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THE PREVALENCE AND COMORBIDITY OF DEATH ANXIETY AND PSYCHOLOGICAL DISTRESS IN PAKISTANI POPULATION DURING COVID-19 PANDEMIC

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ABSTRACT

This study was carried out to determine the prevalence and comorbidity of death anxiety and psychological distress in the Pakistani Population During the COVID-19 Pandemic. In this cross-sectional study, 468 participants between the ages of 16 to 55 years (M= 32.15, SD±9.01) were recruited online through convenient sampling via google form from September to October 2020. Chi-square test of association was performed to calculate the association between death anxiety and psychological distress across gender, ages, marital statuses, and family system. Findings revealed a 1% to 2% prevalence of severe psychological distress at a moderate level of death anxiety across all measurement dimensions. Women reported low death anxiety at a moderate level of psychological distress, whereas this prevalence was steady for men. Psychological distress was linear for young and

older adults, whereas fluctuating for adolescents. High death anxiety was reported at a moderate level of psychological distress, which declined at a severe psychological distress level. Besides, unmarried participants reported more death anxiety at moderate and severe psychological distress levels than their married counterparts. Participants from the joint family system reported high death anxiety at a moderate psychological distress level. Contrary to this, at a severe level of psychological distress, more death anxiety was reported from participants living in the nuclear family system. This study would help develop appropriate interventions to improve vulnerable groups' mental health during the COVID-19 pandemic.

INTRODUCTION

The coronavirus, first detected in Wuhan city of China, has become known as COVID-19, dominating the global headlines. By the end of January 2021, the virus has resulted in 99,864,391 COVID positive cases, including 2,149,700 mortalities (World Health Organization, 2021). This pandemic has led many governments to close the borders, impose strict lockdowns and initiate precautionary safety measures through different social media channels. People around the work started to panic and used every measure to protect themselves from the contagious virus (Garfin et al., 2020). Current literature related to the COVID-19 pandemic indicates a rise in anxiety levels related to the virus (Li et al., 2020). Current literature related to the COVID-19 pandemic indicates that death has become salient globally due to a constant mortality update through social media and apparent death cues through wearing face masks, anti-bacterial sprays, social distancing, and public speaking health campaigns.

Fear of death is central to the experience of a human being. Human beings are the only species having the capacity to anticipate their death. This ability comes with other complexities, such as the desire to live an eternal life leading to death anxiety (Yalom, 2008). Besides, this fear of death may drive one to adopt several maladaptive behaviors, underlie several mental health issues (Menzies, 2012). To explain the impact of fear of death on human behavior through a theoretical framework, the Terror Management Theory can be discussed (Becker, 1973). The theory ascertains that awareness of one's death can produce terror, which can be relieved through two distinct buffers, i.e., worldviews related to culture and self-esteem. These two buffers make individuals believe that they will be remembered after death, thereby reducing their death anxiety (Greenberg et al., 1997).

Recent literature on the current pandemic supports the idea that death anxiety initiates a significant amount of psychological distress (Ahorsu et al., 2020). Empirical evidence also suggests that fatality estimates predict psychological distress and an association between anxious beliefs, anxiety related to death, psychological distress, and behaviors during pandemics (Newton-John et al., 2020; Wang et al., 2020). During the pandemic, researchers who studied mental health disorders have reported that the affected individuals demonstrated emotional distress, depression, and stress (Brooks et al., 2020; Rubin & Wessely, 2020). There is also evidence that exposure to media also causes distress during pandemics (Neria & Sullivan, 2011)

It is challenging to determine human beings' psychological consequences due to COVID-19 and their comorbidities during the current pandemic. As the pandemic has negatively affected the public's mental health, monitoring it with other relevant variables is an immediate priority. The mentioned empirical evidence suggests that fear of death is a transdiagnostic construct driving several mental illnesses. Therefore, the prevalence and comorbidity of death anxiety and psychological distress should be studied. (Malik et al., 2021). Thus, this research was carried out to determine the prevalence and comorbidity of death anxiety and psychological distress in the Pakistani Population During the COVID-19 pandemic.

METHOD

The ethical review board of COMSATS University, Lahore, approved the study with Ref. No. CUI/LHR/HUM/090 on August 18, 2020.

