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How COVID-19 Fear Affects Psychological Distress and Psychological Well-Being: The Mediating Role of Psychological Capital

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ABSTRACT

Purpose: *To explore the effect of COVID-19 fear on Psychological distress (PsyD) and psychological well-being (PsyW) with the mediating role of Psychological capital (PsyC) through the lens of conservation of resource theory (COR) in frontline employees of health sector.* ***Design/methodology/approach:*** *Using an online survey questionnaire, a cross sectional data was collected from the target population of health care frontline workers in Pakistan, and 310 effective questionnaires were utilised for analysis in SPSS-22 and Smart.PLS-3 to verify the hypothesis.* ***Findings:*** *Fear of CoviD-19 has a positive effect on psychological distress and negatively affects psychological well-being. Whereas CoviD-19 negatively affects psychological capital. Additionally, PsyC decreases PsyD and increases psychological well-being. Lastly, PsyC work as a competitive partial mediator for both PsyD and psychological well-being.* ***Research limitations:*** *One of the vital limitations was the solo online data gathering mechanism due to the lockdown situation.* ***Practical implications:*** *In times of pandemic crises, paying attention to the PsyC of health care frontline workers can increase their engagement and motivation towards learning activities. It provides guidelines for health institutions to shape strategies according to the needs of their employees.* ***Originality/value:*** *This study provides additional support for the assumptions derived from the COR theory but it also provided a more in-depth examination of the meaningful nexus between COVID-19 fear and PsyD and PsyW, with PsyC acting as a mediator.*

Introduction

In Wuhan City, China, the CoviD-19 epidemic was first discovered at the end of December 2019. The virus spread swiftly in China and then across international borders and has caused several days' lockdowns of educational activities, including in Pakistan (Waris, Atta, Ali, Asmat, & Baset, 2020; Soraci, 2020). The World Health Organisation verified it to be a pandemic at the beginning of March 2020 due to uncertainty, challenging situations, and a life-threatening infectious rate around the globe. According to the WHO report of October 27, 2020, around the globe, there have been more than 4.3 billion authorised cases with a death rate of 1.1 million, which have approximately affected the residents of 218 countries. Whereas, particularly in Pakistan, more than 0.3 million cases were reported, with a fatality rate of more than 6 thousand (WHO 2020). CoviD-19 is related to a high degree of fear that damages an individual's ability to think rationally and logically (Ahorsu, Lin, Imani, Saffari, Griffiths, & Pakpour, 2020; Boysan, Eşkisu, & Çam, 2022). In such circumstances, stakeholders around the globe legislated different policies to cope with the CoviD-19 crises, and some major preventive measures were familiarised with, namely lockdown, isolation strategies, and physical distancing (Anderson, Heesterbeek, Klinkenberg, & Hollingsworth, 2020). Likewise, all education institutes were closed, and teleworking was officially approved (Caci, Miceli, Scrima, & Cardaci, 2020). To minimise the risk of virus transmission, telemedicine services were introduced (Scheffer, Cassenote, de Britto e Alves, & Russo, 2022), and telenursing in developing countries was a challenge due to a lack of technological advancement and resources (Purabdollah & Ghasempour, 2020). In such circumstances, fear-related CoviD-19 needs to be assessed for potential utility in research and employee-oriented policies to prevent or better cope with the possible negative psychological consequences of the pandemic on health care frontline employees.

Prior studies related to pandemics or epidemics confirmed their negative psychological consequences and were mostly reported in the form of mental soundness and PsyD (Petzold et al., 2020). The recent studies on CoviD-19 portrayed various aspects of the pandemic in different circumstances, particularly the CoviD-19 psychological influence on health practitioners (Giusti et al., 2020). Several researchers have testified that pandemics like CoviD-19 are related to mental disorders and PsyD (Bao, Sun, Meng, Shi, & Lu 2020). Whereas, Mc Gee, Holtge, Maercker, and Thoma (2018) stated that stress and catastrophic' events have some negative consequences on human health and well-being. According to Kumar and Nayar (2020), fear is sophisticated in nature and can be a substantial fundamental factor that damages individual well-being and mental health. A substantial body of literature confirmed the promising effect of the CoviD-19 event on frontline health care workers' mental health (Sampaio, Sequeira, & Teixeira, 2021). Whereas PsyC is also investigated as a potential intervening variable with the subject of academic stress to psychological symptoms (e.g., depression, distress) and life satisfaction (e.g., well-being) (Riolli, Savicki & Richards, 2012). Fear is known as one of the psychological aspects of CoviD-19, and there are limited studies on the psychological effects of CoviD-19 on mental health (Pakpour & Griffiths 2020). Fear is defined' as "an individual unfavourable emotion that is activated by the awareness of alarming situations" (de Hoog et al., 2008). Astonishingly, however, investigations on the influence of PsyC on the psychological' well-being of health' care frontline workers are limited.

According to Younas et al. (2020), a positive psychology study demonstrated that an individual's mental' health is highly related to psychological capital. PsyC is a significant resource for individuals, demonstrating individuals' self-efficacy in terms of their progress and development, as well as a positive psychological condition attributed to resilience, optimism, and hope (Luthans,

Youssef, & Avolio, 2007; Firdaus et al., 2022). Based on the evidence of positive psychological studies, we can argue that some personalities are incapable of handling the psychological impact of panic factors and experience negative symptoms of psychological health (Youssef et al., 2007). On the contrary, some personalities can better cope with uncertainty and suffer little or perform well in their existing capacity (Riolli et al., 2012). The significant research question will be how health sector frontline employees' PsyC plays an intervening role in coping effectively in situations of CoviD-19 fear.

