Effects of Internalizing Problems on Quality of Life in Diabetic and Cardiac Patients: Mediating Role of Coping Strategies

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TO

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LIST OF ABBREVIATIONS

CVD: Cardiovascular Disease

CHD: Coronary Heart Disease

CAD: Coronary Artery Disease

VHD: Valvular Heart Disease

PAD: Peripheral Artery Disease

RHD: Rheumatic Heart Disease

QOL: Quality of Life

CABS: Coronary Artery Bypass Surgery

AMI: Acute Myocardial Infarction

HRQOL: Heart Related Quality of Life

WHO: World Health Organization

CHF: Congestive Heart Failure

DASS: Depression, Anxiety and Stress Scale

MDD: Major Depressive Disorder

MD: Major Depression

GAD: Generalized Anxiety Disorder

PTSD: Post Traumatic Stress Disorder

AF: Acute Failure

HF: Heart Failure

IHD: Ischemic Heart Disease

HPA axis: Hypothalamic-Pituitary-Adrenal Axis

SNS: Somatic Nervous System

PNS: Peripheral Nervous System

MACCE: Major Adverse Cardiovascular and Cerebrovascular Event

DSM: Diagnostic and Statistical Manual of Mental Disorders

APA: American Psychiatric Association

PNAS: Positive and Negative Affect Scale

CERS: Cognitive Emotion Regulation Strategies

CERQ: Cognitive Emotion Regulation Questionnaire

NERS: Negative Emotions Regulation Strategies

CRF: Chronic Renal Failure

HR: Heart Rate

BMI: Body Mass Index

WHOQOL: World Health Organization Qualify of Life

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DECLARATION

I, the undersigned hereby declare that this dissertation entitled, "Effects of Internalizing Problems on Quality of Life in Diabetic and Cardiac Patients: Mediating Role of Coping Strategies" is my own work and all the sources used or quoted have been acknowledged.

Malik Mureed Hussain

Abstract

The present research aims to study the effects of internalizing problems on quality of life in diabetic and cardiac patients and explores the mediating role of coping strategies. The sample of the study consists of 300 participants; these include 150 diabetic and 150 cardiac patients among these we had 66.3 % male and 33.7 % female participants. The measure of study include Urdu translation of Quality of Life Scale (Khand & Akhter,2003), Urdu Translation of Novaco Anger Scale (Naz & Khalily, 2015), Urdu Translation of Depression, Anxiety and Stress Scale (Huma & Kahlily, 2015) and Urdu Translation of WHO Brief Cope Inventory (Akhter, 2005). All these scales have established psychometric properties for use on our sample of study. The participants were drawn from Diabetic ward of Nishter Hospital, Chaudhary Pervaiz Elahi Institute of Cardiology Multan and private diabetic and cardiac centers; they volunteered to take part in the study. The findings of the study indicate that the quality of life is negatively correlated with depression, anxiety and stress along with emotion focused and problem focused coping strategies. However, anger was found positively correlated with depression, anxiety, stress, (emotion focused, problem focused and dysfunctional) coping strategies. With exception of emotion focused coping, depression is significantly positively correlated with anxiety, stress, problem focused and dysfunctional coping strategies. With exception of emotion focused coping, anxiety also is significantly positively correlated with stress, problem focused, and dysfunctional coping strategies. In addition, stress is significantly positively correlated with emotion focused problem focused and dysfunctional coping strategies. However, quality of life is found to be negatively correlated with anger

and dysfunctional coping strategy but the relationship is not statistically significant. An independent-samples t-test showed that there is no significant difference between cardiac and diabetic patients in terms of depression, anxiety, stress and DASS total. However, qualities of life mean score is significantly higher for diabetic patients than cardiac patients. In addition, anger mean score is also significantly higher for diabetic patients than cardiac patients. The results also indicate that the coping strategies play a mediating role in quality of life, internalizing problems and anger in cardiac and diabetic patients.

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INTRODUCTION

Pakistan is suffering from high risk of cardiac disease in the world. Coronary heart disease (CHD) causes 200000 mortalities per year in Pakistan. During the Coronary heart disease (CHD) plaques develop in coronary arteries which cause hindrance in the supply of oxygen to the heart. Another dangerous cardiac disease is Cardiovasculer diseases in which blood vessels become narrow and intrupt the blood supply to the heart which causes angina or stroke. Cardiovasculer diseases cause 30 to 40 percent mortalities in Pakistan. When, we talk about the causal factors of cardiac diseases. Hypertension is the the leading factors of cardiac diseases in Pakistan and 33% of Pakistani population over 45 years of age is suffering from hypertension (Pakistan Observer, 2017).

According to National Survey 2016-17, 26% Pakistani population is affected by diabetes; about 37 million people of above 20 years of age are suffuring from diabetes in Pakistan. "One in every six persons is a diabetic in Pakistan as a whopping 9.04 percent of new diabetes mellitus (without knowing about their disease) were added to the fresh findings of the diabetes prevalence in Pakistan," (Non Communicable Diseases Survey -Pakistan, 2016).

The patients of cardiac and diabetic diseases face many psychological problems like anxiety, stress and depression due to certain circumstances particularly fear of death and other harmful effects on the body. It is often observed that psychological problems become the major cause of physical ailment especially cardiac problems and diabetes.

Cardiovascular Disease

Cardiovascular disease has effect on the cardiac and circulatory system. CAD is part

of CVD which are angina pain, cardiac failure and attack, rheumatic heart disease, hypertension, congenital heart disease, VHD venous thrombosis and PAD (Mendis, & Puska, 2011, Abubakar, &Tillmann, 2015).

High blood pressure, hypertension, use of nicotine, lack of physical activities ,high level of blood cholesterol, inappropriate diet, too much using up of alcohol and diabetes are the main reasons of CHD, PAD and stroke. Thirteen percent deaths of cardiovascular patients occur due to high blood pressure, 9 percent results in use of nicotine, 6 percent lack of exercise, 6 percent due to obesity and 5 percent because of RHD (Mendis, & Puska, 2011). CAD is almost 90 percent can be cured and prevented.

The risk factors can be improved through proper healthy exercise, giving up alcohol intake, avoidance of smoking and proper healthy eating for prevention of atherosclerosis. The causal aspects can be minimized while using treatment which is beneficial (Mendis, & Puska, 2011).

Cardiovascular disease causes millions of deaths all around the world except Africa. It was observed that 17.9 million deaths occurred in 2015 which were 32.1 percent up from 12.3 million which are 25.8 percent in 1990 (Wang, & Naghavi, 2016).

Developing countries have higher ratio of mortality due to cardiac diseases and the ratio is increasing rapidly. Contrarily, it has been on the decrease in many advanced countries since 1970 (Moran, &Forouzanfar, 2014).Most of mortalities have occurred because of CAD and stroke which resulted in 80 percent mortalities in males and 75 percent of CVD in females.

The old people are affected mostly because of cardiovascular disease. In advanced countries, the average age of death is round about 80. On the other hand, in developing countries average age for death is 68. This disease is 7 to 10 years earlier among men and women respectively (Mendis&Puska, 2011).

Quality of Life

Quality of life is not properly met and even in severe heart failure, none of the course of action identifies this outcome. It seems that several facets such as melancholia and disability in social functioning are revealed to have an important effect on QOL among cardiac patients (Schowalter, 2013). Other elements upsetting QOL and functionality consist of importunate congestion, neuro hormonal and inflammatory establishment concentrated blood flow in peripheral muscles, condensed kidney utilization, and the dysfunction of right ventricular, found to be linked with QOL (Parissis, 2009).

According to New York Heart Association (NYHA), low QOL negatively affects the occupational functioning (Juenger, 2002). Physical, emotional and social prospects of QOL are mostly studied in cardiac patients. In fact, on these dimensions, the available data is mostly link to the outcomes of treatment. However, they often provide the whole QOL scores devoid of a comprehensive debate of the separate domains. From subjective and objective perspectives, QOL can be evaluated. However, the subjective evaluation of the sufferer is important. Where as, they understand their situation, together with the capability to substantiate them in the family, working and social environments. The individual's current social environment and relationships as well as physical or mental health effects QOL (Simpson, & Pilot, 2005). Quality of life has been mostly studied for nursing purposes (Ferans, Powers, 1985).

Quality of Life and Cardiac disease

The notion of QOL was developed by Aristotle (384-322 BC) as he noted "his good life or doing well to be the same as being happy". However, the systematic investigation and assessment of this notion is relatively recent.The most recent progress in present days is the recognition of patient's own insight about illness is considered as legal in health sciences.

Shumaker (1995) stated QOL as an individual's subjective assessment and opinion

about health and health concerning activities with regard to life goal and well-being.

However, there are different opinions about which aspects of life should be assessed and considered as elements related to HRQOL (Shumaker & Berzon, 1995). Health related quality of life (HRQOL) is considered as the point of reference in measuring the effects of disease on health and judgment (Urzúa, 2010).

The treatment of CAD mostly involves healthy life style. Scales for assessing the HRQOL are effectively assess the patients' experience, with reference to their health issues in different areas like physical, emotional or social performance, role triumph, pain and fatigue (Asadi-Lari et al., 2003).

Regardless of the acknowledged enthusiasm, in the appraisal of HRQOL in coronary patients, in clinical practice, the principal issue is the decision of the correct instrument (Cepeda-Valery et al., 2011). After an attack of coronary incident is to decrease angina and in this manner to enhance physical action, it is the fundamental capacity of coronary artery bypass grafting. It has happened due to the result for work, recreation, disposition, social, sexual exercises, and over QOL (Duits et al., 1997). Many researchers have endorsed out in coronary patients after CABG have demonstrated a few enhancement in physical, social and sexual execution (Stanton et al., 1984) and in addition to working status (Folks et al., 1986). With the mediation of a half year and diminished anxiety, depression, fatigue, and rest of issues have been found in these patients (Jenkins et al., 1983). Contrarily, some scholars have observed advancement in show of regular exercises, mental state, and family life one year post-surgery (Mayou and Bryant, 1987).It is worth mentioning that with general wellbeing status ending up fundamentally the same as with those from an ordinary populace (Caine et al., 1991). Likewise, it has been affirmed utilizing this instrument to coronary patients have poor HRQOL than all inclusive community (Soto Torres et al., 2004). Furthermore, being female, being more established, not being hitched, having a background marked by the

infection and with a psychological maladjustment are the factors impacting the QOL of these patients. Moreover, the patients with unequal angina found to have a low QOL than the individuals who endured an AMI (Soto et al., 2005).

Heart Related Quality of Life is a useful evident result in coronary patients who endure revascularization. In any case, there are not a few follow-up researches which analyse the progress of heart related quality of life and judge the result of clinical and socio-statistic aspects on the distinctive clinical types of the malady (angina versus myocardial infarction), in spite of the fact that it is fitting to perceive prophetic variables to improve the mediations for subjects in danger (Bryant and Mayou, 1989).

