
The impact of quality of life and resilience on death anxiety: A comparative study among married and unmarried ambulance workers

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✎ **ABSTRACT.** Questo studio ha esaminato l'interazione tra qualità della vita, resilienza e ansia per la morte tra gli operatori delle ambulanze, esplorando come lo stato civile influenzi queste relazioni. Utilizzando un disegno di ricerca correlazionale trasversale, sono state valutate le tre variabili rispettivamente attraverso il WHO-QOL BREF Questionnaire, la Resilience Scale-Urdu (RS-14), e il Death Anxiety Questionnaire-Urdu (DAQ-U). Il campione, raccolto attraverso una tecnica di campionamento mirato, è composto da 276 partecipanti di età compresa tra i 18 e i 40 anni. I risultati dello studio hanno indicato che esiste una differenza significativa tra la qualità della vita (ambientale), la resilienza e l'ansia per la morte tra il personale paramedico sposato e quello non sposato arrivando a concludere che la resilienza e lo stato civile giocano un ruolo significativo.

✎ **SUMMARY.** As frontline responders to medical emergencies, ambulance workers face constant exposure to life-threatening situations and high stress, underscoring the need to understand the factors affecting their psychological well-being. This study examined the interplay between quality of life, resilience, and death anxiety among ambulance workers, exploring how marital status influences these relationships. The study employed a cross-sectional correlational research design. The quality of life, resilience, and death anxiety variables were assessed through the World Health Organization-Quality of Life (WHO-QOL) BREF, Resilience Scale-Urdu (RS-14), and Death Anxiety Questionnaire-Urdu (DAQ-U) respectively. The sample was collected through a purposive sampling technique and consisted of 276 participants aged 18-40. The findings of the study indicated that quality of life, resilience, and death anxiety have a strong relationship with each other among ambulance personnel. Quality of life showed a positive correlation with resilience while negatively correlating with death anxiety. Quality of life indicated no impact while resilience indicated a predictive negative effect on death anxiety. Married ambulance workers scored comparatively higher on (physical, psychological, and environmental domains) of quality of life, and resilience. Unmarried ambulance workers scored comparatively higher on (social relationship) quality of life and death anxiety. There is a significant difference between the (environment) quality of life, resilience, and death anxiety among married and unmarried ambulance personnel. The findings of the study concluded that resilience and marital status play a significant role in death anxiety among ambulance personnel. Further studies can investigate this relationship with other health-related and security professionals.

Keywords: Quality of life, Death anxiety, Resilience, Ambulance service

INTRODUCTION

Emergency medical services (EMS) is a type of preclinical care that is organized and structured to transfer sick or injured patients to a hospital (Hossain et al., 2022). Recent research states the significance of ambulance workers as those who give patients pre-hospital care and are among the most important pillars in the healthcare system (Adnan, Kamauzaman, Lonik & Ab Hamid, 2023). Being subjected to direct and indirect/vicarious traumatic experiences, such as witnessing their patients' difficulties with death/illness is an unavoidable part of the job of ambulance personnel (Kang et al., 2018). Thus, exposure to traumatic incidents and stressors is a necessary part of work for emergency workers.

Poor psychological health is frequently related to emergency medical personnel, which surely has an impact on both their mental and professional well-being. Because they are frequently under extreme strain during crises, ambulance personnel are especially vulnerable to mental health issues. Not only are they exposed to patients, but they also operate in horrific environments frequently accident scenes, fatalities, burns, and natural disasters which makes them susceptible to psychiatric disorders (Naushed et al., 2019). Since the emergency service served as the initial point of contact for patients seeking pre-hospital care, ambulance personnel required a thorough understanding of the patient's condition to provide them with professional care (Adnan et al., 2023). Consequently, there may be instances of stressful circumstances that could harm the patient and cause psychological distress in the ambulance workers.

Increasing stress, anxiety, and depression have been linked to several variables, such as insomnia, sleep disorders, length of work, irregular breaks because of work shifts, family separation, increasing workloads, and patient care involvement (Rajabi, Jahangiri, Molaeifar, Honarbakhsh & Farhadi, 2018). These problems can be made worse by the fact that healthcare professionals frequently struggle with their patients' lives and deaths. It is vital to remember that poor psychological health can have a significant effect on an individual's quality of life and may lead to lower performance. As a result, this may also have an impact on patient care quality and safety (Almutairi, Al-Rashdi & Almutairi, 2020).

Therefore, ambulance crews may be at a higher risk of acquiring work-related health problems such as psychological issues such as depression, exhaustion, PTSD, and job burnout, thus lowering their productivity, resilience,

and quality of life (Calhoon, 2021). Occupational exposure to death or serious injury has been linked to higher levels of fear of death and death avoidance (Chegini et al., 2022). Maintaining and improving the mental and emotional health of EMS employees is very crucial for both the staff and the general public who receive their services (Lawn et al., 2020).

