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Psychological Distress, Hope and Quality of Life Among Cardiac Patients: A Correlational Study

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Abstract
The aim of this research was to investigate the connection between psychological distress, hope, and quality of life in individuals with heart conditions. A correlational research approach was employed, and 200 cardiac patients (100 men and 100 women) were chosen using purposive sampling from different public hospitals in Faisalabad. Various tools including a Demographic Form, Quality of Life Scale, Hope Index, and Psychological Distress Scale were utilized to assess the variables. The Statistical Package for Social Sciences (SPSS) was used to analyze the data. The results of correlation analysis revealed a strong negative relationship between psychological distress and hope, as well as between psychological distress and quality of life. Conversely, a strong positive correlation was found between hope and quality of life. Additionally, the linear regression analysis indicated that psychological distress significantly predicted hope and life quality in cardiac patients. Furthermore, the t-test analysis demonstrated that female cardiac patients exhibited significantly higher levels of psychological distress compared to male patients, while male patients scored significantly higher in hope and quality of life than female patients. These findings could be utilized to advocate for policies that ensure access to mental health support in cardiac care settings and may lead to further research into effective strategies for enhancing hope and reducing psychological distress to improve the life quality for diverse patient populations.
Keywords*:* Quality of Life, hope, psychological distress, cardiac patients

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Introduction

The use of psychology in health promotion, illness prevention and treatment, identifying the diagnostic and causative elements of health and disease, and the evaluation and enhancement of health care systems and policies are all included in the discipline of health psychology (Matarazzo, 1982). Cardiovascular disease (CVD) is a prevalent and significant medical condition that affects human beings. It encompasses diseases that impact the cardiovascular system, including heart disease, kidney and brain vascular diseases, and peripheral arterial illness (Kelly & Fuster, 2010). The causes of CVD are varied, with hypertension and atherosclerosis being the most frequent. Furthermore, aging leads to morphological and physiological changes that affect cardiovascular function and elevate the risk of cardiovascular diseases (Dantas, Jiménez-Altayó & Vila, 2012). Common types of cardiovascular disease include heart attack, angina, and congenital heart disease. Cardiovascular illnesses continue to be the world's leading cause of sickness and mortality, having a substantial negative influence on patients' general quality of life (QoL) and physical health. However, the psychological aspects of living with such long-term conditions are increasingly acknowledged as crucial factors affecting health outcomes. Psychological distress, which includes symptoms of anxiety, depression, and stress, is common among cardiac patients and can have a negative effect on their physical recovery and daily functioning. This distress often arises from the fear of disease progression, changes in lifestyle, and the burden of ongoing medical care, ultimately affecting the overall well-being of patients (Gleason et al., 2019; Tully & Cosh, 2023). In contrast, hope is defined as a positive motivational state based on the interaction between goal-oriented thinking, agency, and pathways (Snyder, 2002). Hope has been linked to improved coping strategies, increased resilience, and better health outcomes in various medical conditions, including cardiovascular disease (Cheavens et al., 2006).

Many researchers have found a relationship between psychological stress and poor life quality. Lee and colleagues suggest that high levels of psychological stress lead to disability and poor life quality in patients (Lee, Yu, Woo, & Thompson, 2005). Emotions negatively affecting the mind and body, such as anxiety and despair, are particularly important when it comes to heart disease. Anger, anxiety, and despair are examples of negative emotions that can increase the danger of coronary heart disease (CHD) and have a major detrimental impact on heart disease outcomes (Kubzansky & Kawachi, 2000). A number of mechanisms exist via which emotions may impact cardiovascular health, including hyperactivation of the sympathetic nervous system & hypothalamic-pituitary-adrenal (HPA) axis, as well as modifications to the heart's autonomic regulation (Kubzansky & Kawachi, 2000). For instance, worry may accelerate the atherosclerotic process and increase the risk of heart attacks by causing electrical instability in the heart (Kubzansky, Kawachi, Weiss & Sparrow, 1998). According to Carney et al. (1995), depression can impact cardiac issues by altering neuro-endocrine function, raising sympathetic tone, lowering the vagal tone, and accelerating platelet aggregation. Social and behavioral facets of health can be impacted by the physiological impacts of emotions and psychological discomfort. In addition to physical limitations and co-morbidities, anxiety and depression during the recovery period prior to and following surgery (e.g., CABG, PTCA)

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play a significant role in influencing outcomes such as span of hospital stay, functional ability, and quality of life (Pirraglia et al., 1999). Adherence to treatment plans that are prescribed (i.e., improving self-care and lowering health risk behaviors) is also linked to negative emotional states. These plans are crucial to cardiac rehabilitation (Januzzi et al., 2000; Ziegelstein et al., 2000).

