# DEATH ANXIETY AND LIFE SATISFACTION AMONG HEALTH WORKERS DURING COVID-19; WITH MODERATING ROLE OF OPTIMISM

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## ABSTRACT

**Background and Aim:** The COVID-19 pandemic was a global and major health crisis that has terrible implications across the world. The current study's aim was investigating the relationship between death anxiety and life satisfaction among doctors and psychologists during the Covid-19, with the role of optimism as a moderator.

**Method:** The current research was based on a cross-sectional survey research method. Data from 200 medical doctors and psychologists was collected by using Purposive Sampling Technique by using measures of Death anxiety scale, satisfaction with life scale, and life orientation test revised for optimism.

**Findings:** The results indicated that the reliability of three scales which used in present research with descriptive analysis. The results also indicated that death anxiety has significant ($p = .01$) but negative correlation with life satisfaction ($r = -.37$, $p < .01$) and optimism ($r = -.42$, $p < .01$). It was found that the direction of relationship between death anxiety and life satisfaction become negative for optimism. There was significant gender difference and profession difference in death anxiety, life satisfaction and optimism.

**Conclusion:** Death anxiety is inversely but significant associated with life satisfaction and optimism among health workers during COVID-19. Whereas health workers with high level of optimism showed higher level of life satisfaction. Optimism also found significant moderator between death anxiety and life satisfaction among health workers. Females' health worker was found more prevalent of death anxiety as compared male health workers, but male health workers showed higher level of life satisfaction and optimism as compared to female health workers. The contrast between doctors and psychologist revealed significant in death

anxiety, life satisfaction and optimism during COVID-19. Doctors reported higher level of death anxiety and psychologist reported higher level of life satisfaction and optimism.

**Keywords:** COVID-19, death anxiety, life satisfaction, optimism, medical doctors, psychologists.

## INTRODUCTION

The pandemic of Covid19 was a major health crisis which affected the world very badly and spread around the globe rapidly, bringing with it a great deal of dread and uncertainty that had negatively impacted the many elements of society, including people's psychiatric, mental hygiene. In these circumstances, it is critical to comprehend how society views the phenomena, so that strategies can be made, and habits changed accordingly. Therefore, this research shed light on the connections between death anxiety, life satisfaction and optimism, this would assist physicians in providing practical implications for promoting high levels of life satisfaction during those challenging scenarios that were so difficult situations. A collaborative effort between health practitioners and psychologists, on the other hand, may resulting in a better outcome for all those involved.

Coronavirus pandemic outspread fast from China to over 20 additional countries; as a result, the World Health Organization's Director General, an authoritative figure in such a grave situation, declared and impose emergency. The International Committee on Taxonomy of Viruses on February 11, 2020, explained that this virus caused sickness and many others physiological symptoms as well as many of the mental health problems (Huang et al., 2020).

It has been noted that the COVID-19 spread quickly after the first instances and effected the millions of individuals and killed hundreds of thousands all over the world during this pandemic crisis (Gundogan, 2021). This pandemic not only affect the human health but also cause huge damaged to world health care system and spoiled the global economy (Fan et al., 2020). In order to death, the World Health Organization figure out that, as of May 14, 2022, there have been 520,372,492 confirmed cases of COVID-19, with 6,270,232 deaths documented (WHO, 2022).

It had been noted that due to this horrifying pandemic damage the world economy and health care of not only the underdeveloped countries but also spoiled the well-developed countries which have excellent health care system and with great economy. The well developed and stable economies including the economies of America and Europe also get instability. It's realistic to assume that the Coronavirus contagion period was be extremely tough and traumatic for individuals. Pakistan's fight against the Covid-19 pandemic has persisted. Although the pandemic in Pakistan appears to be in command, the Coronavirus outburst could spiral out of

control at any point. In Pakistan there has been a new normalization procedure started since 2020, the government has made a choice (Noshili et al., 2022; Ye et al., 2020).