Thus studying the impact on ambulance workers because of daily exposure to direct/indirect stressors such as deaths and injuries is very crucial for the employees as well as the target population who avail the services. The role of resilience is to keep their quality of life better thus providing efficient services to the community. Being a developed country, it's a time of need to study these crucial variables among the ambulance workers for the well-being of employees and the community.

Quality of life

Today scientists are interested in a variety of topics, and quality of life (QoL) is one of them. True human aspiration of QoL is happiness, well-being, and life satisfaction and in a rapidly growing world, quality of life is becoming increasingly important since an increasing number of people are unhappy and depressed. Employees who work in emergency medical services (EMS) deal with stressful work settings and accidental exposure that leads to burnout, and secondary traumatic stress (Miller & Pescaroli, 2018). Thus, it is essential to properly analyze and manage job stress and burnout among EMTs to develop improvement programs for a better quality of life.

Quality of life is defined by the World Health Organization as "an individual's view of his or her position in life in reference to his culture as well as a value system in which he or she lives, and in reference to his or her objectives, aspirations, concerns, and standards". It is also important to consider the WHO's definition of "quality of life", which refers to the overall physical, mental, social, and spiritual well-being (WHOQOL Group, 1995). All facets of an individual's social and personal well-being, such as optimal mental health, the maintenance of a comprehensive and active lifestyle, supportive and positive social relationships, and elevated life satisfaction, contribute to the quality of life.

According to the 20 years of systematic review of the happy worker productive thesis, employees who are happy at work are more productive than others who are not happy. A happy employee may not always align with the organization's

common aspirations or contribute directly to its goals, but there is a strong connection between individual happiness and efficient work performance. Team performance (creativity or organizational citizenship) is an outcome of collective well-being which contributes to objective work-unit performance (Sender, Nobre, Armagan & Fleck, 2021).

Literature suggests that there are three dimensions to quality of life among rescue workers, two of these are adverse (compassion fatigue and burnout) and one of these is favorable (compassion satisfaction) (Caricati, Panari & Melleri, 2020). Thus, in ambulance workers, both positive and negative dimensions have been studied on their quality of life due to their work nature. Ambulance and fire officers among the rescue workers, are more often to experience occupational stress that may have negative impact on their quality of life (Ntatamala & Adams, 2022).

Resilience

Resilience refers as the capability to recoil back from or overcome adversity, resulting in positive outcomes despite a traumatic occurrence or scenario. Individuals who are very optimistic report being more inventive, and amenable, have good decision power, and can develop new relationships. Over a period, recurrent experiences of optimism generate a variety of personal resources, leading to resilience (Dewi & Hamzah, 2019).

Relationship between quality of life and resilience

A study investigated the correlation between professional quality of life and self-compassion, empathy, and resilience in healthcare personnel during the COVID-19 pandemic in Spain. Findings show that the three primary predictors of compassion fatigue, compassion satisfaction, and burnout were empathy, resilience, and mindfulness, respectively. The findings suggest the significance of resilience to the positive dimension of quality of life.

Increased exposure to acute and chronic occupational stress remained positively connected with PTSD research. While resilience and higher levels of quality of life were protective (Ntatamala & Adams, 2022). Another study's findings show that positive cognitive appraisal and effective

coping mechanisms are common among high-resilient people, and as a result, they are better able to cope with trauma and even grow from it (Behnke, 2021).

Further studies show that resilience works as a coping strategy (Smith, Emerson, Boster & Everly, 2020). Individuals who used nonadaptive coping methods (such as substance abuse or self-blame) experienced more distress and negative trauma that eventually lowered their quality of life (Skalski, Dobrakowski & Wasilewska, 2022). Another study's findings show that the most effective factor in predicting each of the QoL domains was resilience. Those nursing faculty members who could adjust to the demands and adjustments brought about by the COVID-19 pandemic reported higher quality of life. Further it is found that resilience works as a coping strategy and is significantly positively correlated to every domain of quality of life (Keener, Hall, Wang, Hulseley & Piamjariyakul, 2021). As a result, developing resilience will enhance the quality of life. Ambulance staff with higher levels of resilience seem to view indirect traumas as a challenge, so they use problem-solving skills and are skilled at finding something good to take away from their traumatic events (Kang et al., 2018). This shows that quality of life and resilience affect each other at a significant level. If ambulance staff have high resilience, they will learn something positive from events that eventually have a positive effect on their quality of life.

Death anxiety

The fear of dying, both for yourself and for others, is referred to as death anxiety (Galanis et al., 2022). There are three types of death anxiety. The first is predatory death anxiety triggered by risky situations when a person's life is on the line. Individual's alternative resources are catalyzed, which stimulates the fight or flight response. This is a deliberate action to confront the threat or escape from that environment. The second type is known as predation anxiety, created by circumstances in which one person annihilates another, whether emotionally or physically. It is linked to resulting in constant guilt that prepares people to take quick acts to damage others (Langs, 2018).

