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Thanatophobia and Psychological Distress among Health Care Workers during COVID-19

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Abstract *The Outbreak of COVID-19 has caused distress all around the world. The healthcare professionals significant risk of transmitting coronavirus to others. This research determines the predictive effects of thanatophobia on psychological distress among healthcare workers during COVID-19. The demographic differences were related to age, gender, job title, and year of experience examined in the study variables. The data were collected on the Kessler Psychological Distress Scale and the Templer's Death Anxiety Scale from doctors, nurses, and paramedical staff in different hospitals of District Haripur, KPK Pakistan via a convenient sampling technique. Findings showed that thanatophobia predicted a 33.5% increase in psychological distress. Women and doctors were more phobic and distressed than men, nurses, and paramedical staff. The older workers with more job experience had high thanatophobia and low psychological distress than their counterparts. The study's limitations and recommendations are discussed.*

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Introduction

Human history has a record of pandemics. In the present era, the chances of an outbreak of viral diseases have increased because of cross-border traveling, trade, and public connections. The spread of severe acute respiratory syndrome (SARS) coronavirus across the globe caused over 300,000 deaths by May 2020. In Pakistan, reported cases of Covid-19 were 206512, and the death toll was 4473 by the end of June 2020 that is expected to exacerbate because of poor living conditions in most parts of the country, inadequate health facilities, safety protocols, and lack of protective supplies. The acute invasion of infectious diseases has impaired the mental health of people in general and health care workers (HCWs), in particular. It has produced fear, stress, anxiety, depression, and other psychological issues among health professionals. Depoux et al. (2020) extrapolated those emerging psychological illnesses during the pandemic are riskier in the long run than the viral infections themselves.

Healthcare workers are more amenable to ruinous concussions that harm their physical, psychological, and socio-emotional well-being during COVID-19. Psychological distress is more severe and long-lasting, resulting from risk factors during the pandemic. One such predictive factor is thanatophobia. The damaging effects are more intense in remote areas of developing countries where healthcare and

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safety operations are compromised. In the International Standard Classification of Occupations (ISCO-08), International Labor Organization (ILO, 2008) classified healthcare workers into five groups "1) doctors, 2) dentists, pharmacists, biologists, dieticians, physiotherapists, etc., 3) nurses, midwives, health officers, etc., 4) radiologists, anesthesiologists, and operation-theater technicians, etc., and 5) secretaries, cleaning staff, drivers, etc." The present study includes health professionals from all five groups.

Thanatophobia, a negative affective state, is incited by mortality salience. The reaction to thinking about the end of life or seeing others die causes negative emotions such as pain, stress, fear, anxiety, etc., (Vallès-Fructuoso et al., 2019). It is more of a traumatic experience for those who directly faced it but survived (Indacochea et al., 2021). The rising death toll and the number of infected people with the COVID-19 virus have multiplied poor psychological symptoms among HCWs. They were burdened with a heavy workload and faced challenges due to a shortage of proper resources, safety measures, and protection procedures. Such circumstances increased psychological distress among HCWs and anxiety, depression, and stress were highly prevalent among HCWs during the pandemic (Vizheh et al., 2020). Kessler et al. (2002) defined psychological distress in terms of "*nervousness, hopelessness, restlessness, worthlessness or no good, and depressed*." Psychological distress is "*an unpleasant objective state of depression and anxiety that has physical and emotional manifestations*."

Empirical evidence lacks insight into the association between thanatophobia and psychological distress. Cassiani-Miranda et al. (2021) reported that HCWs experienced more psychological trauma and related negative behaviors because they behold patients dying in routine. Fear of death springs from the likelihood of catching the virus from the infected patients, which leads them to certain mental health issues such as stress, anxiety, depression, and insomnia (Indacochea et al., 2021). Among HCWs, Dario and Gunsha (2021) found doctors had a higher level of thanatophobia because they have the responsibility of treating contagious patients with limited resources and protective equipment. Moreover, they were mentally and emotionally under-prepared to observe high death tolls and uncontrollable life-and-death situations (Yanez et al., 2020). In contrast, Gorbalenya et al. (2020) found that nurses had high thanatophobia and psychological distress than doctors during the pandemic because they have more direct and frequent contact with patients, from the time of entry into the hospital to exit.