It has been described in many of survey and research that the sub-continent of Asia got damaged serious level particularly the eastern neighbor of Pakistan i.e., India has a big population, so the spreading of the Coronavirus was very high in the ratio and the death toll was also very high due to his great population and lower level of services of health system. It has been estimated that around 43,155,749 people were infected and around 524,611 deaths were reported as of May 17, 2022, in the whole India in spite the government of India imposed a strong lock down and several of areas were imposed curfew. As Pakistan is a part of global village with great population so it was huge victim of the Covid-19. The first corona-virus case was discovered in Pakistan on February 25th, and the first expiry date was set for March 29th, 2020 (Nafees & Khan, 2020). It has been estimated that around 1,530,285 people were infected and around 30,379 deaths were reported to WHO as of May 17, 2022, in the whole Pakistan. People who returned to close or adjacent countries after their stay were the key sources of new coronavirus. In March 2020, the Tablighi group of 14,500 presenters in Malaysia stressed roughly 1400 residents from Pakistan (Arumugam, 2020;). In this way Coronavirus spread from one place to another or from one country to another country or from one continent to another continent. The Coronavirus pandemic has had a significant impact on all aspects of life, including psychological health such as death anxiety, depression, psychological stress with COVID-19 fear. Such type of negative life events are unpleasant, uncontrollable, and generally stressful situations that lead to negative life changes and critical challenges (Armstrong et al., 2011; Noshili et al., 2022).

Professionals, who are the members of the largest cluster of health professionals, were fighting the Coronavirus pandemic on the front lines of the health care system (Fernandez et al., 2020). Because of their direct and frequent interaction with patients, as well as the pandemic's longer working hours, health personnel who care for and treat. Patients with the Corona virus were the most vulnerable to infection (Lai et al., 2020).

The emotional health of healthcare providers, besides their physical well-being, is an important consideration during the Coronavirus crisis (Martinez-Lopez et al., 2020). Corona-virus patients suffer and die, as witnessed by health professionals (Pappa et al., 2020). Physicians had stated that being unable to do anything when affected persons are suffering from breathing problems was challenging for them and had a detrimental influence on their mental health. As a result of increased exposure to such heinous acts, occurrences can exacerbate health workers' worry, anxiety, and distress (Labrague & De Los Santos, 2020).

This causes the negative impact on everyone, but the health workers (Doctors & Psychologists) were also facing a very critical situation along with Coronavirus crisis. It's crucial to probe the optimism and life satisfaction and what they have to do with death anxiety among doctors and psychologists during the Coronavirus pandemic. As a result, medical physicians' and psychologists' life satisfaction had been significantly and negatively damaged, although optimism plays a vital role among them, and it was believed that their points of death apprehension have dropped. A better considerate of the association between life satisfaction and death anxiety would aid medical doctors in better understanding how doctors' and psychologists' optimism could be boosted in such rare conditions to lessen death fear as well as Coronavirus 19 related sickness and mortality (Chen et al., 2020).

**Death Anxiety**

The term, "death anxiety" was coined by Sigmund Freud," hypothesizing people's fear of death is a coping mechanism for doubtful babyhood traumas (Pandya & Kathuria, 2021). Death fear is also linked to being exposed to dangerous situations for life (Hoelterhoff & Chung, 2013). Death anxiety had been connected to several unfavorable healthiness consequences, including a loss in physical functioning, psychological distress, weakened ego integrity and low resilience, according to prior studies (Semenova & Stadtlander, 2016).

Physicians who are afraid of death may have negative emotions when assisting patients who were dying (Cheong et al., 2020). Health workers have more death fear than other healthcare professionals, according to certain during the Coronavirus 19, researchers conducted study (Medin et al., 2020; Sahin et al., 2020).

**Life satisfaction**

The concept of subjective well-cognitive being's component is life satisfaction, which is described as an individual's intellectual abilities with emotional evaluation of their lives while negative experiences such as fear, worry, and tension reduce life satisfaction, numerous happy life events, good friendship relationships, social support, and being mentally strong are variables that promote life satisfaction (Shahbal et al., 2022; Diener & Diener, 2009). It may be argued that persons who are satisfied with their lives have more favorable attitudes toward themselves (Hawi & Samaha, 2017; Khan et al., 2020).

**Optimism**

The hope that something positive will happen in the future is characterized as optimism (Carver et al., 2010). Optimism is also defined as a widespread inclination to anticipate positive outcomes from future events (Scheier & Carver, 1985). Optimism aids in understanding human behavior and thought. People that are optimistic had a positive outlook, were optimistic about

the future, and were motivated to work hard even when faced with difficulties. It's no wonder, then, that optimism is a crucial factor in positive psychology, a branch of psychology that studies virtues, psychological strengths, and pleasant feelings in everyday life (Snyder et al., 2010).

**Significance of the Research**

The relevance of this research is that it demonstrates that the findings deliver data for health workers, researchers, counselors to deal with such pandemic crisis. This investigation contributes to the assessment of life satisfaction and death anxiety level in health workers from Pakistan and Saudi Arabia. This study looked at how death anxiety decreases psychological distress and raises or boosts life satisfaction among health workers during the pandemic, and it revealed new information regarding the links between death anxiety, optimism, and life satisfaction.

