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Role of Social Support, Psychological Distress, and Adaptive Coping Strategies in Determining the Quality of Life among Cardiac Patients in Multan

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Abstract

Coronary Heart Diseases (CHDs) are considered to be a significant cause of mortality around the globe, especially in middle-income countries. This study investigated the major determinants that directly and significantly affect quality of Life (QoL) among patients with cardiac disease. Social Support Theory and Lazarus and Folkman's Stress and Coping Theory were the basic theoretical foundations of the present research. Data were collected from N=385 cardiac patients using a convenience sampling technique at Multan Institute of Cardiology (MIC). Multiple regression analysis indicated that social support, psychological distress, and adaptive coping strategies accounted for 56% of the variance in QoL among cardiac patients. In conclusion, increasing social support and adaptive coping strategies, along with decreasing psychological distress, can improve the QoL among patients suffering from CHD. It is recommended to launch the "Cardiac Care Program" in conjunction with the "Sehat Card" to treat cardiac diseases. Likewise, awareness campaigns, counseling sessions, and rehabilitation therapies can be used to decrease the psychological distress among patients suffering from acute and chronic heart diseases.

Keywords: Social Support, Psychological Distress, Coping Strategies, Cardiac Patients, Chronic Illness, Quality of Life

Introduction

Cardiovascular Diseases (CVDs) are considered to be one of the alarming and noteworthy causes of mortality worldwide. According to an estimation, more than 17 million people suffer from heart diseases each year, accounting for more than 1/3rd of all the deaths around the globe (Benjamin et al., 2019; Menotti et al., 2015). The future estimations were projected that by 2030, approximately 23.6 million people will die from various cardiac diseases, ranging from acute to chronic. Additionally, the socio-economic and health burdens were linked to heart diseases, which mainly impact the low- and middle-income countries (Ahmadi, 2016).

The global data from the United States showed that about $363.4 billion was spent on the healthcare of patients suffering from CHD. Key management strategies included nutritional management, physical therapy, medication, surgical procedures, and other treatment options (Virani et al., 2020). The statistical and empirical evidence from Iran demonstrated that 35 out of every 100 people are affected by some acute and chronic diseases (Maracy et al., 2015). Low-income countries, like Pakistan, also showed the highest percentage of mortality of patients with CHD. In this regard, it is evident that the mortality rate of CVD patients ranges from 30%-40% (Cardiovascular Diseases, 2021). According to the WHO report, 29% of deaths in Pakistan are caused by CHDs (Rehman et al., 2021).

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In recent years, the overall well-being of cardiac patients has been the foremost concern for Sociologists, Psychologists, and Public Health experts. South Asian countries also showed the lowest QoL among cardiac patients compared with developed countries (Costa et al., 2021). Social and psychological factors are substantial causes that decrease the health conditions of patients suffering from CHD. These patients used various coping techniques for overcoming the social and psychological distressing situations (Zhou et al., 2021). Along with these factors, improving patients' motivation and ensuring adherence to the treatment process are vital for effectively managing patients' cardiac conditions. Still, previous literature shows that the health and well-being of cardiac patients are questionable in developing countries (Kato et al., 2011; Wenn et al., 2022).

Despite the biological causes behind CHD, numerous social and psychological factors determine the occurrence of the disease among cardiac patients (Love et al., 2021). The social fabric around the world is not conducive to health and well-being. Therefore, patients face various problems during their disease era. To address these issues, social network support can improve the QoL of patients with CHD. In addition to this, the psychological problems associated with heart diseases are reported to affect the health of cardiac patients negatively (Bhatia et al., 2023), such as depression, anxiety, stress, anger, and nervousness (Babygeetha & Devineni, 2024). Support from family and related social networks also helps to reduce mortality and morbidity rates. Additionally, other coping strategies, psychological and spiritually based, can improve the health conditions of cardiac patients. These strategies, including problem-solving and emotion-focused coping, are used to address heart-related diseases (Freak-Poli et al., 2021).