RESEARCH DESIGN

Cross-sectional study

Participant Characteristics

In this study, 468 participants were recruited online through convenient sampling via google form from September to October 2020. On an online forum, participants were provided the informed consent where at first, maintenance of their confidentiality was assured. To control the extraneous variables, certain inclusion/exclusion criteria were established. Only those participants were included in the study who were: (a) Pakistani nationals, (b) not suffering and seeking treatment for any mental health illnesses, (c) not suffering from any medical illness, (d) educated (can comprehend English), and (f) had no physical disability. The sample obtained was well distributed across men (54%, n=253) and women (47%, n=215) between age 16 to 55 years (M= 32.15, SD=9.01). Out of 468 participants, 12% were adolescents (n=55), 83% young adults (n=391) and 5% older adults (n=22). These participants belong to single (80%, n=373) and married (20%, n=95) marital statuses living in joint (42%, n=198) and nuclear (58%, n=270) family setup.

Measures

Demographic Information Form

A demographic information sheet was prepared to obtain participants' information, including their gender, age, marital status, family system, family's monthly income, and any diagnosed mental illness.

Psychological Distress Scale-K10

A 10 item self-report measure for accessing psychological distress was used, developed by Kessler et al., 2003. The items assess the emotional states of the individual who took part in the study. The sample item includes "In the past

four weeks, about how often did you feel worthless." Each item is scored from 1 (none of the time) to 5 (all of the time). High scores on the scale suggest a high level of psychological distress. The minimum score obtained on the scale is 10, and the maximum is 50. An obtained score between (10 to 19) indicates their absence of psychological distress. A mild likelihood of psychological distress is indicated by an obtained score between (20 to 24). The moderate likelihood is indicated by an obtained score between (25 to 29) and severe likelihood is indicated by an obtained score between (30 to 50). The measure has good internal consistency ($\alpha=.91$) and a strong inter-item correlation (ranges from .350 to .659), indicating that the K10 is a reliable instrument.

Death Anxiety Questionnaire (DAQ)

The death anxiety Questionnaire is a 15-item self-report measure of death anxiety (Templer, 1970). A score obtained between 15 to 35 suggests a low death anxiety level. An obtained score between 36 to 55 suggests a moderate level of death anxiety, and a score between 56–75 suggests a high level of death anxiety. Cronbach's alpha and split-half coefficients for DAS were reported as 0.76 and 0.87, respectively, for a sample of older adults and college students (Conte et al., 1982).

DATA ANALYSIS

Sample's mean, standard deviation, frequencies, and percentages were calculated through descriptive analysis. Chi-square test of association was performed to calculate the association between death anxiety and psychological distress across gender, ages, marital statuses, and family system.

RESULTS

While calculating death anxiety and psychological distress categories, no participants observed severe psychological distress and death anxiety. Therefore, this category was excluded from the analysis. Overall, a 1% to 2% prevalence of severe psychological distress at a moderate level of death anxiety was observed across all measurement dimensions. Though no significant association of psychological distress with death anxiety at diverse levels in men and women was observed, women reported a low level of death anxiety at a moderate level of psychological distress. At the same time, this prevalence was steady for the men sample (see figure 1). In comparing age, interesting findings were seen as an association of death anxiety. Psychological distress was linear for samples of young adults and older adults, whereas it fluctuated for adolescents. High death anxiety was reported at a moderate level of psychological distress, which declined at a severe level of psychological distress (see figure 2). Besides, unmarried participants reported more death anxiety at moderate and severe psychological distress levels than their married counterparts at similar levels (see figure 3). Significant associations were seen in the family system as participants from the joint family system reported a high death anxiety level at a moderate psychological distress level. Contrary to this, at a severe level of psychological distress, more death anxiety was reported from participants living in the nuclear family system (see figure 4).

Table 1. Association between death anxiety and psychological distress across gender and ages