The research conducted by Frasure-Smith and Lespérance (2006) indicates a strong association between depression and presence of angina in patients with coronary artery disease (CAD). Additionally, Pocock et al. (1996) found a connection between the severity of angina and quality of life (QOL). Gravely-White et al. (2007) demonstrated that angina significantly predicts poorer emotional, physical, and social health-related QOL as well as higher levels of depression as measured by the SCL-90. They also noted that patients with angina reported significantly worse QOL at a six-week follow-up. The evidence suggests that angina symptoms impact the QOL of CAD patients, while the presence of depression or depressive symptoms further worsens their QOL. Evangelista et al. (2003) highlighted the connection between hope, QOL, and mental health in cardiac patients, emphasizing that low hope levels are linked with poorer QOL and psychiatric disorders. Numerous researches have examined the detrimental effects of negative emotions on the health outcomes of individuals suffering from heart failure. For instance, Steptoe et al. (2000) state that patients with dilated cardiomyopathy experience elevated levels of anxiety and despair. In a similar vein, Trigo, Silva, and Rocha (2005) discovered that essential fatigue and depression were independent hazard factors for the prognosis and prevalence of coronary disease. Furthermore, a connection was found by Lee et al. (2005) between psychological discomfort and a lower quality of life. Numerous studies have established the predictive importance of depression, indicating that in patients with chronic heart failure, it predicts both death and re-hospitalization (Faris et al., 2002; Jiang et al., 2004).

The assessment of quality of life (QOL) and hope for potential enhancement can be conducted in various ways by researchers. Exploring the predictors of QOL, psychological distress, and hope offers valuable insights for targeting potential interventions. In comparison to individuals with other common persistent conditions including arthritis, lung disease and diabetes, people with heart failure have a much lower life quality (Stewart et al., 1994). According to subsequent studies, numerous cardiac situations, such as heart stoppage, angina, CHD, arrhythmias, and electrical resynchronization, have been repeatedly linked to poorer quality of life (Dracup et al., 1992; Dougherty et al., 1998; Kamphuis et al., 2002). Furthermore, life quality is impaired in patients undergoing procedures such as PTCA and CABG (Konstam et al., 1996; Majani et al., 1999). Recent studies have begun to consider these variables in overall health, in cardiology patients, and specifically in heart failure. For example, Evangelista et al. (2003) discovered that women undergoing heart transplantation experienced high levels of depression, anxiety, and hostility in addition to low levels of hope. Previous research indicates that men generally experience a higher life quality compared to women. Women with cardiovascular disease tend to have more negative subjective experiences than men with the same condition. The gender difference in life quality is more pronounced among individuals with cardiovascular disease than among healthy men and women. Additionally, it appears that gender interacts with social support, namely a feeling of

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companionship, to affect quality of life (Frasure-Smith et al., 1997). Therefore, this study aimed to explore the connection between psychological distress, hope, and life quality in individuals with heart conditions. Understanding the reciprocal impact of these factors can enhance the efficiency of interventions targeting the emotional and physical well-being of this vulnerable group, ultimately improving their overall health and well-being.

Hypotheses

1. There would be a significant negative correlation between psychological distress, hope, and quality of life among cardiac patients.
2. Psychological distress would be a powerful predictor of hope and quality of life for heart patients.
3. There would be considerable gender differences in the psychological distress, hope, and quality of life of cardiac patients.

Method

Research Design

A correlational research design was used to analyze the variables under investigation.

Sampling Technique & Sample

Purposive sampling was used to select the sample for the study, with 200 cardiac patients (100 males & 100 females) taken from various public hospitals in Faisalabad city.

Instruments

The following instruments were used to gather data for assessing psychological distress, hope, and life quality in cardiac patients.

Demographic Form

The researcher developed a demographic form to collect the basic information of study participants, such as name, age, gender, duration of illness, etc.

