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THREAT IS VIRUS NOT THE PEOPLE: FEAR OF COVID-19, DEPRESSION AND SELF-CONTROL

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ABSTRACT

The coronavirus (COVID-19) pandemic outbreak has a significant influence on both peoples' physical and psychological health. Healthcare workers remained most vulnerable to COVID-19 due to requirement of their job. The current study examines terror of COVID-19 and depression along with self-control among the nurses in Pakistan. The cross-sectional study design was employed and data was collected from a sample of nurses from the hospitals of Rawalpindi and Islamabad using non-probability convenience sampling technique. The inclusion criteria involve nurses as they had direct contact with COVID-19 patients for their treatment. The statistical tool of Smart PLS was used for model assessment and regression analysis. Results revealed significant relationship between fear of COVID-19 and depression among nurses. Moreover, self-control also significantly moderated the association between distress of COVID-19 and depression. Future work can be carried on other stressor and psychological factors. Furthermore, there is a need to investigate the vaccination attitude in the future since due to misconception and minimal information available regarding the COVID-19 vaccine.

INTRODUCTION

The coronavirus disease (COVID-19) was first reported in Wuhan, China and spread like bush fire around the globe due to its contagious nature (Wang et al., 2020). WHO (2020) reported 598,000 deaths worldwide which kept on exceeding till date. The pandemic has no cure except practicing social distancing and maintaining personal hygiene (Venkatesh & Edirappuli, 2020) due to which people started fearing social contact and stigmatising the infected corps (Lin et al., 2020). Media reporting and social misinformation made situation worsen (Bao et al., 2020) and threatens the psychological wellbeing of individual's along with physical health (Harper et al., 2020; Pakpour & Griffith, 2020; Taylor et al., 2020). These situations potentially affect the more vulnerable community of the nursing staff who came into direct contact with the affected patients.

Although many studies reported a significant association between physical disease and depression (Trivedi et al., 2020; Pontone & Mills, 2020; Fernandes et al., 2020; Fu et al., 2020) but COVID-19 has worse affect due to its contagious and incurable nature. Specifically, when there is limited access to personal protective equipment (PPE) and inadequate resources for the management of healthcare in the developing country like Pakistan (Hayat et al., 2021; Awais-E-Yazdan et al., 2022). Vulnerable group of nurses who have to treat affected patients directly are more inclined to comprehend the disease, which triggers psychological distress like anxiety, stress, and depression (Mahmud et al., 2020). The nurses are witnessing the critical conditions and deaths of COVID-19 patients on a daily basis which evokes insecurity about life and exaggerate the fear of COVID-19 among them. Moreover, the awareness about the severity of a virus worsening the mental health (Li et al.,2020) and leads to an increased risk of developing depression (Zhang et al., 2020) due to lack of crucial measures and healthcare interventions in the Pakistan.

Therefore, there is a great need for in-depth research regarding information and coping strategies to avoid and control mental health risks caused by terror of COVID-19 (Fitzpatrick et al., 2020). Undoubtedly, COVID-19 can disturb psychological health, reduce the capacity to cope (Wasil et al., 2021), and simultaneously inhibit self-control ability (Duckworth et al., 2013). The high self-control is necessary to survive the disease because it attenuates the fear of COVID-19 and lessens the poor psychological effects (Li et al., 2020). Self-control is associated with the mitigation of physical and mental health issues by suppressing negative emotions (Liu et al., 2018) like depression. Moreover, the role of strong personal immunity in defeating COVID-19 is undeniable, as the cure and precaution to survive COVID-19 is better immunity (Tay et al., 2020). According to study by (Eerde & Venus, 2018) the high self-control boost immunity and helps to cope the negative situation both mentally and physically. Therefore, to survive the COVID-19 the strong immunity is the foremost requisite as it helps to evade the disease. Hence, nurses with high self-control became able to maintain better immunity to fight with COVID-19 and to attenuate the depression.

As, the studies on pandemic are rapidly progressing (e.g., Huang & Zhao, 2020; Lu et al., 2020; Wang et al., 2020) and keeping in view the nature of the

pandemic in Pakistan, the current study has been conducted on nurses. Almost one-fifth of the practicing nurses during COVID-19 has been suffered from depression due lack of psychological support strategies (Slusarska et al., 2022). Moreover, due to collectivist culture (Hofsted, 1983) in Pakistan the nurses are also worried to induce the disease in their family members due to being carrier, these feelings exaggerated the depression level. Hence, the study aimed to contribute towards and understanding of the relationship between agitation of COVID-19 and depression among nurses in order to protect their psychological health under the current COVID-19 pandemic situation. Despite the clear rationale for the role of self-control as a moderator between various stressors, it is not yet empirically tested on the nexus between terror of COVID-19 and depression.

