ ), but anxiety with its psychological and physical components had a direct relationship with feeling of distress and both external and internal components ( $P < 0.03$ ). In addition, professional self-efficacy in single nurses was significantly higher than married ones ( $p < 0.03$ ).

**Conclusion:** It seems that reduction of Covid-19 anxiety in nurses can reduce their feeling of distress in workplace. Therefore, managers and educators can work to improve the ability of nurses to reduce their anxiety for better care quality with self-efficacy.

**Keywords:** COVID-19, Anxiety, Self-efficacy, Entrapment, Nurse.

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## Introduction

According to WHO, one of the developmental indicators of a country is its health condition [1]. Various internal and external factors can influence on it [2], including anxiety. Anxiety in modern life is complex and can negatively affect individuals' health and well-being [3, 4]. Today, one of the most significant anxieties is related to COVID-19[5].

Covid-19 anxiety, stemming from being infected by the coronavirus, is primarily due to its unknown nature and the cognitive ambiguity surrounding it [6]. The fear and anxiety arising from potential exposure to COVID-19 have imposed a significant and destructive psychological burden that may lead to mental and emotional disturbances, weakened immune systems, and reduced mental and physical capabilities to cope with diseases within the community, including healthcare teams (nurses, doctors, etc.) [7, 8]. Among them, nurses play a crucial role in the team and stand as the first line of defense against the COVID-19

Knowledge of Nursing Journal.Autum 2023,1(3)

pandemic. The health of nurses in COVID-19 units is at risk due to the nature of their work, heavy protective gear such as N95 masks, exposure to contamination, and the risk of infecting others, which may contribute to the emergence of psychological disorders [9]. As an effective adaptive mechanism in challenging situations, self-efficacy can lead to job satisfaction and reduce interpersonal stress [10].

According to Bandura, self-efficacy is an important factor and a situational construct, encompassing various dimensions [11]. Professional self-efficacy, an assessable aspect examining individuals' capacity to handle interpersonally stressful situations in the workplace, was studied through a scale developed by Pisanti et al. in 2008 [12]. Considering the challenges related to COVID-19 pandemic, preserving motivated and skilled nursing personnel in healthcare system is crucial for providing comprehensive and sufficient care to

patients. Reducing the sense of entrapment may also contribute to preventing the aforementioned negative consequences and creating a civil and respectful working environment for nurses and decrease environmental stressors. Feeling trapped is a specific type of thinking and emotion referring to a situation where an individual perceives being ensnared or caught in circumstances from which they desire to escape [13]. Someone experiencing the sense of entrapment believes their defensive behaviors are ineffective [14]. Consequently, they tend to avoid the current situation while, at the same time, believe that all potential options for overcoming it are blocked [15].

Li, Wan and Xian Yu (2023) found that of 552 nurses in Wuhan, China, 26% had mild depression and 5.62% had moderate or severe depression. Seventy-four percent had mild anxiety and 1.82% had moderate or severe anxiety [16]. In 2023, Hayati et al. in their cross-sectional study on the relationship between COVID-19 anxiety, Knowledge of Nursing Journal. Autum 2023,1(3)

resilience and Islamic beliefs in 160 hemodialysis patients of North Khorasan province found that 98.8% of the participants had mild levels of anxiety[17].

Although some studies have been conducted on the anxiety of COVID-19, given its significance and impact on nurses' psychological outcomes, a need for further investigation is evident. Additionally, the components of professional self-efficacy and feelings of entrapment have yet to be examined alongside COVID-19 anxiety. This study was performed to explore the relationship between COVID-19 anxiety, professional self-efficacy, and feelings of entrapment among nurses at teaching hospitals in Bojnurd City in 2022.

## Methods

In this descriptive-correlational study, bachelor nurses at teaching hospitals of North Khorasan (Bojnurd) with at least 1 year of work experience were selected via a multi-stage random sampling method. Necessary permissions and informed

consent were obtained from the hospitals and the subjects respectively. Required sample size was calculated 108 with 95% confidence level, population proportion of 0.5, precision of 0.08, and 6% dropout rate in its formula. However, for better reliability, 140 subjects were selected. One research sample had not completed the questionnaires and was excluded from the study.