Recently, Arslan (2021) found a significant positive association of thanatophobia with COVID-19-related suffering and stress, which lessened psychological well-being. Stress and suffering were negative correlates and predictors of mindfulness and well-being during COVID-19. Particularly, HCWs with prior ailments felt more depressed and anxious. For example, Alamri et al. (2021) found 72.1% of 389 Saudi Arabian HCWS experienced depression, and 68.7% of 389 experienced anxiety. Levels of psychological distress varied among HCWs by the type of activities they performed. Staff working in intensive care and emergency management were directly exposed to a greater number of deaths and exhibited more symptoms of psychological distress (Vizheh et al., 2020). Other boosters of psychological distress were unemployment, problems related to lockdown, less mobility, and loneliness. A study reported that people who were affected by loneliness and unemployment experienced heightened psychological distress (Liu et al., 2021).

Pakistani researchers also focused on examining the mental health status of HCWs during the epidemic. Riaz et al. (2021) surveyed 134 HCWs in Lahore to investigate the effects of COVID-19 on anxiety, depression, and stress among doctors, nurses, and non-medical workers. Results showed that a very less percentage of HCWs had mild psychological health issues and a majority reported having poor psychological health. Up to 20% HCWs were infected, and major causes included incomprehension about infection, lack of safety measures and tools, and high stress (Ali et al., 2020). Khan et al. (2021) found that 78.5% of 302 HCWs in Azad Jammu and Kashmir perceived COVID-19 as a serious threat and only 4.3% perceived it as non-risky. Almost all HCWs reported observing safety measures (97%), yet they lacked training (70%), work satisfaction (64%), and supply of personal protection equipment (53%).

Feroz et al. (2021) interviewed healthcare professionals in Karachi to know the challenges and support system during the pandemic. They enlisted excessive workload, risk of carrying and transmitting infections, scarcity of funds for risk situations, and a smaller number of trained workers among top challenges. Consequently, HCWs reported having a high level of anxiety and work overload. Noor-ul-Huda et al. (2021) examined the negative effects of the pandemic on the quality of life of 362 HCWs working in different hospitals in the Hazara Division, KPK. They found poor quality of life of HCWs during COVID-19, and it was particularly true for trainee doctors than house officers and nurses. Greater job experience predicted better quality of life than less job experience. A high designation, such as being head of the department, predicted high quality of life concerning positive social relationships only (Noor-ul-Huda et al., 2021).

Socio-demographic Differences in Thanatophobia and Psychological Distress

The age and gender of HCWs seem to predict the level of thanatophobia and psychological distress during the pandemic. Adelirad et al. (2021) examined thanatophobia among aging adults in Iran and made gender-based comparisons. Findings showed elderly women had a higher level of thanatophobia than elderly men. A study found a higher level of thanatophobia among Pakistani Muslim women than men (Suhail & Akram, 2002). Zhang et al. (2019) found an increase in the level of thanatophobia decreased self-esteem, presence of meaning in life, and search for meaning in life among 283 elderly Chinese adults. Liu et al. (2021) found that Chinese women who were younger and lonely had a higher degree of psychological distress. Alamri et al. (2021) found that Saudi Arabian women (82.1% of 123) had higher anxiety than men (55.6% of 266) during COVID-19. A Meta-analysis discovered acute distress among women, nurses, and younger and front-line healthcare workers than their counterparts (Vizheh et al., 2020). Ching et al. (2021) concluded from a Meta-analysis of 148 studies with around 16 million Asian participants that 40% HCWs had anxiety, depression, stress, and fear during the pandemic. Women and nurses had severe degrees of psychological distress.

Having more or fewer years of experience was also related to differential levels of psychological distress. Elbay et al. (2020) found a negative association between work experience and the age of HCWs with psychological distress during COVID-19. Older and more experienced doctors had low scores on depression, anxiety, and stress as compared to their younger counterparts. A potential reason can be the length of experience and heightened confidence in coping mechanisms against work stressors and personal safety skills. The less experienced and young aged HCWs were more prone to having psychological issues during the outbreak of the pandemic and public emergency. They demonstrated extreme reactions to personal safety and avoided working in risky environments (Elbay et al., 2020).

The Current Study

The present study aimed to examine the predictive effects of thanatophobia on psychological distress among HCWs during the pandemic. Another aim was to examine the demographic differences related to gender, age, job title, and years of experience in the levels of thanatophobia and psychological distress. It was hypothesized to observe a significant positive association between thanatophobia and psychological distress; thus, high thanatophobia among HCWs will lead to high psychological distress during COVID-19. Women were expected to experience high thanatophobia and psychological distress than men. It was hypothesized that older workers will have a higher level of thanatophobia but will be better able to cope with psychological distress than younger workers, who will have less thanatophobia but cannot manage psychological distress.

