Mediating Contribution of Resilience between Quality of Life and Death Anxiety among Individuals with Cardiovascular Disease

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Abstract

In the context of individual with cardiovascular disease, literature review indicates that resilience could act as a protective factor, enabling individuals to effectively manage the symptoms of death anxiety and to achieve better quality of life which ultimately impacts on the challenging journey of cardiovascular disease. However, the fundamental mechanisms leading this pathway needs further exploration. The primary objective of this study is to investigate the mediating role of resilience with quality of life and death anxiety among persons with Cardiovascular Disease. Sample of current study was consisted of 100 individuals with cardiovascular disease from various concerned government hospitals across Karachi, Pakistan. Among the participants 67% were males and 33% were female. The age range of the entire sample was from 20 years to 64 years. The study data has been collected through convenient random sampling technique using informed consent form; personal demographic form; Urdu Resilience Scale (RS-U; Anwar et al., 2017); Urdu World Health Organization Quality of life-Bref (WHOQoL-U; Khan et al., 2003) and Urdu Death Anxiety Scale (DAS-U; Goreja & Pervez, 2000). The finding depicts that path c shows significant total effect of death anxiety on quality of life without resilience as a mediator ($b = .51$, $t = 5.94$, $p < .01$); path c' indicates an estimate direct effect of death anxiety on quality of life with resilience as a mediator ($b = .71$, $t = 5.28$, $p < .01$). The strength of beta value has increased $b = .23$ to $b = .71$ in predicting quality of life with resilience. The statistical analysis has been performed by using PROCESS v4.2, Model 4 by Andrew F. Hayes in SPSS V-26. The importance of this study is relevant to local healthcare professionals and policy makers in the development of interventions and support mechanisms that foster resilience in individuals with cardiovascular disease and ultimately improve their quality of life and overall wellbeing.

Keywords: Resilience, Quality of Life, Death Anxiety, Cardiovascular Disease, Mediation

Introduction

Cardiovascular diseases (CVD) have been among the major causes of worldwide mortality, which significantly influence the psychological and physical well-being of affected individuals (WHO, 2021). Patients with CVD mostly experience reduced quality of life due to chronic nature of illness (Rumsfeld, 2013). This diminution in QoL can lead to increased death anxiety, a cognitive response marked by the fear of dying (Kastenbaum, 2000). However, resilience- a positive adjustability in the challenging phase— may play a significant mediating role in this aspect (Luthar, 2000). Regardless of apparent vitality of resilience, there is a gap exploring its mediating contribution among QOL and death anxiety in patients with CVD (Smith, 2020).

A healthy heart effectively delivers sufficient blood flow to the body to maintain its overall functions. However, when the heart weakens as a result of illness or injury, it may cause inadequate bodily functioning due to its reduced effectiveness (Chaudhry, 2022). Nevertheless, various physiological, psychological, nutritional, and personal influences can also have adverse effects on overall bodily functions. This can lead to a critical situation where the heart fails to pump an adequate flow of blood to meet the physiological requirements, possibly creating a life-threatening situation (Ponikowski, 2014). In the context of individuals dealing with heart-related problems, resilience can assist as a protective factor, empowering them to successfully cope with the psychological and emotional challenges posed by their condition (Ong, 2020). Resilience is characterized as the capability to overcome terror or crises and return to an original state. It denotes a psychosocial capacity that diminishes negative emotions and fosters adaptation in critical conditions (Kim, 2019). Resilience is a crucial psychological element that plays a significant role in encouraging individuals with chronic illnesses to enhance their quality of life (Lemos, 2016). Moreover, adolescents struggling with chronic illnesses demonstrated a higher quality of life when they possessed resilience (Ring, 2016). Quality of life (QOL) encompasses the degree to which an individual enjoys good health, experiences contentment, and can actively participate in life event with derive satisfaction (Keshwara, 2023). QOL is a comprehensive and multifaceted concept that incorporates both objective and subjective phases, addressing the biological, emotional, psychological, and social influence of a disease on patients' lives (Alrubaiy, 2015). Many individuals dealing with complex congenital heart disease (CHD) often encounter daily challenges that have a damaging effect on their overall quality of life (Vigl, 2011). Furthermore, patients may also face persistent physical symptoms that hinder their functioning and affect their quality of life across several domains during and after medical and surgical interventions (Yang, 2015).

Conversely, patients develop a structured framework of health-related beliefs, after being diagnosed with a specific disease, referred to as illness perception. Diminished QoL resulting of physical constraints and psychological distress can intensify death anxiety, producing a vicious cycle that further hinders well-being (Carver, 2010). These perceptions form their subsequent behaviors in managing the illness, ultimately affecting their adherence to treatment (Vahed, 2022). Dealing with an illness that carries the potential for mortality, individuals may face feelings of hopelessness and fear (Soleimani, 2016). Those diagnosed with terminal diseases confront the direct prospect of death, often leading to increased levels of anxiety and stress (Emanuel, 2004). Death anxiety represents a psychological state that can manifest either deliberately or involuntarily, triggered by defense mechanisms that individuals employ when they perceive vulnerability in the face of death (Menzies, 2020).