Four questionnaires were used for data collection. The first was demographic including age, gender, educational level, marital status (married/single), history of chronic diseases, length of employment, department of nurses, amount of overtime hours per month, number of leisure hours per month, the number of COVID vaccine received (1st, 2nd, or 3rd), and history of COVID affliction (yes/no). The second was Professional Self-Efficacy Questionnaire, designed by Pisanti in 2008. Its validity has been confirmed through concurrent validity, criterion-related validity, construct

validity, and Cronbach's alpha coefficient of 0.8. The scoring of it is with a 5-point Likert scale (completely disagree 4 to completely agree 0), where a higher score indicates higher professional self-efficacy [12]. It has also been validated by Unesi et al. (2020) with a Cronbach's alpha coefficient of 0.82 [18].

The third questionnaire was Perceived Entrapment Scale, developed by Gilbert & Allan [13]. Its scoring is also with a 5-point Likert scale (0= 'never like me', 1= 'a little bit like me', 2= 'moderately like me', 3= 'quite a bit like me', and 4= 'highly like me'). A higher score suggests greater entrapment of a person. The total score ranges between 0 and 64 (0-16 Poorly perceived entrapment, 16-32 Moderate perceived entrapment, >32 very good perceived entrapment). It measures perceived entrapment with 16 questions, encompassing both external and internal components. External entrapment pertains to the perception of things in the outside

world, causing escape motivation. Internal entrapment deals with escape motivation initiated by internal feelings and thoughts. The internal consistency as well as split-half coefficients were calculated to assess its reliability. Cronbach's  $\alpha$  coefficient was 0.87 for external entrapment subscale, 0.88 for internal entrapment subscale, and 0.92 for whole scale. The split-half reliability coefficient was 0.88 for the whole scale [19].

The fourth questionnaire was Corona Disease Anxiety Scale (CDAS). It was developed and validated to measure the anxiety related to the spread of the Corona virus in Iran [20]. Its final version entails 18 items and 2 components (factors). Items 1 to 9 measure psychological symptoms and items 10 to 18 physical symptoms. It is scored on a 4-point Likert scale (never=0, sometimes=1, most of the time=2, and always=3), ranging from 0 to 54. In this scale, high scores indicate a higher level of anxiety in individuals. Its validity and

reliability have been confirmed by Alipour et al. with Cronbach's alpha (0.91). Its validity in this study was also confirmed with Cronbach's alpha coefficient ( $\alpha = 0.8$ ), and a reliability coefficient of 88% [20].

After distributing the questionnaires to the nurses, they were requested to self-report and complete the questionnaires when they felt calm, within the specified time frame. The majority of participants returned the questionnaires after 2 days. Categorical variables were measured using counts (percentages), while continuous variables were measured using means (standard deviations). Furthermore, considering deviations from normality assumptions observed in response variables and some independent variables, summary statistics such as percentiles (1st percentile, 1st quartile, median, 3rd quartile, and 99th percentile) were used to describe these variables. Accordingly, Spearman's correlation coefficient was employed to assess the relationship between response

variables, with a coefficient range of -1 to 1, indicating inverse and direct relationships, respectively.

To test the differences in response variables among levels of categorical independent variables, the non-parametric Mann-Whitney U test was utilized. The missing data rate of variables was less than 5%. Stata software (*ver. 14*) was used for conducting the statistical analyses. A significance level of 0.05 was chosen in calculations. The code of ethics

(IR.NKUMS.REC.1400.178) was bestowed by the Ethics Committee of Northern Khorasan University of Medical Sciences. All participants signed the written informed consent.

## Results

A total of 139 nurses (80.6% female) between 23 and 49 years (mean=30.5, SD=7.5) were selected. Almost all of them (97.8%) had bachelor degrees. Table 1 provides a descriptive overview of the dependent and other independent variables.