Earlier investigations focused on separate studies of social support and psychological problems faced by cardiac patients along with their physical impediments during the disease era (see related studies by Al-Zaru & Al-Dwairi, 2023; Freak-Poli et al., 2021). Some relevant literature also showed that psychological ailments such as stress, anxiety, and depression are salient in lowering the quality of treatment procedures and coping mechanisms with cardiac diseases (Garcia et al., 2024; McCann et al., 2023). The literature gaps are silent about addressing the three predictor variables, i.e., social support, psychological distress, and adaptive coping strategies, in determining the QoL of cardiac patients in the context of Pakistan in general, and South Punjab in particular. Therefore, the first author, along with the supervisor (second author) and the researchers responsible for data collection and analysis, planned to design a study incorporating these variables among cardiac patients in Multan. Based on the rationale of the empirical research, the subsequent objectives were formulated: 1) To examine the demographic characteristics of patients with CHD; 2) To assess social support provided to patients with CHD to improve their QoL 3) To evaluate the psychological distress experienced by patients with CHD during their disease era 4) To analyze the socio-psychological, and spiritual coping strategies used by cardiac patients to reduce their distress and enhance their QoL during illness; and 5) To propose recommendations for improving the QoL of patients with CHD.

Theoretical Framework and its application in the present research

The theoretical foundations of the present study include 1) social support theory and 2) Lazarus and Folkman's stress and coping theory

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Social Support Theory

Sidney Cobb (1976) proposed the social support theory, which posits that social support is a noteworthy factor in improving individuals' well-being and facilitating their coping with stressful situations. This social support comes from the social network, enabling individuals to receive emotional support and helpful information, reducing feelings of loneliness, and helping them manage chronic stress. Emotional support is a key factor in ensuring understanding, which helps reduce stress and increase individuals' strength to face challenging situations. Cobb focused on people's connections within the social network in boosting well-being and effectively managing their health challenges. In this regard, dealing with health issues and addressing chronic illness is a disputed and questionable challenge. It requires social networking and teamwork of professionals, patients, and contributing healthcare networks (Cobb, 1976). Recently, social support theory has been applied to cardiac patients in studies by Prabhakaran et al. (2022) and Vila (2021).

The application of this theory confirmed that social networks, including family (siblings, spouse, children, and parents), neighbors, colleagues, and friends, played a crucial role in determining and improving the QoL of cardiac patients. Emotional support helps to alleviate discomfort and decrease the psychological stress among patients with CHD. The primary rationale for using this theory is to examine the role of social networks in adopting various coping strategies during medication and treatment. In this context, it is important to highlight how social networks facilitate integration, the sharing of joys and sorrows, and the maintenance of social network affiliations and connections. Applying this theory in the present research will help readers understand how social networks provide social support to cardiac patients for improving their QoL.

Lazarus and Folkman's Stress and Coping Theory

Another theoretical explanation for the present research was the stress and coping theory, which Lazarus and Folkman proposed in 1984 (Lazarus & Folkman, 1985). This theory explains that individuals use various techniques to manage stressful situations. Additionally, how a person perceives a situation influences their response to a particular problem. For example, when an individual's health declines and specific ailments occur, they use various strategies to cope with these medical situations. To maintain their well-being and health, they use different appraisals, called primary and secondary appraisals. The primary appraisals characterize the situation as threatening and challenging to resolve. Secondary appraisals concern the availability of resources to cope with the complex problem, such as personal skills, social support, and psychological motivation. The theory further focused on two strategies, i.e., 1) problem solving, and 2) Emotion-focused coping. The first strategy involves addressing the source of stress, adopting solutions, gathering information, and situational modifications. Conversely, emotion-focused coping means emotional responses to stressful situations (Lazarus & Folkman, 1985). In recent years, Faryabi et al. (2022) and Meraz et al. (2023) have applied the theory to cardiac patients.

The application of the above-mentioned theory focused on the psychologically distressing situations and circumstances faced by cardiac patients during their disease epoch. In this regard, it is clear that cardiac patients use various coping strategies to curb their psychological problems. The sampled respondents addressed their grievances about the disease through problem- and emotion-focused strategies. The research also focused on cardiac patients' ability to handle difficult health situations, such as seeking medical