Literature Review

Albus et al. (2019) illustrated that patients with enduring cardiac conditions often undergo less QOL levels in comparison of general group of individuals, referring this to prolonged physical symptoms. However, Individuals with chronic illness appeared with high QOL when they were resilient therefore, improving resilience can protect their health along with QOL (Hamer, 2017). That illustrates, resilience plays a vital role in producing psychological well-balanced individuals with congenital heart disease (lee, 2014).

In addition, resilience serves as a mediator between perceived stigma and QOL, as perceived stigma can adversely affect it, which may lead to low self-esteem and lack of optimism that eventually influence QOL (Luo, 2021). However, evidences indicate that resilience significantly mediate between confrontation perceived social support, and health related QoL, showing that it has a vital role in reinforcing the positive impacts of confrontation on health related QoL (Mohlin, 2020). Based on current researches, psychological dynamics are significant in the QOL of cardiac patients although, depression and anxiety, are common coexisting conditions in CVD that further dysfunction QOL (Chen, 2020). Research indicate that strong level of resilience predicts a prominent decline in psychological distress, such as symptoms of stress, anxiety and depression. (Hjemdal, 2011).

Death anxiety is a prevalent psychological issue, which is defined as distress and fear stemming from contemplation of one’s own death or death of loved ones that is categorized by uninvited feelings, such as worry, uneasiness, and apprehensions of death (Mohammadpour, 2018). Research conducted by Nascimento et al. (2020) revealed that elevated levels of death anxiety in CVD patients were linked with escalated depression and anxiety, destructively affecting their overall QOL. These findings underscore the need for comprehensive care strategies that address both physical and

psychological health aspects. The persistence and intensity of death anxiety can lead to critical health consequences, such as somatic and biological ailments, reduced resilience, and multiple other mental health challenges (Karampour, 2018). According to Terror Management Theory (TMT), the responsiveness to mortality causes irrational distress and fear in a person, prompting them to employ multiple defense mechanisms to cope with it (Menzies, 2020). Previous studies reveal stages of resilience and death anxiety in elderly ones and mention that both resilience and death anxiety are inversely interconnected (Rayatpisheh, 2023). Additionally, death anxiety can manifest when there is perceived sense of threat in challenging daily life experiences that inhibit the quality of a one's life (Furer, 2008).

Methodology

Participants

The sample comprised 100 cardiac patients, male and female, with age range 25-65 years from various cardiology centers in Karachi, through purposive sampling. The patients were categorized into two groups: those with mayo cardiac infarction and those who had undergone coronary artery bypass surgery.

Inclusion and Exclusion Criteria

Inclusive: Age range between 25 to 65 years, at least have a one prior history of seeking treatment for cardiovascular disease.

Exclusive: Age range less than 25 years and above 65 years, first time visit for seeking the treatment, person with any noticeable physical or mental disability.

Measures

The consent form covered the research introduction, rationale, voluntary participation, estimated time to complete the form, right to withdraw, and right to receive study results upon completion. Confidentiality was also guaranteed. Furthermore, the demographics form collected information on gender, category of family structure (nuclear or joint), age, marital and socioeconomic status of participants.

Following questionnaires were used for measuring variables:

a) Resilience Scale, Urdu Version (Anwer, 2017)

Resilience Scale operates to a Likert scale comprising 19 items (Anwer, Batool, Skina & Tariq 2017). The participants are supposed to rate themselves on a 5-point scale from "Strongly agree" corresponds to value (5) to" strongly disagree "that corresponds value (1). For the scoring, the score from each item are calculated and then summed up to determine over all resilience score. There is no reverse scoring. In addition, the scale emphasizes on different sub groups i.e. Emotional regulation (a= .71), Adventurousness (a=.66), Determination (a=.62) and Self-Reliance (a=.59). It also showed significant Cronbach's alpha reliability (a=.84).

b) Quality of Life- BRIEF (Khan, 2003)

This summarized version of WHOQOL-100 developed by Khan et al in 2003, consists of 26 items rated on a 5-point Likert scale covering four domains. The

quality of life instrument demonstrated good reliability Cronbach's alpha value of a = 0.90. Furthermore, psychological functioning and environment domains suggested Alpha value as 0.71 and 0.80 respectively. However, Alpha reliability of other two subscales i.e., physical functioning and social dimension have 0.67 and 0.64 alpha value, that was below that criteria.

c) Death Anxiety Scale (Goreja, 2000)

The death anxiety scale, developed by Goreja and Pervez (2000) comprised 20 distress- related items. Responses are rated on a scale from Always to Never (Never = 1 (0%), Rarely = 2 (25%), Sometimes = 3 (50%), Frequently = 4 (75%) and Always = 5 (100%). The reliability of the scale indicated by Cronbach's alpha indicated value of a = 0.89.