Kessler Psychological Distress Scale

The K10 Scale comprises 10 questions that assess feelings related to anxiety and depression experienced in the preceding 4 weeks. These feelings include sensations of stress, lack of value, despair, agitation, and unhappiness. Respondents use a scale from 1 (never) to 5 (always) to rate their experiences. Research indicates that the scale is highly reliable, as indicated by the Cronbach's alpha values, which range from .89 to .91 (Kessler et al., 2003).

Herth Hope Index

The anticipation of achieving desired goals defines the degree of hope calculated by the Herth Hope Index (HHI) which was translated into Urdu by Noreen et al. (2023). This index consists of 12 statements that are rated on a Likert scale from 1 (strongly disagree) to 4 (strongly agree), with the scores for items 6 and 3 being reversed. Strong test-retest reliability is demonstrated by this scale, with correlation coefficients ranging from 0.82 to 0.88 as shown by Herth (1992).

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Quality of Life Scale

Parveen (2013) translated the Quality of Life (QOL) Scale into Urdu to evaluate the quality of life and daily experiences of participants using Flanagan's (1978) framework. Participant reactions are rated on a scale of 1 ("terrible") to 7 ("delighted"). The scale has shown strong internal consistency (α = .82 to .92), excellent test-retest reliability (r = .78 to r = .84), and reliable convergent and discriminant validity.

Procedure

The research topic was approved by both the departmental and university research committees before seeking permission from the relevant hospitals where participant data was obtained. Data collection was carried out using designated questionnaires while ensuring adherence to ethical considerations. The Statistical Package for Social Sciences (SPSS) was used to enter and analyze the acquired data. The means, standard deviations, percentages, and sample frequencies were calculated using descriptive statistics. In testing the research hypotheses, inferential statistics such as Pearson correlation, independent sample t-test, and regression analyses were employed. Finally, the findings concerning demographics and other variables were presented in tabular format for each hypothesis.

Ethical Considerations

The study upheld the rights and dignity of the participants by ensuring confidentiality and providing them with information about the study's purpose. Participants were guaranteed that their information would be kept confidential unless they explicitly consented to disclosure, and they had the choice to remain anonymous. They were informed that they might stop participating at any time and that it is entirely voluntary. All necessary information was presented in the consent form. The study aimed to prevent any potential harm to individuals, communities, and participants, and it was dedicated to maintaining data confidentiality while adhering to ethical principles (American Psychological Association, 2010).

Results and Discussion

Table 1: The Research Participants' Demographic Features (N=200)

Variables	*f*	*%*	*M (SD)*
Age			37.17 (10.68)
Gender			
Male	100	50 %	
Female	100	50 %	
Duration of Illness			
1 to 5 years	81	40.5 %	
6 to 10 years	54	27 %	
11 to 15 years	47	23.5 %	
16 to 25 years	18	9 %	

Table number 1 presents the demographic details of all research participants. The participants' average age was 37.17 years, with an SD of 10.68. Out of the

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total participants, 100 (50%) were male and 100 (50%) were female cardiac patients. Furthermore, the individuals were categorized based on the duration of their illness. The breakdown was as follows: 1 to 5 years, 81 (40.5%); 6 to 10 years, 54 (27%); 11 to 15 years, 47 (23.5%); and 16 to 25 years, 18 (9%).

Table 2: Reliability Analysis of the Scales (N =200)

Scales	No. of Items	Cronbach's Alpha (*a*)
PD	10	.88
Hope	12	.76
QOL	16	.73

Note: PD = Psychological Distress; QOL = Quality of Life

Table 2 showed that the Psychological Distress Scale (PD), Hope Scale (H), and Quality of Life Scale (QOL) had alpha reliabilities of .88, .76, and .73 respectively, indicating satisfactory internal consistency among all the measures, according to the reliability analysis.

Table 3: Correlation Matrix among Cardiac Patients for all Variables (N = 200)

Variables	1	2	3
1-Psychological Distress	--	-.46**	-.55**
2-Hope		--	.54**
3-Quality of Life			--

Note: $^{**}p < .01$

The findings in Table 3 indicate a strong negative correlation between psychological distress and Hope (r = -.46**, p< .01), as well as between psychological distress and quality of life (r = -.55**, p< .01). Conversely, there is a strong positive correlation between Hope and Life Quality (r =.54**, p< .01).