According to Islam, Barna, Raihan, Khan, and Hossain (2020), it is critical to report the psychological consequences of an unexpected crisis situation on healthcare frontline employees. Furthermore, by filling the above gap, we can devise effective interventions and strategies that are needed to improve the mental health' of health care frontline employees. The primary objective of this study is to discover the psychological complications faced by crisis-created problems among healthcare frontline employees in Pakistan. During the uncertain circumstances striving against CoviD-19, the government and health care commission of Pakistan need to concentrate on improving frontline workers' PsyC by enriching hospital employees hope, self-efficacy, optimism, and resilience while addressing crisis-created mental health problems through employee-oriented policies.

Given the aforementioned issues, the current study's objectives are to support mainstream literature by analysing CoviD-19 fear on PsyD and PsyW with the mediating effect of PsyC while targeting healthcare frontline workers in Pakistani hospitals. The study model is based on the notion of conservation of resources (COR) theory. This study is significant because of the grand challenge of CoviD-19 from the perspective of Pakistan while drawing upon COR theory. The empirical study of healthcare frontline workers in times of crisis is a key novelty of the study.

Underpinning Theory

To shape the study hypothesis, we underpin COR theory. The theory postulates that individuals strive' to acquire, defend, sustain, and nurture resources, for instance, subjective attributes and vitalities, which are worthwhile, and these resources play a major role in ensuring a road map for individuals to secure their worthy resources. In the case of a negative event, individuals strive to prevent resource loss (Hobfoll, 2001; Lee and Ok, 2014). This signifies that individuals seek to compile and manage resources for the purpose of conserving and stimulating their health and well-being (Hobfoll, 2011).

When health care workers recognise that COVID-19 fear gives rise to harm to worthy resources, their personal resources will be depleted. Such a fear of COVID-19 spoils employees' psychological capital. Whereas COR theory also suggests that individual well-being depends upon the availability of adequate private resources (Alarcon, Bowling, and Khazon, 2013), COR' was justified as a motivational theory on the basis of the notion that individuals seek a strategy to sustain current resources while acquiring new ones (Halbesleben, Neveu, Paustian-Underdahl, & Westman 2014).

COR's theory is directed towards motivation and stress (Obrenovic, Jianguo, and Khan, 2020). PsyC is attributed to constructive psychological resources, and individuals are motivated and encouraged to uphold and sustain it (Luthans et al., 2007). A conceptual theoretical model of our study proposed that healthcare frontline workers are psychologically affected while confronting the fear of CoviD-19 and PsyC plays an intervening role among the constructive relationships of variables in the sense of situation handler. We claim that PsyC is a defence mechanism to boost PsyW and mitigate PsyD.

Literature review

Fear of CoviD-19 & Psychological Capital

Psychological capital (PsyC) is a positive psychological growth-related condition based on five dimensions known as hope, efficacy, optimism, and resilience (Luthans, Youssef-Morgan, and Avolio, 2015). Hope signifies individual beliefs in one's capability to construct a road map headed to life goals with the intention to thrive. Efficacy denotes holding absolute confidence regarding the effective handling of challenging tasks. Optimism represents positive expectations concerning current and upcoming outcomes. Resilience means attaining great outcomes in difficult and turbulent situations while holding on, bouncing, and sustaining back beyond (Luthans & Youssef-Morgan, 2017).

In times of crises similar to the COVID-19 pandemic, the inhabitants of developed nations are noted to be more resilient to cope with stress and remain psychologically unharmed. Whereas in developing countries like Pakistan, the result is contrary, and the harmful effects of the pandemic are recorded because of inefficient emotional support mechanisms (Shultz et al., 2008; Taylor, 2017). According to the study of Avey, Reichard, Luthans, and Mhatre (2011), PsyC is negatively linked to work-related stress, non-adaptive behaviour at work, and anxiety. Anjum (2020) has linked fear of COVID-19 to psychological capital. Although the authors found that COVID-19 fear is negatively correlated with psychological capital, it was observed that former research on the impact of PsyC was conducted in a work situation. Though inadequate studies in the context of the pandemic are focused on the potential predictors of PsyC, one of them is a study on healthcare workers in Turkey (Yıldırım, Çağış & Williams 2023). Though there are inadequate studies in the health care sector of Pakistan investigating the effect of CoviD-19 fear on the PsyC while underpinning COR theory. As such, looking into the relevant literature, we proposed the below hypothesis.

H1: *Fear of CoviD-19 has a significant negative effect on the PsyC of health care frontline workers.*

Fear of CoviD-19 and Psychological Distress

CoviD-19 primarily arose in Wuhan's city, China, in the eleventh month of 2019, and, in a span of two months, it hurt the planet and was announced as a pandemic. The public health calamities triggered by COVID-19 are destructively affecting the mental health of the public and intensifying the root causes of psychological crises (Xiang et al., 2020). PsyD, in the view of healthcare frontline workers, is declared a central area of research because the frequency of mental distress among healthcare frontline workers is complex in nature as compared to the general public (Naylor, 2020). According to Barlow, David, and Durand (2005), PsyD is the degree of emotion attributed on the basis of anxiety and depression symptoms.

Studies regarding prior epidemics and pandemics in the context of psychological consequences show that these were largely related to mental health problems and PsyD (Petzold et al., 2020). Research conducted by Bakioglu, Korkmaz, and Ercan (2020) declared that fear of CoviD-19 has a positive nexus with stress, depression, and anxiety. Whereas another study by Goman (2008) reflected fear as an effective motivational factor towards a counter-response at the time of threat, negative psychological reactions (depression, anxiety, and stress) emerged in cases of long-lasting and deeply rooted fear. Research conducted in the Philippines in the health care sector also verified a significant positive relationship between fear of CoviD-19 and PycD (Labrague and De los

Santos 2020). A Turkish-based study also proven a significant positive relationship and rationalised that a higher degree of CoviD-19 fear intensified PsyD (Satici, Gocet-Tekin, Deniz, and Satici, 2020). Somehow, looking into the matter logic, we have hypothesised that the main source of negative psychological outcomes depends upon the intensity of CoviD-19 fear.