As a result, researchers, mental health professionals, health care workers, and government officials will benefit from the findings of this investigation. Thus, the conclusions of this project exposed how optimism can lessen the impacts of death anxiety and improve life satisfaction among health care employees. This investigation could contribute to the ever-expanding collection of knowledge about the effects of physicians' mental health around the globe.

**Research Objectives**

- To measure the relationship between death anxiety, life satisfaction and optimism among doctors and psychologists during COVID-19.
- To measure the moderating role of optimism between life satisfaction and death anxiety among doctors and psychologists during COVID-19.
- To measure the gender differences in death anxiety, life satisfaction and optimism among doctors and psychologists during COVID-19.

**Hypothesis**

- There would be significant correlation between the death anxiety, life satisfaction and optimism among doctors and psychologists during COVID-19.
- There would be significant difference in life satisfaction, death anxiety and optimism among male and female doctors and psychologists due to Coronavirus 19.
- There would be significant difference of death anxiety, life satisfaction and optimism between doctors and psychologists.

## Method

### Research Design

The current research was a cross-sectional survey research method to maintain social distance during the coronavirus pandemic.

### Sample

The total sample size in this study was (N= 200) male and female health workers selected from numerous public and private hospitals/healthcare institutions/organizations of Pakistan.

### Inclusion Criteria

The study population included healthcare workers who participated in the care of COVID-19-infected patients. Participants under the age of 25-50 who agreed to participate in the study as a volunteer, completed the survey, and signed an Informed Consent form would be chosen from public and private hospitals for the current study.

### Exclusion Criteria

Those health workers who were reluctant or refused to respond, and participants who had dual nationality and those who did not meet the mentioned criteria of this study would be excluded from the sample. The researcher did not force anybody to participate in the study.

### Instruments

### Sociodemographic Form

Respondents completed a self-constructed demographic sheet including demographic information such as age, gender, career, education, home residence, connected institute, family system, and socioeconomic status.

### Death Anxiety Scale (DAS)

There are 15 true or false questions on the death anxiety scale (DAS). The questionnaire has a high internal consistency ($\alpha$= 0.89), as well as an ICC of 0.91, indicating that it is stable. In 1970, Templer reported test-retest reliability rates of 0.83 and internal consistency coefficients of 0.76 for the DAS (Templer, 1970).

### Satisfaction with Life Scale

Diener et al. (1985) developed the Satisfaction with Life Scale to evaluate the level of life satisfaction in seniors. It comprises of five items. The modified measure was finalized by Dagli and Baysal (2016), who converted it to a 5-point Likert scale. The latest version has a single factor structure and five items (for example, 'In most ways, my life is close to my ideal'). The scale had a Cronbach's alpha internal consistency coefficient of 0.88, with a test-retest consistency of 0.97.

**Life Orientation Test Revised for Optimism (LOT-R)**

Scheier and Carver (1985) created the LOT to assess individual differences in generalized optimism and pessimism. It has been employed in a wide range of studies due to its adequate psychometric qualities. Scheier, Carver, and Bridges rewrote it in 1994. The LOT-R is a shorter version of the original. It contains of ten components. The total score is calculated by reversing the results of items 3, 7, and 9. To categorize optimistic people, the following score range was employed. The author used item sum correlation to establish validity (Scheier et al., 1994).

**Research Procedure**

To acquire approval, all documentation, including consent form, permission letter, and study measures, were provided to the administration of all health-care centers from which data was collected. After a brief introduction to the study, informed consent obtained from the respondents. The study's scales were then shown, along with instructions on how to complete the questionnaire and provided autonomy to leave from the study at any time as they desire to do so. Moreover, participants requested to give their true response while filling the questionnaire. Due to the Covid pandemic situation, the data collected online. Members of the information collection were heartily thanked at the conclusion of the event. With the help of SPSS, the collected data was then broken down.

**Ethical Consideration**

Ethical permission was attained from ethical review board, department of Psychology RIUF, Ethics Committee, along with head of the institutes. Consent to use the scales in this research project was obtained by email from the authors. During the data collection process, participants were assured that their participation was completely optional and that they could leave the study at any moment with no consequences or penalties. Personal information about participants will be kept anonymous and will not be shared with anybody, and the data obtained will be kept private and confidential. The data collecting forms were filled out by health workers who volunteered to participate in the study.