In a study conducted by (Failde and Soto, 2006), it was found in the patients influenced by both flimsy angina and myocardial infarction, they come out of the critical conditions in three months of follow-up in the physical execution, general health, and vivacity extent, and the physical component run down of the SF-36 health questionnaire. It is demonstrated that heart related quality of life is impressively disturbed in coronary patients after the treatment, with enhancements being delivered at a half year, particularly in the measurements of the SF-36 related to real torment, general health, imperativeness, and the physical segment run down. Similarly, Höfer et al. (2006) additionally found a critical positive change after some time for the physical part outline measurement of the SF-36, however not for the psychological segment synopsis measurement. The connections between HRQOL and time of patients, sex and regardless of whether they have endured that revascularization have been industriously contemplated yet the outcomes are as yet faulty. In these patients, more established age has been seen to connect with better post-agent emotional well-being (Rumsfeld et al., 2004). In any case, Miller and Grindel (2001) have revealed that both pre-agent health status and physiological, mental and social recuperation of more seasoned and more youthful patients were comparable. It is discovered (Duenas et al.,

2011) that the females disapprovingly influece HRQOL and the lion's share of studies has revealed that females do not oversee also mentally or physically as men. It stays equivocal why sexual orientation related contrasts in HRQOL exist among coronary patients (Van Jaarsveld, 2002).

Some scholars have opined that females with coronary illness deserve attention to critically poor physical working and emotional well-being as compared to males (Norris, 2004). This impact is diminished at times by its cooperation with other variables, for example, mental health status and histoy of illness and psychological well-being status. Norris et al. (2007) have recommended that subsequent to altering for clinical and psycho-social co-variables, the physical HRQOL contrasts amongst males and females did not vanish. Furthermore, other researchers have opined that smoking, general alcohol and overweight are the most successive hazard factors for more regrettable HRQL in men. The mental enduring and less strenuous exercises are more normal for females (Verbrugge, 1989).

Meanwhile, the females just enhance the physical factor while they are in physical and social working. This is inconsistent with the outcomes acquired by Emery, et, al (2004) opine that men and women have enhanced scores in physical wellbeing with the progression of time, however, females have not significantly higher scores in physical measurements over all appraisals. Duenas et al (2011) have expressed that the variables most unequivocally connected with a negative improvement of HRQL in men were in decrease in emotional well-beings and angina recurrence. Additionally, emotional betterment was likewise a deciding element in the advancement of the females'QOL (Duenas et al., 2011).

There is gender difference in prevalence of health related quality of life as Aguado-Romeo et al., (2006) found out that inclination to work less was more evident in females with coronary ailment than the male participants. Then again numerous examinations have observed that the enhancement of HRQOL varies amongst males and females after coronary

surgery. The females compromised Heath Related Quality of Life (HRQOL) is less connected to cardiovascular disease than men, with other natural and identity variables related to quality of life influencing females more than men.This is a conceivable clarification (Phillips Bute et al., 2003). In conclusion, the most critical view pointis related to the Health Related Quality of Life (HRQOL) of those patients who are with coronary infection is familial help (Rantanen et al., 2008).

Risk Factors of Cardiovascular Diseases

The main causal factors of cardiac diseases are genetics, age, sex, cigarette smoking, low physical activity, high alcohol intake, unhealthy and inappropriate diet, plumpness, genetic predisposition and family history of CVD, hypertension, diabetes, hyperlipidemia, psychosocial factors, scarcity, low education and air pollution. These factors vary from communities to communities and ethnic group. Some risk factors are immutable which are age, gender and genetic predisposition and some important factors can be modified such as social change, life style and intervention of the problems like diabetes, hypertension, and high raised cholesterol (McPhee, 2010).

Genetic factors have effect on males under 55years and females less than65 years. Riskof CVD in individual's parents increases three times (McPhee, 2010) while associating CVD with genetic problems and multiple nucleotide polymorphisms. Genetic contribution to CVD is not clearly understood whereas character influence is very small (McRae, 2016).

Aging is the most vital casual factors increasing the risk with the passage of time (Finegold, 2013). Eighty two percent people die due to CHD. But, the threat of stroke increases twice every ten years after ageof 55, (Naghavi, Falk & Hecht, 2006).Various reasons have become the causal factors of the disease.Age is the main risk factor which remains the basis of CVD. It is found out that cholesterol level also becomes the origin of CVD. But in some areas, when age increases, the cholesterol level also raises. This level rises

in men around the age of 45 to 50 and in women; it increases sharply around the age of 60 to 65 years (Jousilahti, 1999).

Wonen have higher chances to develop heart diseases than men with diabetes provided that those women who also have diabetes. If we compare the ratio of coronary diseases between females and males, it is 2 to 5 times higher among middle-aged males as compared to females (Staats, & Patton, 2004).

According to WHO, gender has almost 40% role with the disparity in the death rate of CHD (Cavalot &Petrelli, 2006).The gender differences reveal that half risk is linked with CVD. The hormonal differences of gender become the most imperative factor in cardiovascular disease. Estrogen, a female sex hormone protects from glucose metabolism and homeostatic system while having direct effect in improving endothelial cell function (Jousilahti, 1999).

Tobacco or any kind of smoking is major reason of cardiovascular disease. Smoking causes 10 percent of cardiovascular disease.However, the people who left smoking at the age of 30 approximately have less danger of mortality as non-smokers do (Doll &Peto, 2004). The lack of exercise and physical activity is the fourth major causal aspects of deaths around the world. In 2008, the ratio of inadequate physical activity among males and females was 31.3% (Mendis, Puska, & Norrving, 2011). Low level of alcohol consumption decreases the danger of cardiovascular disease. Overall alcohol consumption is linked with multiple health problems including cardiac disease (Dowse&Cridge, 2012).

Disturbed socioeconomic conditions cause cardiovascular disease especially in individuals in the lower income countries. Psycho-social influences, environmental hazards, health behaviors, availability of health-care facilities and QOL have their own contribution to socio-economic variances in CVD (Clark, &DesMeules, 2009).

Polluted air has drastic effect on the cardiovascular diseases. Generally, long term

exposure to polluted air enhances the rate of the atherosclerosis and inflammation (Sun, Hong, & Wold, 2010).

Work correlates with CVD. However, it is related to the exposure to toxins, extreme weather, smoke, stress, low social support, lack of opportunities, job insecurity, and exposure to pollution, long working hours and night working shifts (Sbu, 2017).

Denollet and Pedersen (2009) have observed that anger and aggression are linked with a 20% bigger risk. On the basis of these results, it is said that anger and hostility are linked with coronary disease.The psychological management of these issues among CHD patients should be focused (Danesh, & Wheeler, 2004).

Some internal factors of depression such as emotions, thinking, attitude and personalty lead to the severity of cardiac disease (Nicholson, 2006). Chida and Steptoe (2009) have paid attention on psychological factors, but these factors significantly increase the risk of coronary disease (Rozanski, 2005). Meta-analysis of psychological factors is related to CHD. It has become a difficult and complex phenomenon, but no one can deny the presence of such factors (Frasure, 2008).

Anxiety is very frequent among cardiovascular disease patients. It has tendency to heighten the severity of the disease if it remain untreated (Shen, & Avivi, 2008). Ladwig et al. (2008) have observed that treatment with an implantable cardioverter defibrillator could cause to develop post-traumatic stress, which increases the danger of mortality.

Hackett (2016) has described how psychological stress could cause physiological variability which results in complex medical conditions such as hypertension and heart attack (Rozanski, 2005). A main problem is that how physicians could dealth with psychological factors associated with cardiac disease because associated psychological factors vary patient to patient (Rozanski, 2005).

Hackett (2016) has remarked that liability and pliability factors in enhancing the

special effects of psychological factors on the heart. The personality is associated to these factors (Pedersen & Lemos, 2004). A study found tendency to experience psychological distress after inappropriate percutaneous coronary intervention (PCI) commonly known as angioplasty with stent (Pedersen & Lemos, 2004).

There is variation in physiological reactivity to psychological distress due to individual differences.At present; these individual differences are mainly overlooked in clinical study and practice. To wind up, the meta-analysis by Chida and Steptoe (2009) carries many important messages such as:

i) Psychological factors do matter in CHD

ii) Pursuing liability and pliability factors could lessen the level to mystifying by disease sternness.

 iii) Although, we might be far from having all of the answers, the risk linked with psychological factors is alike to that of other clinical risk indicators.

Lack of emotional expression is regarded as an important cause of cardiovascular diseases (Gross, 2013).Behavioral factors provide a significant link with depression and cardiac disease. Depressed patients seem to have less involvement in healthy behavioral activities including appropriate diet (Bauer, 2012), stress reduction, and attainment of cardiac treatment programs following MI (McGrady, 2009). These patients also have more adherences to lower physical fitness as linked with high risk of CVD in certain populations (Wessel, 2004). Depression usually remains undiagnosed and uncured in cardiac patients despite the improvements in diagnosis and treatment (Ziegelstein, 2005). Therefore, systematic screening is recommended for depression in cardiac patients (Whooley, 2009).

It is observed that depression is the most general in patients with heart disease. It gives the sense that either depression leads to CVD or CVD leads to depression or both may be. No evidence is found that depression is a threat indicator for an amplified occurrence of

new cardiovascular disease (etiology) and incurrent cardiovascular disease diagnosis (Nicholson, 2006).

For depression, it is necessary to reveal that depression is considered as a risk factor for cardiac diseases rather than the risk indicator. This prognosticates longitudinal evaluation of patient as well as objective and forthcoming dimension of CVD. It is a consistent, association. The connection is unexplained by known covariates. It is possible that physically believable mechanisms and ultimately trial facts maintain that varying the risk factor changes the diagnosis (Nicholson, 2006). The occurrence of major depression was similar in most individuals without cardiac diseases (7%) but about 50% higher in the AMI group in the control group. Besides, depression is connected with poor observance to medical treatment. Still, it is not likely that a single simplistic etiological model will be found (de Jonge, 2012).

Depression is an influential forecaster of continued existence after AMI (Meijer, 2011) and also in CHF patients. After AMI, patients with depression have three times more tendency of mortality regardless of age and gender.Depression and other psycho-social issues become the cause of CVD. Anxiety is a general factor because majority of depressed CVD patients undergo a co-morbid anxiety disorder. Anxiety is separately linked with amplified death in CHD patients, mainly in the incidence of co-morbid depression (Lespérance, 2002. 2000).

Depression and anxiety contribute to some related path physiological features. The varying path of anxiety and depression after Acute Myocardial Infarction (AMI) was first described several years ago. The incidence of anxiety before time after an acute cardiac disease predicts the afterward increase of depression. Evidently, the incidence of anxiety together with depression requires more attention when planning suitable managing strategies (Celano, et.al, 2012; Watkins, et.al, 2013). Qualtiy of LIife (QOL) in the management of cardiovascular disease (CVD) patients is salient characteristics. Cross-sectional researches on

cardiovascular disease CVD patients authenticate a high correlation between depression and quality of life.

Dekker and Hare (2011) have predicted that social aspects and health conditions are relevant factors of depression among patients of CHD. A study conducted by the "National Heart Association of Malaysia", revealed that most of the patients with CHD is in their forties and fifties (MOH, 2011).

Further findings revealed that CHD is a main source of untimely mortality in Malaysia, and has noteworthy psychological, social and economic implications for the country (Clinical ProactiveGuideline, 2011). The anxiety and depression of CHD patients have major effect on their conformity with intervention and diagnosis.