THEORETICAL BACKGROUND

WHO declared the coronavirus illness a public health emergency on January 30, 2020. Most of the attention around the globe has focused mainly on the impact of COVID-19 on physical health, even though its impact on psychological health cannot be ignored (Satici et al., 2020). In fact, the outbreak of this disease has revealed a broad range of psychological impacts on people worldwide (Zhao et al., 2022). People may experience anxiety and fear of becoming sick due to this disease, leading to a mental break down including depression and stress (Ho et al., 2020). Due to a prolonged period of quarantine, there is a correlation between the symptoms of depression and a high prevalence of distress (Sasaki et al., 2020). Healthcare workers such as nurses and paramedics face high levels of stress, depression, and anxiety. The fear of getting infected is high compared to the risk of exposure. They also fear transmitting the virus to their family members (Bhattacharjee & Acharya, 2020). During the COVID-19 outbreak, there is an increase in mental health burden which calls for support to reduce mental health problems including depression, stress, and anxiety. Şimşir et al. (2021) found a strong association between terror of COVID-19 and mental health problems such as depression, anxiety, stress, and traumatic distress. Irrational and unclear thoughts may also result from a high level of fear of COVID-19. Terror of COVID-19 and social marginalisation of patients, survivors, and their families raise the likelihood of developing mental health issues such depression and stress. (Mahmud et al., 2020).

A number of studies (e.g., Xiong et al., 2020; Sakib et al., 2021) have been conducted in different countries to investigate the COVID-19 outbreak as an uncontrollable stressor impacting the mental health of frontline nursing staff. The most common response to this disease is fear of being infected. Fear is a reaction to the threat that results in enhanced safety actions such as social distancing and hygiene measures during the period of this pandemic. However, a high level of fear can have a detrimental effect on the brain, resulting in negative feelings including depression (Talaee et al., 2020). People who are suspected to have contracted COVID-19 are kept in isolation and quarantined, which may cause depression, anxiety, confusion, and stress (Bhattacharjee & Acharya, 2020). In the current situation, it is vital to predict the psychological consequences (including depression) caused by fear of this disease. According to Jiloha (2020), fear of being infected with COVID-19 affects the mental health

of individuals and results in depression, especially among the nursing staff. The study found a significant link between depression and fear of COVID-19 among women. Among the healthcare workers, the on-going pandemic situation is itself a major contributor to their poor mental health (Bakioğlu et al., 2020; Petzold et al., 2020). Based on this discussion, this study posits that:

H1: There a positive and significant association between fear of COVID-19 and depression.

Self-Control as a Moderator

Self-control refers to a person's ability to control inner desires and external attractions that obstruct the achievement of a long-term goal (Muraven, 2010). It is an important personality trait that helps in dealing with poor mental and physical health. Self-control has a strong relationship with good mental and health outcomes (Liu et al., 2018). Individuals who have high self-control can deal with negative outcomes such as depression, stress, and anxiety more effectively. Self-control is not only important for good mental health but also acts as a moderator in the relationship between negative factors such as fear of COVID-19 and its outcomes such as depression. Individuals who have good self-control will be able to cope with fear of COVID-19 and suppress negative emotions like depression (Ma et al., 2020).

In line with the self-regulatory theory (Hall & Fong, 2007), individuals with high self-control can control their emotions because they have more regulatory resources. There is strong evidence that individuals with high self-control can deal with any fears that can cause depression (Sari et al., 2020). It has been found that high self-control creates a high level of immunity, which assists in coping with diseases like COVID-19 and reduces the feeling of depression. Self-control can help individuals gain an understanding and deal with the mental aspects of COVID-19 and cope with fear of the pandemic in order to reduce the depression associated with this fear (Orúzar et al., 2019). Therefore, based on this discussion, this study posits that:

H2: Self-control moderates between the relationship of fear of COVID-19 and depression.