## RESULTS

Following the completion of the data collection, statistical analysis was performed using SPSS (26.00). This data was analyzed using a variety of statistical methodologies. First, the variables' psychometric qualities were assessed. To test the hypothesis, statistical analyses such as correlation, multiple regression, and independent samples t-test and more than two ANOVA were employed to compare two groups (e.g., gender) of demographic characteristics.

**Table 4.1:** *Demographics Sheet of Respondents (N=200)*

| *Respondent's Characteristics* | | *f (%)* | *M(SD)* |
|---|---|---|---|
| Age of Respondents | | | 31.49 (4.71) |
| Gender | Male | 100 (50.0) | |
| | Female | 100 (50.0) | |
| Profession | Doctor | 100 (50.0) | |
| | Psychologist | 100 (50.0) | |
| Education | MBSS | 100 (50.0) | |
| | ADCP | 12 (06.0) | |
| | MS Clinical Psychology | 88 (44.0) | |
| Residence | Rural | 54 (27.0) | |
| | Urban | 146 (73.0) | |
| Affiliated Hospitals | DHQ Hospital Faisalabad | 36 (18.0) | |
| | DHQ Hospital Chiniot | 28 (14.0) | |
| | DHQ Hospital Toba Tek Singh | 30 (15.0) | |
| | Allied Hospital Faisalabad | 34 (17.0) | |
| | DHQ Hospital Sargodha | 28 (14.0) | |
| | Mujahid Hospital Faisalabad | 9 (5.5) | |
| | Safi Hospital Faisalabad | 12 (6.0) | |
| | DHQ Hospital Jhang | 23 (11.5) | |
| Family System | Joint | 75 (37.5) | |
| | Nuclear | 125 (62.5) | |
| Socioeconomic Status | Middle | 86 (43.0) | |
| | High | 114 (57.0) | |

The results from Table 4.1 disclosed the frequency distribution of demographics variables, which measured in this research using demographic sheet. The average age of respondent is (M = 31.49; SD = 4.71). In gender distribution, both male (n = 100) and female (n = 100) are equally collected. While, only doctors (n = 100) and psychologist (n = 100) are equally collected as a health worker. The doctors are collected on the base of MBBS education (n = 100), but psychologist is collected with education of ADCP (n = 12) and MS Clinical Psychology (n = 88). The participations of respondents are also considered on the base of residence, respondents from rural are (n=54) and from urban (= 146). The collection of data is

completed from 8 hospitals such as DHQ Hospital Faisalabad (n = 36), DHQ Hospital Chiniot (n = 28), DHQ Hospital Toba Tek Singh (n = 30), Allied Hospital Faisalabad (n = 34), DHQ Hospital Sargodha (n = 28), Mujahid Hospital Faisalabad (n = 09), Safi Hospital Faisalabad (n = 12), DHQ Hospital Jhang (n = 23). The participation of respondents on the base of family system shows that respondents from joint family are (n = 75) and respondents from nuclear family (n = 125). While from socioeconomic status, respondents from middle status are (n = 86) and respondents from high status are (n = 114).

**Table 4.2:** *Reliability as well Descriptive Statistics of Death Anxiety, Life Satisfaction and Optimism (N=200)*

| *Variables* | | | | *Range* | | | | |
|---|---|---|---|---|---|---|---|---|
| | *k* | *M* | *SD* | *α* | *Potential* | *Actual* | *Skewness* | *Kurtosis* |
| Death Anxiety | 15 | 27.04 | 6.61 | .77 | 0-15 | 0-15 | -.07 | .02 |
| Life Satisfaction | 5 | 45.68 | 19.49 | .92 | 5-35 | 5-34 | -.33 | -1.25 |
| Optimism | 6 | 16.27 | 8.04 | .87 | 0-24 | 0-23 | -.17 | -.82 |

The results from Table 4.2 indicated the reliability three scales which used in present research with descriptive analysis. The results support for suitable reliability for all three scales i.e., Death Anxiety (alpha = 0.77), Life Satisfaction (alpha = 0.92), Optimism (alpha = 0.87). Whereas the skewness and kurtosis score for death anxiety, life satisfaction and optimism are also help the adequate range for the normality of collected data.

**Hypothesis 1**

Correlation was conducted to test out the hypothesis that "There would be significant correlation between the death anxiety, life satisfaction and optimism among doctors and psychologists during Covid-19". Correlation results for variables of death anxiety, optimism and life satisfaction showed that death anxiety has significant but negative correlation with life satisfaction and optimism.