The defined concepts and previous problems practiced by the patients may aggravate their symptoms, and consequently influence their value of life (Rumsfield, 2003). It is reported that in CHD, the patients are inclined to undergo from mood liable, and end up with overt depression (Januzzi, 2000). Right around 50% of the coronary ill patients indicated merciless passionate responses in the initial four months after a heart assault. Furthermore, there was an enhanced cardiovascular mortality in patients who created post-myocardial dead tissue despondency. Pre-myocardial localized necrosis dejection did not build up some other danger of death (Dixon, 2000).

In the patients having lower socio-economic status, emotion activates emotional upsets. They become psychopaths. The major symptoms start of plaque rupture, formation of a pro-thrombotic vascular situation, thrombus formation, and other neuro-endocrine and autonomic functions. All this is falloutin cardiac beat dysfunction (Rozanski, 2005).With the expansion of atherosclerosis and heart diseases, perplexing psychosocial factors are observed. Depression and anxiety disorders, anger, hostility and chronic life stressors are major confounding factors. Other factors are low in socio-economic status, lack of social support,

work stress, and marital problems (Xie & Zheng, 2008). Severe depressive cases depend on gender. The working environment can be a risk and other factors might play a role as well.

Additionally, the analysis of depression and CHD propose a fundamental relation between depression and liability of unpleasant cardiovascular problems (Denollet, 2006). The resrearches have recognized that the treatment of depression reduces the chances of the cardiac issues. It is perceived that cure of depression in cardiac patients cause to diminish in cardiac sickness side effects, and declines patients' bleakness and handicaps, along these lines enhancing the personal satisfaction. The low alteration to an unending disease can prompt depression and anxiety and also practical decays.

Though, a few patients may consequently adjust succeeding ailment, others keep on showing side effects of despondency, uneasiness and mutilation. Resltantly, dejection is connected with diminished commitment to pharmaceutical, lessened inclusion and expanded drop-out rates in heart restoration programs, which energize the way of life changes (Grace, 2005). Cornory artery disease is a main international problem. Besides, it has a high risk of bereavement for females compared to males.

Cornory artery disease has unusual contingency factors like way of living, psychological contingencies, atmosphere, age, emotional conditions, and tobacco (Antonogeorgos, 2012, Lindeberg, 2012). Anger, depression and anxiety are general setting, effecting the general population; but some researchers have reported the special effects of anger, depression and anxiety on general cardiac health (Shen, 2011, Dempe, 2013). Anxiety affectability change amongst patients and their indications are connected with anxiety excitement. It has no positive physical impact predominantly on the individuals who are psychologically vulnerable, for example, those who have with depression or depressive side effects. It is shown that females have a higher event of these side effects than males (Tull and Gratz, 2008). Hadi N et al. (2009) appeared, depression and anxiety have no contrast between

breast cancer patients and control gathering, yet they watched a noteworthy distinction for outrage score in their examination (Hadi and Asadollahi, 2009). Palizgir (2013) watched high event "depression and anxiety" levels in diabetic patients (70.7% had depression and 69.6% had anxiety). The heartless depression and anxiety are joined by safe deregulation (Palizgir, 2013).

Heart failure is a devastating sickness whose occurrence rate has been on astonishing rise in recent years regardless of fabulous advances in health care services and diagnosis technology. In these conditions, heart does not become capable to provide adequate amounts of blood due to structural or functional problems (Safavi, 2016). Occurrence of this ill health has a direct connection with amplify in age so that probability of heart failure is doubled with a ten-years amplify in age. Five-year death rate of heart failure is 45% in women and 60% in men (Abedi, 2011). Heart failure patients formulate the most use of healthcare systems so that an average of 25% of patients hospitalized in heart units are affected by heart failure, according to a study conducted in Iran (Cheraghi, 2012).

It is found that due to heart failure complications, its long and worsening course, heart failure patients are highly subject to depression and anxiety. The depression and anxiety are not only prevailing causes of dissatisfactions and mortalities but also predictors of detrimental heart issues in cardiovascular patients (Rustad, 2013).The socio-mental factors that stimulate the autonomic nervous system are independent of age. Some other factors are heart failure, gender, tension and stress, particularly the sympathetic system, through physiological and neuropsychiatric mechanisms. They, therefore, cause amplify in cardiovascular reactions contributing to outbreak and persistence of heart diseases (Yousefi, 2010).

DASS and Cardiac Disease

Every cardiac patient is the victim of depression. In last 20 years, depression is found not only frequent in heart patients but also a causal factor for cardiac disease and mortality.It is obvious that the relationship between depression and cardiac disease possibly involves both physiological and behavioral effects of depression.

Additionally, diagnosis of depression among heart disease patients is simple.The techniques of diagnosis are essentially similar to those for MDD diagnosis in other settings. A study by Mavrides & Nemeroff (2013) has noticed the epidemiology, course, impact, pathogenesis, and diagnostic assessment of depression among CVD patients. Depression is defined as elevated depressive symptom on a validated depression scale or a formal diagnosis of MDD.

Depression is more frequent in cardiac patients. It is found that thirty one to forty five percent patients are suffered with cardiac disease (Celano & Huffman, 2011). Furthermore, 15 to 20% patients have the full criteria of MD (Carney & Freedland, 2008). The rate of MD is estimated three times greater than the general population (Kessler, 2003). Depression is frequently found chronic and recurrent among cardiovascular disease patients (Glassman, 2006). It is evident that women and patients with previous history of depression have more chances to facedepression in the milieu of CVD (Shankman, & Nadelson 2012).

Psychiatric problems correlate with depression among patients with cardiac diseases with respect to co-morbid symptoms, conditions and anxiety. They are mostly interrelated with depression in different types of cardiac diseases. Elevated symptoms of anxiety are common among cardiac patients (Doering, 2010), and among those who have cardiac rehabilitation (de Schutter, 2011). Formal anxiety disorder and GAD are mostly found among the cardiac patients.

It is evident that GAD was 38% among cases of MD (Martens, 2010).PTSD is found

among specific populations of depressed cardiac patients (Dao, 2010). An anxiety disorder, particularly GAD is linked with death and other drastic cardiac abnormalities (Roest, 2012; Phillips, 2009). Therefore, these disorders are mostly co-morbid with depression.

There is controversial issue regarding whether the effects of GAD and MDD on heart problems are preservative or not (Frasure-Smithn, 2008). Literature of last fifteen years has confirmed the relation of depression and CVD (Pizzi, 2010). Severe depression is ascertained to be linked to recurrence of AF in patients following cardio version (Lange, 2007) and with cardiovascular death in patients with co-morbid AF and HF (Frasure-Smith, 2009). In patients undergoing CABG, depression needs longer hospitalization. They have poorer functional outcomes, more operative complications (Beresnevait, 2010; Morone, 2010), worse HRQOL, progression of atherosclerotic disease, increased chances of re-hospitalization, and mortality (Broek, 2011).

Platelet adhesion, activation, and aggregation are major components and increased platelet activity may cause coronary events on this basis. Serotonin is considered an important element in platelet biology through its binding with 5-hydroxytryptamine (5-HT) receptors on platelets (Miyata, 2000). Furthermore, increased serotonin in blood leads to CAD and IHD (Serebruany, 2005). Neuro-hormonal activation has an important role in the relation between depression and heart failure. The levels of circulating catecholamines increase among heart failure patients.Especially, they are found in the patients with decompensate heart failure.Increased levels of nor-epinephrine areassociated with greater mortality in the illness (Anand 2003). Furthermore, high level of nor-epinephrine in blood plasma and cerebrospinal fluid are linked with MDD and cause mortality among heart failure patients (Gold, 2005).

Malfunctioning of HPA axis has a significant role. Cortisol and aldosterone are linked with mortality in HF.High level of cortisol is observed among depressive patients. Similarly,

decreased activity of PNS is seen among the patients with IHD and HF (Frenneaux, 2004; Buccelletti, 2009). Depressed patients have imbalance activities in SNS and PNS (Kemp, 2010).

Depression provides understandings to the affirmed relationship between negative feelings and disagreeable cardiovascular. Cerebrovascular measures are taken for the patients with CHD (Carney, 1997). Not with standing depression treatment with psychotherapy and antidepressant mediations, a steady reducing in MACCE is common with depression and CHD (Baumeister, 2011). Almost certainly, depression causes disorders which should contrarily influence CHD results (Baumeister, 2015). The examination prognosticates that manifestations of anhedonia turn into a dimensional marker for the distress disorders. However, the dread disorders comprise of social fear, agoraphobia and frenzy disorder (Watson, 2009.Andrews, 2009). The side effects of on edge excitement are a dimensional pointer of the dread disorders. Thus, they are not implied for other conventional uneasiness disorders, for example, PTSD and OCD and so forth. The prior research in (CHD) populaces have for the most part watched sub types of unipolar and dysthymic depression and anhedonia in connection to MACCE (Baune, 2006 and Denollet, 2008). A few bits of proof in CHD populaces propose that PTSD is connected with MACCE repeat (Edmondson, 2011).

Conflictingly GAD is fluctuated and comorbid with other anxiety disorder (Tully and Cosh, 2014). It is apparent that just a single report is led about the assessment of anhedonia contemporaneously with on edge excitement and NA measurements of the misery and dread groups (Tully and Pedersen, 2011). With these impediments, it is tried to break down MACCE to 4.6-year development. Based on dominating examination to date, it is speculated that the trouble disorder bunch and significant despondency particularly are impressively connected with MACCE at development. Moreover, it is proposed that the anhedonia length corresponds with MACCE follow-up mental hazard factors in CHD (Stapelber and Hamilton,

2012).

Depression becomes the risk factor of CVD, long hospitalization and death among CHD patients (Jiang, 2002). The individuals with HF have 20% higher tendency to depression rather than healthy individuals (Lesperance, 2000; Jiang, 2002). Therefore, a depression becomes a mediator for marital stress and finally causesCHD. Anxiety has drastic effect on prognosisamong patients with CHD (Lett & Blumenthal, 2004).

Systematically, it is indicated that twelve researches have evaluated clinical endpoints, such as MI and cardiac death.Five researches report considerable involvement, three observe slightly considerable relations, and four find no relation of anxiety and cardiac diseases (Grace, 2004). Roest (2010) has found out that anxiety is an independent causal factor of CHD and CVD.But the association between anxiety and CHD is less than depression and higher between anger and CHD. Anxiety is also ascertained to correlate with physical factors of cardiac diseases such as palpitation, anger, irregular heart beat and muscle tension (Suls, Bunde 2005). Theresults have shownthe relation between CHD and psychological factors particularly anxiety (Nabi, Koskenvuo 2010).Anxiety and depression have link with lack of exercise and higher use of cigarette smoking. Depression is connected with higher alcohol consumptionas anxiety has a connection with high blood pressure (Janszky, 2010).

In high income countries common causes of disability are CVD and depression. They are relied upon to end up plainly such causes in the nations of all pay levels by 2030 (WHO, 2008). The fundamental wellbeing framework and financial pointers connecting to CVD and wretchedness indicate increment in therapeutic expenses.

Nevertheless, CVD and gloom have exceptional effect overall personal satisfaction. One might say that melancholy is the most principle driver of general personal satisfaction (O'Neil, 2013; Johansson, 2016). Furthermore, a few people have a more troubled, persisting

identity including a few highlights of discouragement (Denollet, 2009). Gloom by and large includes side effects, for example, feeling of discouraged state of mind, loss of intrigue or delight in exercises, rest unsettling influence, weakness or weakened focus. Normally, discouragement is a ceaseless variable. Sometimes, criteria are utilized for dichotomizing information.