Likewise, job titles and years of job experience will predict differential levels of thanatophobia and psychological distress. Doctors will be more phobic and distressed than nurses and paramedics because doctors have more responsibility for the cure of patients. Last, the more experienced healthcare workers were expected to have high thanatophobia and less psychological distress because of their expert knowledge about the perils of the pandemic to the masses and the risk to their own lives. To sum up, women and doctors will score high on thanatophobia and psychological distress. Older workers with more experience will score high on

thanatophobia but low on psychological distress than their counterparts.

Method

Participants

Data was collected from doctors, nurses, and paramedical staff in different hospitals of District Haripur, KPK Pakistan via a convenient sampling technique. There were more men (n = 132) than women (n = 118). Most participants were between 20-40 years and had 10 to 15 years of job experience. Table 1 displays sample characteristics.

Table 1. Frequencies and Percentages for Participants' Demographic Characteristics

Variables	F	%
Gender		
Men	132	52.8
Women	118	47.2
Age		
21-30	91	36.4
31-40	96	38.4
41-50	35	14.0
51-60	28	11.2
Years of Experience		
1-5	67	26.8
6-10	86	34.4
11-15	57	22.8
16-20	22	8.8
21-30	18	7.2
Job Title		
Doctor	100	40.0
Nurse	78	31.2
Others	72	28.8

Measures

Templer's Death Anxiety Scale (DAS)

Templer (1970) developed this self-report measure to assess perceived of life risks and anticipation of dying in life-threatening situations or during day-to-day interactions. It accounts for the internal psychological factors and external life experiences about death. DAS consists of 15 items that are responded to on true/false or Likert type rating of strongly disagree (1) to strongly agree (5). We used dichotomous ratings in the present study. The score range was 0-15 and a higher score indicated higher death anxiety. Participants were categorized into three groups where scores 11-15 indicated high death anxiety, 6-10 was moderate death anxiety, and 1-5 was low death anxiety. The alpha reliability of this scale was .76.

Kessler's Psychological Distress Scale (K10)

Kessler et al. (2003) devised this brief screening tool to assess the likelihood of having a mental disorder. It has 10 questions about anxiety and depressive symptoms experienced in one last month that are responded to on a five-point rating scale ranging from "none of the time" to "all the time." The score ranged from 10 to 50, and a high score yields a high level of psychological distress. Respondents were diagnosed as having no, mild, moderate, or severe psychological distress if their scores were < 20, < 24, < 29, and 30-50, respectively. The alpha reliability of the scale was .78 in this study.

Procedure

Approval of the Ethics Review Committee from the University of XXX was obtained. We collected quantitative data during the face-to-face administration of questionnaires. Participants were provided with information about the research purpose and standardized instructions to respond to survey items. The willing participants were asked to provide demographic information about gender, age, years of experience, and job title, alongside

responding to the scales. Data were collected between May and June 2020 and completed in 45 days. The response rate was low, and 46% of contacted participants indicated informed consent and willingness to participate. Anonymity and data confidentiality was ensured.

Results

The skewness and kurtosis confirmed normal data distribution. On average, participants had a moderate level of thanatophobia ($M = 6.71$, $SD = 3.53$), and a mild-to-moderate level of psychological distress ($M = 26.19$, $SD = 7.14$) during Covid-19. The present study aimed to examine psychological distress as an effect of thanatophobia. The unstandardized regression coefficient represents a 6.79 times increase in psychological distress with one unit increase in the level of thanatophobia (B = 6.79, t (298) = 1.20, 0.75, $p < .05$). An increase of 1 standard deviation in thanatophobia was associated with an increase of 33.5 standard deviations in psychological distress that can be interpreted as 33.5% upward change. This finding aligns with a hypothesis about a significant positive predictive effect of thanatophobia on psychological distress during COVID-19.

Another aim of the study was to examine the demographic differences in thanatophobia and psychological distress. For this purpose, we performed an independent sample t-test for gender differences and three separate one-way ANOVA tests for variations related to age, designation, and years of experience, respectively. Table 2 displays a significant difference between men and women in the reported level of thanatophobia, favoring the latter-mentioned for relatively higher scores. There was a non-significant gender difference in psychological distress that is confirmed by the small magnitude of Cohen's d value. These findings partially support hypothesis 2 because women scored higher on only one variable.