The third is existential death apprehension, the most common type of anxiety due to the worry of dying. Human reactions to death are diverse, multifaceted, and dynamic. Pain, loneliness, ultimate loss of life, ambiguity, finality, and

violence of death are all examples of death anxiety. Humans assign varied interpretations to events and objects in their physical surroundings. As a result, people formed particular connections with death, and the effects would differ depending on whether the death has positive or negative meanings (Langs, 2018; Willis, Nelson & Moreno, 2019).

According to the recent systematic review as part of their work, ambulance personnel which includes, emergency medical technicians, paramedics, and others frequently encounter potentially disturbing scenarios. systematic review shows substantial evidence that depression, PTSD and anxiety disorders are more common in emergency medical professionals while individual-difference factors showed weak or inconsistent relationships with symptoms, while exposure-related and organizational factors had the best predictive associations with PTSD symptoms. Crucially, there is currently insufficient information available about the effects of traumatic exposure at work on anxiety and depression in ambulance workers. This gap in the research must be filled to direct organizational response to these disorders in ambulance workers (Wagner et al., 2020). Thus, death anxiety and how it affects quality of life is studied among ambulance workers in this study.

Quality of life and death anxiety

On a daily basis, palliative care providers are exposed to death and dying. Their feelings about death may have an impact on their own quality of life as well as the care they provide to terminally ill patients and their families. There is much evidence that shows an association between quality of life, death anxiety, and mental health (Willis et al., 2019). Kastenbaum's Edge theory proposes that when people feel their lives are in danger, death anxiety takes on a survival function (Kastenbaum, 2000). According to the findings, death fear can be enhanced by a reduction in a variety of social, physiological, psychological, and environmental components that ultimately make up the notion of quality of life. Another study finding shows reducing death anxiety may be crucial to enhancing quality of life (Ji et al., 2024). A study on Covid 19 in healthcare professionals in Spain demonstrated how life satisfaction is negatively impacted by death anxiety. There was a correlation between poorer life satisfaction and higher death anxiety in nurses (Karabağ Aydin & Fidan, 2022).

Resilience and death anxiety

Higher resilience scores were associated with reduced levels of death anxiety (Edo-Gual, Monforte-Royo, Aradilla-Herrero & Tomás-Sábado, 2015). Another study also showed an indirect correlation between moral courage, resilience, and death anxiety. Thus, it has been concluded that death-related thoughts had a statistically significant inverse connection with optimism, and resilience. The findings for the nursing students during COVID-19 indicated a strong and inverse relationship between resilience and death anxiety (Mohammadi, Masoumi, Oshvandi, Khazaei & Bijani, 2022). Resilience and anxiety in health care personnel investigated that participants have experienced psychological effects as a result of the extraordinary global state of emergency brought forth by the COVID-19 epidemic. The participants exhibited significant levels of resilience, and over half of them displayed symptoms suggestive of a potential diagnosis of generalized anxiety disorder. Professionals who were exposed to exceptionally stressful situations acquired symptoms suggestive of a potential diagnosis of generalized anxiety disorder. Resilience abilities, however, served as a buffer (Peñacoba et al., 2021). While there is no literature on resilience and death anxiety particularly in ambulance personal up to the best of the researcher's knowledge. This literature gap is identified in this study.

Marital status and social support

Marital status of ambulance personnel plays significant role in buffering resilience. Emotional demands were shown to be high among emergency responders. As a result, spouses provide support by avoiding conflict, reduced their own emotional needs and compensated emotionally in relationship to balance mental problem and stress faced by emergency responders (Novara et al., 2015; Sharp et al., 2022). Emergency personnel reported that more of the support is coming from their family and friends despite having peer support programs at organization (Lawn et al., 2020). Furthermore, a study shows that ambulance worker with full PTSD is found to be significant in number in non-married as compared to married and thus having relatively low quality of life (Zegel, Leonard, Healy, & Vujanovic, 2023). Another study reported that being single or divorce linked with lower resilience among professional health emergency

workers (Sánchez-Zaballos & Mosteiro-Díaz, 2021). Another meta-analysis findings suggest that in romantic relationships, traumatic stress is transmissible, thus it highlights the significance of marital status and importance of mental health in context of ambulance workers (Wang, Ford, Credé, Harms & Lester, 2023). Recent literature shows that in paramedics there is no significant relationship exist between marital status and resilience (Alhamdani et al., 2024; Mcizana, Adams, Khan & Ntatalama, 2024). In response to these contradictory findings there is need to study marital status in the framework of quality of life, resilience and death anxiety among ambulance workers.