H2: *Fear of CoviD-19 has a positive effect on the PsyD of health care frontline workers.*

Fear of CoviD-19 and Psychological Well-being

According to Huppert (2009), PsyW is a complex mixture of an optimum level of functionality and pleasurable emotions. According to Nica, Manole, and Briscariu (2016), PsyW is a universal and non-conditional evaluation and representation of a person's emotional state of pleasurableness. Several prior studies depicted stress and perceived challenging or threatening life events as having a negative effect on well-being and human health (McGee et al., 2018). So far as we know, only a few studies concentrate on the effect of COVID-19 on PsyW in the context of healthcare frontline workers in Pakistan. Even though no research was conducted in our constructive relationship, Turkish-based research has proven the negative nature of the relationship between CoviD-19 fear and life satisfaction (Satici, Gocet-Tekin, Deniz, and Satici, 2020). Another study by Dymecka, Gerymski, and Machnik-Czerwik (2020) also confirmed and justified that COVID-19 produces fear while threatening human health and life, which ultimately negatively and significantly affects their psychological well-being.

To minimise the hazards and intensity of the CoviD-19 infection, quarantining and social distancing mechanisms from government authorities completely transform the daily routine of every individual (Pakpour and Griffiths 2020). Due to the abrupt preventive measures, health care centres postponed face-to-face check-ups and adopted an online consultation mechanism as an alternative mechanism (Haleem, Javaid, Singh, & Suman, 2021). Such actions totally transform the usual routine of employees while generating social isolation, but in the case of frontline workers, there is no possibility or option of telemedicine. Which ultimately affect the mental health and PsyW of frontline workers in the healthcare sector (Van Bavel et al., 2020). The CoviD-19 pandemic also generates a psychologically depressed and hectic environment. Furthermore, it produces an alarming situation among the public across a broad spectrum while threatening several aspects of psychological well-being. These types of threats define the degree of individual PsyW on a daily basis (Satici, Saricali, Satici, and Griffiths 2020). Another latest investigation by Amin (2020) also confirmed the CoviD-19 effect on the PsyW of healthcare workers in Pakistan. Holding the existing literature, we conclude that fear of CoviD-19 has an impact on the PsyW of frontline employees and propose the following hypothesis*:*

H3: *Fear of CoviD-19 has a negative effect on the PsyW of health care frontline workers.*

Psychological Capital and Psychological Distress

In light of healthcare workers' previous studies that identified and documented PsyD as a key universal issue, healthcare employees remained at the forefront of combating the progression of the virus (Arias-Ulloa *et al*., 2023). PsyD is the extent of deep-rooted emotions that are related to painful experiences and bad or negative feelings (Kessler *et al*., 2002). In such a hectic state, individuals are powerless to handle specific complications or confront distress on a regular basis. It has been noted progressively more often among healthcare workers. Another study by Mirowsky and Ross (2002) testified and defined that PsyD is the degree of individual suffering, emotion, and feelings attributed to anxiety (e.g., sleep difficulties, agitation) and depression (e.g., hopelessness,

missing interest, sorrow). According to Sharp and Theiler (2018), psychological characteristics and personality traits, particularly optimism, self-esteem, resilience, and hope, are reported as coping mechanisms to handle psychological distress-related factors. PsyC considers it a better strategy to handle psychological distress and affect each other in a negative way (Sun *et al*., 2022). Literature also justifies that a high degree of PsyC weakens PsyD (Zhou *et al*., 2017). A study by Byrd and McKinney (2012) also declared that mental distress is an outcome of an individual's lower degree of confidence in their own communication abilities and lack of handling capabilities. As such, it has also been proven that a lower degree of hope is inversely associated with PsyD, including hostility, common anxiety, depression, and general anxiety (McDermott *et al*., 2015). Subsequently, a low degree of optimism is also linked with a higher degree of PsyD (Burris, Brechting, Salsman, and Carlson, 2009).

Some of the combination of positive psychological resources Hope, resilience, optimism, and efficacy are named as PsyC, which has adverse effects on mental health symptoms (depression, anxiety), and it is also justified that the combined psychological concept of these resources might be a deeper predictor of depression and anxiety than the separate HERO constructs (Finch, Farrell, and Waters 2020). Several prior studies concluded that PsyC is negatively associated with distress; advancing the PsyC of frontline health care employees may act as a defensive aspect against the shifting intensity of distress (Jin *et al*., 2020). Using the logical reasoning of the relevant studies, we hypothesise that:

H4: *PsyC has a significant negative effect on the PsyD of health care frontline workers.*

Psychological Capital and Psychological Well-being

PsyW is a comprehensive belief that addresses mental and emotional' circumstances in terms of overall life satisfaction and degree of satisfaction in a specific context. It is clearly defined as a person's complete effective stage with reference to psychological functioning (Cartwright and Pappas, 2008) and being deeply rooted in two basic beliefs of pleasure: hedonic well-being and eudemonia well-being (Deci and Ryan, 2008). The former is typically related to a person's happiness (i.e., subjective well-being), whereas the latter is related to the advancement of a person's capabilities on the basis of cognition (Disabato, Goodman, Kashdan, Short, & Jarden, 2016). The central idea of the present study is the eudemonic aspect of PsyW, which is the actualization of individual capabilities and a purposeful life. PsyW comprehends the thriving concept in the context of a challenging environment, identical to self-development and constructive relations with others (Ryff and Singer 2008).