**Table 1. Demographic variables**

Variable	Number (%)	1st Percentile, 1 <sup>st</sup> Quartile, 3 <sup>rd</sup> Quartile, 99 <sup>th</sup> Percentile
Age	<30 years ≥30 years	77 (55.39) 62 (44.61)
Marital status	(married)	100 (71.9)
Chronic disease history	(yes)	12 (8.8)
Department of service	(CCU) (ICU) (internal) (surgery) (emergency)	11 (7.91) 35 (25.17) 25 (17.98) 46 (33.09) 22 (15.82)
COVID-19 Vaccine	1 2 3	7 (5.1) 62(44.2) 70 (50.7)
COVID-19 history	(yes)	137 (98.5)
Employment duration	(years)	1.5 (2 4 7) 21
Extra Shifts per month	(hour)	2 (50 80 100) 180
Vacation per month	(hour)	0 (10 24 60) 300
Anxiety	Psychological component Physical component	0 (1 4 10) 53 0 (1 4 9) 28 0 (0 0 1) 23
Professional Self-Efficacy		0 (7 12 18) 32
Sense of entrapment	External component Internal component	0 (0 3 11) 53 0 (0 2 6) 22 0 (0 1 5) 31

The correlations between dependent variables (and their components) are presented in Table 2, where significant correlations ( $P < 0.05$ ) are highlighted in

bold. Anxiety with its psychological and physical components had a positive correlation with the feeling of entrapment ( $P < 0.01$ ).

**Table 2. Correlations between variables of interest**

Variables	Anxiety	Psychological	Physical	Entrapment	External	Internal	Professional Self-Efficacy
<b>1 Anxiety</b>	1						
1.1 Psychological		1					
1.2 Physical			1				
<b>2. Entrapment</b>	0.48	0.44	0.44	1			
2.1 External	0.47	0.43	0.40		1		
2.2 Internal	0.46	0.41	0.46			1	
<b>3 Professional Self-Efficacy</b>	0.10	0.11	-0.02	-0.03	-0.02	-0.03	1

*Note.* Average self-efficacy in single nurses was significantly higher than married ones.

Finally, the relationship between dependent and independent variables is demonstrated in Table 3 using medians (interquartile range). The only significant relationship was related to marital status in terms of self-

efficacy. Specifically, the average level of self-efficacy in single nurses was significantly higher than that of married ones ( $P = 0.01$ ).

**Table 3. Distributions of Gender, Age, Marital Status and COVID-19**

Variables		Anxiety	Professional Self-Efficacy	Entrapment
Sex	Male	3 (0.4)	4 (0.9)	11 (3.16)
	Female	5 (2.12)	2 (0.13)	12 (7.5)
Age	<30 years	4 (2.12)	4 (0.12)	12 (8.16)
	≥30 years	4 (1.9)	2 (0.11)	10 (7.19)
Marital status	Single	4 (1.13)	6 (1.18)	11 (8.15)
	Married	4 (1.5)	2 (0.8)	12.5 (7.19)
COVID-19 Infection	No	4 (0.11)	4 (0.18)	10 (6.21)
	Yes	4 (2.10)	3 (0.11)	12 (7.17)

## Discussion

The results showed that there is no significant relationship between COVID-19 anxiety and professional self-efficacy. Xiong et al. (2020), Simonetti et al. (2021) and Mamani-Benito et al. (2021) have indicated a significant relationship between self-efficacy and COVID-19 anxiety [21-23]. This discrepancy can be attributed to various reasons: one could be that, at the beginning of the COVID-19 pandemic, the condition undoubtedly caused higher levels of anxiety among people [20], especially healthcare workers. Our study was conducted two years after the onset of the

pandemic, and it is conceivable that the anxiety related to COVID-19 at the initial stages of the pandemic might have had more prominent impact on self-efficacy of healthcare workers and was gradually diminishing over time. On the other hand, it can be theorized that nurses typically experience varying degrees of anxiety, and this aspect has become intertwined with the nursing profession itself.