What is required to master mind data about important investigative gatherings? This is done through numerous ways. DSM-IV of the APA is regularly utilized (American Psychiatric Association, 1994). The particular parameters are utilized to sort the people having dysthymia (a confusion of inclination), sadness (a response to misfortune), change issue with discouraged state of mind (a period restricted response to an occasion) or significant depressive issue in heart patients. These disorder bunches can happen. After intense medicinal occasions, various mental responses can conceivably happen. Discouraged response to an intense coronary occasion can be of an impermanent.This way delegate an alteration issue if the patients are comprehensively overseen. After intense coronary occasions, the most continuous sort of discouragement experienced is a change issue with discouraged state of mind (Maercker, 2007).

To control and deal with any depression is key for every cardiac patient. The patients, who satisfy criteria for MDD, are at hoisted chance for advance occasions because they have no profitable life. In this way, such patients fundamentally require delicate finding, adjust analysis and watchful administration (Thombs, 2008).

The study of disease transmission, etiological relationship and prognostic ramifications of depression are found in cardiovascular patients. The detailed event of depression in patients with cardiac sickness is variable. It has been discovered that mellow types of depression are seen in 66% of patients in clinic after extreme myocardial dead tissue (AMI), with real depression in 15% of CVD patients. This event is seen more than 2-3 times

in the regular populace, while it might be significantly higher than the anticipated life time event for the basic populace (Cooney, 2013.Kessler, 2003). All these things have marked that doubtlessly 15-20% of patients have real depression after coronary supply route side step surgery and likely another 15% experience minor depression or fundamentally discouraged inclination (Suzuki, 2010; Tully, *2012*).

The link of CVD and stress is not easy to understand. The experimental research shows a link between heart and mind (Rozanski, 2005). The components of stress include anxiety, social isolation, depression, low social support, stressful life events and occupational environment and hostility. They are considered to have link with cardiac diseases (Kubzansky, 2000).

The relationship is found between CVD and depression, anxiety, untimely death, and cancer. Some other findings support that such association is not universal. Some studies propose such links as unreliable estimates. Most findings ignore the reverse causality linked with psychological distress. So there is need to study reverse causality at large scale (Hamer, 2009). Further studies can examine dose-response effects between distress and mortality. If the proper association is found between distress and mortality, its influence will lead to death.

It is discovered that the association of psycho-social elements and CHD remained the subject matter of research in last twenty years. The most common health issues are observed to be strongly interrelated with each other. In their study, Bunker et al (2003) have concluded that there is a strong and constant proof of an independent causal connection between social isolation depression, lack of social support and the prognosis of CHD. Smoking, dyslipidemia and hypertension give increase to the psychological problems. The researches on these links have two categories. The first type is observed that the psychological elements become the risk factor for occurrence of coronary disease. The second type has observed that psycho-social conditions are causal factor of cardiovascular morbidity and mortality in relation to

established CHD. Depression is associated with unpleasant cardiac outcomes. It causes decrease in QOL for the patients who have faced societal economic burden (Zellweger, 2004).

Furthermore, CHD threat is related to the sternness of depression. Kuper (2005) has conducted an inclusive organized assessment concerning the role of psycho-social factors in CHD. The research has integrated only probable group studies while paying attention on psycho-social factors. They were considered in minimum two different study populations, i.e. on Type-A behavior, psychiatric illness, psycho-social characteristics, hostility and social support. It indicates a relation between depressions, lack of social support and work stress with CHD.Most of the studies on Type-A personality characteristics have observed no link between the personalities attributes and CHD. Many studies have been conducted on the psychosocial elements including socio-economic status; Type -A behavior, psychiatric illness or social support. The researches have been made mainly on initial samples for other psycho-social characteristics like anger and stress.

The side effects of long term traumatic situation on coronary heart patients have not been well examined properly even in the developed countries. Kawachi (1998) has found the link between CHD and depression, anxiety and stress. Socio-political studies find variations in the levels of psychiatric illness with CHD.

It is feared that the worldwide mortality from cardiovascular diseases will boost from 16.7 million in 2002 to 23.3 million in 2030 if the recent trends continue (Mathers,2006).The coronary artery disease remains prevalent due to its high morbidity and mortality among the CAD. Depression and anxiety are psycho-social factors associated with developing symptoms of CAD.

The incidence of MD in patients with CAD is three times higher as compared to general population. In addition to, depression is linked with physiological mechanisms of

CAD, as well as unhealthy lifestyle and lower treatment adherence (Khawaja, 2009). In a meta-analysis on the relationship between depression and CAD, a connection of these variables with etiological factors and diagnosis was observed (Nicholson, 2006). There is an increasing factor relating anxiety disorders to the increase of cardiac diseases in the general population.

The persons with anxiety disorders have unhealthy lifestyle. It is a threatening element for patients with CAD (Rozanski, 1999). Anxiety and depression enhance the threat of major poor cardiac events in patients with CAD, including death from cardiac diseases and myocardial infarction. The researches show that symptoms of psychiatric illness are more horrible in women with CAD as compared with men (Kazemi, 2008).

Psychological interventions are important in the cure of cardiac diseases. A study about CERS, positive and negative emotions among cardiac patients and healthy subjects was conducted on 50 subjects, in Iran. The CERQ and PNAS were used as research tools.
The results have indicated major variations between CERS and positive affect between cardiac and healthy subjects. The negative effects were non-significant between the two. Poor emotions regulate strategies as a risk factor of cardiac diseases (Bahremand, & Alikhani, 2016). Almost 20 million people world wide survive a heart attack per year and the most of them needs extensive care.

The expenditures of surgeries and rehabilitation of heart are increasing on daily basis. The disease causes economic burden along with low productivity and performance. Psychological interventions are essential for the patients with heart problem along medical treatment. It is revealed that cognitive mechanisms which cause emotional distress leads to "cardiovascular disease, heart attack as well as sudden death.

Many studies have confirmed the sequel of negative emotions such as anger, stress, fear and depression on cardiac functioning. The result of the study found positive refocusing

strategies, positive reappraisal, rumination and acceptance in healthy individuals and NERS like blaming others and self catastrophe found higher among patients with cardiac disease.

Day et al (2005) found high depression, anxiety and negative emotions among patients suffering from cardiac disease. The patients have also accepted that their mental state and emotional condition lead to their cardiac disease. Different cognitive emotion regulation styles carry out different types of emotional, cognitive, and social consequences (Gross, & John, 2003).

It is observed that inappropriate cognitive strategies lead to emotional problems (Garnefski & Kraaij, 2006), such as self-blame and catastrophizing (Martin &Dahlen, 2005). It is shown that CERS helps to control negative emotional reactions (Campbell-Sills & Barlow, 2007). Appropriate cognitive adaptation strategies such as reappraisal leads to regulate the negative emotional feelings (Rottenberg & Gross, 2003).

Emotional behavioral problems found to have positive correlation with inappropriate cognitive emotion regulation (Rottenberg & Gross, 2003) and psychopathology (Kraaij et al., 2010). Appropriate emotional regulation is correlated with good mental and physical health as well as interpersonal relations (Hasani, 2012).

A research aimed to examine relationship between theoretical frameworks of psychiatric illness with CVD conducted structured clinical interview on 158 females before bypass surgery to determine depression and anxiety. The results show strong relationship between generalized disorder and CVD, on the other hand distress disorder was not considerably correlated these disorders (Tully, & Winefield, 2015).

The incidence of cardiac diseases leads to many psychological difficulties.Such problems occur outside the domain of medicine and influence the morbidity and mortality among cardiac patients.

The analysis of 200 individuals revealed high level of psychiatric illness in both

disputed and normal areas. This study revealed that traumatic and tense conditions cause high emotional distress which leads to CHD (Nehra, &Sharma, 2012).

Increased anxiety and depression among CHD effect mental health and increased the risk of mortality (Yousefy, et.al, 2010). Meta- analysis, despite the inconsistencies among the studies, Meta- analysis supports the role of mental illness as risk factor for cardiovascular and coronary heart disease as well as sudden death (de Jonge, 2007). Sixty percent patients of CHD experience depression within 12 months of attack (Connerney, Shapiro, 2001). Significant factors of non-fatal CHD are depression and hopelessness which lead to social dysfunction. The patients suffering from CHD occupational, social, sexual and physical dysfunction develop the fear of death.

Tension and anxiety are also commonly observed among coronary heart disease patients as dysfunctional factor (Eaker, Sullivan, 2005). A study in India examined anxiety and stress among CHD of disputed and non-disputed areas found significant variation in level of stress and anxiety among coronary heart disease patients in Kashmir and Haryana. Family difference could also be a factor of anxiety and stress among these patients. A study conducted by Margoob (2006) has found that long-term traumatic events of firing and explosion in Kashmir are 58.69% and high anxiety and stress in Kashmiri population are due to their long term experience of traumatic events.

Psychological factors are significant indicator of CHD and there is need to study these factors extensively (Margoob, 2006). A review of literature from 1995 to 2012 has demostrated that psychological factors play independent role in the development of CHD (Khayyam-Nekouei, 2013).

Insufficient blood and oxygen supply to heart muscles cause CAD which will be the important reason of death until the year 2020 (Barth, J.et.al, 2010). High expenses of treatment and complications could be reduced by applying appropriate scientific methods to

prevent such diseases. Therefore, it is necessary to focus on psychological factors and lifestyle (Rutledge, et.al, 2009).

Increasing prevalence, high expenditures of treatment and side effects make CAD an essential medical and health issue (Strik, et.al, 2003). Most researches on CHD give attention to biological and lifestyle factors. But the evidence proves that psychological and social factors have significant role in causes, growth and effects of the disease (Rutledge, et.al, 2009). However, psycho-social and psychological factors are clinically unrecognized.

Most of the cardiologists have said that these factors are found in literature not in clinical practice. There are three possible reasons. Firstly, psycho-social factors are considered risks rather than causes of CHD. Secondly, psychological characteristics elicit in specific circumstance such as hostility. Thirdly, psychological explanation is made for the patients who have no clear biological risk factors like diabetes, smoking and hypertension. Different studies have described depression and anxiety as factors which cause CVD (Khayyam, 2010). Extensive research had found positive relation between depression and HF more than 20% (Lespérance, 2000). Iran faces the decreased age of exposure to cardiovascular disease. The main cause of such exposure is psychological and lifestyle factors. Therefore, the main goal of psychology is to treat psychosomatic disease help to improve physical condition and QOL (Usefy, et.al, 2010).

Knowledge of mental, psychological and emotional risk factors and their prevention or treatment will lead to decrease treatment cost and improve QOL. It will help to decrease illness ratio (Gupta, & Deedwania, 2011). Anxiety and depression are studied among patients who under went percutaneous coronary intervention. The result indicates that women experience more depression and men experience more anxiety than women (Furuya, et.al, 2013). This study had more women as subjects whereas other studies had more men as subjects (Dessotte, 2011). Women with CAD found to have more depression than men

(Norris, et.al, 2008).

