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# Relationship between Death Anxiety and Resilience among Myocardial Infarction Patients: Moderated By Social Support

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## ABSTRACT

*The current research aimed to assess the relationship between death anxiety and resilience among myocardial infarction patients, moderated by social support, and to find out the difference of death anxiety, resilience, and social support about the demographic variables (gender, age, qualification, marital status and number of heart attacks). A sample of 300 patients from different hospitals (CMH, AIMS, Cardiac hospital & AMI)in Muzaffarabad was taken. Death Anxiety Scale (DAS), Nicholson McBride Resilience Questionnaire (NMRQ), and Social Support Questionnaire- Shortened Version were used. Total 45items of questionnaires were given to the participants from different hospitals of Muzaffarabad. Data analysis was performed using SPSS (Statistical Package for Social Sciences) software version 21, using the analysis of correlation, regression, moderation, t-test, and ANOVA. Correlation yielded that there is no significant relationship between death anxiety and resilience among MI patients. Social support plays the role of moderator in the relationship between death anxiety and resilience. Statistical analysis has shown that there exists no significant difference in levels of death anxiety and resilience of MI patients based on age, gender, qualification, family income, and number of heart attacks. Marital status has a significant impact on death anxiety but not on the resilience of these patients. Our research shows that the study of these demographics has a significant impact on the level of social support. A significant difference was noted in values of social support based on gender, qualification, and number of heart attacks. The study can provide insight that could guide interventions and support for those dealing with death anxiety and the vital role of social support.*

## Introduction

Myocardial infarction (MI) is the top killer among non-communicable disease worldwide, affecting approximately 17.7 million people (Riahi, 2016). It is projected that by 2030, deaths due to MI could rise to 23.3 million (Esfahani et al., 2017; Koohi et al., 2015).The Global Burden of Disease Study indicates that from 1990 to 2019, the incidence of MI grew from 271 million to 523 million, while the rate of death due to MI has increased from 12.1 million to 18.6 million (Roth et al., 2020).According to the World Heart Report (2023), the global population in 2023 reached 8 billion, with around 620 million individuals affected by heart and circulatory diseases.

The mortality rate due to acute myocardial infarction (AMI) in Pakistan is particularly concerning. Data from the National Cardiovascular Data Registry (NCDR) indicates that in-hospital mortality rates for AMI patients range from 3% to 4%, which aligns with global trends but can vary based on care quality and treatment timeliness (PLOS, 2023). The rise in cardiovascular diseases has made them one of the most common health issues in Azad Kashmir and Muzaffarabad, affecting nearly every family. The resulting increase in mortality has caused widespread death anxiety among the population.

Death anxiety involves fears related to one's own impending death, the potential loss of significant people, and negative emotional responses triggered by the thought of nonexistence (Koshkhatti et al., 2020).Moderate levels of death anxiety can motivate positive activities and help individuals find meaning in life, excessively high levels can lead to psychological maladjustment, heightened anxiety, and other disorders. This can also cause avoidance behaviors and hinder discussions about end-of-life care and medical decision-making (Mohammadpour et al., 2018). On another note, death anxiety describes the fear stemming from one's perception of their own death or dying process, often surfacing when individuals face threatening illnesses or stressors that suggest an approaching death (Sherman et al., 2010).A study by Valikhani and YarmohammadiVasel (2014) found that 70% of patients with cardiovascular disease experience moderate to severe levels of death anxiety. Several factors, including resilience, can help reduce anxiety related to chronic illness (Sadoughi et al., 2017).

Resilience is the ability to recover from stress or crises and return to a baseline state. It represents a psychosocial strength that reduces negative emotions and promotes adaptation during difficult situations (Kim, 2019). A dynamic process, resilience can lead to positive adaptation when facing life’s challenges, helping individuals with chronic illnesses manage anxiety and stress more effectively. It can boost self-esteem, emotional stability, and personal strength (Rayatpishesh et al., 2023).Those with high resilience levels can better cope with illness-related challenges, allowing for quicker adaptation to chronic diseases when supported by factors such as problem-solving skills, hope, spirituality, and other facilitators (Karadag et al., 2019). Enhancing resilience in patients with cardiovascular diseases can help them better withstand stressors, anxiety, and psychological issues (Amirkhani et al., 2021). One way to boost resilience is through social support.

Social support refers to both physical and emotional assistance provided by family, friends, coworkers, spiritual advisors, healthcare professionals, and community members (Karadag et al., 2013).High levels of support have been shown to protect cardiac patients from the negative outcomes associated with anxiety (FrasureSmith et al., 2000). Social support also contributes to health outcomes by reducing engagement in harmful coping mechanisms related to chronic diseases (Shen et al., 2004).Studies have shown that high social support levels can buffer cardiovascular responses to acute psychological stressors (Thorsteinsson et al., 1998). Social

support has been linked to better clinical outcomes for heart patients. For instance, Berkman et al. (2000) found that individuals with strong social networks and support systems had lower mortality rates following a myocardial infarction (MI). Gottlieb et al. (2005) also found that social support positively influences adherence to cardiac treatment plans, with patients who have supportive relationships more likely to follow prescribed treatments and lifestyle changes crucial for managing heart disease.