According to Bandura, physiological and emotional arousal is one of the factors influencing self-efficacy. The higher the level of physiological and emotional arousal, the lower the sense of efficiency and self-efficacy would be [11].



Furthermore, in explaining the mediating role of self-efficacy in the relationship between problem-solving orientation and COVID-19 anxiety, it can be said that individuals with a problem-solving orientation are those with a positive attitude toward challenges and a willingness to confront problems. A positive orientation is considered as one of the constructive problem-solving elements [24]. In the study by Bagheri Sheykhangafshe et al., nurses and physicians who had high levels of resilience and self-efficacy were found to have suitable mental health [25].

Asadi et al. (2020) highlighted that all individuals and various social groups, particularly nurses and healthcare workers, have experienced anxiety related to COVID-19 disease [26]. In another study by Pappa and colleagues using a meta-analysis approach, it was revealed that the prevalence of anxiety among healthcare team was moderate. This study also demonstrated varying degrees of anxiety

among nurses working in coronavirus units, which is consistent with the findings of the aforementioned study [27].

Our results also indicated that there was a significant relationship in the levels of self-efficacy and marital status (single/married). In other words, single nurses exhibited higher levels of self-efficacy compared to married ones. Conversely, Zarrin et al. (2023) concluded that educational level, marital status and gender had no significant relationship with the level of self-efficacy of nurses referring to Tabriz hospitals. This difference may be attributed to the COVID-19 pandemic or other factors that require further investigation [28]. It seems that single nurses, being younger and likely experiencing the initial years of their employment, had better performance in dealing with job situations. On the other hand, married nurses, due to their responsibilities for their families, might gradually experience negative impacts on their performance as well as professional

self-efficacy. In other words, singles with an independent and sole life outside of work may increase their engagements with their patients, causing changes in their social interactions. This may explain the relationship between marital status and self-efficacy.

Additionally, this study found that anxiety in nurses has both emotional and physical aspects, and both are linked to feelings of being trapped. Nurses are expected to provide care despite their fear and anxiety, which can create a conflict between their emotions and professional abilities[29]. This conflict can lead to feelings of entrapment [30-32], as found in our study.

Taylor et al. assert that the sense of entrapment is significantly associated with other psychological disorders especially anxiety disorders [33]. The mechanism of action and impact of entrapment in conditions like anxiety have been substantiated through disruptions in problem-solving and induction of Knowledge of Nursing Journal.Autum 2023,1(3)

hopelessness at individuals [34-35]. Therefore, it can be deduced that entrapment, defined as a sense of falling into a trap or a specific form of thinking and feeling that occurs when a person is stuck in a situation they wish to avoid, could lead to compulsive cessation of human activities and individual's inability to escape from a situation [14]. This, in turn, can result in the emergence of anxiety symptoms in the individual, as supported by the findings of this study.

One of the limitations of our study was the lack of access to a completely similar study for comparison purposes, which is somewhat related to the novelty and uniqueness of the research topic. Future studies in this field are necessary to provide better and more reliable results. Another limitation was the use of self-report questionnaires, which can be influenced by the psychological conditions of nurses and the way they respond to the questions. Therefore, the researchers made an effort

during the study to maximize the honesty and accuracy of their responses by allocating enough time and verbally requesting for their participation.

Since our research was conducted in hospitals in Bojnurd city, it is recommended to conduct studies that are congruent with this research, using samples from other communities as well. This will allow for a clearer perspective on the variables and provide a more comprehensive view of the factors influencing healthcare personnel.

### **Conclusion**

The results indicated that the more COVID-19 anxiety increases, the more the level of entrapment would be. Therefore, nursing educators and managers can reduce these problems through training of professional competencies, providing support with psychological counseling as well as stress management, fostering peer support

networks and implementing interventions in the workplace to enhance the mental well-being of nurses.

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### **Conflict of Interest**

The authors of the article declare no conflicts of interest.

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