Prior to this work, there had been several studies on the systematic relationship between PsyC and PsyW. A meta-study by Avey, Reichard, Luthans, and Mhatre (2011) verified a significant positive association between PsyC and PsyW. Although numerous other studies have also proven and justified that a higher degree of PsyC is related to a higher degree of PsyW (Mensah & Amponsah-Tawiah, 2016; Ganotice, Yeung, Beguina, & Villarosa, 2016; Luthans & Youssef-Morgan, 2017; Manzano-Garcia & Ayala, 2017; Kim, Kim, Newman, Ferris, & Perrewe, 2019; Kim, Kim & Lee, 2020). A positive development in PsyC will enrich a person's PsyW through the accumulation of constructive experiences. A person with high PsyC will shape a coping mechanism, try to find more opportunities, and strive for the achievement of their goals (Kim *et al*., 2019). When a health care frontline worker makes a positive change in psychological capital, the degree of their PsyW definitely increases. Keeping in mind the basic theme of the above-stated arguments, we hypothesized that:

H5*: PsyC has a significant positive effect on the PsyW of health care frontline workers.*

Mediation of Psychological Capital b/w CoviD-19 Fear and Psychological Distress

It is worth mentioning that former research on mental health did not give adequate focus to the PsyC of frontline service employees in the health sector. Prior researchers justified that PsyC is negatively associated with harmful emotions' such as anxiety, stress, and depression (Rahimnia, Mazidi, & Mohammadzadeh, 2013), which are assessed as a range of PsyD by Rehman *et al*. (2020). Recently, research conducted in the context of tourism in China suggested that during the COVID-19 pandemic, individuals experienced insecurities concerning their operational earnings and confronted countless distresses to their health. In such a situation, conservation of individual PsyC becomes a major challenge (Mao, He, Morrison, & Coca-Stefaniak, 2020). According to the COR-theory' of Hobfoll (2001), individuals struggle to acquire, maintain, and safeguard resources. Personal attributes, situations, vitalities, or former belongings that individuals value are counted as resources. The worth of resources differs from person to person and depends on personal knowledge and particular circumstances. The theory proposes that the loss of resources is more obvious than the gain of resources. A person with scarce resources faces negative outcomes and is more at risk of resource loss. Therefore, in a declining period of resources, a person will conscientiously behave in utilising the remaining resources while preventing future loss and strive to re-establish Zhou *et al*. (2017) reported that individual PsyC is an essential defensive aspect against PsyD, and it is defined as a condition of emotional pain attributed to symptoms of anxiety (e.g., agitation, sleep problems) and depression (e.g., hopelessness, lost interest, and misery) (Mirowsky and Ross, 2002). According to Al-Zyoud and Mert (2019), PsyC is a prospective and effective positive psychological resource that may reduce PsyD. We hypothesise based on the underpinning theory that a fear of crises or pandemic situations may reduce frontline workers' PsyC and ultimately lead to an increase in their level of PsyD.

H6: *The relationship between fear of COVID-19 and PsyD is mediated by psychological capital.*

Mediation of Psychological Capital b/w CoviD-19 Fear and Psychological Well-being

To fully understand how COVID-19's fear influences the PsyW of frontline workers, we should also reflect on the potential intervening role of individual attributes, particularly those related to frontline workers' psychological capital. The straight nexus between CoviD-19' fear and PsyW is very limited. Based on the notion of COR theory, fear has the capacity to decrease a person's well-being, as psychological health demands energy and energy needs resources (Hobfoll, 2001). According to Sun, Zhao, Yang, and Fan (2012), people with high PsyC can handle turbulent conditions with appropriate attitudes, better cope in situations of crises, always expect positive outcomes, and regain energy after frustration. In times of negative events, PsyC can play a defensive role (Laschinger & Fida, 2014). Prior studies verify an inverse relationship between stress anxiety and PsyC (Avey, Luthans, & Jensen 2009). Avey, Luthans, Smith, and Palmer (2010) validated a positive association between PsyC and PsyW. The association between PsyC and wellbeing among teachers has been proven previously, and it has been proposed that the development of PsyC may help in better wellbeing (Kurt & Demirbolat, 2019). On the basis of the cited literature, we make the contrary assumption that a reduction in PsyC will ultimately mitigate the PsyW of health care frontline workers. However, as far as we know, we are unaware of any prior reports examining the mediating effect of PsyC between CoviD-19 fear and the PsyW of frontline workers in the literature so far. Therefore, this study suggested PsyC as a mediating mechanism and hypothesised the following:

H7: *The relationship between fear of CoviD-19 and PsyW is mediated by PsyC.*

Methodology

Method

To gauge the relationships, we conduct a cross-sectional, and data were collected in a single interval of time. To assess the theoretical model and related hypotheses, we compiled a dataset shaped by an online survey questionnaire, which circulated through an online platform because it was the best option due to the nationwide lockdown imposed by the government of Pakistan as a protective strategy in the period of COVID-19. The audience or target population for this study was health care frontline employees that confront patients face-to-face while nursing them. The data was collected in the month of April 2020, which was the period in which COVID-19 fear was at its peak in Pakistan. To initiate data collection, non-probability convenience' sampling techniques were applied. Structured questionnaires were circulated through the platform of Google Forms while sharing the link through Facebook and Gmail. The online questionnaire was categorised into two segments. On the first page, respondents were bound to answer about their gender, age, and education, which were counted as demographic segments according to the theme of the research. Further segments consist of questions regarding the research model. After scrutiny of the data, a total of 344 responses were incorporated in the closing end.

For the purpose of statistical data analysis, we operationalized two major software's of research: SPSS 22.0 and Smart PLS 3.3.2. The former is used for the analysis of demographic variables, and the latter is utilised to assess the association among the variables in the research framework through a partial least squares test. To report "Partial Least Square-Structural Equation Modelling (PLS-SE)", we follow the given procedure and techniques of Hair, Hult, Ringle, and Sarstedt (2014).

Measures

Fear of CoviD-19

We adopted 07-items from Ahorsu *et al*. (2020) to evaluate the health care frontline worker's degree of fear about the novel coronavirus. This scale was particularly assembled for assessing the fear of novel coronaviruses. Items are answered on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores representing a higher degree of CoviD-19 fear. Some of the sample items are "It makes me uncomfortable to think about the coronavirus" and "I cannot sleep because I'm worrying about getting the coronavirus". Cronbach's α was recorded as greater than 0.7.