Up to researcher knowledge literature shows under representative findings regarding ambulance personnel's marital status and its role in mental health significance. Thus, this study explores the role of marital status of ambulance personnel and its impact on their quality of life, resilience, and death anxiety.

Literature shows representative findings regarding ambulance personnel's marital status highlighting the significant role it plays in fostering resilience and meeting emotional needs (Lawn et al., 2020). This study explores the role of the marital status of ambulance personnel and its impact on the quality of life, resilience, and death anxiety.

Terror management theory

The terror management theory proposed by Ernest Becker is one of the major theories that have been established to explain the existence of death anxiety (Pyszczynski, Greenberg & Solomon, 1999), a dual process model for explaining death anxiety that has been widely embraced. According to terror management theory, the fear of death is based on the fear of extinction., when one becomes aware of their mortality, they engage in a series of proximal defenses intended to minimize the anxiety associated with death.

The awareness of one's death is unavoidable, through death reminders is coupled with death anxiety, which is the driving force underlying a wide range of behaviors intended to defend oneself or one's social group from danger. There are two pathways one is in consciousness and the other is out of consciousness. Immediate death anxiety is defended by consciousness through proximal defense where one defends himself by denying, distracting, and rationalization. When approaching threat of mortality is reduced one defends

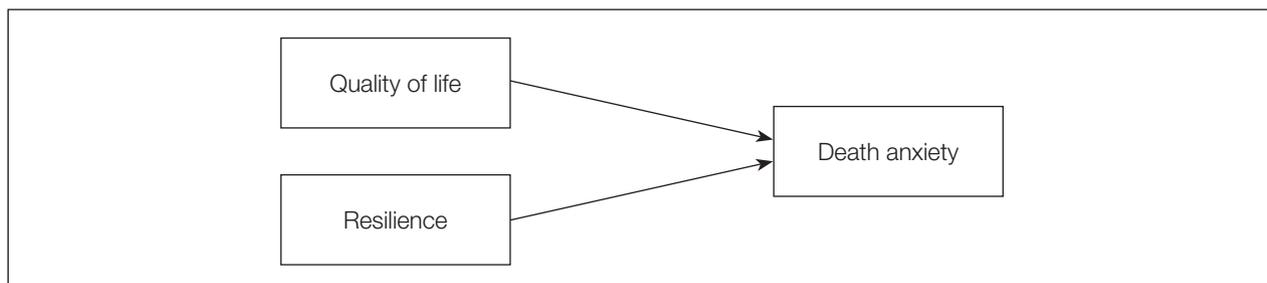
himself by distal defense through cultural worldview, striving for self-esteem and social relationships. (Menziez, Sharpe & Dar-Nimrod, 2019).

There are multiple variables to be considered in this theoretical structure but resilience, quality of life and death anxiety are the most suitable variables along with marital status. Because these are significant for the well-being investigation of ambulance workers. Death reminders are common for ambulance workers while dealing with incidents via dead bodies and injuries coupled with death anxiety. To defend themselves they immediately involve in the unconscious pathway of rationalization i.e. adaptive coping resilience and the conscious pathway of social relationships i.e. marital status plays a significant role as a protective factor. Social relationships particularly romantic relationship maintaining practices such as romantic partners reduce death anxiety (Menziez et al., 2019). Literature suggests the inverse relationship between death anxiety and quality of life (Willis et al., 2019). Thus in the current study, we are approaching the variables in the target population with respect to their relationship as married and unmarried

Rationale of the study

Quality of life, resilience, and death anxiety have been studied previously, but their relationship with emergency services, particularly ambulances, is not adequately represented in prior research. The emergency services are the life savers and sustainers of the society. The ambulance personnel are at high risk for developing psychological distress and death anxiety due to recurrent exposure to traumatic events. So, this study aims to find the relationship between the quality of life, resilience, and death anxiety in ambulance personnel (see Figure 1).

Previous literature shows that there can be positive or negative effects on the ambulance crew's quality of life (Caricati et al., 2020). Moreover, the relationship between death anxiety and quality of life has been investigated in patients and caregivers. However, this relationship under representative research has been found in ambulance personnel to the best of the researcher's knowledge. Thus, the present study aims to study this relationship in ambulance personnel and whether the quality of life in relationship with death anxiety and resilience will have a positive or negative effect.

Figure 1 – Hypothesized model of study

Other than a study conducted on nurses shows that a relationship exists among resilience, death anxiety, and quality of life (Pourakbari et al., 2014) there is no other study with these respective variables in emergency workers. Moreover, literature shows that occupational exposure to death and injury can increase death anxiety in hospital staff (Özer, Özkan, Özmen & Ercoban, 2023) and decrease death anxiety in nurses (Milligan & Almomani, 2020). While there is not enough research in relevance to ambulance workers thus the current study aims to study this relationship among ambulance personnel as well as to investigate that in ambulance personnel whether the death anxiety will be elevated or reduced. Further, there is no literature on resilience and death anxiety particularly in ambulance personnel up to the best of the researcher's knowledge. This literature gap is identified in this study.