The increased stress and lower perception of social support may lead depression and anxiety (Boutin-Foster, 2007). In qualitative study, women have revealed historical perspective and memories of significant life event which leads to the development of the symptoms of depression (Ladepresion, & De Mujeres, 2008).

A research on CAD patients taking part in a cardiac rehabilitation program, the ADIS-IV used to check the current and life long episodes of anxiety Women were found to suffer more current and long term episode of anxiety than men (Todaro, 2007). The studies about mental health among patients with CAD are found more mental illness among women as compared to men (Norris, et.al, 2009).

In research with patients of coronary artery disease, the HADS was applied to measure anxiety and depression, on three sub-scales negative effect, autonomic anxiety and depression. The results revealed higher negative effect, autonomic anxiety and depression than men. But this study had small sample size (Hunt-Shanks, 2009). The people who suffer from depression, PTSD and anxiety after cardiac issues have greater chances to have complications resulting in death than are people who do not.

Despite the advances in psychological strategies to enhance lifestyle among patients with cardiac diseases (Pietrabissa, 2015).There is lack of awareness regarding how to cope with psychological issues among patients with cardiac diseases effectively.

A significant decrease revealed in psychological distress, anxiety, depression and PTSD after 20 session of cognitive behavior therapy (Greenman, et.al, 2015). Low anxiety was shown among patients with coronary heart disease and low level of depression among CHD patients. This might be due to the fact that CHD patients are evaluated early for depression, anxiety (Eng, & Yean, 2011). Low score on anxiety and depression among CHD patients indicates towards patients adopting well coping strategies, and these patients perhaps

accept disease and change their lifestyle better than other cardiac patients.

Furthermore, family and social support should be the supplementary elements to achieve the psychological outcome. Past researches have revealed that family and social support improves the coping mechanism of individuals (Hasanah, Zaliha, & Mahiran, 2011). Several studies found unmarried CHD patients have high depression.

It may be due to that unmarried status is correlated with life dissatisfaction (Rohyans, & Pressler, 2009). Meta-analysis revealed that depression increase 46% risk of CVD and 55% increase the risk of cardiac death (Luttik, et.al, 2006). Several studies indicated that generalized anxiety and major depression are higher the risk of cardiac death.

These findings indicate that the anxiety and depression support each other to affect CHD (Roest, 2010). Iran is facing increased level of CAD. A study was conducted to examine the relation of anxiety, depression, diabetes and CAD among patients undergoing angiography.

The results have indicated significantly increased anxiety, depression and fasting blood glucose among patients with diabetes and coronary artery disease (Tajfard, et.al, 2014). Depression is a significant incidence of CHD. In addition, the risk of death is increased in people who are depressed after MI. Depression is also linked with increased inflammatory biomarkers (Miller, 2003). A recent study reveals that increased level of perceived stress is correlated with possible risk of CAD because individuals with increased anxiety and depression have more chances to have unhealthy lifestyle such as use of smoking, and unhealthy nutrition (Richardson, 2012).

Sick behavior is risk factor of CAD due to depressed lifestyle. Diabetes mellitus is a risk factor for CAD for many reasons, along with enhanced inflammatory signal (Zernecke, & Weber, 2012). A research study in Iran has found higher level of depression and anxiety among diabetic patients. MD, GAD, panic disorder and death anxiety are constantly

experienced factors of HF (Palizgir, et.al, 2013). High level of spiritual health associates with low depression, anxiety and stress. This study shed light on the significant of spiritual healthcare in the intervention of cardiac diseases (Safavi, Oladrostam, Fesharaki, & Fatahi, 2016).

Age is another factor of cardiac diseases. A research on 150 patients with HF in which and their age mean was 56. As it was observed, prevalence of this illness was associated with an increase in age. According to Rochester and Friedman, probability of heart problem is doubled with a ten-year increase in age (Lu, et al., 2014).

In their study Zeighami et al. (2012) have selected their subjects from among the patients within the age range of 34 to 88. Most samples were in an average spiritual health level. It was found that the total score of spiritual health was obtained to be 102, and 72% of samples had high rates of spiritual health. The rest 28% had average levels of spiritual health. As it was observed, results of studies are relatively contradictory, which might be attributed to differences in atmospheres and communities under investigation. Many subjects under investigation have average degrees of depression, anxiety, and stress.

Likewise, in a research by Shafiei (2014), most samples had average degrees of depression, anxiety, and stress. Jasper (2014) showed that 32.6% of patients have depressive symptoms 48% symptoms of anxiety, and 27.6% symptoms of stress.

The variables depression, anxiety, and stress have the highest impacts on people's health. In recent years, many studies focused on the issue that how religiosity and religion influence a range of physical and mental health (Wild.S, 2006).

It means that patients with HF, with higher degrees of spiritual attachments are more likely to have undesirable psychological conditions. Sorojjakool (2008) has showed that religious beliefs play a large-scale role in improvement of depression. As a result, depression levels are lower in spiritual persons. The results of above-mentioned studies are all

supportive. High spiritual health is correlated with lower anxiety, depression and stress.

Improvement of spiritual health assists individuals to have improved feelings and to cope with their illness and even death. Spiritual and religious behaviors reduce negative emotions by means of fulfilling individuals' intrinsic needs for attachment and communication. Moreover, spirituality and spiritual beliefs facilitate coping with issues due to chronic diseases like heart failure and stress through comprehension of the fact that psychological issues and life problems are transitory.

Physiological and behavioral factors have a significant role in worsen the depression with cardiac problems. Due to this increased issue American Heart Association recommendsregular screening of depression among cardiac patients, despite the advances in screening and treatment, depression mostly un-recognized and un-treated among cardiovascular patients (Huffman, 2013).

The patients with heart problems experience psychiatric problems like depression, anxiety and stress and these psychological factors mostly remain untreated which left drastic effects on morbidity and mortality in cardiac patients. In a research aimed to examine psychological distress among coronary heart disease patients live in disputed conditions and place (Kashmir) and non-disputed place (Haryana) through HADS and PSS-4 among 200 male patients.

The results showed a grandly prevalence of depression, anxiety and stress in groups of the both places. It means increased exposure to traumatic and stressful events, increase emotional distress which negatively influence the mental or psychological condition (Nehra, &, Sharmak, 2012).

The Quality of Life Index Cardiac Version-IV was applied to measure the parameter of quality of life. The results revealed lowest quality of life in psychological and spiritual domains whereas high quality of life was revealed in family relationships domain. Overall no

note-worthy difference found in quality of life among patients with pacemaker and other cardiac patients.

However, noteable difference was revealed in individual domains of quality of life such as marital status, higher quality of life found among married patients as compared to unmarried patients (Kurucová, 2014). An interview of 362 cardiac patients was conducted to find out socio-economic and psychological inequalities low income and education found to be correlated with deprived psychological wellbeing, mental health and low quality of life.

Therefore, socio-economic inequalities should be considered seriously in management and intervention especially psychological factors among patients with cardiac disease (Skodova, 2009). A study was directed to search out the observation about personal satisfaction of teenagers and youthful grown-ups with intrinsic coronary illness and inspect the factors that negatively effect on it that include a versatility impact.

All patients had restorative records. Statistic and clinical information were gathered and patients filled a form on personal satisfaction. The patients demonstrated a superior view of personal satisfaction than did the all-inclusive community, on the premise of mental, social relationship and condition scales. More seasoned patients hold a superior view of personal satisfaction on the mental scale.

Cyanosis did not demonstrate any huge effect over view of personal satisfaction not with standing, the quantity of surgical techniques and the steadiness of direct to serious lingering wounds had impressive unfavorable impact. Social help affected expanding flexibility, elevating change in accordance with disease. A few components may assume a part in change in accordance with intrinsic coronary illness, either enhancing the impression of personal satisfaction or compounding it.

Some cradle factors on inherent coronary illness may assume parts in expanding the view of personal satisfaction of patients amid their life time. Social help most likely clarifies

why the impression of personal satisfaction is superior to in the ordinary populace (Silva, et al., 2011).

Survival of cardiac patients has been increased due to advancement in intervention strategies and early diagnosis. Contradictory results have been shown in many studies. Some studies argue that such disease effect the quality of life where as often studies find improved awareness about quality of life among children diagnosed with congenital heart disease when compared with healthy subjects (Bertoletti, 2014).

The studies about betterment of quality of life and depression among heart failure patients are still minute. There is need to improve strategies to enhance quality of life and their implementation in daily life. Education on self-care management and physical exercise are important to include in a disease management program. Symptoms management alongwith medical therapy is advised for both the patient and caregiver and also focuses on outcome of co-morbidities and outcomes of symptoms and therapies (Jaarsma, et al. 2010).

The major objective of intervention is to improve QOL among HF and patient preferences are increasingly recognized as being highly important. Until now an appropriate profile data regarding demographic and clinical variables to predict level of QOL and depression is not established. Additionally, interventions including patient education, self-management and physical activity can enhance the physical and mental health. It can be applied in daily practice to enhance the QOL. A study to examine the different dimensions of QOL among patients with angina found dissatisfaction with treatment. There is need to improve the treatments settings for angina patients (Kharame, et al., 2014).

There is only one study in Iran that assessed QOL of IHD patients. But its results are not comparable because of qualitative presentation rather than quantitative presentation (Taghadosi, 2008). Wong (2007) has achieved result that patient's angioplasty had less problem regarding treatment satisfaction (Wong, & Chair, 2007). The results have revealed

that women have less quality of life in all dimensions as compared to men. Similarly, females with heart diseases are considered negative predictor of QOL (Pragodpol, & Ryan, 2013).

Significant dissimilarity of males and females QOL is not entirely clear (Van Jaarsveld, 2002). The patients with low quality of life have higher tendency of repeated hospitalization. There is significant correlation between severity of the disease and all the aspects of QOL. Wong et al. (2007) have stated after three months of angioplasty, QOL of patients decreased and angina became stable. QOL gets more importance as the patients of CAD are increasing. Spiritual health is considered an important factor of QOL.

The patients with CAD have average spiritual health and QOL. Female patients showed higher QOL as compared to males. There is a significant correlation of spiritual health and QOL among patients with CAD (Jahani, et al. 2012). Religious and existential elements of spiritual health have shown significant relation with QOL. Correlation of spiritual health and QOL was supported by Fisch et al. (2003), Rezai et al. (2008), Allah-bakhshian Farsani, et.al (2010) and Bussing (2007). Spiritual beliefs help to develop goal and concept of life which leads to better tolerance during disease. Livneh et al. (2004) have shown that spirituality is very significant to cope with stressful conditions resulted from disease. Focus on spiritual health can help to improve QOL among patients.So there is need to consider spiritual health as an important indicator of intervention of cardiac diseases (Ghasemi, 2014). There is need to improve the QOL of women with CAD because they pay significant role in families, in fact family health depends on women's health (Hadaegh, 2009; De Smedt, 2014). Luttik et al. (2005) believed that supportive resources are necessary for survival and adaptation to the disease and cardiac patients who live alone have low QOLs.

Individuals who have higher educational background and economic status have much access to helpful information and resources which help them to cope well and to improve QoL (Durmaz, 2009). The nurses should be given training about QOL in women with

coronary artery disease. They should be equipped with to identify the risk factors and to provide sufficient psycho-educational support on how to improve the QOL.It is the main purpose of treatment to enhance the patient's physical, mental and social functioning. These results recommend the need to view the patients in holistic perspective and should be kept in mind all the aspects of the patient's life to help them improve their quality of life and health (El Achhab, 2008).