METHODOLOGY

Sample and Procedure of the study

A cross sectional survey was conducted from the four main hospitals of Rawalpindi and Islamabad, Pakistan in which patients with coronavirus were being treated due governmental interventions (holy family, poly clinic, pakistan institute of medical sciences, benazir bhutto hospital). The convenience sampling method was used to collect the data after taking consent from the nurses to fulfil the requirements of research ethics. The data was collected using self-reported measures of fear of Covid-19, depression and self-control, the questionnaire items were adopted and distributed to the targeted nurses. The survey instrument was in the English language. Most of the nurses have english

background as minimum criteria for nurses is intermediate degree and nursing diplomas. The inclusion criteria used in the study were nurse's staff who were in direct contact with COVID-19 patients and working in isolation wards specifically. Total 200 questionnaires were distributed and 150 responses were received showing 75% response rate.

A preliminary data analysis of demographic information provides a complete picture regarding gender and the proportion of males and females involved in the study. The 45% percent of the respondents were males and 55% were females. In terms of age, 62% of the respondents were in the 25–30 years old age group, 25% were 31–35 years old, 8% were 36–40 years old, 2% were 41–45 years old, and the remaining 3% were 46 years old or older. The 59% has nursing diplomas, 30 % were F.sc and rest 11% have BS degrees in nursing education. Regarding their working experience, 49% of the respondents had 1–3 years of experience, 17.6% had 4–6 years of experience, 22% had 7–9 years of experience and 6% had 10–12 years of experience.

Instrument of the study

The study employed a questionnaire as the survey instrument. The survey included questions on the participant's demographic information, including gender and working experience along with adopted measures. This study used a seven-item scale by Ahorsu et al. (2020) to measure fear of COVID-19, a six-item depression sub-scale by Le et al. (2017) to measure depression, and a 13-item scale by Tangney et al. (2004) to measure self-control. All items were reported on a five-point likert scale. The Statistical Package for the Social Sciences (SPSS) was used for preliminary data analysis and the Smart PLS technique was employed to analyse the collected data.

DATA ANALYSIS TOOLS AND TECHNIQUES

The study investigates the relationship between fear of Covid-19 and depression along with self-control as moderator among nurses of hospitals. Firstly, descriptive statistics and correlation analysis were performed. Later on data was analysed using smart PLS for measurement model, reliability, validity, regression and moderation analysis.

RESULT

Measurement Model Assessment

The measurement model (MM), also called the outer model and is used to determine individual item reliability, internal consistency reliability, convergent validity & discriminant validity. The components of the MM are depicted in Figure 1.1 and discussed below.

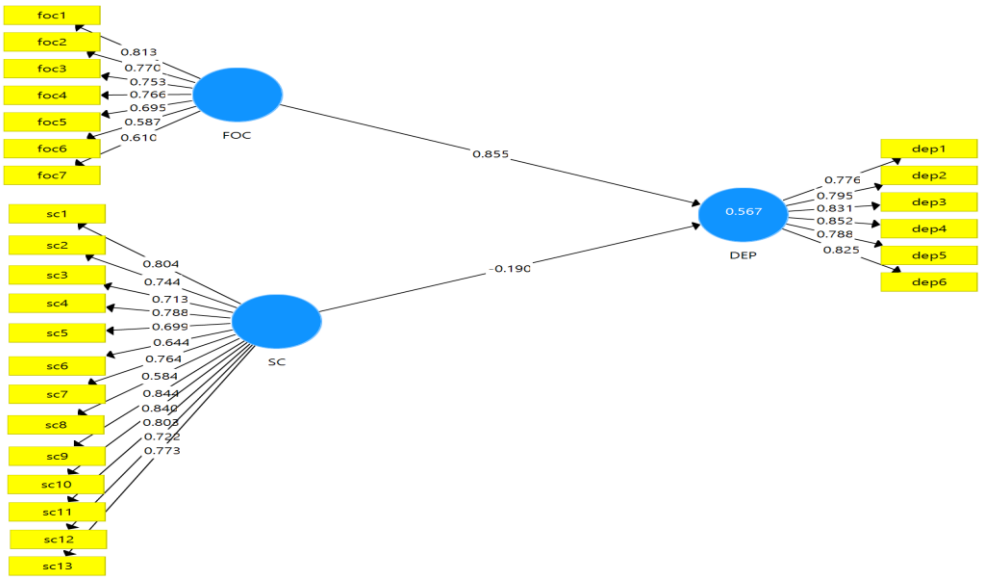

Figure 1.1: *fear of COVID-19, depression, and self-control*

Individual Item Reliability

In this study, reliability of construct was evaluated by determining the factor loading of every construct (Hair et al., 2016; Duarte & Raposo, 2010; Hulland, 1999). Hair et al. (2016) stated that items with loading between 0.40 and 0.70 can be retained. Additionally, if the removal of an item raises the values of the average variance extracted (AVE) and composite reliability (CR), that item should be eliminated (Hair et al., 2016; Awais-E-Yazdan et al., 2022). In our research, the items with loading among 0.40 and 0.70 were retained as their removal did not result in any increase in the loadings.