Death anxiety has been consistently linked to decreased resilience in patients with myocardial infarction (MI) (Huffman et al., 2016; Taylor et al., 2017).This relationship can be attributed to existential fears triggered by death anxiety, leading to decreased resilience. Furthermore, death anxiety promotes rumination, which undermines resilience (Nolen-Hoeksema et al., 2008). A study by Lee et al. (2022) found that death anxiety predicted lower resilience in MI patients, mediated by anxiety and depression. Another study by Wang et al. (2020) found that death anxiety negatively correlated with resilience and quality of life in MI patients. The negative correlation between death anxiety and resilience has been explored in various studies, indicating that individuals with higher resilience tend to experience lower levels of death anxiety (Aldao et al., 2010).

Furthermore, social support plays a crucial role; resilient individuals often have strong social networks that provide emotional comfort and reduce feelings of isolation when grappling with existential issues (Taylor, 2007). Collectively, these factors illustrate how resilience acts as a protective buffer against death anxiety, promoting psychological well-being in the face of mortality.

Social support has been shown to moderate the relationship between death anxiety and resilience in MI patients.High social support buffers the negative impact of death anxiety on resilience (Cohen et al., 2000; Taylor et al., 2017) whereas low social support exacerbates the negative impact of death anxiety on resilience (Huffman et al., 2016). A sense of belonging, fostered by social support, also reduces death anxiety's impact on resilience (Holt-Lunstad et al., 2015). Additionally, social support enhances self-esteem, mitigating the negative effects of death anxiety on resilience (Taylor et al., 2017). A study by Zhang et al. (2022) found that social support from family and friends buffered the negative impact of death anxiety on resilience in MI patients. Another study by (Liu et al. 2020) found that online social support improved resilience and reduced death anxiety in MI patients.

## Objectives

1. To investigate the relationship between resilience and death anxiety among MI patients.
2. To explore the impact of resilience on death anxiety among MI patients.
3. To explore the moderating influence of social support on the relationship between resilience and death anxiety among MI patients.
4. To investigate the role of demographics (age, gender, qualification, marital status, and number of heart attacks) on study variables (resilience, death anxiety, social support) among MI patients.

## Hypothesis

1. There will be a substantial negative correlation between death anxiety and resilience among myocardial infarction patients.
2. Resilience will negatively predict death anxiety among myocardial infarction patients.

3. Social support will moderate the relationship between death anxiety and resilience among myocardial infarction patients.
4. Demographics (age, gender, qualification, marital status & number of heart attacks) will significantly predict variations with variables among MI patients.

## Method

For this research we first took permission letters from our department for hospitals concerning the heads of different hospitals, after obtaining permission from there, we got consent signs from patients and then went to data collection, even during the data collection, patients who did not show willingness or emotional regulation, we did not collect data from them. For the research purpose sample of 300 patients N=300 of myocardial infarction patients was taken from different hospitals in Muzaffarabad. Questionnaires were utilized to explore the relationship between death anxiety, social support, and resilience. For the survey these questionnaires (death anxiety scale, Nicholson McBride Resilience Questionnaire (NMRQ) and Social Support Questionnaire-Shortened Version) were used. These research questionnaires were distributed to the participants with clear instructions, asking them to first read the general guidelines before responding. Participants were encouraged to complete the questionnaire individually and thoroughly, ensuring that no statement was left unmarked. After obtaining informed consent, each participant was given approximately 25 minutes to fill out the questionnaire. Upon completion, they were thanked for their participation. The collected data was then statistically analyzed using SPSS version 21 using correlation, regression, moderation, t-test, and ANOVA analysis to achieve the research objectives.

**Table 1: Socio-demographic Statistics of Participants (N=300)**

| Demographic variables | Frequency | Percent |
|---|---|---|
| **Gender** | | |
| Male | 146 | 48.7 |
| Female | 154 | 51.3 |
| **Age** | | |
| 18-40 | 90 | 30.0 |
| 41-65 | 210 | 70.0 |
| **Marital status** | | |
| Un-married | 48 | 16.0 |
| Married | 207 | 69.0 |
| Others | 45 | 15.0 |
| **Qualification** | | |
| Under-graduate | 183 | 61.0 |
| Graduate | 117 | 39.0 |
| **Family income** | | |
| Less than or equal to 1 lac | 209 | 69.7 |
| More than 1 lac | 91 | 30.3 |
| **No. of heart attacks** | | |
| 1 | 227 | 75.7 |
| 2 | 63 | 21.0 |
| More than 2 | 10 | 3.3 |

Table 1 presents the demographic characteristics of the study participants ( N=300), highlighting key variables such as gender, age, educational qualification, marital status, family income, and history of heart attacks. The sample exhibits a nearly balanced gender distribution, with 48.7% male (146 individuals) and 51.3% female (154 individuals). Age distribution shows a significant majority (70.0%) in the 41-65 years category (210 individuals), while 30.0% are younger, aged 18-40 years (90 individuals). Regarding educational qualifications, 61.0% of participants are undergraduates (183 individuals), and 39.0% hold graduate degrees (117 individuals). Marital status indicates that most participants are married (69.0%, 207 individuals), with 16.0% unmarried (48 individuals) and 15.0% identifying as "others" (45 individuals). In terms of family income, a substantial 69.7% report earnings of less than or equal to 1 lac (209 individuals), while 30.3% have a higher income (91 individuals). Finally, a notable majority (75.7%) of participants have experienced only one heart attack (227 individuals), with 21.0% reporting two (63 individuals) and 3.3% indicating more than two heart attacks (10 individuals).