Statistical Analysis

The data was collected using designated standardized measures. Interpretation of the available scores was performed using Structural Equation Modeling (SEM) in statistical terms. Statistical computations were conducted using Statistical Package for Social Sciences (SPSS, V-26).

Results

Table 01

Demographic characteristics (N= 100)

Characteristics		Frequency	Percentile	Mean
Gender				
	Male	67	67.0	1.33
	Female	33	33.0	
Socioeconomic Class				1.77
Relationship Status				
Participant's Classification	Upper	41	41.0	
	Middle	41	41.0	
	Lower	18	18.0	1.98
	Single	06	6.0	
	Married	91	91.0	
	Divorced	02	2.0	1.40
	Widow	01	1.0	
Age				
	With Coronary Artery Bypass Grafting			
	With Myocardial Infarction	60	60.0	
		40	40.0	1.85

Young Adulthood-20 to 35 Years Old	15	15.0
Middle Adulthood-36 to 64 Years Old	85	85.0

Table 01 represents demographic information of the participants (N=100); within the population 67% participants were male and 33% were female; in socioeconomic status 41% belong to upper and middle class separately and 18% belong to lower class; in relationship status 6% were single, 91% were married, 2% were divorced and 1% were widow; among the disease classification, 60% had been experiencing coronary artery bypass grafting and 40% had history of experiencing myocardial infarction; within the age the middle adulthood aged 36-64 years old were highest 85%, however, the young adulthood aged 20-35 ratio were 15%.

Table 02

Mediation Effect of Resilience (R) on the Relationship between Death Anxiety (DA) and Quality of Life (QoL)

Regression Paths	*B*	*SE*	*t*	*P*	*95% CI*
Mediation Path *a* (DA on R)	.23	5.30	2.42	.017	.0554, .5589
Mediation Path *b* (R on QoL)	.57	7.69	5.28	.000	.4441, .9780
Total Effect, Path *c* (DA on QoL; No Mediator)[a]	.51	5.69	5.94	.000	.5402, 1.08
Direct Effect, *c'* (DA on QoL; R as a Mediator)	.71	.134	5.28	.000	.4441, .9780
Indirect Effect, *c-c'* with bootstrapped	.09	.05			.0144, .2376

Note: B = Unstandardized Regression Coefficient; CI = Confidence Interval; Bootstrap Sample = 5000

Path *a* in Table 02 demonstrates that death anxiety significantly predicts resilience (*b = .23, t = 2.42, p <.05*); path *b* indicates resilience also significantly predicts quality of life (*b = .57, t = 5.28, p <.01*); path *c* shows significant total effect of death anxiety on quality of life without resilience as a mediator (*b = .51, t = 5.94, p <.01*); path *c*' indicates an estimate direct effect of death anxiety on quality of life with resilience as a mediator (*b = .71, t = 5.28, p <.01*). The strength of beta value has increased *b = .23* to *b = .71* in predicting quality of life with resilience. The strength of association between death anxiety and quality of life while controlling effect of resilience is the evidence of partial mediation. Path *c-c'* indicates indirect

effect of death anxiety on quality of life (*b = .09*) with bootstrapped standard error (*.05*), and confidence interval (*.1444, .2376*). However, there is no zero in between the confidence intervals of indirect effect, which indicates that the effect is significant.

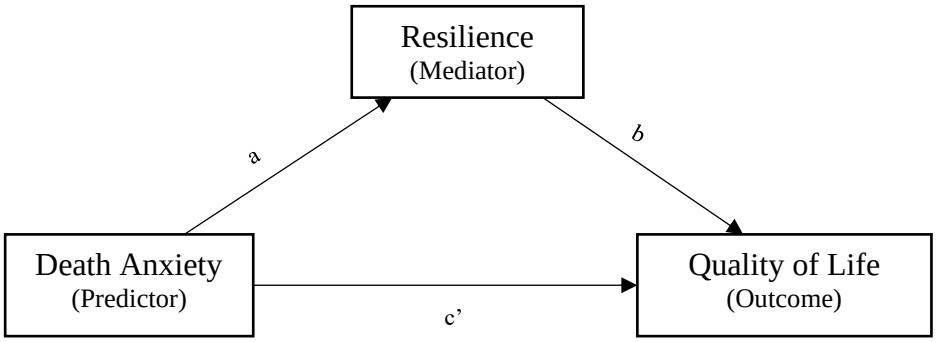

Figure 01: Hypothesised and Tested Model of This Study

Discussion

This study examines the role of resilience in maintaining the quality of life for patients with heart diseases. Our hypothesis posits "There would be a mediating Contribution of Resilience between Quality of Life and Death Anxiety among Individual with Cardiovascular Disease". The outcomes of the current study indicate that resilience has direct and indirect effect on quality of life and death anxiety in cardiac patients.