Physical activity had the lowest scores among four dimensions of QOL and overall results show low QOL among cardiac patients in general (Yaghoubi, 2012). A study to find out the relation between CRF and HRQOL, vitality and physical limitation were found to higher among females on HRQOL. Males are found to have higher scores only on physical functioning (Clennin, 2015).

HRQL measures the patient's perspective regarding the effects of illness and treatment. Overall measures of quality of life are divided into two categories, (i) types specific (ii) disease specific. Most of the measure of HRQL are not patient centered and could not appropriately mention the factors of QOL from patient's point of view (Dunderdale, 2005).

Most of the tools were developed for use in clinical research, not for the clinical use. A study has found negative correlation between diabetes education program and depression among diabetic patients. Diabetes education program helped to decrease depression among Chinese diabetic patients. Use of injections to control blood glucose and cholesterol are associated with depression. The patients with type -II diabetes were found to have higher level of depression. It is recommended to screen the depression among diabetic patients on regular basis (Tsai, Chiang, & Lee, 2008). In their study 13.17% patients show undiagnosed depression. High level of cholesterol was also found to be associated with increased depression. On the other hand , some patients may find that controlling diabetes requires a

major change in their lifestyle, and those with difficulty in doing so might get depressed.

No significant relation was found between depression and glycohemoglobin level. Use of injection was also found to be positively correlated with depression among Korean patients with diabetes. Daily use of injection is perceived as chore and therefore causes stress.

Diabetic patients with heart disease tend to have lower depression as compared to patients only with diabetes. The tendency rejects the belief that the co-morbidity tends to increase the depression. Similarly diabetic patients who work as manual laborer found to have less depressive symptoms (Noh, et.al, 2005).

Depressive symptoms found to be common among patients with type -II diabetes. Depression among type -II diabetic patients may be due to poor glycemic control, poor QOL, high cost of treatment and loss or lack of work. Regular screening for depression is highly recommended for individuals with diabetes along with the level of cholesterol, especially those individuals who are not working or retired and who use injections to control blood sugar level (Black, Markides, & Ray, 2003).

Anxiety, stress, anger and depression were found to be different among patients with heart disease, diabetes and migraine than healthy people. The study found higher level of anger, stress, anxiety and depression among patients as compared to healthy people. Stress affects the individuals' ability to cope with problems (Hamedi, Ameri, 2013). According to vulnerability stress model, stress reaction largely depends on the hereditary, environmental and social factors of the individual for specific problems. When the patients are affected by stress than the disorder will be developed.The patients with chronic disease such as diabetes and heart diseases show maladaptive angry reactions (Greenwood et al, 2003).

T sauna - Hadji and colleagues (1998) found chronic chest pain positively correlated with hostility. Cancer patients also showed significant relation between anger and severity of pain (Greenwood et al, 2003). Emotional disturbances have significant role in managing

diabetes mellitus. Presence of anxiety, stress and depression adversely affect the glycemic level and quality of life. The emotional disturbance is usually undiagnosed and untreated by general practitioners and physicians. The results revealed 13.5% depression, 28% anxiety and 11% stress among diabetic patients. The female patients showed higher level of emotional distress as compared to male patients.

Symptoms of anxiety were more prominent than depression and stress in diabetic patients (Al Ani, et.al, 2014). Another study in Malaysia found 11.5% depression, 30.5% anxiety and 12.5% stress among diabetic patients (Kaur, Tee, et.at, 2013). The results of both studies were lower than a study conducted in Qatar which showed 52.5% depression, 73% anxiety and 70% stress among diabetic patients. Similarly, depression rate in "United Arab Emirates" found 12.9% and in India was 16.9% (Balhara, & Sagar, 2011). The anxiety level was found slightly higher in Germany among diabetic patients which was 25.2%, but it is much little as compare to other studies which showed 40% anxiety among diabetic patients (Grigsby, 2002).

The distinction in the rates of depression, anxiety and stress may happen because of the utilization of various evaluation devices, change in test measure, social contrast, and complexity of diabetes, personal satisfaction, social help and length of diabetes. Finding out the connection between different elements with depression, anxiety and stress, it was revealed that the level of depression, anxiety and stress was higher among females when contrasted with guys. Anxiety was noteworthy though past investigations demonstrated that depression, anxiety and stress were essentially connected with sexual orientation of the diabetic patients, with a higher event in females (Kaur, and Tee, 2013) Nnevertheless, extraordinary investigations have noticed that there were no distinctions seen among men and females and the scores for depression and anxiety were similar. Depression was factually huge with race. Past studies have discovered that time of diabetes is connected to a higher event of

depression. It was found that depression; anxiety and stress were higher among diabetic patients longer than 5 years (Katon, et.al, 2004).

A study conducted by Vaghela (2016) compares the anxiety level among diabetic and non-diabetic patients reported statistically significant difference on anxiety level among diabetic and non-diabetic patients. Diabetes mellitus increased drastically in Malaysia and affected 15.2% population in 2011.

Depression is co-morbid with hyperglycemia, diabetic complications and expenses of health care. A cross sectional study revealed 11.5% depression, 30.5% anxiety and 12.5% stress among type-II diabetic patients, gender, history of psychiatric illness and alcohol consumption was important prognostic factor of depression among type-II diabetic patients. Life has no adequate physical activities which create stress especially in females.

The predominance of despondency, nervousness and stress manifestations may be high among Type-II diabetics, with just about a third being named on edge. Screening of high hazard Type-II diabetics for discouragement, nervousness and stress side effects in the essential care setting is prescribed at customary interims (Kaur, et.al, 2013). Anxiety was found 40.3% and depression was bringing into being 22.6% among sixty years old people with type-II diabetes.

Anxiety and depression are found and associated with this complicated diabetes. Thus, there is need to diagnose anxiety and depression among type-II diabetic patients especially older patients and to make appropriate intervention for these disorders (Masmoudi, et.al, 2013). Depression is getting drastic level in the world with suicidal tendency. Hence, stress management plan is essential to reduce depression, anxiety and stress not only for psychiatric patients but also other cardiac and diabetic patients (Maaly, El Malky, 2015). The objective of survey was to examine the episode of anxiety and depression symptoms in patients with Type-II Diabetes Mellitusrelating to sex, BMI.

Anxiety has found three times higher and depression was two times higher among females with type-II diabetes mellitus as compared to men. It is shown that high BMI favors the incidence of modest or severe symptomatology, as risk increases for any additional BMI unit. The occurrence of anxiety and depression symptoms is strongly correlated to the gender of persons with Type-II Diabetes mellitus, and the Body Mass Index (Zoe, 2009).

Diabetes mellitus is a wide spread chronic metabolic disorder. It is one of the chief causes of death in Palestine. Military and disturbed economic conditions of Palestinian make people vulnerable to psychological illness. Beck Depression Inventory (BDI-II) was used on two hundred Palestinian individuals suffering from type- II diabetes. The results found positive correlation between depression and female gender, low level of education, joblessness, additional diseases and low level of medical adherence. Depression was found insignificant with glycemic control, period of diabetes and socio-demographic factors. Even if 40% of the screened patients were potential instances of misery, none were being treated with antidepressants.

Psycho-social appraisal should be a piece of routine clinical assessment of such patients. There should be essential social insurance facilities to increase the personal satisfaction and decline unfriendly results among diabetic patients (Sweileh, et.al, 2014). A huge quantity of literature from medical field identified many factors of stress related to diabetes. Stress disturbance glucose level among type-II diabetic patients. The psychosomatic perspective related to diabetes improves doctor - patient relationship and insight about the complexities of the disease. Music therapy is recommended to treat stress and psychosomatic problems among patients with diabetes and to develop psychological wellbeing.

Music also helps to concentrate and emotional healing. It relaxes the diabetic patients and reduces depression and anxiety. In diabetes, some aspects of this therapy help treating the illness and its possible complications. Classical music assists to manage glycemic level. But

it mainly depends on the patient's own interest of music.

This new approach not only helps to improve psychological aspects as well as somatic (glycemia) elements (CIOCA, 2015). Depression and diabetes bring a massive public health trouble, making the detection of threat for these disorders a significant strategy. Risk and socio-economic factors of chronic diseases have been studied extensively in developed countries as compared to under-developed countries.

Recording constant disease peril factors is significant for understanding contamination stacks in poorer countries and for concentrating on specific masses for the best intercessions. The purpose of this review is productively layout evidence for the relationship of money related status with diabetes and debilitation co-grimness. Scarcely somestudies have discovered depression among diabetic patients corresponded with low financial status. Not very many examinations have revealed the fact that in low and center wage nations depression and diabetes are getting to be plainly extreme and crazy (Leone, 2012). As an endless illness, for example, diabetes generally influences the life and group of people.

It diminishes the personal satisfaction, brings about reduction in physical working and quality or feeling of security, which brings about sentiment sadness and anxiety or depression. Diabetic patients with depression have poorer personal satisfaction when contrasted with non-discouraged diabetic patients. Refusal to acknowledge the nearness of an interminable ailment like diabetes fundamentally influences the personal satisfaction contrarily. Enhanced information and perception of instances of depression are required in various zones of diabetes mind. The patient's mental prosperity influences all parts of restorative and nursing intercessions (Katon, 2003).

Health-related quality of life (HRQOL) is an imperative feature for self-management behaviors of diabetic patients. These behaviors have exceptional significance in preventing complicacy of diabetes. In Iran significant difference is found according to age, gender,

education level related to type of diabetes, type of treatment and health related quality of life (Kakhki, 2013).

In Saudia Arabia, diabetic patients' age, education and occupation were not found to be significantly correlating with quality of life. Females' quality of life was worse than males and married patients had worsened quality of life as compared to the unmarried individuals. Likewise, the patients with type II diabetes are found to have the worse quality of life as compared to the patients with type 1 diabetes. The duration of the disease was not found to be a significant factor of quality of life. The poor quality of life was also found to be correlated with diabetic complications among Saudi individuals. Diabetic foot ulcer (DFU) is very serious and expensive problem which affects about 15% of patients along with quality of life (Al-Shehri, 2014).

Six proportions of quality of life, enjoyment in life, physical health, daily activities dependence, negative emotions, concern about wound and wound care were examined. The findings have shown that demographic variables age, employment, socio-economic status, leg ulcer and the number of foot ulcer were highly correlated with quality of life and its dimensions. Some other variable like smoking during emotional disturbance, and matrimonial status affecting the foot care difficulties were highly correlated with quality of life. Thus the better care of foot ulcer will enhance the quality of life of such patients. The diabetes leads to reduce quality of life and increases disability (Nasiriziba, et.al, 2015).

Depression is negatively correlated with lower quality of life, poor intervention results and lower glycemic control. In Nepal, there are more than half individuals (54.1%) among 147 experienced depressions. Highest quality of life is found to be associated with social relationships, environment, psychological and physical health. Reduced physical health, poor social relations are found high among urban residence as compared to rural residence. Severity of depression also reduces social relation domain. Urban residence has negatively

correlation with physical health and social relation domains on quality of life (Mishra, 2015).