**Table 2: Psychometric Properties for Scale**

| Scale | M | SD | Range | Cronbach's α | skewness | kurtosis |
|---|---|---|---|---|---|---|
| Death anxiety scale | 34.65 | 4.75 | 22.44-46.86 | .704 | .026 | -.130 |
| Resilience scale | 36.84 | 7.15 | 19.72-55.26 | .739 | .007 | -.237 |
| Social support scale | 30.61 | 5.42 | 15.0-44.0 | .772 | -.096 | .507 |

*Note: Cronbach's alpha coefficients are reported for each scale.*

Table 2 outlines the psychometric properties of the scales used in the study, providing key statistics including mean (M), standard deviation (SD), range, and Cronbach's alpha for each scale. The Death Anxiety Scale has a mean score of 34.65 with a standard deviation of 4.75, indicating a range of scores from 22.44 to 46.86. The scale exhibits a Cronbach's alpha of 0.704, suggesting acceptable internal consistency. The Resilience Scale has a mean score of 36.84 and a standard deviation of 7.15, with scores ranging from 19.72 to 55.26; it shows good internal consistency with a Cronbach's alpha of 0.739. Lastly, the Social Support Scale has a mean of 30.61 and a standard deviation of 5.42, also reflecting a range of scores from 19.72 to 55.26, and it demonstrates strong internal consistency with a Cronbach's alpha of 0.772. These statistics affirm the reliability and validity of the scales utilized in the research, contributing to the overall robustness of the study findings.

**Table 3: Pearson correlation among death anxiety and resilience**

| Variable | DAS | RS |
|---|---|---|
| DAS | -- | |
| RS | -.026 | -- |

*NOTE: DAS=Death Anxiety Scale, RS=resilience Scale*

Table 3 displays the Pearson correlation between death anxiety (DAS) and resilience (RS). The correlation coefficient between these two variables is -0.026**,** indicating a very weak negative relationship that is close to zero and non-significant. This suggests that, within the sample, there is essentially no meaningful association between death anxiety and resilience. The correlation between each variable and itself (DAS with DAS and RS with RS) is 1, as expected for self-correlations. Overall, the data suggest that death anxiety and resilience do not significantly influence one another in this particular study.

**Table 4: Regression analysis of variable predicting death anxiety N=300**

| Variable | *B* | *S.E* | *t* | *p* | L.L-U.L |
|---|---|---|---|---|---|
| Constant | 34.68 | .270 | 1.28 | .00 | 34.1-35.2 |
| Resilience | .364 | .286 | -1.270 | .205 | -.927-.200 |
| Social support | .499 | .283 | 1.74 | 1.75 | -.65-1.06 |

*NOTE: N=300, p>.01*

The *regression* analysis, conducted with a sample of 300 participants, examined the predictors of death anxiety, focusing on resilience and social support. The results revealed that resilience had a coefficient of 0.364, but this was not statistically significant (p = 0.205), indicating no meaningful relationship with death anxiety. Social support showed a coefficient of 0.499, suggesting a positive association, but its significance remains unclear due to an apparent error in the reported p-value (1.75).

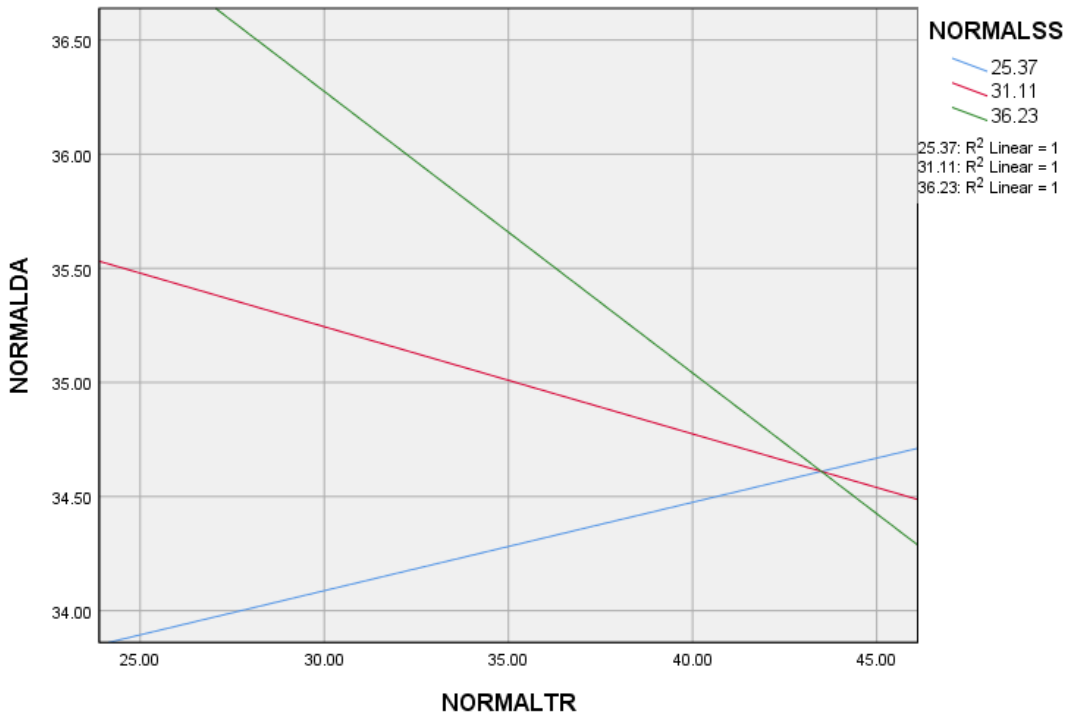
**Table 5: Moderating role of social support between death anxiety and resilience ( N=300)**