Measures	Death Anxiety											
	Men				Women		Total Sample					
	Low	Moderate	Total	χ^2	Low	Moderate	Total	χ^2	Low	Moderate	Total	χ^2
f(%)	f(%)	f(%)	f(%)		f(%)	f(%)	f(%)		f(%)	f(%)	f(%)	
Probably be well	120 (26%)	6 (1%)	126 (27%)	4.49	82 (18%)	6 (1%)	88 (19%)	4.84	202 (43%)	12 (3%)	214 (46%)	6.53
Probably have a mild disorder	62 (13%)	7 (1%)	69 (14%)		42 (9%)	7 (1%)	49 (10%)		104 (22%)	14 (3%)	118 (25%)	
probably have a moderate disorder	30 (6%)	3 (1%)	33 (7%)		31 (7%)	7 (1%)	38 (8%)		61 (13%)	10 (2%)	71 (15%)	
Probably have a severe disorder	21 (5%)	4 (1%)	25 (6%)		37 (8%)	3 (1%)	40 (9%)		58 (12%)	7 (2%)	65 (14%)	
Total	233 (50%)	20 (4%)	253 (54%)		192 (42%)	23 (4%)	215 (46%)		425 (91%)	43 (9%)	468 (100%)	
	Adolescents				Young Adults	Older Adults						
	Low	Moderate	Total	χ^2	Low	Moderate	Total	χ^2	Low	Moderate	Total	χ^2
	f(%)	f(%)	f(%)		f(%)	f(%)	f(%)		f(%)	f(%)	f(%)	

Likely to be well	21 (4%)	0 (0%)	21 (4%)	6.71	165 (35%)	11 (3%)	176 (38%)	4.64	16 (3%)	-	16 (3%)
Probably be well	18 (4%)	0 (0%)	18 (4%)		84 (18%)	13 (3%)	97 (21%)		3 (1%)	-	3 (1%)
Probably have a mild disorder	3 (1%)	5 (1%)	8 (2%)		55 (12%)	8 (1%)	63 (13%)		3 (1%)	-	3 (1%)
probably have a moderate disorder	8 (1%)	0 (0%)	8 (1%)		49 (11%)	6 (1%)	55 (12%)		0 (0%)	-	0 (0%)
Total	50 (10%)	5 (1%)	55 (11%)		353 (76%)	38 (8%)	391 (84%)		22 (5%)	-	22 (5%)

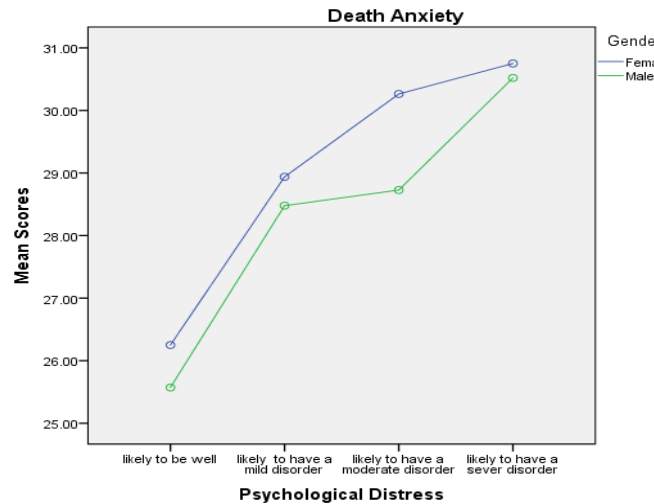


Figure 1: Interaction between men and women on psychological distress and death anxiety

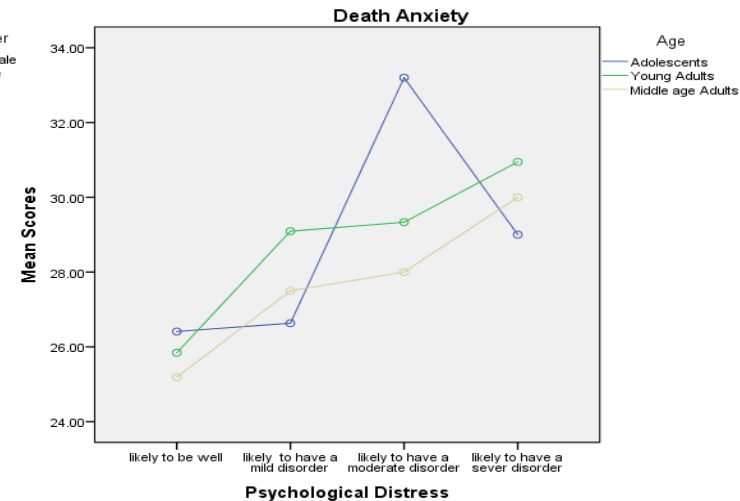


Figure 2: Interaction between ages on psychological distress and death anxiety

Table 2. Association between death anxiety and psychological distress across marital status and family system.