Diabetes is common in particular social and ethnic gatherings. Genetics could be a critical on-screen features of diabetes. A study inspects the impacts, administration and effect of diabetes on Labanes people group in Sydney. Of the members 48.5% confronted challenges in individual care and cleanliness, 74% members experienced troubles at work. In addition, diabetes crippled 80% of those endeavoring to do family tasks; over 75% experienced torment and inconvenience while 73.5% experienced uneasiness and depression due to diabetes. Men take after their therapeutic arrangement as compared to the superior to anything ladies particularly moderately aged diabetic patients. In total diabetic impact physical and enthusiastic strength of patients and diabetic patients altogether encounter tension and worry in attempt to deal with the ailment. It builds up an instructive arrangement to enhance quality of life among diabetic patients (Mustapha, 2014).

Currently, assessment of QOL is more needed because of increased incidences of chronic diseases. Quality of lifeis compared between type -II diabetic patients and healthy people through case control study The average quality of life scores especially in physical activity, energy, emotional, social functioning and bodily pain domains were highly different between case and control groups. These results are supported by previous studies of DM, or various difficulties and problems which diabetic patients suffer. There is need to enhance the quality of life along with education to implement on diabetic patients (Aghakoochak, 2014). The quality of life of Turkish type- II diabetes patients has been improved with the effect of awareness through education. The diabetes has negative impact on enjoyment of food. Similarly, duration of disease and insulin therapy have negative correlation with quality of life among type-II diabetic patients. Multidimensional assessments of quality of life including both generic and disease-specific interventions are essential for patients with diabetes (Demirci, & Cinar, 2012). Complexity of diabetes negatively affects the health related quality

of life of type -II diabetic patients.

Timely diagnosis and effective treatment planning is necessary to prevent or control the deterioration of health related quality of life among diabetic patients especially type II (Lloyd, Sawyer, & Hopkinson, 2001). Diabetes mellitus negatively affects the quality of life in all domains.

An examination inspected the quality of life of patients with diabetes mellitus in Uganda. Male patients have enhanced quality of life rather than the females, particularly in vitality and torment areas. Elements related to poorer QOL included more established age, female sexual orientation, and presence of comorbidities. Uncontrolled diabetic patients have a lower QOL than controlled diabetics (Spasic, et.al, 2014). Quality of life is surveyed in the measurements of part restriction because of physical and enthusiastic wellbeing, fulfillment with intercession, physical resilience and fulfillment with abstain from food. Patient's qualities, restorative conditions and factors of lifestyle, were broken down.

Variables identified with quality of life are not totally unique among patients with diabetes in Uganda (Nyanzi, 2014). The outcomes have uncovered, depression, tension, adverse wellbeing convictions, intellectual disappointments, relational affectability, antagonistic vibe and number of difficulties and clinical appearances anticipated wellbeing related quality of life (HRQOL) among the general example (Sarfo, Cudjoe, and Schlatter,2015).

An examination directed in India has found that most of the patients (57%) had direct quality of life, 38% had great quality of life, 4% had great quality of life, and just 1% subjects have low quality of life. The outcomes have emphasized the importance of consolidating systems to show signs of improvement the quality of life of Type-II diabetes mellitus patients by giving a data flyer to accomplish a more advantageous quality of life (Anumol, et.al, 2014). An examination of 46 patients about with respect to diabetes and wellbeing related

quality of life in Iran, discovered lower level of wellbeing related quality of life among diabetic patients.

There is an enhancement in financial status and controlled cardiovascular hazard factors prompts enhanced wellbeing related quality of life among diabetic patients (Kiadaliri, Najafi, and Mirmalek-Sani, 2013). Prazeres and Figueiredo (2014) have inspected the quality of life among more seasoned type-II diabetic patients. It was found over weight, irregular circulatory strain, low lipid level, emotional wellness and prosperity, contrarily connected with quality of life among more established compose type-II diabetic patients. The females were found to have exacerbated quality of life when contrasted with men in this examination particularly in the regions of emotional wellness and prosperity. Riaz, Rehman, Hakeem, and Shaheen (2013) have conducted an examination in Pakistan over wellbeing related quality of life among recently determined and follow up patients to have diabetes who got instruction about diabetes. It discovered enhanced wellbeing related quality of life among patients getting training about the diabetes in follow up sessions when contrasted with recently analyzed patients.

There is an examination to search the impact of diabetes mellitus on quality of life (QOL). To characterize the space that demonstrates the best effect of diabetes. A cross-sectional research was done in Ajman among diabetic and non-diabetic people. An institutionalized self-managed poll (Short Form-36) was used to gauge the QOL of the members in various aspects, physical movement, and role of physical limitation because of DM, bodily torment, general wellbeing, vitality, social working, and role of passionate restriction because of DM, mental wellbeing, physical component, and mental component. An institutionalized scoring framework was utilized to build up the QOL areas scores for every person. The examination included 180 diabetic and 180 non-diabetic people. Diabetes mellitus influences the quality of life of patients in all measurements, physical, mental and

social (Issa, et.al, 2014).

Mosaku (2008) examined the incidence of psychiatric disorders and their association with quality of life among diabetic, asthmatic and healthy individuals. Zung Self Rating Depression scale and State Trait Anxiety Inventory and Diabetic Well-Being Questionnaire were used along with socio-demographic and clinical variables to obtain the data. Depression was found 20% among diabetic patients, 12% among asthmatic patients whereas it was found only 4% among healthy individuals. Higher anxiety was found among asthmatic patients 34% than the diabetic patients 20% and 8% in healthy individuals. Ages, poor glycemic control, period of diabetes were found as predictors of depression. Similarly, depression, anxiety and fasting blood glucose were found as predictors of diabetic well-being and all these factors were found to be linked with low quality of life.

An orderly survey identified with relationship amongst diabetes and depression uncovered noteworthy dreariness, mortality and medicinal services costs. Depression among diabetic patients prompts diminished enthusiasm for treatment, poor metabolic control, expanded intricacy in ailment, low quality of life, expanded social insurance cost alongside expanded breaking down, and efficiency and expanded danger of death (Egede, 2010). An examination was led to explore the wellbeing related qualify of life among Greek Type-II DM patients with diabetic neuropathy (DN) and to inspect the indicators of illness among patients. The results have revealed that most of diabetic patients with diabetic neuropathy have low wellbeing related quality of life alongside physical and mental parts. Most critical indicators were diminished action, weakness, depression, neuropathy treatment and coronary conduit sickness. Seniority, low instruction, unmarried, retinopathy, fringe blood vessel malady, depression, nervousness and stress were additionally observed to correspond with wellbeing related quality of life. It is basic to deal with the depression and exhaustion to keep up great wellbeing related quality of life among diabetic neuropathic patients (Georgios,

2013).

Measures of QOL among constant patients furnish fundamental therapeutic information alongside research facility discoveries and analytic tests and are ending up progressively pertinent to control clinical trials. Diverse kinds of scales have been made to quantify the psychological, physical, and social parts of quality of life among diabetic patients (Porojan, 2009). A survey identified with human services quality of life utilized MeSHterms as: 'Diabetes Mellitus', 'Quality of Life', 'Essential Health Care', and 'Scandinavia' or 'Denmark', 'Finland', 'Iceland', 'Norway', or 'Sweden'. The resultsin all out, 19 important articles were discovered, 9 from Finland and 10 from Sweden. "Wellbeing related quality of life" was discovered reasonably influenced among diabetic patients, with macrovascular maladies, other gatherings at higher danger of more regrettable HRQOL were diabetic patients with mental scatters, particularly depression, and remote conceived patients (Wändel, 2005).

Diabetes

Diabetes Mellitus normally are referred as diabetes which is a gathering of metabolic illnesses in which, there are high glucose levels over a drawn out period (WHO, 2014). The side effects of high glucose incorporate regular pain, expanded thirst, and expanded appetite. On the other hand, if these things left untreated, diabetes may turn into the reason for some intricacies. The intense confusions may contain diabetic ketoacidosis, nonketotic hyperosmolar extreme lethargies, or demise. The genuine long haul inconveniences include coronary illness, stroke, unending disappointment of kidney, foot, and harm to the eyes stroke and ulcers (Huffman, 2013). Diabetes happens either the pancreas not delivering enough insulin or the parts of the body not reacting appropriately to the insulin created (Tao, Shi, and Zhao, 2015.).

Diabetes Mellitus begins because of insulin protection, a condition in which cells neglect to react to insulin fittingly. With the progression of time the sickness advances, an

absence of insulin may likewise create. This shape was referred to as non-insulin-subordinate diabetes mellitus or grown-up beginning diabetes. The explanation for this is excessively body weight and absence of sound exercise. Pregnant ladies without a past history of diabetes grow high glucose levels. The gestational diabetes is the third primary frame which happens (Huffman, 2013).

The prevention and the treatment engross maintaining a healthy diet, regular physical exercise, a normal body weight, and avoiding use of tobacco and regular healthy diet. The control of blood pressure and maintaining proper foot care are important for people who are suffered with the disease. Type-I, diabetes mellitus should be managed with insulin injections. Type-II, diabetes mellitus may be cured with medicine with or without insulin. Low blood sugar is occurred due to use of insulin and some oral medicines. Sometimes an effective measure occurred in those with type-II diabetes mellitus, the people who do weight loss surgery with obesity. After the delivery in females, the gestational diabetes usually occurs (Cash, J, 2014).

It is an estimated idea that in 2015, 415 million people had been suffered in diabetes around the world, with type -II diabetes mellitus. With equal rates in both women and men, "his represents 8.3 percent of the adult" Due to diabetes a risk of early death is increased. 1.5 to 5.0 million deaths every year resulted from diabetes, from 2012 to2015 almost. In 2014, "the global economic cost of diabetes was estimated to be US$612 billion (Tao, Shi, & Zhao, 2015.).

The weight loss, polyuria (increased urination), polydipsia (increased thirst), and polyphagia (appetite) are the symptoms of uncontrolled diabetes (Cooke, & Plotnick, 2008), these symptoms may perhaps develop hastily in type-I DM, and whereas they generally expand much more gradually and may be delicate or not present in type-II DM.

Many studies have suggested that quite a lot of other symptoms that can show the

beginning of diabetes although they are not particular to the disease. They include unclear vision, headache, fatigue, slow healing of cuts, and itchy skin, these are additional symptoms. Long time high blood glucose may cause glucose absorption in the lens of the eyes, which cause changes in its shape and vision changes. It is suggested that quite a lot of skin rashes that may be able to happen in diabetes that are jointly known as diabetic dermatomes (Cooke, & Plotnick, 2008). Diabetic emergencies among individuals with type-I and type-II diabetes mellitus, low blood sugar level is the most common.

It is quite evident that disease can range from uneasiness, sweating, trembling, and increased appetite in not severe cases to more serious issues such as confusion, changes in behavior such as aggressiveness, seizures, unconsciousness, and once in a blue moon permanent brain damage and sometime death in some severe cases. In some cases, the moderate hypoglycemia may straight forwardly be mistaken for drunkenness. Rapid breathing, sweating, cold and pale skin are characteristics of hypoglycemia but not perfect. It is observed that in diabetes mellitus, mild to moderate cases are self-treated by eating or drinking something high in sugar .Some severe cases can lead to unconsciousness and must be treated with injections with glucagon (Kumar, & Sreedevi, 2017).