Psychological Capital

Twelve items from Lorenz, Beer, Pütz, & Heinitz (2016) were adopted to test health care frontline workers' PsyC. Items are answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores signifying a greater degree of psychological capital. The sample items consist of "I can think of many ways to reach my current goals" and I can solve most problems if I invest the necessary effort".

Psychological Distress

To evaluate PsyD, we adopted ten items from Kessler and Mroczek (1994). Items are responded to on the basis of the given ranking "(1). None of the time; (2) a little of the time; (3) some of the time; (4) most of the time; (5) all of the time"**.** The sample items were "In the past 4 weeks, about how often did you feel nervous?" "In the past 4 weeks, about how often did you feel hopeless?".

Psychological Well Being

To assess the PsyW of health care frontline workers, we used a condensed version of Reker and Wong's (1984) questionnaire. The scale consists of six items. Responses are ranked on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree); higher scores denote a higher level of PsyW. Sample items consist of "It is exciting to be alive" and "I don't seem to care about what happens to me".

Result & Findings

The demographic attributes of respondents are reported in Table I. Male health care frontline workers were noted (25.2%) and females were (74.8%). In terms of age, 18 to 25 were in the majority and recoded as 62.3 %, 26 to 40 were 32.6 %, and 41 to 60 were 5.0 %. Whereas, in the category of education, BS 4 years were in the majority among the respondents and recorded as 47.2 %, employees with diplomas are 40.3 %.

Table I: Summary of Respondents Profile

Variables	Categories	Frequency	Percentage %
Gender	Male	85	25.2
	Female	252	74.8
Age	18-25	210	62.3
	26-40	110	32.6
	41-60	17	5.00
	Over 60	0.0	0.00
Education	BS 2 Year	42	12.5
	BS 4 Year	159	47.2
	Diploma	136	40.3
N= 337			

Descriptive Statistics

Descriptive statistics were categorised in Table II below. The table reflects the values of variables in a precise and standardised format. The mean value of three demographic and four latent variables ranged from 1.2522 to 5.0423. Whereas, a Likert scale of 7 was used for latent variables except psychological distress, which was rated on a "5-point Likert scale". In such a case, the mean values of all variables were noted to be very close and above the midpoint of 3.50 and 2.50. PsyC recorded the highest mean value of 5.0423 among latent constructs. The dispersion values reported through the standard deviation reflect the range of the latent variable between 0.86636 and 1.42536.

Table II: Descriptive Statistics

Variables	Sample Size	Min	Max	Mean	Std. Deviation

Gender	337	1.00	2	1.2522	0.43494
Age	337	1.00	3	1.4273	0.58876
Education	337	1.00	5	2.4659	0.99082
CoviD-19 Fear	337	1.00	7	3.3162	1.42526
PsyC	337	1.42	7	5.0423	1.10905
PsyD	337	1.00	5	2.4273	0.8977
PsyW	337	1.67	7	4.4327	0.86636

Evaluation of measurement model (Inner Model)

Construct Validity

According to Sekaran and Bougie (2010), a construct validity test is designed to assess how well the findings gained from the application of the measure meet the theories around which a model is built (Kazemian, Abdul Rahman, Mohd Sanusi & Adewale, 2016). It can be performed by observing the respective loadings' and cross-loadings' to estimate if there are issues with any specific factors. Hair *et al*. (2010) suggested (0.5) as the minimum significant threshold value for loadings. If any item has a loading higher than (0.5) on two factors, it means that there is a significant problem with cross-loading. Table III displays construct validity while verifying that items measuring a specific construct loaded heavily on that construct while loading lightly on the others.