Measures	Single				Married			
	Low	Moderate	Total	χ^2	Low	Moderate	Total	χ^2
Psychological Distress	f(%)	f(%)	f(%)		f(%)	f(%)	f(%)	
Probably be well	145 (31%)	10 (2%)	155 (33%)	4.99	57 (12%)	2 (1%)	59 (13%)	3.08
Probably have a mild disorder	86 (18%)	14 (3%)	100 (21%)		18 (4%)	0 (0%)	18 (4%)	
probably have a moderate disorder	54 (11%)	9 (2%)	63 (13%)		7 (2%)	1 (0%)	8 (2%)	
Probably have a severe disorder	49 (11%)	6 (1%)	55 (12%)		9 (2%)	1 (0%)	10 (2%)	
Total	334 (71%)	39 (8%)	373 (79%)		91 (20%)	4 (1%)	95 (21%)	
	Nuclear				Joint			
	Low	Moderate	Total	χ^2	Low	Moderate	Total	χ^2
	f(%)	f(%)	f(%)		f(%)	f(%)	f(%)	
Probably be well	113 (24%)	7 (1%)	120 (25%)	4.01	89 (19%)	5 (1%)	94 (20%)	8.58*
Probably have a mild disorder	61 (13%)	10 (2%)	71 (15%)		42 (9%)	4 (1%)	46 (10%)	
probably have a moderate disorder	38 (8%)	3 (1%)	41 (9%)		23 (5%)	7 (2%)	30 (7%)	
Probably have a severe disorder	34 (7%)	4 (1%)	38 (8%)		24 (5%)	3 (1%)	28 (6%)	
Total	246 (52%)	24 (5%)	270 (57%)		178 (38%)	19 (5%)	198 (43%)	

*p<.05

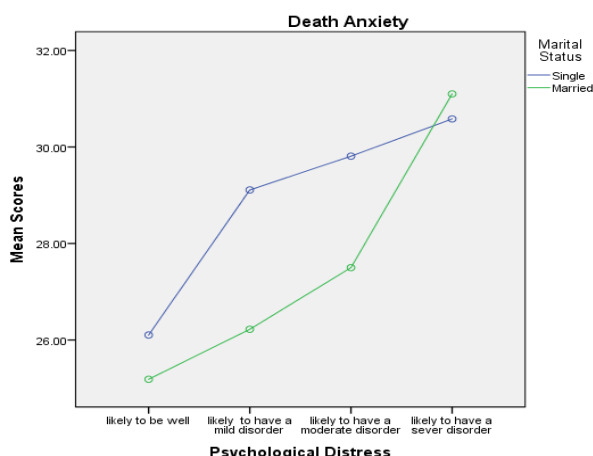


Figure 3: Interaction between marital statuses on psychological distress and death anxiety

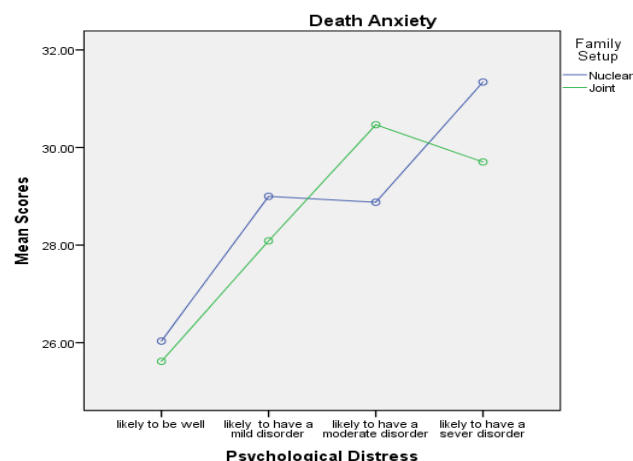


Figure 4: Interaction between family systems on psychological distress and death anxiety

DISCUSSION

To the best of our knowledge, this is the first prevalence and comorbidity study on death anxiety and psychological distress during the COVID-19 pandemic in Pakistan. Death anxiety and comorbid psychological distress have been exacerbated since the onset of coronavirus in the world. Considering the scenario, examining people's mental health during uncertainty and extreme stress becomes necessary. Along with this, knowledge of the prevalence and comorbidity of death anxiety is very crucial in designing appropriate interventions.