The literature shows that the social factor fosters resilience and ambulance crews have high emotional demands thus having close interpersonal relationships (Lawn et al., 2020). Further, a study shows that ambulance worker with full PTSD is found to be significant in the number of non-married as compared to married (Zegel et al., 2023). In another study results show that there is no significant impact of PTSD on the marital status among pre-hospital healthcare staff (Abbaspour et al., 2020), thus literature has contradictory findings regarding the marital. Thus, there is a need for more studies to have stable results. So, this study aims to find out whether marital status has or has not an impact on quality of life, resilience, and death anxiety among ambulance personnel.

In Pakistan, emergency services particularly ambulance personnel's mental well-being have not been given such significance yet. In this situation, their resilience

(psychological hardiness) and quality of life can have significant importance for their well-being. So, this study aims to find the relationship among these variables. The findings of this study will also play a significant role in developing interventions to improve the mental health and well-being of ambulance workers. It will also assist in finding out the role of marital status in the quality of life, resilience, and death anxiety of ambulance personnel. These findings will be very helpful for ambulance workers who pursue mental well-being. Further studies should work on the intervention development for the ambulance personnel's well-being.

METHOD

Objectives of the study

The following are the objectives of the study:

- to study the relationship between quality of life and resilience among ambulance personnel;
- to study the relationship of quality of life and resilience with death anxiety among ambulance personnel;
- to study the impact of quality of life and resilience on death anxiety among ambulance personnel;
- to study the difference in marital status (unmarried and married) with the quality of life, resilience, and death anxiety among ambulance personnel.

Hypotheses of the study

Following are the hypotheses of the study.

- There is a positive relationship between quality of life and

- resilience among ambulance personnel.
- There is a negative relationship between quality of life and resilience with death anxiety among ambulance personnel.
- There is a predictive role of quality of life and resilience on death anxiety among ambulance personnel.
- Among the ambulance personnel, there is a difference in marital status (married and unmarried) in reference to quality of life, resilience, and death anxiety.

Operational definition of variables

Quality of life. Quality of life is typically defined as the perception, an individual has regarding his/her position in life, the system of values, and the cultural context in which he/she lives, in relation to his/her interests, expectations, and achievements (WHOQOL Group, 1995). In the present study, an individual with higher scores on the *World Health Organization-Quality of Life (WHO-QOL) BREF Questionnaire* will show a higher degree of quality of life.

Resilience. The tendency of a system to adapt successfully to problems that threaten the system’s function, survival, or future development is characterized as resilience (Masten, Lucke, Nelson & Stallworthy, 2021). In the present study, an individual high score on the *Resilience (R-14) Questionnaire* will indicate a higher degree of resilience.

Death anxiety. The North American Nursing Diagnosis Association defines death anxiety as a feeling of fear, and unease associated with death certainty or near-death situations (Templer & McMordiein, 1979). The individual

high scores on the *Death Anxiety Questionnaire* will indicate the degree of death anxiety in an individual.

Research design

The study followed the cross-sectional correlational research design to find the relationship between quality of life, resilience, and death anxiety among married and unmarried ambulance workers.

Sample

The sample ($N = 276$) comprised ambulance personnel. Data were collected only from male, single ($n = 125$) and married ($n = 151$) ambulance personnel. The sample was selected using a purposive sampling technique from the Islamabad and Rawalpindi regions (see Table 1).

Instruments

Demographic Information Sheet. The demographic sheet included information regarding name, age, marital status, name of ambulance agency, location, and exposure to incidents per day in a week.

World Health Organization-Quality of Life (WHO-QOL) BREF Questionnaire. The manual of WHOQOL was created by Alison Harper and his colleagues in 1998 under Dr. J.

Table 1 –Descriptive characteristics of marital status (N = 276)

| Marital status | Frequency | Percent |
|----------------|-----------|---------|
| Unmarried | 125 | 45.3 |
| Married | 151 | 54.7 |
| Total | 276 | 100 |

Orley. WHO-QOL BREF is derived from the WHO-QOL 100 questionnaire that investigates the individual's QoL on the conceptual framework of the WHOQOL definition. It's comprised of 25 items on a five-point Likert scale that examines the QoL in four domains i.e., Psychological, physical, social relationships, and environment. The higher values represent the higher QoL and vice versa. The overall scale reliability is .89, while the reliability of the physical domain is .87, the psychological domain is .87, the social relationship domain is .69, and the environment is .84. The overall scale has good to excellent reliability as well as good content and discriminate validity.