| Variable | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| | B | Beta | SE | B | Beta | SE |
| Constant | 34.702 | | .271 | 34.879 | | .284 |
| Resilience | -.284 | -.061 | .286 | -.282 | -.060 | .284 |
| Social support | .512 | .109 | .286 | .534 | .114 | .285 |
| Resilience *social support | | | | -.561 | -.112 | .289 |

Table 5 presents the results of a regression analysis exploring the moderating role of social support between death anxiety and resilience, with a sample size of 300 participants. The table is divided into two models. In Model 1, the coefficients (B) show that resilience has a small negative effect on death anxiety (B = -0.284, Beta = -0.061), while social support has a positive effect (B = 0.512, Beta = 0.109). In Model 2, the resilience coefficient remains similar (B = -0.282, Beta = -0.060), and the effect of social support slightly increases (B = 0.534, Beta = 0.114). Importantly, the interaction term for resilience and social support in Model 2 indicates a negative effect (B = -0.561, Beta = -0.112), suggesting that social support moderates the relationship between resilience and death anxiety. Overall, these results imply that social support play a significant role in how resilience influences death anxiety.

The graph shows that the x-axis is labeled “NORMALTR” and represents the resilience levels. The y-axis is labeled “NORMALDA” and shows death anxiety levels. Three separate lines represent different levels of social support, Blue Line Corresponds to lower levels of social support (SS = 25.37). Red Line Represents moderate levels of social support (SS = 31.11). Green Line Indicates higher levels of social support (SS = 36.23).The graph indicates that the relationship between resilience and death anxiety changes based on the level of social support. Low Social Support (Blue Line) shows that resilience increases, and death anxiety also slightly increases. This suggests that for patients with lower social support, increasing resilience may not significantly reduce death anxiety. (Red Line) shows a more stable or slightly decreasing trend in death anxiety as resilience increases. It implies that moderate social support may provide some buffering effect, reducing death anxiety at higher resilience levels. Green Line shows that resilience increases and death

anxiety decreases significantly. This suggests that high social support enhances the protective role of resilience, effectively reducing death anxiety among MI patients.




*NOTE:DAS=death anxiety scale, TR=resilience, SS=social support*

The lines appear to intersect, emphasizing that the impact of resilience on death anxiety is notably moderated by the level of social support. The effect varies significantly across low, moderate, and high social support conditions. High social support enhances the protective effect of resilience, effectively reducing death anxiety. In contrast, low social support weakens this effect, demonstrating the crucial moderating role of social support.

**Table 4: Result of t-test and descriptive statistics for death anxiety, resilience And social support by gender (N=300)**

| | **Gender** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Males (n=146)** | | **Females (n=154)** | | | **95%CI** | |
| Variable | M | SD | M | SD | t | p | Cohen'sd |
| Death | 34.22 | 5.08 | 35.12 | 4.24 | -1.67(298) | .22 | 0.19 |
| anxiety | 36.51 | 7.38 | 37.14 | 6.61 | -.78(298) | .07 | 0.08 |
| Resilience | 30.48 | 5.80 | 30.82 | 4.95 | -.55(298) | .005 | 0.06 |
| Social support | | | | | | | |

*NOTE: Independent samples t-test assumes that the observations are independent*

Table 6 presents the results of the t-test and descriptive statistics for the Death Anxiety, Resilience, and Social Support, stratified by gender (N=300). For the Death Anxiety, males (n=146) have a mean score of 34.22 (SD = 5.08), while females (n=154) have a slightly higher mean of 35.12 (SD = 4.24). The t-test results indicate a t-value of -1.67 with 298 degrees of freedom and a p-value of 0.22, suggesting no statistically significant difference between genders in death anxiety levels.