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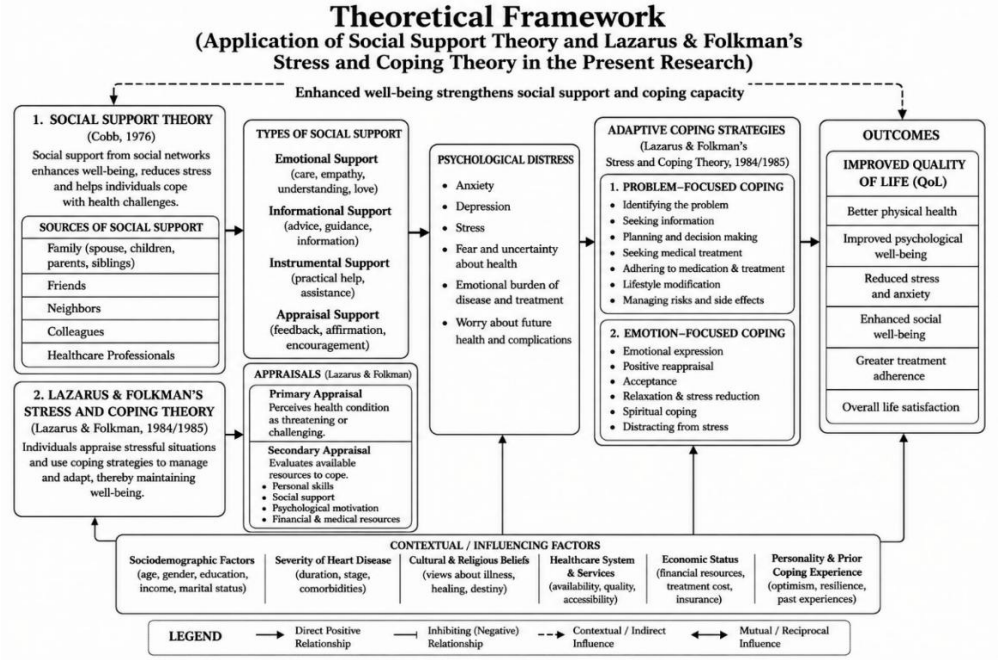
treatment, managing the risks associated with medication and surgery, dealing with emotionally challenging conditions, and problems in attaining comfort and social support.



Methodology

Universe, target population, and inclusion criteria for respondents

The universe for the present study encompassed all patients diagnosed with mild-to-severe cardiac diseases in Multan. Patients with CHD who were admitted to MIC were the targeted population. MIC is a well-known hospital in Multan that provides treatment, medications, and surgical interventions to cardiac patients. The researchers concentrated on patients of diverse ages, genders, monthly incomes, and educational attainments. For data collection, the following inclusion criteria were used for approaching the cardiac patients: 1) Patients who attended the MIC for medications, treatment, or surgeries, 2) Patients who suffered from acute or chronic heart diseases, and 3) Patients who made at least three visits to the MIC.

Demographic profile of the respondents

The demographic profile for the cardiac patients included age, gender, and marital status. In this regard, the cohort of patients diagnosed with CHD comprised both older and younger individuals, with an age span of under 18 to over 40 years. In addition, both male and female patients, along with married and unmarried patients diagnosed with CHD, were included.

Sampling Procedure and Sampling Technique

We selected outdoor patients for sampling. As the population size was unknown, we selected a sample size of N=385 through Cochran's formula for an infinite population with a 5% margin of error. We used convenience sampling to approach the targeted cardiac patients. Due to time and financial constraints, the researchers collected data only from respondents present at the time of data collection. In addition, the patients with follow-up visits were also included.

Online ISSN: 3006-8886
Print ISSN: 3006-8878

Research technique

The face-to-face survey was the primary research method, allowing the researchers to conduct their research in a more comprehensive and evaluative manner. Moreover, this research technique provides an understanding of the data and enables the generalization of the findings. These face-to-face questions allowed patients to ask about unclear aspects and receive accurate answers. It also increases the response rate of the collected data.