Table 4: Linear Regression Analysis for Psychological Distress Predicting Hope and Quality of Life in Cardiac Patients (N =200)

	Hope		QOL	
Variable	ΔR^2	*B*	ΔR^2	*B*
PD	.19	- .46***	.29	-. 56***

Note: $^{***}p < .001$, *df* = (1, 198)

In Table 4, it is indicated that a substantial 19% of the variability in hope can be explained by a model that includes psychological distress as the predictor {F (1, 198) = 15.48, p < .001}. Additionally, the findings demonstrate that a significant 29% of the variability in Quality of life can be accounted for by a model that includes psychological distress as a predictor {F (1, 198) = 25.34, p < .001}.

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Table 5: Comparison of Males and Females on Psychological Distress, Hope and Life Quality among Cardiac Patients (N = 200)

	Male (*n*= 100)		Female (*n* = 100)				95% CI		
Variables	*M*	*SD*	*M*	*SD*	*T*	*P*	*LL*	*UL*	Cohen's d
PD	23.76	5.10	30.89	11.16	-3.87	.003	-12.10	-2.14	0.82
Hope	37.82	3.76	34.83	5.07	3.32	.005	1.16	4.75	0.66
QOL	81.78	8.77	75.15	13.74	2.34	.024	.88	12.42	0.57

Note: *p<.05, **p<.01, PD = Psychological Distress, QOL = Quality of Life, CI=Confidence Interval, LL=Lower Limit, UL=Upper Limit

The results presented in Table 5 reveal that there are statistically significant negative mean differences in psychological distress (PD) {t (198) =-3.87, p < .01}. This suggests that female cardiac patients scored significantly higher in psychological distress compared to male cardiac patients. The findings also demonstrate significant mean differences in Hope {t (198) =3.32, p < .01}, indicating that male cardiac patients scored significantly higher in Hope compared to female cardiac patients. Additionally, the results indicate significant mean differences in Quality of Life (QOL) [t (198) =2.34, p <.05], showing that male cardiac patients scored significantly higher in QOL compared to female cardiac patients.

Discussion

The purpose of the present research was to evaluate the link between psychological distress, hope, and quality of life in individuals with cardiac conditions. A correlational research design was utilized to gauge the association between the variables under study. A sample of 200 cardiac patients was chosen from various public hospitals in Faisalabad using purposive sampling. The data collection process used a Demographics Form, Kessler Psychological Distress Scale, Herth Hope Index, and Life Quality Scale. The Statistical Package for Social Sciences (SPSS) software was used to evaluate the study hypotheses. The initial hypothesis for this research was that "there would be significant negative correlation between the psychological distress, hope and quality of life among cardiac patients". The findings in Table 3 indicated a strong negative relationship between psychological distress and Hope (r = -.46**, p< .01), as well as between psychological distress and life quality (r = -.55**, p< .01). Conversely, there is a strong positive relationship between Hope and Quality of Life (r =.54**, p< .01). Based on the correlation analysis results, this research's first hypothesis is confirmed. Previous studies supported the association between psychological distress, hope, and life quality. Berendes et al. (2010) found that hope was negatively linked to psychological distress, specifically depression. A recent study by Shek et al. (2023) also found that elevated levels of hope were linked with improved mental well-being and reduced depressive symptoms. Likewise, another study showed a negative relationship between psychological distress and

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quality of life, indicating that severe psychological distress is linked to lower health-related life quality and the presence of persistent medical conditions (Shih & Simon, 2008; Bano et al,. 2024). A subsequent study on drinking practices, psychological distress, and life quality in a common population-based sample from Norway revealed a negative correlation between psychological distress and life quality. Researchers found that heavy drinkers experienced the highest levels of psychological distress and the lowest quality of life in the psychological, social interaction, and ecological domains (Mathiesen et al., 2012).