Regarding Resilience, males report a mean score of 36.51 (SD = 7.38), compared to females who have a mean score of 37.14 (SD = 6.61). The t-test yields a t-value of -0.78 (298 degrees of freedom) with a p-value of 0.07, indicating that the difference in resilience scores between genders is not statistically significant. In terms of social support, males have a mean score of 30.48 (SD = 5.80), while females report a mean of 30.82 (SD = 4.95). The t-test results show a t-value of -0.55 (298 degrees of freedom) with a p-value of 0.005, suggesting a statistically significant difference in social support scores between genders, with females scoring higher.Cohen's d values, indicating effect sizes, are 0.19 for Death Anxiety, 0.08 for Resilience, and 0.06 for Social Support, all suggesting small effect sizes. Overall, while there are no significant differences in death anxiety and resilience between genders, the difference in social support is notable, with females reporting higher levels.

**Table 5: Result of t-test and descriptive statistics for death anxiety, resilience, and social support by age (N=300)**

| | **Age** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **18-40 (n=90)** | | **41-65 (n=210)** | | | **95% CI** | |
| Variable | M | SD | M | SD | t | p | Cohen'sd |
| Death | 34.22 | 4.3 | 35.2 | 4.8 | -1.7(298) | .554 | .21 |
| anxiety | 37.82 | 7.2 | 36.41 | 6.8 | 1.6(298) | .364 | .20 |
| Resilience | 29.80 | 5.6 | 31.03 | 5.2 | -1.8(298) | -1.7 | .22 |
| Social support | | | | | | | |

*NOTE: independent samples t-test assumes that the observations are independent*

Table 7 presents the results of the t-test and descriptive statistics for the Death Anxiety, Resilience, and Social Support, categorized by age groups (N=300).For the Death Anxiety, participants aged 18-40 years (n=90) have a mean score of 34.22 (SD = 4.3), while those aged 41-65 years (n=210) report a higher mean of 35.20 (SD = 4.8). The t-test results indicate a t-value of -1.7 with 298 degrees of freedom and a p-value of 0.554, suggesting no statistically significant difference in death anxiety levels between the two age groups. In terms of Resilience**,** younger participants have a mean score of 37.82 (SD = 7.2), compared to older participants who have a mean score of 36.41 (SD = 6.8). The t-test yields a t-value of 1.6 (298 degrees of freedom) and a p-value of 0.364, indicating that the difference in resilience between the age groups is not statistically significant. Regarding Social Support**,** those aged 18-40 years report a mean score of 29.80 (SD = 5.6), while participants aged 41-65 years have a higher mean score of 31.03 (SD = 5.2). The t-test results show a t-value of -1.8 (298 degrees of freedom) with a p-value of 0.17, again indicating no significant difference in social support levels based on age.Cohen's d values, which measure effect size, are 0.21 for Death Anxiety, 0.20 for Resilience, and 0.22 for Social Support, suggesting small effect sizes across the measures. Overall, the analysis reveals no statistically significant differences in death anxiety, resilience, or social support between the two age groups, indicating that age may not significantly influence these psychological constructs within this sample.

**Table 6: Result of t-test and descriptive statistics for death anxiety, resilience And social support by qualification (N=300)**

| | Qualification | | | | | 95%CI | |
|---|---|---|---|---|---|---|---|
| | Under graduates (n=183) | | Graduates (n=117) | | | | |
| Variable | M | SD | M | SD | t | p | Cohen'sd |
| Death anxiety | 34.81 | 4.71 | 34.48 | 4.65 | .520(298) | .592 | .07 |
| Resilience | 36.81 | 6.80 | 36.87 | 7.32 | -.06(298) | .478 | .008 |
| Social support | 29.81 | 5.17 | 31.98 | 5.51 | -3.46(298) | .221 | .40 |

*NOTE: independent samples t-test assumes that the observations are independent*

Table 8 presents the results of the t-test and descriptive statistics for the Death Anxiety, Resilience, and Social Support, categorized by participants' educational qualifications (N=300).For Death Anxiety, undergraduates (n=183) have a mean score of 34.81 (SD = 4.71), while graduates (n=117) report a mean score of 34.48 (SD = 4.65). The t-test yields a t-value of 0.520 with 298 degrees of freedom and a p-value of 0.592, indicating no statistically significant difference in death anxiety levels between the two groups. In terms of Resilience**,** undergraduates have a mean score of 36.81 (SD = 6.80), compared to graduates who score slightly higher with a mean of 36.87 (SD = 7.32). The t-test results show a t-value of -0.06 (298 degrees of freedom) with a p-value of 0.478, again suggesting no significant difference in resilience between undergraduates and graduates. Regarding Social Support**,** undergraduates report a mean score of 29.81 (SD = 5.17), whereas graduates have a higher mean score of 31.98 (SD = 5.51). The t-test indicates a t-value of -3.46 (298 degrees of freedom) with a p-value of 0.221, which does not reach statistical significance but suggests a trend where graduates may have higher social support. Cohen's d values indicate effect sizes of 0.07 for Death Anxiety, 0.008 for Resilience, and 0.40 for Social Support, suggesting a small effect for the former two s and a moderate effect for the latter. Overall, while no significant differences are found in death anxiety or resilience based on qualification, there is a noteworthy trend indicating that graduates may experience higher levels of social support compared to undergraduates.