The 14-Item Resilience Scale-Urdu (RS-14). Fourteen-Item Resilience Scale (Wagnild & Young, 1993) translated version into Urdu (Khalid, 2013) is used in study. The scale is comprised of 14 items with five items referring to self-reliance (1,5,7,12 and 14), three items referring to meaningfulness (2, 9 and 13), two items referring to equanimity (3 and 10), two items referring to perseverance (6 and 8), and two items referring to existential aloneness (4 and 11). It is measured on a seven-point Likert scale. Its Cronbach's Alpha ranges from .89 to .96 which is considered excellent.

Death Anxiety Questionnaire-Urdu (DAQ-U). The Death Anxiety Questionnaire was developed by 11 bilingual specialists in 2015 and was revised by Donald Templer (2006). The scale is comprised of 15 items on a 5-point Likert scale. The score ranges between 15-75 indicates low, whereas 36-55 indicates moderate, and 56-75 indicates high death anxiety. The DAS-Urdu version is divided into two divisions, with eight elements in the first division and seven in the second (Saleem, Gul & Saleem, 2015). The split-half coefficient was .85, and the correlation coefficient obtained between the two divisions was .78 and DAS has an excellent Alpha reliability of .88.

Procedure

The ambulance workers were approached individually for data collection. As most of the participants were illiterate, so mostly questions were asked verbally, and their responses were noted. Participants had given informed consent forms following the confidentiality. Participants were requested to fill up the demographic survey followed by WHO-QOL BREF, RS-14, and DAQ-U. All their queries were well addressed at that time and their cooperation was highly appreciated at the end of the study.

RESULTS

In this study, we aim to explore the intricate relationships among quality of life, resilience, and death anxiety among ambulance personnel, aiming to shed light on how these factors interact within this unique and high-stress profession.

The sample characteristics of the study variables reveal important insights into the data distribution and reliability of the measures used. With a sample size of 276, the quality of life (QOL) variable demonstrated a high reliability coefficient ($\alpha = .94$) and a mean score of 80.7, indicating that participants generally reported a favorable quality of life within the potential range of 26 to 130. The resilience measure also showed strong reliability ($\alpha = .95$). Similarly, the death anxiety (Anx) variable exhibited good reliability ($\alpha = .92$) and a mean score of 47.0, indicating moderate levels of anxiety related to death within the range of 15 to 75. The skewness and kurtosis values for all variables suggest that the data distributions are relatively symmetrical and indicate a normal distribution, supporting the appropriateness of parametric statistical analyses in subsequent evaluations. Overall, these findings highlight the robust nature of the data and provide a foundation for understanding the relationships among quality of life, resilience, and death anxiety in the study population (see Table 2).

Table 3 illustrates the interrelationships among quality of life, resilience, and death anxiety. A strong positive correlation ($r = .84, p < .01$) between quality of life and resilience indicates that individuals who report higher overall life satisfaction tend to exhibit greater resilience, suggesting that a fulfilling life experience enhances one's ability to adapt and cope with challenges. Conversely, the negative correlation between quality of life and death anxiety ($r = -.61, p < .01$) reveals that higher quality of life is associated with lower levels of death anxiety, meaning that those with a more satisfying life experience are less fearful of death. Additionally, a significant negative correlation between resilience and death anxiety ($r = -.59, p < .01$) highlights that individuals with higher resilience levels are likely to experience less death anxiety, indicating that adaptability and effective coping strategies can mitigate fears related to death. Together, these findings underscore the importance of fostering resilience and improving quality of life as potential avenues for reducing death anxiety.

The multiple regression analysis indicates a significant relationship between quality of life (QOL) and resilience as

Table 2 – Sample characteristics of the study variables (N = 276)

| Variables | N | α | Potential range | | Actual range | | M | SD | Skew | Kurt |
|------------|----|----------|-----------------|-----|--------------|-----|------|------|------|-------|
| | | | Min | Max | Min | Max | | | | |
| QOL | 26 | .94 | 26 | 130 | 45 | 123 | 80.7 | 18.8 | .19 | -1.20 |
| Resilience | 14 | .95 | 14 | 98 | 23 | 98 | 57.9 | 19.3 | .24 | -1.29 |
| Death anx | 15 | .92 | 15 | 75 | 23 | 75 | 47.0 | 12.4 | -.29 | -1.18 |

Legenda. QOL = quality of life; anx = anxiety; Skew = skewness; Kurt = kurtosis.

Table 3 – Correlation among study variables (N = 276)

| No. | Variables | 1 | 2 | 3 |
|-----|-----------------|---|-------|--------|
| 1 | Quality of life | – | .84** | -.61** |
| 2 | Resilience | – | – | -.59** |
| 3 | Death anxiety | – | – | – |

Note. Correlation is significant at the .01 level (2-tailed).

predictors of death anxiety among ambulance personnel, with the model explaining 39% of the variance in death anxiety ($R^2 = .39$). Both predictors have a substantial standardized effect, with QOL ($\beta = -.39, p < .01$) demonstrating a stronger impact than resilience ($\beta = -.26, p < .01$). The confidence intervals (LL and UL) for both predictors do not include zero, further supporting the significance of these findings. Collectively, these results underscore the importance of enhancing quality of life and resilience as effective strategies for reducing death anxiety in this population (see Table 4).