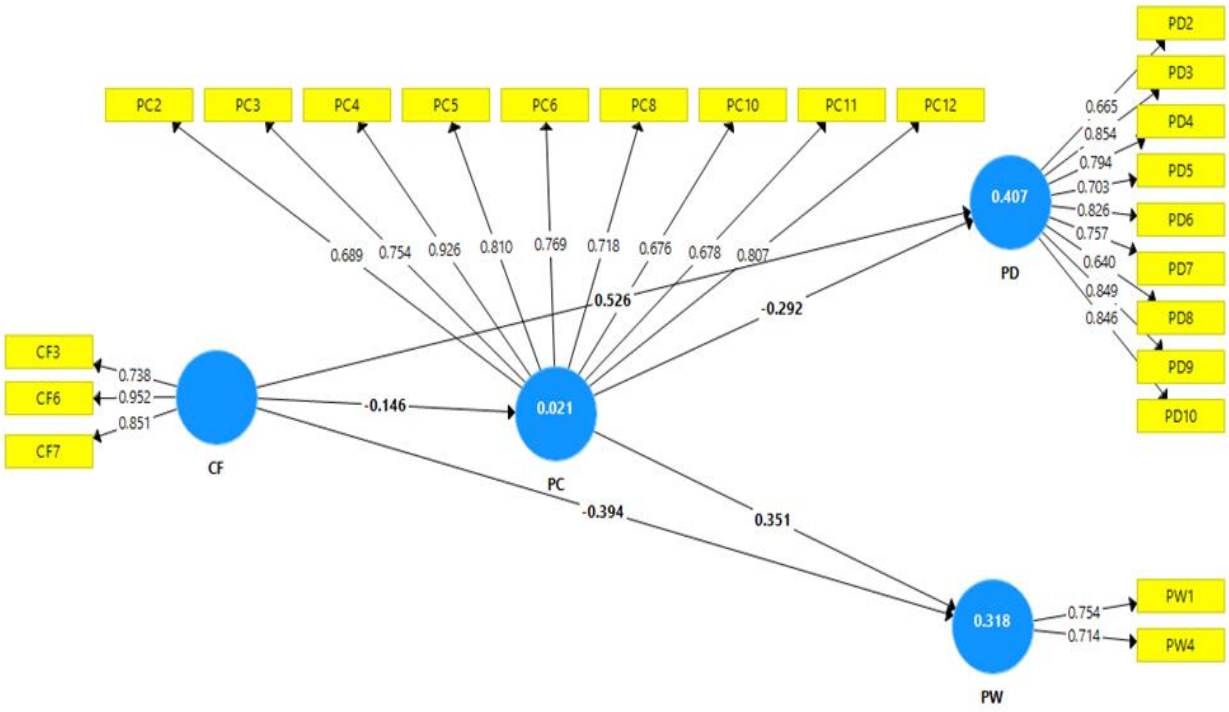

Figure 1: Research Model and Factor loadings

Table III: Factor Loading & Cross Loading

Items	CoviD-19 Fear	PsyC	PsyD	PsyW
CF3	**0.738**	-0.062	0.441	-0.312
CF6	**0.952**	-0.161	0.522	-0.448
CF7	**0.851**	-0.14	0.488	-0.366
PC2	-0.063	**0.689**	-0.282	0.264
PC3	-0.100	**0.754**	-0.285	0.304
PC4	-0.115	**0.926**	-0.306	0.430
PC5	-0.069	**0.810**	-0.28	0.375
PC6	-0.069	**0.769**	-0.274	0.345
PC8	-0.098	**0.718**	-0.276	0.283
PC10	-0.131	**0.676**	-0.252	0.258
PC11	-0.197	**0.678**	-0.262	0.217
PC12	-0.171	**0.807**	-0.313	0.287
PD2	0.416	-0.209	**0.665**	-0.485
PD3	0.566	-0.253	**0.854**	-0.566
PD4	0.423	-0.305	**0.794**	-0.584
PD5	414	-0.276	**0.703**	-0.472
PD6	0.529	-0.255	**0.826**	-0.557
PD7	0.39	-0.315	**0.757**	-0.554
PD8	0.36	-0.243	**0.640'**	-0.453
PD9	0.464	-0.326	**0.849**	-0.612
PD10	0.388	-0.377	**0.846**	-0.651
PW1	-0.38	0.246	-0.542	**0.754**
PW4	-0.271	0.357	-0.496	**0.714**

Note: The bold values represent those items that are above the recommended value of 0.5.

Convergent Validity

Under the umbrella of the measurement model, we first confirmed convergent validity, which is the position to which several items to gauge a similar idea are in agreement. Convergent validity was authenticated through factor loading of the items, composite reliability (CR), and average variance extracted (AVE) keeping the recommended criteria of Hair *et al. (2010).*

Table IV: Results of Measurement Model

Model Construct	**Measurement Items**	**Loading**	**CR**	**AVE**

CoviD-19 Fear	CF3	0.738	0.887	0.725
	CF6	0.952		
	CF7	0.851		
PsyC	PC2	0.689	0.925	0.581
	PC3	0.754		
	PC4	0.926		
	PC5	0.810'		
	PC6	0.769		
	PC8	0.718		
	PC10	0.676		
	PC11	0.678		
	PC12	0.807		
PsyD	PD2	0.665	0.930'	0.600'
	PD3	0.854		
	PD4	0.794		
	PD5	0.703		
	PD6	0.826		
	PD7	0.757		
	PD8	0.640'		
	PD9	0.849		
	PD10	0.846		
PsyW	PW1	0.754	0.700'	0.539
	PW4	0.714		

Note: AVE = Average variance extracted' CR = Composite reliability'

According to Lee and Kozar (2008), the recommended value for factor loading is 0.6, which was fulfilled by all items in the range of 0.640 to 0.952 and was retained for further study. Whereas, CF1, CF2, CF4, CF5, PC1, PC7, PC9, PD1, PW2, PW3, PW5, and PW6 were deleted after noticing they were below the cut-off value. Composite reliability, or construct reliability, is an amount of internal consistency in scale, items that are recorded in the range of 0.700 to 0.930 and meet the authorised value of 0.7 (Hair *et al*., 2010).

Table V: Summarize Result of the measurement Model

Model Construct	MI	Standardized Factor estimate	T-Value
CoviD-19 Fear	CF3	0.738	14.517

	CF6	0.952	25.533
	CF7	0.851	22.524
PsyC	PC2	0.689	6.208
	PC3	0.754	9.232
	PC4	0.926	12.287
	PC5	0.810'	10.627
	PC6	0.769	8.170'
	PC8	0.718	7.399
	PC10	0.676	6.488
	PC11	0.678	6.512
	PC12	0.807	8.129
PsyD	PD2	0.665	13.707
	PD3	0.854	22.506
	PD4	0.794	21.659
	PD5	0.703	14.278
	PD6	0.826	18.987
	PD7	0.757	17.731
	PD8	0.640'	12.864
	PD9	0.849	23.500'
	PD10	0.846	25.966
PsyW	PW1	0.754	15.293
	PW4	0.714	13.501

The average variance extracted (AVE) quantifies the variance captured by the items relative to measurement error and was noted in the range of 0.539 to 0.725, surpassing the proposed value of 0.5 (Hair *et al*., 2013). All the above criteria are scrutinised and mentioned in Table IV, whereas Figure I also depicts the factor loading of retained items. Above Table V depicts the findings of the measurement model in summary format. On the basis of their factor assessment and statistical significance, the results clearly declared that all four variables CoviD-19 fear, PsyC, PsyD, and PsyW are all valid measures of their respective constructs (Chow and Chan 2008)

Discriminant Validity

According to Hair *et al*. (2013), there are two major criteria for the assessment of discriminant validity: the cross-loading inquiry and the Fornell and Larcker (1981) standard. Henseler, Ringle, and Sarstedt (2015) raised criticism and recommended an alternative approach labelled the heterotrait-monotrait (HTMT) criteria due to its superior performance.