Tool for data collection

1. An interview schedule served as the data collection tool. The primary rationale for selecting this tool was that not all patients with CHD were educated. Therefore, the researcher conducted interviews and documented the responses accordingly. The instrument included both structured and unstructured questions. The first and second authors provided detailed explanations to patients who did not understand any question. To investigate the research topic, the instrument included the following sections.
2. Demographic profile of the patients with CHD
3. Social support provided by the family, friends, caregivers, and other networking relations to patients suffering from CHD
4. Psychological distress experienced by patients during their disease epoch
5. Coping strategies implemented by patients with CHD
6. QoL of patients with CHD
7. Recommendations for increasing social support and coping strategies to decrease psychological distress among cardiac patients

Data Collection Methods

The first author gathered data through face-to-face interviews and consulted hospital records and treatment information to verify the accuracy of the health data. The first author also collected additional information during the interviews through non-verbal cues, emotional expressions, and contextual information. Noteworthy challenges during data collection included, first, a significant number of patients being illiterate and reluctant to provide data. Secondly, collecting data from male patients was challenging. Therefore, the first author sought assistance with data collection from the hired male researcher, who holds an M.Phil. Degree in Sociology. In addition, the male authors of this paper also supervised data collection from the male cardiac patients. The other challenge was that the administrative staff of MIC continued to interfere in the data collection process. Consequently, the letter from the Board of Directors granting permission for data collection provided the evidence needed to address this issue. After considerable effort, the researchers collected the data from the patients suffering from CHD. A pilot study was conducted involving 10 patients with acute and chronic heart diseases at the research locale. Based on respondents' feedback, the questions were restructured, and repetitive and overlapping questions were eliminated. Respondents also suggested increasing social support and adopting multiple coping strategies to improve QoL among cardiac patients. Therefore, the authors included a separate section with open-ended questions to solicit respondents' suggestions regarding the research problem.

Ethical considerations

To meet the ethical requirements of the present research, the first author submitted the research to the Ethical Review Board. The members of the Board were Sociologists, Psychologists, Medical Sociologists, Public health experts, and researchers who reviewed the

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research ethics and allowed the researcher to collect the data with some minor mistakes. Afterward, the permission letter was issued to the first author with the subsequent research considerations: 1) following the research protocol, 2) ensuring no harm to the participants, 3) maintaining the confidentiality of data and anonymity of the respondents, and 4) addressing the emotional ethics of the cardiac patients.

Data analysis

Data were analyzed using SPSS version 21 by coding and segregating the data. For univariate analysis, frequencies and percentages were used, while demographic variables were analyzed using bivariate analysis. Multiple regression analysis was used to investigate the effect of the independent variables (social support, psychological distress, and coping strategies) on QoL (dependent variable).

Results

Table-I

Demographic characteristics of patients with CHD (N=385)

Demographic variables	Frequency (Percentage)	Binary Logistic Regression $	
		OR's (95% CI) #	p-value
Age in years			
<18	37 (9.6)	**1 (RC)^**	
30 to 40	96 (24.9)	0.388 (0.147-0.573)	<.05
> 40	252 (65.5)	0.701 (0.655-1.801)	<.05
Gender			
Male	170 (44.2)	**1 (RC)**	
Female	215 (55.8)	2.371 (2.224-4.573)	<.05
Educational attainment			
Illiterate	14 (3.6)	**1 (RC)**	
Primary education/Equivalent	58 (15.1)	2.884 (2.341-3.910)	<.05
Secondary education/Equivalent	142 (36.9)	3.481 (2.997-4.521)	<.05
Tertiary education/Equivalent	171 (44.4)	6.007 (5.810-7.913)	<.01
Family size			
< 5 members	129 (33.5)	**1 (RC)**	
5 to 10 members	207 (53.8)	2.770 (1.984-3.566)	<.05
> 10 members	49 (12.8)	3.078 (2.049-5.804)	<.05
Family type			
Nuclear	113 (29.4)	**1 (RC)**	
Joint	111 (28.8)	4.081 (3.028-5.776)	<.05
Extended	161 (41.8)	3.075 (4.058-4.099)	Ns
Monthly income in PKR*			
< 30,000	164 (42.6)	**1 (RC)**	
30-000-50,000	140 (36.4)	6.014 (5.774-6.883)	<.05
>50,000	81 (21.0)	7.019 (6.348-8.790)	<.05

*PKR refers to the currency of Pakistan in rupees

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Dependent variable: QoL of cardiac patients