Table 5 compares the mean differences in quality of life (QOL), resilience, and death anxiety between unmarried ($n = 125$) and married ($n = 151$) ambulance personnel. Married individuals reported significantly higher resilience

($M = 60.34, SD = 21.85$) compared to unmarried individuals ($M = 54.89, SD = 15.14$), with a significant difference ($t = -2.35, p = .01$) and a moderate effect size (Cohen's $d = .29$). Additionally, married personnel exhibited lower levels of death anxiety ($M = 45.30, SD = 13.41$) than their unmarried counterparts ($M = 49.14, SD = 10.75$), which was also statistically significant ($t = 2.59, p = .01$) with a moderate effect size (Cohen's $d = .32$). Although the difference in QOL was higher among married individuals ($M = 82.56, SD = 21.33$) compared to unmarried individuals ($M = 78.47, SD = 15.05$), it did not reach statistical significance ($t = -1.80, p = .07$). Overall, these findings suggest that marital status significantly influences resilience and death anxiety among ambulance personnel.

Table 4 – Multiple regression analysis for quality of life and resilience in predicting death anxiety (N = 276)

| Variable | Unstandardized coefficient | | Standardized coefficient | 95%CI | |
|----------------|----------------------------|------|--------------------------|-------|-------|
| | B | SE | B | LL | UL |
| Constant | 77.72 | 2.65 | | 72.49 | 82.95 |
| QOL | -.25 | .06 | -.39*** | -.37 | -.14 |
| Resilience | -.17 | .05 | -.26** | -.28 | -.05 |
| R ² | .39 | | | | |
| F | 90.53*** | | | | |

Legenda. QOL = quality of life; SE = standard error; CI = confidence interval; LL = lower level; UL = upper level.
 p<.01, *p<.001

Table 5 – Group comparison/mean differences for gender across study variables (N = 276)

| Variables | Marital status | | T | p | 95%CI | | Cohen's d |
|---------------|------------------------|----------------------|-------|-----|-------|------|-----------|
| | Unmarried (n = 125) | Married (n = 151) | | | LL | UL | |
| | M (SD) | M (SD) | | | | | |
| QOL | 78.47 (15.05) | 82.56 (21.33) | -1.80 | .07 | -8.55 | .372 | .22 |
| Resilience | 54.89 (15.14) | 60.34 (21.85) | -2.35 | .01 | -9.99 | -.90 | .29 |
| Death anxiety | 49.14 (10.75) | 45.30 (13.41) | 2.59 | .01 | .92 | 6.77 | .32 |

Legenda. M = mean; SD = standard derivation; CI = confidence interval; LL = lower level; UL = upper level; QOL = quality of life.

DISCUSSION

The present research aims to examine the relationship between quality of life, resilience, and death anxiety among ambulance workers in the context of Pakistan. Specifically,

it seeks to understand the predictive role of resilience and quality of life in determining death anxiety. The findings strongly support the idea that resilience is positively related to quality of life, echoing previous studies (Chen et al., 2023), and provide valuable insights into the dynamics of resilience

in the lives of ambulance personnel.

Resilience emerged as a significant predictor, positively influencing the overall quality of life. The characteristics inherent in resilient individuals, such as their preference for active coping strategies over avoidant ones (Fullerton, Zhang & Kleitman, 2021), may explain this positive relationship. In stressful situations, resilient individuals adapt more readily, reframing negative emotions into positive ones, significantly contributing to better mental health and life satisfaction. As Chen and colleagues (2023) highlight, resilience not only reduces stress but fosters happiness and satisfaction, enhancing the quality of life overall. This ability to maintain a positive outlook in adversity plays a critical role in self-regulation and maintaining well-being. In line with this, the research underscores that when faced with psychological trauma or adversity, resilient individuals tend to use cognitive reappraisal techniques, which help them experience more positive emotions (Friedberg & Malefakis, 2022). This optimistic assessment of life circumstances allows them to self-regulate effectively, even in high-stress situations (Crane, Searle, Kangas & Nwiran, 2019). Such traits of resilience, including positive self-assessment and self-worth, are closely linked to improved quality of life, further solidifying resilience as a protective factor in managing life stressors.