Table VI: Discriminant Validity of the Constructs					
Constructs	1	2	3	4	5
Fear Of CoviD-19	**0.852**				
PsyC	-0.146	**0.762**			
PsyD	0.569	-0.369	**0.775**		
PsyW	-0.445	0.408	-0.708	**0.734**	

"Diagonals signify the square root of the average variance obtained, while the other records denote the squared correlations".

The very first standards that we apply are the cross-loading examination, which was justified with the help of recorded data in Table III, and we noticed that all the items determining a specific construct loaded stronger on that construct and loaded weaker on the other constructs, thus endorsing the first condition of discriminant validity. Secondly, the Fornell and Larcker (1981) criterion was implemented, which states that the square root of the AVE of each construct should be greater than the construct's highest correlation with any other construct in the model and is depicted in Table VI.

Table VII: The heterotrait–monotrait (HTMT) Criteria				
Constructs	**CF**	**PsyC**	**PsyD**	**PsyW**
Fear Of CoviD-19				
PsyC	0.144			
PsyD	0.568	0.366		
PsyW	0.442	0.405	0.703	

Lastly, the latest technique HTMT was exercised and observed all the values below the recommended threshold of 0.9 or better below 0.85 and the outcomes are presented in Table VII. Therefore, after scrutiny of all the above recommended procedures we can concluded that our reflective measurement model acceptably established convergent and discriminant.

Reliability Analysis

Reliability is an investigation that how repetitively a gauging device evaluates whatever concept it is assessing, (Sekaran and Bougie 2010). We evaluate inter-item consistency' of our measurement items through Cronbach, s alpha coefficient and recorded significant reliability because all the recorded values are higher than (0.6) as recommended by Nunnally and Bernstein (1994). Details are mentioned in Table VIII.

Table VIII: Result of Reliability Statistics				
Constructs	**Measurement Items**	**Cronbach's Alpha**	**Loading Range**	**No. of Items**
Fear Of CoviD-19	CF3, CF6, CF7	0.884	0.738 - 0.952	3 (07)
PsyC	PC2, PC3, PC4, PC5, PC6, PC8, PC10, PC11, PC12	0.926	0.676 - 0.926	9 (12)

PsyD	PD2, PD3, PD4, PD5, PD6, PD7, PD8, PD9, PD10	0.931	0.640 - 0.854	9 (10)
PsyW	PW1, PW4	0.699	0.714 - 0.754	2 (06)

Evaluation of Structural Model (Outer Model)

A structural model has been tested through path coefficient β, the coefficient of determination R^2, effect size f^2 and predictive relevance Q^2. To check the hypothesis bootstrapping with a resample degree of 5000 were exercised (Hair *et al*., 2017) in PLS 3.3.2 to comprehend *t* values, *p* values, and bootstrapped confidence intervals. Lastly, structural model is gauged on the basis of path estimation (direct, indirect, and total paths). Figure 2 and Table VIII presents the estimated value of path coefficients for direct, indirect, and total paths. Here, the path estimates the negative relation of CoviD-19 fear and PsyC (β = - 0.146, t = 2.292, $p < 0.01$) with f^2 of 0.022 PsyD (β = 0.528, t = 11.344, $p < 0.05$) with f^2 of 0.457 and negative related PsyW (β = - 0.394, t = 5.491, $p < 0.01$) with f^2 of 0.223, thus supporting H1, H2 and H3 of the present study. We also found a negative significant relation of PsyC with PsyD (β = - 0.292, t = 5.984, $p < 0.01$) with f^2 of 0.141 and a positive significant relation with PsyW (β = 0.351, t = 5.391, $p < 0.01$) with f^2 of 0.176, thus supporting H4 and H5.