**Table 4.3:** *Correlation among Personality Traits, Cognitive Flexibility, and Life Satisfaction (N=200)*

| Variables | 1 | 2 | 3 |
|---|---|---|---|
| Death Anxiety | - | -.37** | -.42** |
| Life Satisfaction | | - | .53** |
| Optimism | | | - |

** $p$ <.01

The results of Table 4.3 indicated that death anxiety has significant (p = .01) but negative correlation with life satisfaction (r = -.37, p < .01) and optimism (r = -.42, p < .01). This results support that if the level of death anxiety is high among health workers, then the

level of life satisfaction and optimism is low among health workers. While the results revealed that life satisfaction has significant (p = .01) and positive relationship with optimism (r = .53, p < .01). Its mean that if the level of life satisfaction is high among health workers, then the level of optimism is also high among health workers.

**Hypothesis 2**

**Table 4.4:**

*Hierarchical (Multiple) Regression for Moderating of Optimism between Death Anxiety and Life Satisfaction (N=200)*

| Variables | Life Satisfaction | | | | |
|---|---|---|---|---|---|
| | $R^2$ | *B* | *β* | *F* | *95% CI* |
| Step 1 | .06** | | | 13.61** | |
| Age (Control Variable) | | .47** | .25** | | (.22, .72) |
| Step 2 | .33** | | | 49.26** | |
| Optimism | | .79** | .52** | | (.62, .97) |
| Step 3 | .36** | | | 36.22** | |
| Death Anxiety | | -.45** | -.17** | | (-.79, -.12) |
| Step 4 | 38.** | | | 29.29** | |
| Death Anxiety X Optimism | | 1.26* | .15* | | (.23, 2.29) |

*$p$<.05; **$p$<.01

The results of table 4.4 showed that subsequently controlling variable from demographic (i.e., age). Optimism, death anxiety, and interaction terms between death anxiety and optimism in step-4 were entered, the complete model described the 37.5% of variance ($R^2$ = .38, F (4, 195) 29.29, p < .001) for life satisfaction, where from step-1, Age as a control variable is found significant (F (1, 198) 13.61) positive predictor of life satisfaction. From step 2, the optimism is found to be a significant (F (2, 197) 49.26) predictor and moderator for life satisfaction. From step 3, the death anxiety is also found significant but negative predictor of life satisfaction. Whereas, from step 4, the interaction term between death anxiety and life satisfaction is found significant.

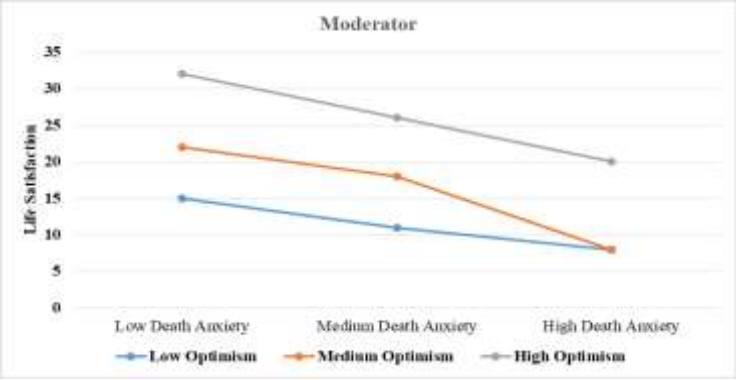


**Figure 4.1:** *Mod-graph of Death Anxiety and Life Satisfaction with Optimism as Moderator*

The figure 4.1 showed the direction of connection betwixt death anxiety and life satisfaction become negative for optimism. While low optimism is with low death anxiety is linked with slightly dissatisfied than low optimism with high death anxiety, which is showing extremely dissatisfied from life. While medium level of optimism with low death anxiety is associated with slightly satisfied as compared to medium level of optimism with high death anxiety, which is associated with extremely dissatisfied from life. Finally, compared to high socioeconomic level with good friendship quality, high socioeconomic status with low friendship quality was associated with low subjective vitality.

**Hypothesis 3**

T-test was conducted to test out the hypothesis that "There would be significant difference in death anxiety, life satisfaction and optimism among male and female doctors and psychologists due Covid-19". The results for variables of death anxiety, life satisfaction and optimism indicated that the significant gender difference in the mean (average) score of death anxiety, life satisfaction and optimism.