Table 2. Mean Scores of Participants on Study Variables by Gender (n=250)

Variables	Men (n=132)		Women (n=118)		T	P	Cohen's d
	M	SD	M	SD			
Thanatophobia	6.30	3.56	7.17	3.45	-1.96	.05*	0.24
Distress	26.05	7.62	26.34	6.60	-.32	.75	0.04

*$p < .05$. *Note. M = mean; SD = standard deviation.*

Participants' reported age was categorized into four groups with an interval of 10 years, as shown in Table 3. With growing age, participants reported an incremental growth in the mean score of thanatophobia and a decline in the mean score of psychological distress. Older workers were expected to score higher on thanatophobia but lower on psychological distress than younger workers. It is confirmed by the findings that health workers in the 51-60 age group had higher scores on thanatophobia, and those in the 21-30 age group had higher scores on psychological distress. The η^2 revealed small effect sizes for both variables. However, findings confirm hypothesis 3 about age differences.

Table 3. Participants Mean Scores on Study Variables by Age (n=250)

Variables	21-30 (n=91)		31-40 (n=96)		41-50 (n=35)		51-60 (n=28)		F	η2
	M	SD	M	SD	M	SD	M	SD		
Thanatophobia	5.90	3.37	6.36	3.64	8.46	2.92	8.32	3.28	2.23*	0.08
Distress	27.00	7.73	26.07	7.07	25.83	5.90	24.39	6.81	0.25	0.01

*$p < .05$. *Note. M* = Mean*; SD* = Standard deviation.

Next, one-way ANOVA was run to estimate mean group differences in study variables due to participants' job titles. Table 4 demonstrates significant differences in thanatophobia and psychological distress. Nurses and other paramedical staff had slightly lower scores on both variables than doctors. However, the effect sizes were too small to accept these differences. The findings support hypothesis 4 that doctors will be more phobic and distressed than nurses and paramedics.

Table 4. Participants Mean Scores on Study Variables by Job Title (n=250)

Variables	Doctors (*n*=100)		Nurses (*n*=78)		Others (*n*=72)		F	η2
	M	SD	M	SD	M	SD		
Thanatophobia	7.51	3.20	6.54	3.68	5.78	3.60	5.34*	.04
Distress	26.65	8.08	25.90	5.33	25.86	7.54	0.35*	.00

*$p < .05$. *Note. M = Mean; SD = Standard deviation.*

Last, the years of experience were used to check group differences for the study variables. The findings in Table 5 display slight differences in thanatophobia and psychological distress and support hypothesis 5. The small effect sizes for both variables reveal that there were small group differences due to years of job experience. Participants who had less job experience were more distressed and those with more job experience were more phobic. The medical health workers who reported having 21-30 years of job experience had the highest levels of thanatophobia (*M* = 7.99, *SD* = 3.26) as compared to those who had 1-5 years of job experience.

Table 5. Participants' Mean Scores on Study Variables by Years of Experience (n=250)

Variables	1-5 (n=67)		6-10 (n=86)		11-15 (n=57)		16-20 (n=22)		21-30 (n=18)		F	η2
	M	SD	M	SD	M	SD	M	SD	M	SD		
Phobia	6.22	3.42	6.37	3.62	7.11	3.49	7.18	3.54	7.99	3.26	1.81	.03
Distress	27.39	7.74	25.88	6.93	26.39	7.23	25.36	4.56	23.61	8.37	.96	.01

*$p < .05$. Note. *M = Mean; SD = Standard deviation.*

Discussion

Psychological distress is a common public experience during the epidemic. Among other factors of lockdown, social distancing, unemployment, and huge death toll that escalated psychological distress, thanatophobia is a less studied predictive factor. The HCWs being the frontline fighters during COVID-19 were highly vulnerable to experience thanatophobia and its negative impact on mental wellbeing. Having scarcity of empirical evidence about mental status of HCWs during a stressful situation of the pandemic, this cross-sectional study was planned to investigate association between thanatophobia and psychological distress among doctors, nurses, and paramedical staff. The estimates show the prevalence of both among HCWs as they reported having moderate levels of thanatophobia and mild-to-moderate distress.

Not only thanatophobia and psychological distress were correlated but thanatophobia was a significant positive predictor of psychological distress. HCWs who had a higher degree of thanatophobia also reported having severe psychological distress during COVID-19 than those who reported less thanatophobia. There occurred 33.5% increase in the symptoms of psychological distress in a result of thanatophobia. This findings supports the hypothesis and aligns with Dario and Gunsha (2021) and Gorbalenya et al. (2020), who found a rise in risk of psychological distress when doctors and nurses were afraid of dying in COVID-19.