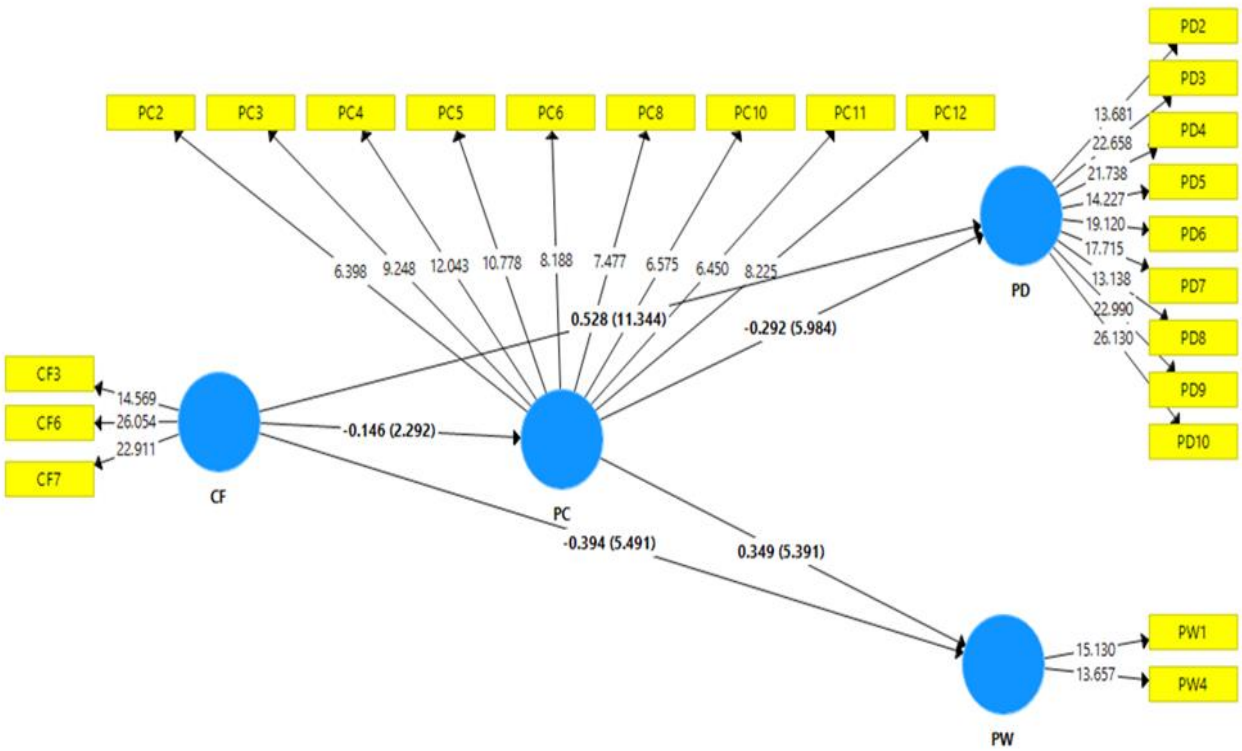

Figure 2: Findings of Structural Model

According to Zhao *et al*. (2010), there are two types of partial mediation: complimentary partial mediation and competitive partial mediation. When the indirect and direct effects have the same sign, this is referred to as complementary partial mediation. This implies that another possible mediator with the same sign as the existing mediator could be "hidden" in the direct impact. Competitive partial mediation, on the other hand, happens when the indirect and direct effects have

opposite signs. The "hidden" potential mediator and the existing mediator have conflicting signs in competitive partial mediation (Zhao *et al*. 2010). Hence according to these criteria competitive partial mediation criteria is fulfilled by H6 and H7 because their p1, p2, p3 have opposite signs.

Table : VIII Results of Structural Model & Hypothesis Testing

Hypothesis	Relationship	Coeff. β	t-Value	P-Value	Conclusion	Mediation	R^2	f^2	Q^2
H1	**CF→PC**	-0.146	2.292	0.022	Supported		0.021	0.022	0.011
H2	CF→PD	0.528	11.344	0.000	Supported		0.407	0.457	0.219
H3	CF→PW	-0.394	5.491	0.000	Supported		0.318	0.223	0.150
H4	PC→PD	-0.292	5.984	0.000	Supported			0.141	
H5	**PC→PW**	0.351	5.391	0.000	Supported			0.176	
H6	CF→PC→PD	0.043	2.122	0.034	Supported	Competitive Partial Mediation			
H7	CF→PC→PW	-0.051	1.980'	0.048	Supported	Competitive Partial Mediation			

Discussion

The main stream contribution of this paper is provision of theoretical and conceptual knowledge while applying Structural Equation Modelling (SEM) to explore the most needed domain of CoviD-19 fear, PsyC, PsyD, and PsyW among front line employees of the health sector. The following are the primary findings and consequences with their implications. The in-depth study indicate that CoviD-19 fear has a negative effect on PsyC and that the effect of fear of CoviD-19 on PsyD and PsyW is partially mediated by PsyC. The findings of this inquiry can provide an orientation concerning health practices for hospitals to enhance their front line employees PsyC, which ultimately reduce their PsyD and enhance their PsyW. Adding more into the subject, the current findings have various alternative explanations that may have significance for future research. The overall results of the statistical examination normally verified the hypotheses of the research

First, this research establish that CoviD-19 fear has a negative effect on PsyC of health care frontline workers. This result is consistent with those reported in the same nature of study by Mubarak *et al*., (2021). The study also proven that CoviD-19 fear has positive effect on employee PsyD and significantly negatively related with PsyW. As such these findings are congruent with previous study of Satici, *et al*., (2020) and Amin, (2020). In addition, to the best of our knowledge it has not been proven before, our study has revealed the partial intervening role of PsyC between fear of CoviD-19 and psychological distress, PsyW in healthcare sector of Pakistan during pandemic. As such Yildirim *et al*., (2022) stated that PsyC function as a protective psychological shield and positive determinant of psychological consequences. Therefore, we can say that employees who hold PsyC alleviates the fear of corona virus and work as a strength at the time of coping with mental stress and well-being. This suggests that front line employees in health care sector particularly nurses with high degree of CoviD-19 fear have lower degree of psychological

capital, which in turn intensify the experience of PsyD and weaken their psychological well-being. The findings of this research are important because it proven the significance of PsyC as a mental resource at the time of crises which reduce the psychological health problems of nurses.

These findings have significant implications for health care leadership staff. The health care management need to recognize the severity of pandemics fear and develop intervention that used in the time of crises and uncertain situation. The leadership need to work on the strengthen of health care worker psychological resources and equipped them with hope, optimism, resilience, and self-efficacy to reduce the harmful psychological effects of fear of CoviD-19 on mental health outcomes including PsyD and PsyW. In terms of theoretical implications, a rigorous and robust study is needed to address the fear of CoviD-19 in term of opportunity instead of a challenge, and assess whether they have different impact remain the same with negative nature and then develop intervention accordingly.

Limitation and Future research directions

Regardless of all stated contribution, this paper has some limitation that must be addressed in future studies. The study is purely cross sectional and data is gathered in a single interval of time which is do not allow researchers to track changes over time and such findings consider as flawed or skewed. As such, cross-sectional studies might also suffer from common method variance (CMV). The cross-sectional' character of this study also calls for care when conducting causal nature of study (Podsakoff *et al*., 2003). Future research design longitudinal study to further validate our findings. Third, the exclusive focus on health care frontline employees may limit the generalizability' of our results. Thus, we call for more research to examine the impacts of CoviD-19 fear by means different sample across the sectors etc. rescue workers, ambulance workers, doctors, and other frontline services staffs. Fourth, future research may further explore more outcomes of CoviD-19 fear through a rigorous design with robust analysis techniques, such as impact on employee cognition, emotional states, attitude and behaviours.

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