**Table 4.5:**

*Gender Wise Differences in Death Anxiety, Life Satisfaction and Optimism (N=200)*

| *Variable* | *Male (n = 100)* | | *Female (n = 100)* | | | | *95%CI* | | |
|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t (19)* | *p* | *LL* | *UL* | *Cohen's d* |
| *Death Anxiety* | *7.35* | *3.20* | *9.06* | *3.09* | *-3.85* | *.00* | *-2.59* | *3.18* | *.41* |
| *Life Satisfaction* | *22.00* | *7.73* | *17.01* | *8.94* | *4.22* | *.00* | *-2.66* | *7.32* | *.86* |
| *Optimism* | *14.32* | *4.95* | *10.89* | *5.90* | *4.45* | *.00* | *1.91* | *4.95* | *.70* |

The results form table 4.5 indicated the significant gender difference in the mean (average) score of death anxiety, life satisfaction and optimism. While the mean score of death anxiety is significantly ($t\ (198) = -3.85,\ p < .00$) higher among female (M = 9.06, SD =3.09) respondents than male (M = 7.35, SD =3.20) respondents. Whereas the mean score of life satisfaction is significantly ($t\ (198) = 4.22, p < .00$) higher among male (M = 22.00, SD = 7.73) respondents than female (M = 17.01, SD =8.94) respondents. Same as, the mean score of optimism is significantly ($t\ (198) = 4.45, p < .00$) higher among male (M = 14.32, SD =4.95) as compared to female (M = 10.89, SD =4.45) respondents.

T-test was conducted to test out the hypothesis that "There would be significant difference of death anxiety, life satisfaction and optimism between doctors and psychologists". The results

for variables of death anxiety, life satisfaction and optimism indicated that the significant gender difference in the mean (average) score of death anxiety, life satisfaction and optimism.

**Table 4.6:**

*Profession Wise (Doctors vs Psychologist) Differences in Death Anxiety, Life Satisfaction and Optimism (N=200)*

| Variable | Doctors (n = 100) | | Psychologists (n = 100) | | t (19) | 95%CI | | | Cohen's d |
|---|---|---|---|---|---|---|---|---|---|
| | M | SD | M | SD | | P | LL | UL | |
| Death Anxiety | 8.86 | 3.14 | 7.55 | 3.25 | 2.90 | .00 | .42 | 2.20 | .41 |
| Life Satisfaction | 17.93 | 8.93 | 21.08 | 8.22 | -2.60 | .01 | -5.54 | -.76 | .86 |
| Optimism | 11.64 | 5.94 | 13.57 | 5.30 | .2.42 | .02 | -3.50 | -.36 | .70 |

The results form table 4.6 indicated the significant profession vise difference between doctors and psychologist in the mean (average) score of death anxiety, life satisfaction and optimism. While the mean score of death anxiety is significantly (*t (198) = 2.90, p < .00*) higher among doctors (M = 8.86, SD =3.14) as compared to psychologist (M = 7.55, SD =3.25). Whereas the mean score of life satisfaction is significantly (*t (198) = -2.60, p < .01*) higher among psychologist (M = 21.08, SD = 8.22) as compared to doctors (M = 17.93, SD =8.93). Same as, the mean score of optimism is significantly (*t (198) = -2.42, p < .02*) higher among psychologist (M = 13.57, SD =5.30) as compared to doctors (M = 11.64, SD =5.94).

## Findings

The results from Table 4.1 disclosed the frequency distribution of demographics variables, which measured in this research using demographic sheet. The average age of respondent is (M = 31.49; SD = 4.71). In gender distribution, both male (n = 100) and female (n = 100) are equally collected. While, only doctors (n = 100) and psychologist (n = 100) are equally collected as a health worker. The doctors are collected on the base of MBBS education (n = 100), but psychologist is collected with education of ADCP (n = 12) and MS Clinical Psychology (n = 88).

The results from Table 4.2 indicated the reliability three scales which used in present research with descriptive analysis. The results support for suitable reliability for all three scales i.e., Death Anxiety (alpha = 0.77), Life Satisfaction (alpha = 0.92), Optimism (alpha = 0.87). Whereas the skewness (skew) and kurtosis (kurtos) score for death anxiety, life satisfaction and optimism are also help the adequate range for the normality of collected data.

The results of Table 4.3 indicated that death anxiety has significant (p = .01) but negative correlation with life satisfaction (r = -.37, p < .01) and optimism (r = -.42, p < .01). This results support that if the level of death anxiety is high among health workers, then the level of life

satisfaction and optimism is low among health workers. While the results revealed that life satisfaction has significant ($p = .01$) and positive relationship with optimism ($r = .53$, $p < .01$). Its mean that if the level of life satisfaction is high among health workers, then the level of optimism is also high among health workers.