OR: stands for Odds Ratios

Demographic factors associated with CHD patients

Table I illustrates the significant demographic factors that determine the QoL among cardiac patients in MIC. From the statistical analysis, it is evident that n=252 respondents (65.6%) were aged > 40 years. The binary logistic regression analysis showed that cardiac patients aged 30-40 years have 0.388 times less QoL as compared to the younger patients with CHD, i.e., <18 years ($p < .05$). The gender differentials indicated that n=215 respondents (55.8%) were female, whereas n=170 participants (44.2%) were male. Female patients had a 2.371-fold higher QoL than male cardiac patients ($p < .05$). Educational level showed that cardiac patients with a tertiary education (n=171, 44.4%) had a sixfold higher QoL than illiterate cardiac patients (n=14, 3.6%). Data further show that patients with CHD and a family size exceeding 10 members had three times better QoL than patients with a family size of < 5 members (n=129, 33.5%). Further analysis showed that patients residing in the joint family system (n=111, 28.8%) reported a fourfold higher QoL than those living in the nuclear family system (n=113, 29.4%). The primary rationale for improved QoL among patients living in a joint family system is that they receive social support from their kin and other network relations. In addition, the table showed that demographic characteristics are not significant in the extended family system. Regarding income, patients who earn more than 50,000 PKR reported 7.019 times more QoL than cardiac patients who earn less than 30,000 PKR (n=164, 42.6%).

Table-II

Provision of social support from the social network to patients with CHD (N=385)

Social support variables	**Agreed respondents Frequency (Percentage)**
Social support provision from social networks, including family, siblings, spouse, parents, caregivers, and children	324 (84.2)
Emotional support provision from one's social network, including companionship, empathy, and a non-judgmental environment	301 (78.2)
Informational support provision from social networks, including treatment options, digital resources, and lifestyle modifications	337 (87.6)
Social support provision by sharing joys and sorrows with the social network	271 (70.4)
Social support provision by receiving a comfortable zone from family	266 (69.1)
Social support provision from social networks through attachment and condolences about the disease	218 (56.7)
Social support provision through improved communication within one's social network	317 (82.4)
Social support provision through one's social network by sharing pains and grievances during adverse circumstances	340 (88.3)
Getting social support by sharing the joys and sorrows associated with the disease within one's social network	353 (91.7)
Attaining social support by empowering the patient through decision-making	239 (62.1)

Online ISSN: 3006-8886
Print ISSN: 3006-8878

Provision of social support from the social network to patients with CHD

Statistical data from Table II indicated that n=324 (84.2%) patients with CHD agreed that they get exceptional support from social networks, such as family members, siblings, spouse, and children. Participants also agreed that emotional support is a crucial element of social support networks, providing companionship, empathy, and non-judgmental responses (n=301, 78.2% of respondents). In addition, n=337 (87.6%) respondents affirmed that informational support, such as treatment options, digital information, and lifestyle modifications, improves the QoL for cardiac patients. Other aspects of social network support pertinent to augmenting the QoL included the joys and sorrows (n=271, 70.4%), sharing joys and sorrows related to the disease (n=353, 91.7%), and sharing pains and grievances related to the disease (n=340, 88.3%). The data further demonstrated that the QoL for cardiac patients can be significantly enhanced through the social support networks that give comfort and condolences (n=218, 56.7%), facilitating improved communication with family members (n=317, 82.4%), and empowering the social networks in the decision-making process of the patients regarding their treatment and medications (n=239, 62.1%).

Table-III

Psychological distress experienced by patients with CHD (N=385)

Psychological distress variables	Agreed respondents Frequency (Percentage)
Anxiety	332 (86.2)
Stress	319 (82.9)
Depression	301 (78.2)
Nervousness	244 (63.4)
Panic attacks	179 (46.5)
Fear	368 (95.6)
Sadness	375 (97.5)
Fatigue	369 (95.9)
Loss of interest	309 (80.3)
Loss of appetite	366 (95.1)
Restlessness	370 (96.2)
Cognitive difficulties and dual consciousness	381 (98.9)
Sleep disturbances	352 (91.4)
Worries for every task	374 (97.1)
Avoidant behavior in social interaction	380 (98.7)
Intrusive thoughts	321 (83.4)
Brain fog	299 (77.7)