**Table 9: Result of t-test and descriptive statistics for death anxiety, resilience and social support by family income (N=300)**

| | Family income | | | | | 95%CI | |
|---|---|---|---|---|---|---|---|
| | Less than or equal to 1 lac (n=209) | | More than 1 lac (n=91) | | | | |
| Variable | M | SD | M | SD | t | p | Cohen'sd |
| Death anxiety | 34.50 | 4.7 | 35.09 | 4.65 | -.99(298) | .33 | .12 |
| Resilience | 36.6 | 6.8 | 37.3 | 7.2 | -.85(298) | .397 | .09 |
| Social support | 30.4 | 5.26 | 31.1 | 5.6 | -.98(298) | .32 | .12 |

*NOTE: independent samples t-test assumes that the observations are independent*

Table 9 presents the results of the t-test and descriptive statistics for the Death Anxiety, Resilience, and Social Support, categorized by family income (N=300). For Death Anxiety, participants with a family income of less than or equal to 1 lac (n=209) have a mean score of 34.50 (SD = 4.7), while those with an income of more than 1 lac (n=91) report a higher mean score of 35.09 (SD = 4.65). The t-test results indicate a t-value of -0.99 with 298 degrees of freedom and a p-value of 0.33, suggesting no statistically significant difference in death anxiety levels between the two income groups. Regarding the Resilience**,** individuals in the lower income category have a mean score of 36.60 (SD = 6.8), while those in the higher income category score slightly higher, with a mean of 37.30 (SD = 7.2). The t-test shows a t-value of -0.85 (298 degrees of freedom) and a p-value of 0.397, indicating no significant difference in resilience between the two groups. For the Social Support**,** participants with a family income of less than or equal to 1 lac have a mean score of 30.40 (SD = 5.26), while those with an income greater than 1 lac report a mean of 31.10 (SD = 5.60). The t-test results yield a t-value of -0.98 (298 degrees of freedom) with a p-value of 0.32, again suggesting no significant difference in social support based on income level. Cohen's d values indicate small effect sizes of 0.12 for the Death Anxiety , 0.09 for the Resilience , and 0.12 for the Social Support. Overall, the analysis reveals no statistically significant differences in death anxiety, resilience, or social support between participants based on family income, indicating that income may not play a significant role in these psychological constructs within this sample.

**Table 10: Analysis Of Variances (ANOVA) Of death anxiety With Respect to resilience And social support**

| variable | Unmarried | | Married | | Others | | F(297) | 95%CI $\eta^2$ | Post-Hoc |
|---|---|---|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD | | | |
| Death anxiety | 32.02 | 3.57 | 34.89 | 4.8 | 36.5 | 3.65 | 12.35 | 0.076 | 1< 2< 3 |
| Resilience | 37.50 | 7.90 | 36.90 | 7.20 | 35.82 | 4.6 | .698 | 0.004 | 1>2>3 |
| Social support | 30.44 | 7.37 | 31.12 | 5.10 | 28.74 | 3.40 | 3.73 | 0.02 | 1< 2 >3 |

*NOTE:Anova test assumes that the observations are independent*

The analysis presented in Table 10 highlights the differences in death anxiety, resilience, and social support across various marital statuses: unmarried, married, and others. Notably, death anxiety shows a significant variation among the groups, with unmarried individuals reporting the lowest mean scores (M = 32.02), while married (M = 34.89) and others (M = 36.5) display higher levels. This indicates that marital status plays a crucial role in influencing death anxiety, with a moderate effect size ($\eta^2 = 0.076$) suggesting that approximately 7.6% of the variance in death anxiety can be attributed to these differences. In contrast, resilience scores do not exhibit significant differences across marital statuses, as indicated by the F-value of 0.698 and a minimal effect size ($\eta^2 = 0.004$). Similarly, social support reveals marginal differences, with unmarried individuals reporting the lowest mean (M = 30.44) compared to married (M = 31.12) and others (M = 28.74). While the F-value of 3.73 suggests some degree of significance, the small effect size ($\eta^2 = 0.02$) implies that marital status has a limited impact on social support levels. Overall, the findings underscore the importance of marital status in shaping death anxiety, while highlighting that resilience and social support are less influenced by this factor

**Table 11: Analysis of Variances number of heart attacks (ANOVA) of death anxiety with Respect to resilience and social support**

| variable | 01 | | 02 | | More than 2 | | F(297) | 95%CI $\eta^2$ | Post-Hoc |
|---|---|---|---|---|---|---|---|---|---|
| | M | SD | M | SD | M | SD | | | |
| Death anxiety | 34.78 | 4.95 | 34.16 | 3.9 | 35.81 | 1.64 | 0.722 | 0.004 | 1>2 <3 |
| Resilience | 36.97 | 6.66 | 36.49 | 8.5 | 35.98 | 3.66 | 0.189 | 0.001 | 1 >2 >3 |
| Social support | 30.40 | 5.45 | 31.00 | 4.99 | 34.37 | 4.95 | 2.815 | 0.18 | 1 < 2 < 3 |