The negative relationship between resilience and death anxiety is another important finding. Ambulance personnel, who are regularly exposed to traumatic events, benefit from resilience as it provides them with the psychological tools to cope with their frequent encounters with death. Resilience helps reduce the intensity of death anxiety by allowing these workers to process their experiences more adaptively, thus minimizing emotional distress (Fullerton et al., 2021). As a result, resilient individuals may view death as an inherent part of their job, which they can accept and confront with less fear. This resilience not only allows ambulance personnel to confront death anxiety but also enables them to find meaning in their work and maintain a sense of control through effective coping strategies (Kaplánová & Gregor, 2021). Fostering resilience through training, peer support, and mental health resources could, therefore, be a crucial step in helping these workers manage death anxiety, improving their well-being and job performance.

Furthermore, the significant negative relationship between quality of life and death anxiety suggests that as the quality of life improves, death anxiety decreases. This

indicates that overall life satisfaction plays an important role in mitigating fears related to death among ambulance personnel (Ji et al., 2024). While they are frequently exposed to life-threatening situations, a higher quality of life may provide them with a stronger psychological foundation, helping them to cope better with these stressors. This connection implies that individuals who experience a higher sense of well-being are better equipped to manage the emotional challenges posed by their profession (McFadden et al., 2021). Additionally, while personal beliefs, job-specific stressors, and mental health conditions still influence death anxiety (Chegini et al., 2022), quality of life remains a crucial factor in shaping how ambulance workers perceive and cope with death-related fears. This underscores the need to consider both personal well-being and other external factors in understanding and addressing death anxiety in this high-risk profession.

In this study, the role of marital status was also explored concerning quality of life, resilience, and death anxiety among ambulance personnel, providing valuable insights into how these factors differ between married and unmarried individuals. The enhanced resilience, improved quality of life, and reduced death anxiety observed among married ambulance workers can be attributed to several interconnected factors, primarily related to the emotional and social support inherent in marriage (Rusu, Bodenmann & Kayser, 2019). Marriage often provides a crucial network for emotional assistance and understanding, offering stability and security that significantly contributes to emotional well-being (Karimi, Bakhtiyari & Masjedi Arani, 2019), especially for those facing the constant stress of working in an ambulance setting. The shared responsibilities within marriage may act as a buffer against the challenges of this high-stakes profession, enabling a more balanced and sustainable approach to cope with work-related stressors (Hank & Steinbach, 2021). Additionally, the sense of purpose derived from family responsibilities may encourage ambulance workers to prioritize their mental and physical health. The shared experiences and coping mechanisms developed within the marital relationship likely foster higher resilience and a decreased fear of death. Furthermore, healthier lifestyle choices within a marital partnership may amplify these positive effects on overall well-being. However, it is important to note that individual experiences within marriage can vary, and these findings reflect general trends rather than universal outcomes.

Implication of the study

The implications of this study highlight several key areas for improving the well-being of ambulance personnel and addressing the challenges they face in their profession. First, the findings underscore the importance of fostering resilience and enhancing quality of life as effective strategies for mitigating death anxiety. This suggests that training programs should include components focused on developing resilience, coping mechanisms, and emotional support systems.

Second, the study highlights the need for organizations to offer comprehensive mental health resources tailored to the demands of emergency medical services. These resources include access to mental health professionals, counseling services, and crisis support, alongside peer support programs and well-being workshops. Third, the significant influence of marital status on resilience, quality of life, and death anxiety underscores the importance of strong social support. Therefore, initiatives that enhance family support and healthy relationships may further strengthen the emotional resilience of ambulance personnel.

Finally, the findings call for ongoing research to explore the broader range of factors influencing death anxiety, including personal beliefs and job-specific stressors. This will help develop a more holistic understanding of the psychological landscape faced by ambulance workers and inform future interventions aimed at improving their mental health and overall job performance.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design limits the ability to draw causal inferences

between the variables, as it captures a snapshot in time rather than changes over time. Second, the reliance on self-reported measures may introduce bias, as participants might overestimate or underestimate their quality of life, resilience, or death anxiety due to social desirability or recall bias. Additionally, the sample was drawn from a specific geographical area, which may limit the generalizability of the results to other regions or cultures. Furthermore, the study did not account for potential confounding variables such as prior traumatic experiences, personality traits, or workplace environments, which may also influence the relationships examined.

Suggestions

Future research should consider using longitudinal designs to better understand the causal relationships among quality of life, resilience, and death anxiety. Incorporating qualitative methods, such as interviews or focus groups, could provide deeper insights into the personal experiences of ambulance personnel and the factors influencing their mental health. Expanding the sample size and diversity to include participants from various geographical locations and cultural backgrounds would enhance the generalizability of the findings.

Additionally, future studies should explore the impact of workplace interventions, peer support programs, and family dynamics, including the presence of children or minors in the household on resilience and death anxiety to identify effective strategies for promoting mental well-being in this high-stress profession. Finally, investigating other potential moderators or mediators, such as coping styles or social support, could provide a more comprehensive understanding of the factors that influence death anxiety among ambulance workers.

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