Psychological distress experienced by cardiac patients

Table III divulged the various psychological problems faced by the cardiac patients that contributed to decreasing their QoL. The data revealed that the patients suffered from persistent feelings of anxiety, n=332 (86.2%), and stress, n=319 (82.9%) during their disease epoch. Additional disease-related psychological symptoms included fear (n=368, 95.6%), sadness (n=375, 97.5%), and fatigue (n=369, 95.9%). Furthermore, the patients with CHD reported that the additional psychological feelings were brain fog (n=299, 77.7%), intrusiveness (n=321, 83.4%), and avoidance behaviors (n=380, 98.7%). Extending this, cardiac disease also became the baseline factor for inducing psychological distress, including

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sleep disturbances (n=352, 91.4%), persistent worry (n=374, 97.1%), and panic attacks (n=179, 46.5%). Patients also reported that during their disease course, other psychological concerns included ongoing nervousness (n=244, 63.4%), sleep disturbances (n=352, 91.4%), and loss of appetite (n=366, 95.1%).

Table-IV

Coping strategies employed by patients diagnosed with CHD to enhance their QoL (N=385)

Coping strategies adopted by patients with CHD	Frequency (Percentage)
Social coping strategies	
Showing connectedness with the consanguinal social network (blood relations such as siblings and parents)	311 (80.8)
Showing connectedness with the intimate social network (intimate relations, such as husband and children)	354 (91.9)
Showing cooperation and effective communication with the healthcare providers	178 (46.3)
Psychological coping strategies	
Mind mapping and changes in lifestyle	322 (83.6)
Positive reframed thoughts	337 (87.5)
Changing and avoiding the negative thoughts	351 (91.2)
Attending the rehabilitation sessions	338 (87.8)
Ensuring psychological counseling	367 (95.3)
Using various stress management techniques	380 (98.7)
Spiritual coping strategies	
Practicing the religious rituals	375 (97.4)
Ensuring the religious reappraisals	361 (93.8)
Increased resilience towards spirituality	349 (90.7)
Fulfilling the spiritual needs by performing sacred customs	377 (97.9)

Social, psychological, and spiritual coping strategies adopted by the cardiac patients to increase their QoL

Table IV shows that cardiac patients used various coping strategies to reduce psychological distress and increase QoL during their disease epoch. As shown, n=311 (80.8%) cardiac patients reported maintaining stronger connections with family, friends, neighbors, and siblings. In addition, intimate relationships within close networks, such as spouses and friends, contributed to strong network ties, which improved cardiac patients' QoL (n=354, 91.9%). Furthermore, an overwhelming majority of respondents (n=178, 46.3%) agreed that their primary social coping strategy for combating their disease was better communication and cooperation with the healthcare professionals.

Table IV shows that the cardiac patients adopted the psychological coping strategies to improve their QoL during medication and the treatment process. The first psychological coping strategy reported by the cardiac patients in MIC was changing their mindset and adopting the necessary lifestyle changes. In line with this, n=322 (83.6%) cardiac patients agreed that they would change their dietary patterns and sedentary lifestyles. The additional psychological coping strategy was positive reframing, which increased QoL among cardiac patients (n=337, 87.5%). Afterward, n=351 (91.2%) respondents reported avoiding negative

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thoughts. These thoughts are related to pain, distress, death, and various hallucinations about the disease. As indicated in the table, n=338 (87.8%) cardiac patients reported that attending the rehabilitation sessions can increase their QoL and help them to cope with the painful periods of their disease. In addition to this, n=367 (95.3%) patients described that they must use psychological counseling techniques to manage their cardiac ailments. Moreover, n=380 (98.7%) patients reported stress management techniques for combating their CVD. Patients reported that the most effective stress management techniques included lifestyle changes, spending time with friends, physical relaxation, deep breathing, meditation, limited screen time, and adopting various hobbies.

The table also showed that the study context focused on adopting religious teachings to check for any disease. In this regard, cardiac patients focus on improving the QoL during the disease period by adopting spiritual coping strategies. For this purpose, most patients engaged in diverse spiritual practices to enhance their well-being during their illness (agreed: n=375, 97.4%). An additional coping strategy was used in which the cardiac disease was treated through religious reappraisals and increasing resilience. For these strategies, n=361 (93.8%) and n=349 (90.7%) participants acknowledged their effectiveness. Univariate analysis also showed that the additional coping strategy addressed spiritual needs by engaging in various religious rituals, festivals, and customs to feel relaxed and to cure the disease.