Being novel, COVID-19 is not much explored and is rapid in its transmission, causing a high mortality rate globally. This increase in mortality has given rise to future apprehension, causing death anxiety and comorbid psychological distress (Banerjee, 2020). This anxiety and distress weaken the body's immune system when the level is high, increasing the chance of contracting the virus (World Health Organization, 2020). Literature suggests that people who stay updated about the COVID-19 news experience more death anxiety. Such news is mainly associated with rumors and misinformation, which causes a high level of anxiety, depression, and stress (Moghanibashi-Mansourieh, 2020; Zhou et al., 2020). In line with this, knowledge of the prevalence of mentioned psychological issues can help mental health professionals guide and recommend health behaviors (Banerjee, 2020).

As Pakistan is underdeveloped with poor health conditions, this pandemic has become a more serious issue. Globally in underdeveloped countries, COVID-19 has exposed people to more significant psychological threats. The limitations of the health care system in all such countries make their population even more vulnerable to concerns about their death and related mental health illnesses (Ahmed et al., 2020; Cao et al., 2020; Ueda et al., 2020; Sigdel et al., 2020; Kazmi et al., 2020; Othman, 2020; Shevlin et al.,

2020; Odriozola-González et al., 2020; Agberotimi et al., 2020; Mazza et al., 2020).

Epidemiological literature suggests that women are usually prone to a higher risk of depression, stress, and post-traumatic stress disorder than men (Lim et al., 2018). In line with this are the results of this study that indicate no significant association of psychological distress with death anxiety at diverse levels in men and women. However, women reported a low level of death anxiety at a moderate level of psychological distress. At the same time, this prevalence was steady for the men sample. Recent literature on COVID-19 related to the prevalence of psychological issues also suggests that depression, anxiety, and stress are higher in women than in men (Liu et al., 2020).

The finding of this study suggests that psychological distress was linear for samples of young adults and older adults, whereas fluctuating for a sample of adolescents. In line with this, recent literature suggests that depression, death, anxiety, and stress are high among 21 to 40 years of age. The factor contributing to young age psychological distress might be because they are concerned about the future consequences and economic challenges caused by the pandemic. People in this age group are the primary working force of society and are the most affected by redundancies and business closures during the pandemic (Ahmed et al., 2020; Huang et al., 2020; Moghanibashi-Mansourieh, 2020). Researchers also suggest that high levels of anxiety in the young are caused due to easy access to facts and information through social media (Cheng et al., 2014).

Further current study findings suggest that High death anxiety was reported at a moderate level of psychological distress, which declined at a severe level of psychological distress. Besides, unmarried participants reported more death anxiety at moderate and severe psychological distress levels than their married counterparts at similar levels. Significant associations were seen in the family system as participants from the joint family system reported a high death anxiety level at a moderate psychological distress level. Contrary to this, at a severe level of psychological distress, more death anxiety was reported from participants living in the nuclear family system.

The Pakistani Government and health departments should ensure the infrastructure that provides a satisfactory amount of life-saving and other safety equipment to the public during the COVID-19 pandemic. If the public is optimistic about the Government's protective measures, there can be a reduction in depression and anxiety levels, and this positivity can also promote social stability (Ghaffar et al, 2021).

There are a few limitations to this study, one of which is the sample size. Due to the bombardment of online administration of research questionnaires, many people did not consent to participate in the study, reducing the sample size. Due to COVID-19 SOP and maintenance of researchers' safety, the participants could not be approached physically. Therefore, it was decided to collect the data electronically, limiting the participation of only educated

participants with internet access. It is recommended to carry out future research on a larger sample to increase the generalizability of the results. Furthermore, this study was cross-sectional and was done within a year of the onset of coronavirus. Knowing that psychological states and prevalence change over time, longitudinal studies should be carried out as a future endeavor.

CONCLUSION

Covid-19 has not only caused physical concerns among world populations but has also resulted in a rise in psychological disorders. The spread of this novel virus can have a devastating effect on people's mental health. Therefore, it is essential to determine the prevalence and comorbidity of the most encountered issue during this pandemic, i.e., death anxiety. This study would help develop appropriate interventions to improve vulnerable groups' mental health during the COVID-19 pandemic.

DECLARATIONS

Author Contribution Statement

MS conceived the idea, collected data, designed the study, wrote the initial draft of the study.

FA collected data and did the statistical analysis.

NIZK did the data collection and initial review of the article.

RF did grammatical, formatting, and language correction.

AA did the final review of the draft.

Declaration Of Interests

The author(s) disclose that they have no conflict of interest.

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Data Availability Statement

Data can be provided upon request.

Additional Information

No additional information for this paper is available.

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