A *t*-test and three separate one-way ANOVA tests were run to respectively examine the demographic differences related to gender, age, job title, and years of experience in both study variables. Results show that on average, males, nurses, and paramedical staff faced less fear of death, and thus had less intense psychological symptoms. It was hypothesized that women will experience high thanatophobia and more psychological distress than men because of having weak coping strategies and high emotional vulnerability to stress in crisis. Females on average, scored higher on thanatophobia but there was non-significant gender difference in psychological distress. This finding partially support 2nd hypothesis. These findings are aligned with some previous studies such as Ching et al. (2021), Liu et al. (2021), and Vizheh et al. (2020).

Older HCWs with many years in medical service had high thanatophobia but low psychological distress whereas younger HCWs with few years in job had more psychological distress on average. When we compared grouped means across categories of participants' age, thanatophobia incremented, and psychological distress decremented with growing age. Senior HCWs were more phobic to death in pandemic, and this may occur with consideration of less immunity to fight infections. They might have experienced stressful crisis situations overtime and reacted to COVID-19 with lesser anxiety, depression, and stress as compared to their younger counterparts. The 21-30 age group feared death less (M = 5.90, SD = 3.37) but expressed greater distress (M = 27, SD = 7.73), whereas the 51-60 age group fear death the most (M = 8.32, SD = 3.28) and expressed less distress (M = 24.39, SD = 6.81). Findings fully support the hypothesis and age had a significant differences on thanatophobia and psychological distress. This finding is consistent with Elbay et al. (2020) who found that older and the more experienced doctors expressed low depression, anxiety, and stress than younger and less experienced counterparts.

Job title or designation were also believed to produce significant differences in thanatophobia and psychological distress. HCWs more frequently see patients' sufferings and deaths. If they fail to cope with stressful emotions, their mental health is compromised. While comparing, doctors, nurses, and paramedical staff, it was hypothesized that doctors will be more phobic and distressed than nurses and paramedics because of having clear understanding of the risk factors of epidemic and heavy workload. The finding supported the hypothesis and doctors outscored on both study variables than nurses and paramedics. These findings align with Dario and Gunsha (2021) who also found doctors were more anxious and fearful about dying in COVID-19. Likewise, less experienced HCWs were more distressed and more experienced HCWs were more phobic to death. Only fewer researchers examined the effects of on-the-job experience differences on the levels of thanatophobia and psychological distress, thus there are not many supporting studies.

Limitations and Future Recommendations

There are less studies on psychological distress among Pakistani health care workers in spite it is a populous developing country with limited resources. The shortcomings of the preset study include its cross-sectional design, use of non-indigenous and self-reported measures. No background information was gathered about the mental health status of the participants. Data collection was difficult because of lockdown, travel restrictions, and corona SOPs. Above it, health care workers were overburdened and did not cooperate to participate in this survey. That is the reason no longitudinal study or follow-up were taken. It alludes to the presence of response bias and absence of any causal association between the study variables.

On the positive side, the present study predicted levels of psychological distress in relation to thanatophobia and controlled for the socio-demographic variables. It also helped in understanding the stigma healthcare workers had to face during COVID-19 pandemic, which lead HCWs to face significant distress and suffering. Future studies should further expand on seeking information on the alternative factors affecting distress such as duty hours and acquisition of stress-management training. Based on these findings, it is recommended to introduce reduced working hours, proper rest breaks, and provision of psychological counseling services during such stressful conditions. More studies should be conducted for screening, prevention, and intervention of psychological distress among health care workers. A well-structured targeted mental health support programme is needed urgently to support and reduce the long-term impacts on healthcare workers' mental health and wellbeing.

Conclusion

The present study provides empirical support for assessment of psychological impact of COVID-19 among different healthcare workers. Findings show significant positive association between thanatophobia and psychological distress among Pakistani doctors, nurses, and paramedical staff. On average, health workers reported having moderate levels of thanatophobia and mild-to-moderate distress. As compared to men, nurses and paramedical staff, older and more experienced health workers, psychological

distress was more severe among women, doctors, youngers and less experienced health workers. In the light of these findings, government should take measures to ensure mental well-being of HCWs through training programs for stress management and crisis management, post-COVID-19 psychological interventions, and recruiting sufficient workforce in healthcare centers to mitigate over-burden and psychological distress.

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