The results of table 4.4 showed that subsequently controlling variable from demographic (i.e., age) in step 1. Optimism (moderator) in step-2, death anxiety (predictor) in step-3, and interaction terms between death anxiety and optimism in step-4 were entered, the complete model described the 37.5% of variance ($R^2 = .38$, $F (4, 195)$ 29.29, $p < .001$) for life satisfaction, where from step-1, Age as a control variable is found significant ($F (1, 198)$ 13.61) positive predictor of life satisfaction. From step 2, the optimism is found to be a significant ($F (2, 197)$ 49.26) predictor and moderator for life satisfaction. From step 3, the death anxiety is also found significant but negative predictor of life satisfaction. Whereas, from step 4, the interaction term between death anxiety and life satisfaction is found significant.

The figure 4.1 showed that the direction of relationship between death anxiety and life satisfaction become negative for optimism. Whereas low optimism is with low death anxiety is linked with slightly dissatisfied than low optimism with high death anxiety, which is showing extremely dissatisfied from life. While medium level of optimism with low death anxiety is associated with slightly satisfied as compared to medium level of optimism with high death anxiety, which is associated with extremely dissatisfied from life.

The results form table 4.5 indicated the significant gender difference in the mean (average) score of death anxiety, life satisfaction and optimism. While the mean score of death anxiety is significantly ($t (198) = -3.85$, $p < .00$) higher among female ($M = 9.06$, $SD = 3.09$) respondents than male ($M = 7.35$, $SD = 3.20$) respondents. Whereas the mean score of life satisfaction is significantly ($t (198) = 4.22$, $p < .00$) higher among male ($M = 22.00$, $SD = 7.73$) respondents than female ($M = 17.01$, $SD = 8.94$) respondents. Same as, the mean score of optimism is significantly ($t (198) = 4.45$, $p < .00$) higher among male ($M = 14.32$, $SD = 4.95$) as compared to female ($M = 10.89$, $SD = 4.45$) respondents.

The results form table 4.6 indicated the significant profession vise difference between doctors and psychologist in the mean (average) score of death anxiety, life satisfaction and optimism. While the mean score of death anxiety is significantly ($t (198) = 2.90$, $p < .00$) higher among doctors ($M = 8.86$, $SD = 3.14$) as compared to psychologist ($M = 7.55$, $SD = 3.25$). Whereas the mean score of life satisfaction is significantly ($t (198) = -2.60$, $p < .01$) higher among psychologist ($M = 21.08$, $SD = 8.22$) as compared to doctors ($M = 17.93$, $SD = 8.93$). Same as,

the mean score of optimism is significantly ($t\ (198) = -2.42,\ p < .02$) higher among psychologist (M = 13.57, SD =5.30) as compared to doctors (M = 11.64, SD =5.94).

## Discussion and Results

The objective of existing research is to measure the relationships between death anxiety and life satisfaction among health workers during COVID-19 with moderating effect of and optimism. The sample of this study were collected from both doctors and psychologists of Punjab, Pakistan without any discrimination of gender. This current research is based on a cross-sectional research survey method. The data collection was done following the purposive sampling with online google form to collect the sample of 200 health workers (i.e., n=50 male psychologists, n=50 female psychologists and n=50 male doctors, n=50 female doctors) from different hospitals with their age ranging from 25 to 60 years.

The COVID-19 had an impact on all domain of life among every person, including mental health consequences such as death anxiety, dissatisfaction from life and hopelessness (less optimism) (Haktanir et al., 2020; Evren et al., 2020). As a result, the findings of this study revealed that H1 "there would be significant correlation between the death anxiety, life satisfaction and optimism among doctors and psychologists during COVID-19" in table 4.3 that supported the findings for first hypothesis and revealed death anxiety has significant but negative correlation with life satisfaction and optimism. While the results revealed that life satisfaction has significant and positive relationship with optimism. Saeed and Bokharey (2016) indicated that death anxiety was inversely but significantly correlated with life satisfaction. The literature showed an inverse link between death anxiety and life satisfaction (Karabag, & Fidan, 2022).

Health workers' life satisfaction and death anxiety were found to be inversely associated during COVID-19 (Tomaszek & Muchacka-Cymerman, 2020). During COVID-19, there was a plethora of studies were conducted among different countries with across the population that found inverse and significant correlation between death anxiety and life satisfaction (Duong, 2021; Rababa et al., 2021). According to Neimeyer et al. (2011), future oriented personality trait like optimism is connected to death anxiety. Even though there is a vast corpus of study on death anxiety, there has been plenty of research on the relationship between death anxiety and optimism that found optimism has been associated to lower death anxiety among younger adults and older adults (Barnett et al., 2018; Abbas et al., 2022). The past studies are similar with present research and supported $H_1$ of current research.