The study's second hypothesis was that the "psychological distress would be significant predictor of hope and quality of life among cardiac patients". In Table 4, it is indicated that a substantial 19% of the variability in hope can be explained by a model that includes psychological distress as the predictor {F (1, 198) = 15.48, p < .001}. Additionally, the findings demonstrate that a significant 29% of the variability in life quality can be accounted for by a model that includes psychological distress as a predictor {F (1, 198) = 25.34, p < .001}. According to the outcomes of regression analysis, the 2nd hypothesis of this study has been validated. Prior studies have indicated that psychological distress plays a significant role in predicting hope and quality of life. Research demonstrates that among cardiac patients, psychological distress significantly predicts both hope and life quality. Elevated levels of distress are linked to reduced hope and diminished quality of life (Soleimani et al., 2020; Abdolhosseini, Mami & Ahmadi, 2022; Hood, 2015; Yarcheski & Mahon, 2016). In the same vein, a different research study found that depression & anxiety were important predictors of life quality for people dealing with infertility (Chachamovich et al., 2010). Patients diagnosed with heart disease often encounter both physical and psychological symptoms simultaneously. Physical symptoms can include restricted physical abilities, fatigue, pain, and difficulty breathing. Additionally, they commonly experience psychological symptoms such as depression, anxiety, distress, and anger. Financial concerns are also frequently reported among these patients compared to the common population. The significant decline in their lifestyle and future goals may result in social isolation. Studies have shown a direct link between negative physical and psychological factors and the quality of life (QoL). Therefore, individuals with heart disease are found to have more adverse physical and psychological effects impacting their QoL compared to the common population (Soleimani et al., 2020 ; Sher et al,. 2024).

The 3rd hypothesis of this study was that "there would be significant gender differences on psychological distress, hope and quality of life among cardiac patients". The results presented in Table 5 expose that there are statistically significant negative mean differences in psychological distress (PD) {t (198) =-3.87, p < .01}. This suggests that female cardiac patients scored significantly higher in psychological distress compared to male cardiac patients. The findings also demonstrate significant mean differences in Hope {t (198) =3.32, p < .01}, indicating that male cardiac patients scored significantly higher in Hope compared to female cardiac patients. Additionally, the results indicate significant mean differences in Quality of Life (QOL) [t (198) =2.34, p <.05], showing that male cardiac patients scored significantly higher in QOL compared to female cardiac patients. The t-test analysis results confirm the third hypothesis of this study. Previous research has indicated that gender differences exist in hope, psychological distress, and life quality among cardiac patients. The results of a

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study indicate that women generally experience more psychological distress than men. This difference is influenced by factors such as hormonal fluctuations, social roles, and a greater susceptibility to certain mental health conditions (Kuehner, 2017). Another research study indicates a strong correlation between sex and psychological distress such as depression & anxiety. According to Roupa et al. (2009), women tend to experience high level of psychological suffering compared to men (Sher et al,. 2023). Additionally, a separate study suggests that men often display higher levels of hope, attributed to their problem-solving approach and focus on taking action (Hwang, 2010). Conversely, women generally report a lower life quality than men, often due to higher rates of chronic illness and psychological distress (Baird et al., 2019). These variations may be influenced by cultural and social factors.

Conclusion

The aim of this research was to examine the correlation between psychological distress, hope, and life quality among cardiac patients. The findings from the correlation analysis showed a strong negative link between psychological distress and hope, as well as between psychological distress and life quality. Conversely, there was a strong positive association between hope and life quality. Moreover, based on the linear regression analysis, it was evident that psychological distress had a noteworthy impact on hope and life quality in patients with heart conditions. Additionally, the results of the t-test revealed that female patients with heart conditions experienced notably higher levels of psychological distress than male patients, while male patients reported notably higher levels of hope and life quality compared to female patients.

Limitations & Recommendations

The sample size was insufficient in the current study, and because of time constraints, the sample was gathered from a limited number of public hospitals in Faisalabad City. As a result, it is advisable to expand the sample size significantly and gather data from various regions of the country to improve the applicability of the study findings. Additionally, researchers examining similar variables should establish more stringent control conditions and employ diverse investigative methods.

Implications

The correlation between psychological distress and hope has the potential to lead to a more holistic approach to patient care. Healthcare professionals may integrate psychological support into medical treatment to address both the emotional and physical well-being of patients. The findings of this research could be used to advocate for policies that ensure access to mental health support in cardiac care settings. Additionally, this may drive efforts to secure insurance coverage for psychological services for individuals with heart disease. This area of study has the potential to pave the way for further research into specific strategies that effectively enhance hope and reduce psychological distress, ultimately enhancing the quality of life for various patient populations.

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