Table V

Multiple regression analysis concerning the influence of social support, psychological distress, and coping strategies on the QoL among patients with CHD (N=385)

Predictor variables	B	SE B	β	t	p
Constant	11.64	1.26	11.51	9.64	.000
Social Support	.37	.05	.43	5.17	.000
Psychological Distress	-.27	.08	-.34	-.31	.002
Coping strategies	.27	.06	.26	4.13	.002

Model Summary of Multiple Regression Analysis (N = 385)

Model	R	R square	Adjusted R-squared	Std. Error of estimate	F-value	*p*-value
1	.735	.560	.571	5.214	85.74	.000

Multiple regression analysis regarding the influence of social support, psychological distress, and coping strategies on the QoL of patients with CHD

The results of the hypothetical analysis in Table V showed that the predictor variables accounted for 56% of the variance in the response variable. This means that social support, socio-psychological factors, and spiritual coping strategies have a positive and significant relationship with QoL among cardiac patients. Conversely, the results in the table show that the magnitude of psychological distress is substantial, but the direction of its effect on QoL among cardiac patients is negative. It means that reducing the psychological distress of patients with CHD during their disease epoch can increase the QoL among cardiac patients in the study area (p =.000).

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Discussion

To validate the present research findings, it is evident that CVDs are the leading cause of mortality in the global context, especially in middle- and low-income countries (Di Cesare et al., 2024). Data extracted from the World Health Organization (WHO) revealed that in 2012, 17.5 million individuals died due to CVDs. From this statistical analysis, an 80% mortality rate for cardiac diseases skewed towards the developing countries (WHO, 2016). The empirical evidence from the global context also indicates that the significant causes of heart diseases in the world are connected with inadequate dietary patterns, sedentary lifestyles, and psychological distress. These investigations suggest that cardiac patients face numerous emotional, social, and mental health challenges, which can be mitigated by adopting various coping strategies (see Gaziano, 2022; Priasmoro & Lestari, 2023; Townsend et al., 2022).

The findings indicated that cardiac patients who faced psychological stress had low QoL. Results from the multiple regression analysis also validated that psychological distress has a negative relationship with QoL. Consistent with the present study findings, previous studies conducted among Korean patients revealed that QoL further determines the mortality rate of patients suffering from CHD. When physical and psychological problems are reduced among cardiac patients, their QoL increases. These Korean research studies showed that the primary cause of physical and mental distress among cardiac patients was fatigue, mood swings, muscle cramps, nervousness, and inability to focus (see the related studies of Chu et al., 2014; Kim et al., 2021).

In light of the present study findings, demographic factors such as age, gender, education, monthly income, and family structure are the significant determinants of QoL among cardiac patients. Binary logistic regression was employed for this analysis, comparing categories of these demographic variables against a designated reference category. Consistent with the current research, aforementioned studies conducted in Pakistan reported that patients over the age of 40 years are more exposed to cardiac diseases. The salient reason is that they have low physical activity and generally have poor health, which increases their risk of heart disease. Additionally, low-income families are unable to afford the treatment expenses. Furthermore, illiterate and low-educated people are also more exposed to cardiac diseases as they have inadequate knowledge about the prevention and cure of the disease (see the relevant studies of Saqlain et al., 2021; Husain et al., 2019).

The study’s findings showed that patients with low monthly income faced economic burden in treating the disease, resulting in low QoL. Empirical evidence from the global context indicates that cardiac patients' QoL is primarily affected by financial burdens related to tests, medications, and costly surgical procedures. The research suggested that insurance policies for the healthcare system of patients with CHD can help them face the high costs of the disease. Another study conducted in Pakistan by Saeed et al. (2021) demonstrated that frequent hospitalizations, along with expensive medications and laboratory tests, are the baseline factor for psychologically distressing situations among the patients.