Internal Consistency Reliability

The internal consistency reliability (ICR) of a construct can be measured using composite reliability (CR) and Cronbach's alpha (Hair et al., 2017). Cronbach's alpha fulfils the same objective as CR, but CR is more reliable than Cronbach's alpha (Barroso et al., 2010; Asada et al., 2020; Junoh et al., 2019; Basheer et al., 2019a;Muneer et al., 2019; Basheer et al., 2019b; Basheer et al., 2018). Therefore, the current study used CR to measure the ICR. On the basis of the recommendation made in past studies, values lower than .60 are not appropriate, values of 0.60–0.70 represent average ICR, and values of 0.70–0.90 signify appropriate ICR. Table 1.0 exhibits the ICR of the present study and demonstrates that this study's ICR values fall within an acceptable range (Hair et al., 2011).

Convergent Validity

Average variance extracted (AVE) was adopted to explain convergent validity (CV), as per Hair et al. (2010). The AVE of each construct should be above .50 by measuring the appropriate CV (Fernandes, 2012; Hair et al., 2014). Table 1.0 shows that the AVE values are acceptable as they exceed 0.50.

Table 1.0 : Loadings, CR, and AVE

Constructs	**Items**	**Loadings**	**AVE**	**CR**
Fear of Covid	FOC1	0.813	0.515	0.880
	FOC2	0.770		
	FOC3	0.753		
	FOC4	0.766		
	FOC5	0.695		
	FOC6	0.587		
	FOC7	0.610		
Self-control	SC1	0.804	0.565	0.943
	SC2	0.744		
	SC3	0.713		
	SC4	0.788		
	SC5	0.699		
	SC6	0.644		
	SC7	0.764		
	SC8	0.584		
	SC9	0.844		
	SC10	0.840		
	SC11	0.803		
	SC12	0.722		
	SC13	0.773		
Depression	DEP1	0.776	0.659	0.920
	DEP2	0.795		
	DEP3	0.831		
	DEP4	0.852		
	DEP5	0.788		
	DEP6	0.825		

Discriminant Validity

The extent to which a construct is different from other constructs empirically is known as discriminant validity (Hair et al., 2017). Firstly, Fornell-Larcker's (1981) criterion is used to measure discriminant validity based on the AVE values. Secondly, discriminant validity is also determined by assessing the values of cross-loadings (Grégoire & Fisher, 2006; Raoof et al., 2021; Abdulmuhsin et al., 2021; Hameed et al., 2021; Yan et al., 2020; Nuseir et al., 2020). This approach states that each indicator's loading must be bigger than its cross-loadings with other indicators. To provide acceptable discriminant validity, another criterion is the heterotrait-monotrait ratio of correlations (HTMT). (Henseler et al., 2015). HTMT is a factor correlation that distinguishes between the two factors. (Henseler et al., 2016). These three techniques were used in the current study to evaluate discriminant validity. The outcomes of this study's Fornell-Larcker criterion, cross-loadings, and HTMT are displayed in Tables 1.1, 1.2, and 1.3, respectively.

Table 1.1: Latent Variable Correlations and Square Roots of AVE

	DEP	**FOC**	**SC**
DEP	**0.812**		
FOC	0.738	**0.718**	
SC	0.337	0.616	**0.751**

Note. Entries in the boldface represent the square root of AVE

Table 1.2 : Cross Loadings

	DEP	**FOC**	**SC**
dep1	**0.776**	0.631	0.501
dep2	**0.795**	0.557	0.178
dep3	**0.831**	0.641	0.343
dep4	**0.852**	0.646	0.281
dep5	**0.788**	0.560	0.224
dep6	**0.825**	0.552	0.108
foc1	0.649	**0.813**	0.560
foc2	0.595	**0.770**	0.337
foc3	0.547	**0.753**	0.439
foc4	0.714	**0.766**	0.351
foc5	0.373	**0.695**	0.547
foc6	0.238	**0.587**	0.587
foc7	0.234	**0.610**	0.568
sc1	0.271	0.478	**0.804**
sc10	0.265	0.508	**0.840**
sc11	0.290	0.495	**0.803**
sc12	0.232	0.369	**0.722**
sc13	0.166	0.474	**0.773**
sc2	0.121	0.406	**0.744**
sc3	0.135	0.335	**0.713**
sc4	0.237	0.493	**0.788**
sc5	0.300	0.514	**0.699**
sc6	0.218	0.384	**0.644**
sc7	0.334	0.494	**0.764**
sc8	0.151	0.402	**0.584**
sc9	0.329	0.541	**0.844**