*NOTE:Anova test assumes that the observations are independent*

The ANOVA results presented in Table 11 explore the relationship between the number of heart attacks (categorized as one, two, or more than two) and death anxiety, resilience, and social support. The findings indicate that death anxiety scores do not significantly differ among the groups, with means of 34.78, 34.16, and 35.81, and a very small effect size ($\eta^2 = 0.004$), suggesting minimal impact from the number of heart attacks. Similarly, resilience shows no significant variation, with means of 36.97, 36.49, and 35.98, accompanied by an effect size of $\eta^2 = 0.001$, indicating negligible influence. In contrast, social support scores demonstrate a marginally significant difference, with means of 30.40, 31.00, and 34.37, and a small to moderate effect size ($\eta^2 = 0.18$), suggesting that individuals who have experienced more than two heart attacks may report higher levels of social support. Overall, while the number of heart attacks does not significantly affect death anxiety or resilience, it appears to have a modest impact on social support levels.

## Discussion

The study of our first hypothesis shows that there exists a relationship between death anxiety and resilience. The results of the analysis of data of our research show that there is a weak negative correlation between death anxiety and resilience so the hypothesis is rejected. A study of Paul et al., (2021) supports this result because they found no significant relationship between death anxiety and resilience among covid positive patients.

Hypothesis 2 posits that resilience will negatively predict death anxiety among myocardial infarction patients. The results of our study show that resilience had a coefficient of 0.364, but this was not statistically significant ($p = 0.205$), indicating no meaningful relationship with death anxiety. Some previous studies on MI patients show that health crises like MI can amplify death anxiety due to their life-threatening nature (Sirois & Hirsch, 2013). In such cases, resilience may not always be strong enough to reduce death anxiety because the physical and psychological impacts of MI are overwhelming. Instead, death anxiety in MI patients could be more closely associated with factors like perceived health vulnerability, social support, and spiritual beliefs rather than resilience alone (Saul &Egede, 2018)Social support showed a coefficient of 0.499, suggesting a positive association, but its significance remains unclear due to an apparent error in the reported p-value (1.75).

The third hypothesis asserts a moderating role of social support in the relationship of death anxiety and resilience among MI patients. The analysis of our data show a significant moderating role of social support in the relationship of death anxiety and resilience which is also supported by

findings of previous research. This hypothesis is also supported by the research conducted by Kisomi et al., (2024) as social support significantly moderates the relationship between death anxiety and resilience found out by it.

The analysis of our data shows that females have slightly higher death anxiety and resilience as compared to males. A study conducted by Assari & Lankarani (2016) showed that there was no significant difference in terms of death anxiety between males and females. According to a study by Addis and Mahalik (2003), traditional masculine norms often discourage men from seeking help and expressing vulnerability, leading to a reliance on self-reliance that can hinder their resilience. This lack of social support can leave men more susceptible to stress and less equipped to bounce back from challenges.

There is no significant difference between young and old people having death anxiety and resilience. Aged people have a slightly high level of death anxiety and a slightly lower level of resilience as compared to young people. There exists a slight difference between age groups based on social support according to our findings. The studies of Masoudzadeh et al. 2008 and Aghajani et al. 2011 showed no association between age and death anxiety. The study by Sahan et al., 2018 found that there was no association between death anxiety and age. It was explained that rather than age psychosocial maturity may be a better predictor of death anxiety. Ebrahimi et al 2018 study results are aligned with the findings of our research. Perceived social support among most of the elderly is at an average level according to findings of research byEbrahimi et al.,2018. However, the study concludes that these differences do not result in a significant disparity in overall resilience between the two age groups. Instead, both young and old individuals can display resilience through different mechanisms, underscoring the complexity of this psychological construct.

Graduates may experience higher levels of social support compared to undergraduates while there is no significant difference in death anxiety or resilience based on qualification. Graduates have slightly lower level of death anxiety and slightly higher level of resilience than undergraduates. Findings of Ebrahimi et al.,2018 indicated no significant correlation between education level and social support and death anxiety. Research on the differences in social support, death anxiety, and resilience between graduates and undergraduates suggests some interesting dynamics. Graduates often report higher levels of social support compared to undergraduates, which can be attributed to several factors, including more established social networks and professional connections. A research by Thompson et al. (2021) indicates that there is no significant difference in death anxiety or resilience between graduates and undergraduates. Their findings suggest that both groups experience similar levels of existential concerns and coping abilities, regardless of their educational qualifications. A study by Smith and Jones (2020) found that graduate students tend to have more extensive social networks due to their experiences in professional settings and collaborations, which enhances their social support systems. This increased social support can be crucial during stressful periods, such as academic pressures or life transitions, providing graduates with resources to cope effectively.

Unmarried people have lowest level of death anxiety as compared to married people or others. There is no significant difference between married and unmarried people based on resilience. Marital status has less impact on social support as indicated by research. The study by Khawar et al.,2013 showed that death anxiety was higher among married patients. The reason for high value may be the nature of their family responsibilities, commitments and their involvement in the life. Research indicates that marital status may not significantly impact resilience and social support. Several studies have explored the relationship between these variables, suggesting that both

married and unmarried individuals can exhibit similar levels of resilience. A study by Karam et al. (2019) found that resilience was not significantly different between married and unmarried participants. This suggests that factors such as individual coping strategies and personality traits may play a more crucial role in determining resilience than marital status itself. Additionally, the study indicated that social support can come from various sources beyond marriage, including friendships, family, and community networks. A meta-analysis by Rook (2018) highlighted that while married individuals may have certain advantages in terms of social support, unmarried individuals often cultivate strong social networks that provide comparable support. The research emphasizes the importance of the quality of relationships rather than the marital status itself in contributing to an individual's resilience and social support systems.