It is evident from the results section that the patients with CHD faced various physical, psychological, and emotional distressing situations during their disease epoch. These distressing situations significantly contributed to the diminished QoL. The increased level of nervousness, sleep disturbances, depression, anxiety, stress, and cognitive dualities are the major factors that trigger the illness of cardiac patients. These findings are supported by prior research by Chauvet-Gelinier & Bonin (2017) and Rashid et al. (2023). These studies showed that cardiac patients develop negative thoughts about their disease. These thoughts are related

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to immediate death, paralysis, and cardiac failure in the near future. These thoughts generated stress, anxiety, depression, nervousness, and social isolation during their disease epoch. In extension, the studies conducted by Butler et al. (2022) and Chen et al. (2018) indicated that cardiac patients face psychologically distressing situations such as depression, anxiety, and stress due to medication and treatment fear. These studies also showed that educated patients can better manage disease-related psychological health and QoL. Another study conducted by Agarwal et al. (2022) indicated that psychological issues related to cardiac diseases became stronger due to various other associated causes among patients with CHD, such as physical inactivity, insomnia, and various traumatic disorders.

Cardiac patients' QoL can be improved by increasing social support. To support this finding, Shafiq & Shahzadi (2023) provided empirical evidence from Pakistan by collecting data from 180 patients with CHD. The research indicated that cardiac patients who received support from their social network experienced low levels of psychological distress. Anxiety, depression, stress, loss of interest, and restlessness were the factors that could be lessened by the support provided by the social network to cardiac patients. Furthermore, their QoL is affected by the psychologically distressing situations. From the above results section, it can be extracted that the patients who experienced psychological ailments reported a low QoL, as they experience stress, anxiety, restlessness, and loss of interest. Furthermore, the research evidence shows that social support mediates the relationship between psychological distress and QoL among patients with CHD.

In compliance with the present study findings, Kroemeke (2016) demonstrated that cardiac patients overcome their health problems through various social, psychological, and spiritual coping strategies. Additionally, cardiac patients who adopted coping strategies tend to hold more positive perceptions of their illness and report higher levels of satisfaction with their health conditions. Evidence from Pakistan demonstrated that these coping mechanisms can improve the QoL among cardiac patients. In this regard, Bukhari et al. (2022) and Shahin et al. (2021) reported that these coping strategies positively impact treatment adherence and recovery from medications and surgeries among cardiac patients. The paper demonstrated that the social coping strategies are the primary influencers of the QoL among patients with CHD.

Conclusion

In conclusion, cardiac patients suffered from various psychological challenges related to their disease, such as anxiety, depression, stress, nervousness, panic attacks, restlessness, and avoidance behaviors. These psychological problems also became the baseline factor for various other psychologically based physical symptoms, such as loss of appetite, intrusive thoughts, cognitive fog, diminished interest in daily activities, and cognitive impairments, which may exacerbate their condition. The study found a significant association between QoL and psychological and demographic factors in cardiac patients. The research work demonstrated that having a strong social network, comprising siblings, friends, spouse, children, relatives, neighbors, and others, provides social connections that offer emotional support and encourage patients to adhere to medications and physicians' prescriptions. To combat the disease, the patients adopted the coping strategies at three levels, i.e., social, psychological, and spiritual, which improved their QoL. Cardiac patients reported using strong social networks, ongoing communication with healthcare providers, engagement in counseling, rehabilitation, stress management practices, and lifestyle modifications as salient psychological coping strategies to improve QoL. The patients also reported that noteworthy

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spiritual coping strategies included abiding by spiritual practices, increased resilience, and religious reappraisals as supplementary coping strategies.

Recommendations

Based on the respondents' suggestions and the findings of this research, the following recommendations can help manage illness and QoL among patients with CHD.

1. Education and awareness sessions are necessary to motivate cardiac patients to use their social networks as a source of social support.
2. Cardiac patients should focus on counseling sessions to address their psychological ailments regarding the disease.
3. The involvement of cardiac patients in their spiritual activities should be encouraged, as it will decrease their psychological distress and improve their spiritual healing from the disease.
4. The financial assistance program for cardiac patients, such as "Sehat Card," should be launched as it will facilitate adherence to medications and the treatment process.
5. Cardiac patients should ensure that they make lifestyle changes. In this regard, they must change their dietary habits and adopt a more active lifestyle.
6. The government of Pakistan, in collaboration with the healthcare providers, NGOs, and other associated welfare organizations, should initiate the "Cardiac Care Program" to use the telehealth support system to assist cardiac patients in remote communities.
7. To mitigate the psychological distress among patients with CHD, counseling sessions, rehabilitation therapy, along with Stress Management Programs (SMP) and Cognitive Behavioral Therapy (CBT), should be recommended during their treatment phase.

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