Table 1.3: HTMT VALUES

	DEP	**FOC**	**SC**
DEP	-		
FOC	0.750	-	
SC	0.352	0.735	-

Structural Model Assessment

To determine the significance of the path coefficients, this study used the standardised bootstrapping procedure with 5000 bootstrap samples and 204 sub-samples. Figure 1.2 shows the measurements of the structural model.

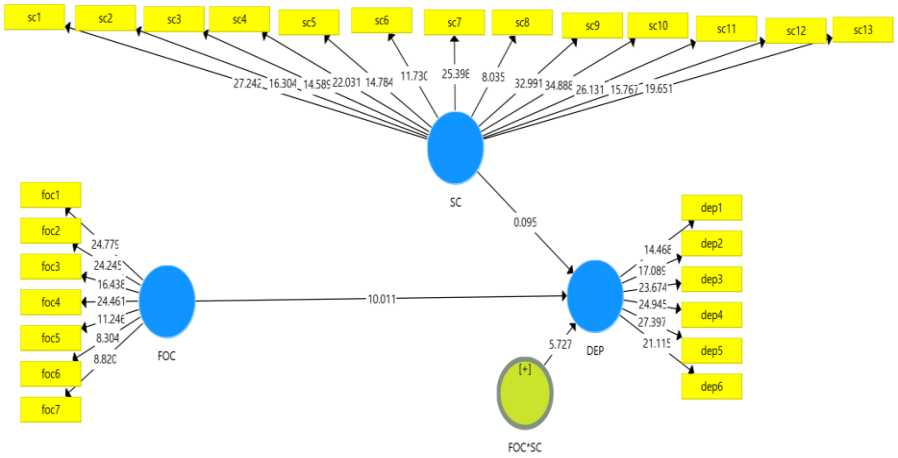

Figure 1.2: Structural Model (Direct relationship and Moderating Effect)

The structural model depicts the path coefficients of the hypothesised relationships. Hypothesis H1 states that "There is a positive association between fear of COVID-19 and depression". The results in Figure 1.2 and Table 1.4 show a significant and positive relationship between fear of COVID-19 and depression ($\beta = 0.068$; $t = 10.297$; $p < 0.000$). Next, hypothesis H2 states that self-control moderates the relationship between fear of COVID-19 and depression. The results indicate that this relationship is stronger for an individual with high self-control than an individual with low self-control. Figure 1.2 and Table 1.4 depict the interaction effect, stipulate the effect of fear of COVID 19*self-control on depression ($\beta = 0.274$; $t = 5.805$; $p < 0.000$) is significant.

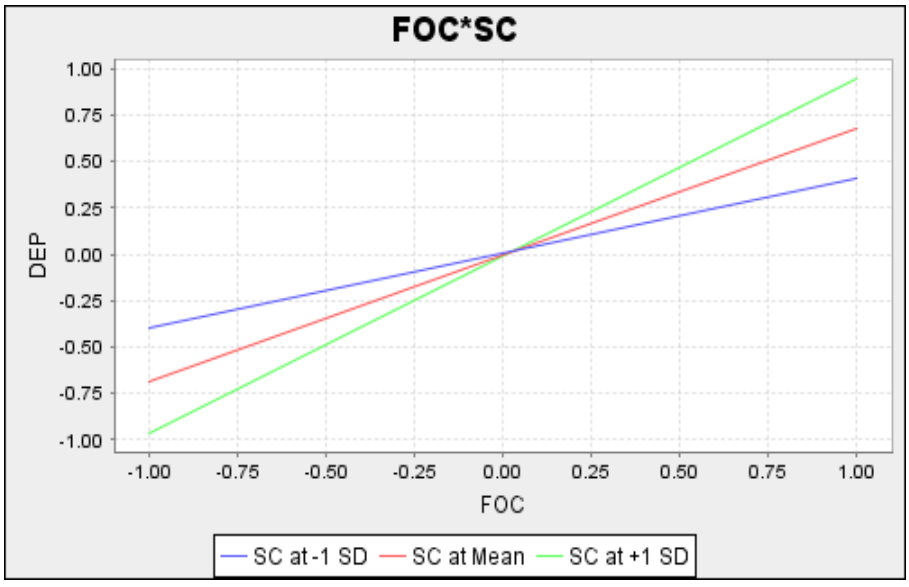

Figure 1.3: Interaction Effect of Fear of COVID 19 and Self-Control on Depression