Psychological resilience refers to the ability of resist illness, adjust positively, and coming back to a pre-morbid level of functioning despite ongoing stress (Dooley, 2017). However, our findings reveal the role of resilience as meditator with QOL and death anxiety. This is supported by a previous study which demonstrated that resilience mediates the relationship between perceived distress and satisfaction of life (Shi, 2015). Furthermore, patients who have higher levels of resilience are more likely to adapt constructive coping skills, participate in positive communication, and have ability to sustain improved psychosocial functions (Dibley, 2018).

In line with the previous studies, resilience is found to have both direct and indirect effects on health-related QOL and serves as a mediator in the relationships between quality of life and social support (Chon, 2020). Similarly, resilience is found to be a positive predictor of self-management in people with chronic diseases (Verma, 2020). It has also been demonstrated that resilience mediates the relationship between perceived stigmas, emotional and social functional dynamics of QOL (Luo, 2021). Furthermore, resilience has a positive influence on self-management approaches in chronic illnesses (Hadj-Abo, 2020).

Research also identifies that resilience is a significant factor that can mediate the association among death anxiety and moral courage. For instance, nursing students with higher resilience levels are better equipped to deal with

the psychological challenges and anxiety associated with caring for COVID-19 patients (Mohammadi, 2022).

Death anxiety is a common response to reminders and awareness of, or threat related to mortality (Sherman, 2010). Generally, death anxiety may trigger as a result of challenging everyday experiences, particularly when there is a perceived mortality hazard that inhibits person's well-being (Furer, 2008). Current research explores the moderate levels of death related anxiety in cardiac patients that is consistent with previous studies. Similarly, result of the study by Mohammadi et al. (2021) reveals that nursing staff have reported moderate levels of both anxiety and resilience, with an indirect relationship observed between resilience and anxiety.

Despite the strong role of resilience as mediator between interpersonal risk factors of depression and hopelessness, prior research has not extensively explored this aspect, beyond the ground of clinical depression (Rossi, 2017). In conclusion, strong levels of resilience are linked with reduced negative emotions and healthier interpersonal communication (Ungar, 2020).

Limitations and Recommendations

The limitations and recommendations of the study are discussed as follow:

1. The sample of the study was taken from different hospitals and medical centers in the Karachi city, which restricts the generalization of research findings. To minimize this restriction, future research endeavors could benefit from expanding the sample size to include the participants from all over the Pakistan.
2. Secondly, this study exclusively focused on cardiac patients, specifically two major groups i.e. Mayo Infarction (MI) and Coronary Artery Bypass Grafting (CABG). However, subsequent studies may consider including a broader range of heart disease and sub groups, utilizing the same variables to facilitate comparisons and deeper understanding in the area of psychological well-being in order to promote mental health in cardiac patients.
3. Further, studies are advised to employ more advance statistical techniques to yield more comprehensive and quantitative findings considering the nature of this study on resilience, quality of life and death anxiety in cardiac patients. It is recommended to complement these findings with a qualitative study. Qualitative analysis can provide enriching insights into the variables under investigation, elevating our understanding of the phenomenon.

Implications

The outcomes of this study would play a remarkable role in hospital setups, mental health professionals, rehabilitation of cardiology department and counseling services in promoting knowledgeable understanding about resilience and quality of life. Insights from the outcomes of this study can

contribute to fostering healthy lifestyles and dealing anxious and distressing thought patterns in patients.

In Pakistani culture, there is an obvious and pressing need to foster resilience among individuals to constructively manage psychological stressors and uphold their well-being. Understanding the relationship between resilience, quality of life and death anxiety among patients with heart issues can nurture better quality health care through patient empowerment and self-management, and lessening health care cost burdens. In addition, it is significant for individuals to gain insight about these concepts which can help preserve mental health and can play a dynamic role in battling physical illnesses. Poor resilience can cause an unhealthy lifestyle and deteriorated psychological well-being in patients.

The findings of this study would also support mental health specialists in understanding the influence of resilience on human life, allowing them to organize awareness programs and establish interventions for both healthy and diseased people. Since a diagnosis of a terminal or fatal illness can make a person more vulnerable and helpless, it is important to assist them sustain their quality of life by improving their optimistic personality traits. Psychologists, mental health practitioners in medical set ups and counselors can facilitate seminars, workshops, educational talks and awareness sessions to educate patients about the ideas and procedures. Health professionals can train patients to boost adaptive coping skills to manage distress instead of indulging in thinking patterns that lead to death-related anxiety and hopelessness.

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