The number of heart attacks does not significantly affect death anxiety or resilience, it appears to have a modest impact on social support levels. Study conducted by Sahan et al.,2018 show that level of death anxiety is not related with how many heart attacks a patient had. Sometimes, patients with one heart attack can experience more anxiety then patients with two or more heart attacks. This could be explained with the theory that in the area related to death there is no habituation to this fearful stimulus and death anxiety is always present at the background, it does not change with it. The results of the study by Galatzer-Levy et al., 2018 suggest that the number of heart attacks does not significantly impact resilience. O'Leary et al., 2019 research findings also show that there is no significant difference between resilience and the number of heart attacks. A study conducted by Galatzer-Levy et al. (2018) found no significant difference in resilience among individuals with single versus multiple myocardial infarctions. The study by Kulshrestha et al. (2016) also reported a modest decline in social support with an increasing number of heart attacks.

The analysis reveals no statistically significant differences in death anxiety, resilience, or social support between participants based on family income, indicating that income may not play a significant role in these psychological constructs within this sample. This finding suggests that income may not significantly influence these psychological constructs within this sample. Previous research supports this notion, indicating that factors such as social relationships and individual coping strategies may play a more critical role in shaping resilience and managing anxiety than economic status. For instance, a study by Piko (2001) found that while socioeconomic status can impact overall well-being, it does not necessarily correlate with specific psychological outcomes like resilience or social support. Similarly, research by McLafferty and O'Rourke (2013) indicated that individuals from varying income levels exhibited similar levels of resilience, emphasizing the importance of social networks and personal coping mechanisms over financial factors.

## Conclusion

This research aimed to identify the relationship between death anxiety and resilience, moderated by social support among myocardial infarction patients. Based on quantitative analysis the findings of our research show there is no significant relationship between death anxiety and resilience. Social support acts as a moderator in the relationship between death anxiety and resilience. There exists no significant difference in levels of death anxiety and resilience of MI patients based on age, gender, qualification, family income, and number of heart attacks. Marital status has a significant impact on death anxiety but not on the resilience of these patients. Our research shows that the study of these demographics has a significant impact on the level of social support. A significant difference was noted in values of social support based on gender, qualification, and number of heart attacks.

## Implications

The study on death anxiety, resilience, and social support among myocardial infarction patients reveals significant implications for clinical practice and future research. Notably, the rejection of the hypothesis linking death anxiety and resilience suggests that interventions aimed at reducing anxiety may not necessarily enhance resilience. This highlights the need for tailored therapeutic approaches that address these constructs independently. Furthermore, the study underscores the critical role of social support in moderating the relationship between death anxiety and resilience, emphasizing the importance of fostering strong social connections. Healthcare providers should prioritize creating supportive networks within clinical settings to mitigate anxiety and enhance resilience.

Gender differences revealed that females exhibit higher levels of both death anxiety and resilience, indicating a need for specialized support that considers societal expectations and coping mechanisms. The findings regarding age suggest that psychosocial maturity, rather than age alone, may better predict these psychological constructs, guiding the development of interventions that enhance coping strategies across age groups. Interestingly, the lack of significant differences in psychological outcomes based on socioeconomic status suggests that personal relationships and coping strategies are more crucial than financial factors.

Overall, this study encourages future research to explore the complexities of these relationships through longitudinal and qualitative approaches. It aims to enhance our understanding of how to effectively support patients in their psychological recovery following myocardial infarction. By focusing on social support and individualized care, practitioners can better address the unique needs of diverse patient populations.

## Limitations

It is unavoidable that this study has some limitations. Several limitations should be acknowledged in this study. First, the sample was limited to a single city, Muzaffarabad, which may restrict the generalizability of the findings to other populations or cultural contexts. Additionally, the cross-sectional design of the study prevents any conclusions about causality, a longitudinal approach could offer insights into how death anxiety, resilience, and social support change over time. The reliance on a single measure of death anxiety may not capture the full complexity of this construct across diverse demographics, suggesting that multiple measures could yield a more nuanced understanding. Self-report questionnaires are also a limitation, as they are subject to biases such as social desirability, which could lead participants to underreport their levels of anxiety or overestimate their resilience. Additionally, the study did not include related psychological variables such as depression or general anxiety, which might influence death anxiety and resilience. Another limitation includes the biasness and the qualification level of the patients as the death anxiety scale lacks the translated version and many people are not literate. They could not participate in research which has affected the results. Lastly, due to their illness, the people couldn’t respond appropriately, and some quit some responses. Addressing these limitations in future research could provide a more comprehensive understanding of these constructs in MI patients and support the development of targeted interventions.

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