In Figure 1.3, the x-axis represents the independent construct and the y-axis presents the dependent construct. The simple slope plots represent the relationship between the independent and dependent variables for high and low

levels of the moderator using three (green, red, and blue) lines. The red line shows the effect of the independent variable on the dependent variable without the moderation effect, while the blue and green lines represent a low level and a high level of the moderator, respectively.

Table 1.4: Structural Model Assessment with Interactions

Hypothesis	Relationships	Beta	SE	T-value	P-value	Decision
H1	FOC -> DEP	0.068	0.071	9.598	***	Supported
H2	FOC*SC->DEP	0.274	0.049	5.611	***	Supported

DISCUSSION

This study examined the relationship between fear of COVID-19 and depression among nurses from the healthcare sector along with self-control as the moderator. Two hypotheses were developed and both were accepted. The first hypothesis proposed that fear of COVID-19 has a significant and positive relationship with depression. Based on the data analysis, the main reason for accepting the hypothesis is that nurses have a high risk to be infected with COVID-19 because they treat affected patients directly, which triggers depression among them. The vulnerability of being infected because of close contact with COVID-19 patients, unfamiliar procedures, and physical discomfort (Huang et al., 2020) lead to mental health issues like depression. Moreover, the burden of work and family responsibilities worsens the situation (Liu et al., 2020). Pakistan has collectivist culture (Hofstede, 1983) where most people are close to their families. That is the reason the one of the dominant factor of depression among nurses is the fear to infect their family members with contagious disease. Along with these factors, witnessing huge number of deaths, critical condition of affected patients, lack of personal protection equipment and social distancing excavate the depression among nurses (Khattak et al., 2020).

The second hypothesis, which states that self-control moderates the relationship between fear of COVID-19 and depression, is also supported. This study found that a high self-control is linked with low psychological issues. The data analysis revealed that nurses with high self-control are better able to cope with depression due to fear of COVID-19. Because self-control improves the mental well-being (Xie et al., 2020) and is negatively related to depression. The nurses who have ability of high self-control reported better psychological health, as self-control alleviates depression. Additionally, self-control promotes life satisfaction, boosts immunity, and enhances mental health (Proctor et al., 2010). Although fear of COVID-19 affects mental health and can lead to depression, self-control can alleviate these issues by emotion regulation and self - counselling. Beside these faith and religion are also contributing factors in enhancing self-control ability while minimizing the fear of Covid-19 and depression among nurses. Faith is one from the survival strategies as it maintain sense of security and hope through prayers and spirit (Kowalcyzk et al., 2020).

LIMITATIONS AND FUTURE DIRECTION

Although the findings of the study are generalizable and complement the extant literature, the study has several limitations. First, this study used the non-probability sampling design. In the future, time-lagged research can be conducted as over the time, the ability to deal with the virus will improve. Secondly, the study used the self-reported survey which can result in biased reporting. The questionnaire can be filled up by supervisors and senior doctors on behalf of their nursing staff in order to provide "accurate reactions" regarding fear of COVID-19. Third, many other psychological issues (including anxiety, stress, job burnout, and work family conflict) can result from fear of COVID-19, which were not addressed in this study. Hence, fear of COVID-19 can be studied with other variables that are linked with psychological health.

Fourth, different countries have different cultures and intensities in responding to fear of COVID-19. Hence, future studies may want to examine other countries to assess fear of COVID-19 and its impacts on depression along with other moderating variables. Fifth, this study used Smart PLS for data analysis. Future research may consider using other tools for data analysis, such as AMOS. Sixth is linking spiritual renewal with fear of COVID-19 in various professions. Last but not least, future studies may investigate the fear of COVID-19 and vaccination attitude. The COVID-19 vaccine has been rolled out and is being tested on medical staff and the general public. The study by Mushtaque et al. (2021) found that only 70% of healthcare workers showed willingness to get vaccinated while the rest were waiting for more information due to misconception and various attitudes towards the COVID-19 vaccine.

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