The results of present research revealed for $H_2$ "there would be a moderating role of optimism between life satisfaction and death anxiety among doctors and psychologists during COVID-

19 in Table 4.4 that revealed optimism as a moderator between death anxiety and life satisfaction among doctors and psychologists during COVID-19. Further results also found death anxiety and optimism are significant predicators of life satisfaction. The mod graph for moderation indicated the direction of relationship between death anxiety and life satisfaction become negative for optimism. Whereas low optimism is with low death anxiety is linked with slightly dissatisfied than low optimism with high death anxiety, which is showing extremely dissatisfied from life.

While medium level of optimism with low death anxiety is associated with slightly satisfied as compared to medium level of optimism with high death anxiety, which is associated with extremely dissatisfied from life. The results past studies indicated that optimism is significant predictor life satisfaction (Agberotimi & Oduaran, 2020). Tuckwiller and Dardick (2018) found that optimism is substantially linked to life satisfaction. Yu and Luo (2018) discovered that optimism was positively associated to well-being. Another researcher found death anxiety as predictor of life satisfaction among nurses During the COVID-19 Pandemic in Turkey. The past studies are similar with present research and supported $H_2$ of current research.

The results of current research for gender difference revealed in table 4.5 that indicated the significant gender difference in the mean of death anxiety, life satisfaction and optimism. Female respondents have a considerably higher mean score for death anxiety than male respondents. Male respondents have a much higher mean score of life satisfaction than female respondents. Similarly, men respondents have a much higher mean optimism score than female respondents. Females have more prone toward fear of death and lower level of life satisfaction than males (Pierce et al., 2007; Saeed & Bokharey, 2016). Past researchers also found that men are more optimistic than women (Comerford, 2021; Jacobsen et al., 2014).

The results of current research showed for $H_3$ "there would be significant difference of death anxiety, life satisfaction and optimism between doctors and psychologists" in table 4.6 indicated the significant profession vise difference between doctors and psychologist in the mean (average) score of death anxiety, life satisfaction and optimism. While doctors had a considerably higher mean score for death dread than psychologists. Whereas the mean score of life satisfaction is significantly higher among psychologist as compared to doctors. Same as, the mean score of optimism is significantly higher among psychologist as compared to doctors. The death anxiety rate was higher in doctors due their exposure with COVID patients as compared to psychologist. Psychologist were more optimistic and higher life satisfaction as compared to doctors. There is no study in past that support the results of current research.

**Limitations of the Study**

However, study has several limitations. The limitations of this study are that the data were collected online, only from Pakistan's healthcare units/hospitals and it is not possible to determine whether the sample represents whole world. Applied for age range between 25-60 years only. Another flaw was that the data collection method was online, which resulted in a slew of complications, including bogus responses, a lengthy procedure, and so on. The participants in this study were assessed using a self-report standard of assessment, which may be insufficient for collecting perfect data; as a result, future studies may use both qualitative and quantitative research methods or be developed for further development.

**Suggestions and Recommendations**

The data of this research were collected only Pakistan, so it is recommended in future, data will be collated from other countries. In this research, only quantitative data were collected with purpose sampling, non-random sampling have less generalizability, so in future, random sampling will be used. It is also recommended in upcoming research that add more independent variables to measure the outcome variable of life satisfaction among health workers. The present study was a quantitative, as quantitative study has numerous limitations, qualitative studies should be conducted to investigate the reason of life satisfaction.

**Implications of the study**

The existing study will be beneficial for doctors, psychologists, scholars and government sectors for purpose of necessary arrangements during the pandemic situation such as COVID-19. Doctors and particularly females revealed higher tendency death anxiety, so therefore it is counselled to psychologists that they must be arranged seminars for doctors during and even after COVID-19 pandemic to improve their life satisfaction and reduce the level of death anxiety. Government should take initiative to start such as project that provide mental health facilities for doctors.

**Conclusion**

The conclusion of this research is that death anxiety is inversely but significant associated with life satisfaction and optimism among health workers during COVID-19. Whereas health workers with high level of optimism showed higher level of life satisfaction. Optimism also found significant moderator between death anxiety and life satisfaction among health workers. Females' health worker was found more prevalent of death anxiety as compared male health workers, but male health workers showed higher level of life satisfaction and optimism as compared to female health workers. The contrast between doctors and psychologist revealed significant in death anxiety, life satisfaction and optimism during COVID-19. Doctors reported

higher level of death anxiety and psychologist reported higher level of life satisfaction and optimism.

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