These complications may develop with time after many years.But it is possible that these may be the first symptom in those people who have not been diagnosed before that time. The damage to blood vessels is the main long-term complication of the diabetic patients. The people, who suffered with diabetes, have the risk of cardiovascular disease.Almost 75% of mortality in diabetics is due to coronary artery disease.

In addition, other macro vascular diseases are like stroke, and peripheral vascular disease (Barkoudah, Skali, & Pfeffer, 2012). The basic complexities of diabetes have harmful effects on organs of the body particularly damage in small blood vessels include damage to the eyes, kidneys, eyes, and nerves. The symptoms of diabetes can include numbness,

tingling, pain, and altered pain sensation which can lead to damage the skin. Additionally, the proximal diabetic neuropathy becomes the main causes of painful muscle wasting and weakness (O'Gara, & Kushner, 2013).

The cognitive distortions and diabetes have relationship (Cukierman, Gerstein, 2005). In 2016,422 million people had diabetes all over the world, in 2013, it was an estimation that 382 million people suffered from this disease, while in 1980, 108 million people were involved in diabetes (Polisena, &Tran, 2009). Some data showed that indicated rates are approximately equal in women and men, (Vos, 2013) but the male surfeit in diabetes has been recognized in lots of populations with higher type-II occurrence, the chances to sex-related differences in insulin sensitivity (W.H.O, 2016). In 2012, the diabetes mellitus resulted in 1.5 million deaths and it was observed that it was the 8th main cause of death (Polisena, Tran, 2009). According to the estimation of International Diabetes Federation in 2014, the diabetes has caused 4.9 million deaths around the world. All over the world, diabetes mellitus has been prevailed but it is more common especially type-II in more developed countries. In middle income countries 80% deaths occur due to diabetes (Polisena, &Tran, 2009).

The increase in rates is due to the inclination of urbanization and lifestyle changes, including increasingly inactive lifestyles, lack of physically work, exercise and the worldwide nourishment evolution in developing countries marked the intake of eatable things that are high energy-dense but nutrient-poor (Mathers, & Loncar, 2006).

Diabetes and Quality of Life:

Diabetes is a significant healthcare challenge in the Western world and in developing countries, principally in view of expanded heftiness, maturing populaces, and more inactive lifestyles. Intricacies related with diabetes are a noteworthy reason for dismalness, mortality, and health-care costs. A large portion of the research revealed in the quantity of life diabetics

has happened in developing countries (Wild, and Sicree, 2009).

The World Health Organization (WHO) characterizes Quality of Life (QOL) as a person's view of their position in life with regards to the way of life and esteem frameworks in which they live and in connection with their objectives, desires, guidelines and concerns (WHOQOL GROUP, 1998). It is a wide going idea influenced unpredictably by the individual's physical health, mental state, level of autonomy, social connections, individual convictions and their relationship to remarkable highlights of their condition (Skevington, 2004). Despite the fact that specialists and able professionals may assess seriousness of the ailment and level of disintegration, the feeling of the patients' quality of life may not coordinate with individual perspective of the patients. There is an incredible effect of psycho-social and social factors on the individual perspective of the patient (Nouwen, &Peyrot, 2010).

Due to the pathophysiology and related comorbidities and confusions, diabetes is known to negatively affect health results like health-related quality of life (Landman et al., 2010). Concentrates among Ghanaians determined to have diabetes revealed comorbidities and side effects like general disquietude, dazedness, cerebral pains, unhealed injuries, sexual dysfunctions, visual debilitation, physical inabilities, hypertension, prostate malignancy, asthma, gout, dejection, and neuropsychological deficiencies (Sarfo, 2014). Notwithstanding these, a few examinations done outside Ghana additionally revealed renal clutters like interminable kidney disappointment, cardiovascular scatters and musculoskeletal conditions as regular comorbidities of diabetes mellitus (Nguyen, Evans, and Zonderman, 2007).

The importance of HRQOL issues has correlated outcomes in diabetes. The mind has dynamically been recorded throughout the years. The HRQOL hypothesis portrays how the features of quality of life identify with a man's impression of health and general prosperity. It depicts and measures the general demeanors, emotions, or the limit of people to see an

extreme fulfillment in a specific part of health status. This part of health life can be physical, mental or social, which is acknowledged by the individual as critical to their prosperity. In a sickness circumstance, this is viewed as debilitated by the advancement of malady or health-related dysfunctions. The key parts of HRQOL as estimated incorporate; physical working, psychological wellness, substantial torment, general health, imperativeness, and social working (Testa, & Simonson, 1996).

Quality of life is imperative for individuals with diabetes and their healthcare suppliers for a few reasons. This is on the grounds that numerous individuals who experience the ill effects of diabetes and who have low quality of life, often have less regard for their self-care and sickness management. When self-mind is reduced in diabetes, it thus prompts poor glycaemic control and increment danger of entanglements. Along these lines, quality of life issues are urgently imperative since they may intensely anticipate a person's ability to deal with his ailment and keep up long haul health and wellbeing.

Diabetes is seventh driving reason for death in United States. Diabetes is chunk of ice ailment. Despite the fact that expansion in both the predominance and frequency of Type- II diabetes mellitus has happened all around, WHO gauges that more than 346 million individuals world wide have diabetes. This number is probably going to dramatically increase by 2030 without intercession. Just about 80% of Diabetes passings happen in low and center wage nations (Richard, 2000).

India has more than 61 million diabetic patients (2012) an expansion from 50.8 million a year ago (2010). By 2030, India's diabetes trouble is required to cross the 100 million stamp as against 87 million prior assessed. The nation is additionally the biggest supporter of local mortality with 9, 83,000 passings caused because of diabetes in the time of 2011. The level of diabetic cases living in urban zone of India is anticipated to increment from 54% out of 1995 to 73% by the time of 2025 (Dixon, et.al, 2012).

An epidemiological overview was directed to survey the quality of life among 951 elderly diabetes mellitus patients in Shanghi people group of China. The hazard factors had an absolutely 30.5% effect on the whole quality of life. The investigation has suggested that there is requirement for helpful and down to earth techniques to enhance quality of life of elderly diabetes mellitus patients (Verma, & Wang, 2006).

A study and graph survey was led to evaluate the health-related quality of life among 2285 sort II diabetes individuals in the Canada. The investigation has demonstrated that the most pervasive diabetic confusions were coronary supply route malady (16%), retinopathy (15%), cerebrovascular mishaps (9%), neuropathy (9%), fringe vascular sickness (7%), and nephropathy (6%). Huge connections were found between the term of insulin utilize and confusions. The examination has shown that the general population with diabetes encounter noteworthy weakness in their health-related quality of life, the nearness of diabetic complexities altogether influences some health-related quality of life of Type- II diabetes mellitus patients (Harvey, 2006).

An investigation evaluated the diabetes mellitus and health-related quality of life among 37,054 more seasoned grown-ups in US. The investigation result demonstrated that the extent of more seasoned grown-ups detailing more unhealthy days was higher among those with diabetes contrasted with those, without the conditions. It was found that diabetes is freely connected with bring down levels of HRQOL among more seasoned grown-ups (David, 2003).

An investigation was led to evaluate the health-related quality of life among 50 individuals with diabetic mellitus in Romania. The SF-36 scale was utilized to gather information. The results showed lower quality of life among patients with diabeties mellitus as compared to general population.There are no other factually huge relationships between SF-36 score and different factors dissected. The examination presumed that the patients with

DM have factually critical debilitation of all parts of QOL (Porojan, 1998).

A cross-sectional investigation was led to evaluate the quality of life among 177 elderly diabetic patients at Swedish. The diabetic subjects were contrasted age and sexual orientation coordinated controls from an arbitrary standard populace test (SPS) of the Swedish populace.The examination comes about demonstrated that the HRQOL was poorer in diabetic subjects than in the SPS controls. Atheromatous inconveniences and nonvascular infection were critical indicators of a weakness related quality of life. The examination presumed that the elderly diabetic subjects had a poorer health-related quality of life than the all inclusive community, particularly with respect to physical health (Wandel, 2000).

A relative report was directed to survey the effect of diabetes on HRQOL among 112 diabetes mellitus patients and 81 healthy grown-ups control aggregate at Nigeria. The investigation comes about demonstration that the HRQOL of patients was brought down in all spaces with the exception of the natural area (P=0.6478) contrasted with control gathering. The investigation has shown that diabetes has impacts on the quality of life of the patients (Odili, and Ugboka, 2010).

A cross-sectional examination was directed to evaluate the needy quality of life in more established patients with type -II diabetes mellitus among 285 examples in Slovenia. The examination result has demonstrated that the lower QOL was altogether associated with a heart assault scene and to the impression of not having diabetes under control. The investigation proposed actualizing fitting intercessions for accomplishing better administration of diabetes and eventually enhancing the QOL of patients with diabetes (Eva, 2013).

DASS among Diabetic Patients

Many factors are associated with the development of diabetes particularly, bio-psycho - social model states that biological, psychological and social factors interact to keep healthy

or cause disease. The role of psychological factors is important in the genesis of all diseases in the psychosomatic medicine light of psychosomatic medicine. Anxiety, fear, anger and other emotional states can cause physiological changes such as asthma, gastroenteritis, cardiovascular disease, dermatological diseases", cancer, pain (headache, low back pain, etc.), diabetes, arthritis, thyroid disease, muscle tension, and infectious diseases. The cause is clear that mind and body have bilateral relation (Sadok, & Sadok 2007).

If we observe the metabolic disorder, the diabetes is one of the most ordinary inherited metabolic disorders and has harmful consequences (Hadavi, 1339).The psychological factors have a significant role in chronic physical disease such as diabetes. For patients and their relatives, these diseases are main stressor. Psychological problem such as disappointment, depression, anxiety, stress and anger are inseparable part of their life in most chronic diseases (Alipor, 1390).The evidences have shown that with any kind of stressors can intensify diabetes (Horin. et al.2008).

The migraine and cerebral pains have no huge beneficial outcome on the performance and the personal satisfaction (Holroyd, et al, 2006). In overall health issue, diabetes mellitus is the most genuine and disturbing issue. Especially, creating nations are at primary hazard (King, & Rewers, 1993). The predominance of diabetes is anticipated to rise general and the figure of diabetic patients are probably going to be around 366 million by the year 2030 contrasted with 171 million of every 2000 (Wild S, 2004).The Malaysian National Health Morbidity Survey III (NHMS III) was led in 2006.It demonstrated that the occurrence of diabetes mellitus in over 18 years was 11.6%. This figure was higher than the before survey (NHMS II) which was concluded in 1996.It uncovered the event to be 8.3% (Letchuman, 2010). The figure which is more prominent than that of previous 15.2% among the Malaysian populace in 2011(Institute for Public Health, 2011).It is most expected that the diabetes is identified with a high rate of intricacies whether they are utilitarian, mental, physical and dire

efforts are required to grasp close by this issue.

To enhance the healthcare staff, the accompanying advances are required. It is recommended sufficient assets, enhance patients' diabetes self-administration aptitudes and improve the patient-healthcare faculty relationship to accomplish the most extreme objectives (Mafauzy, 2006). Treatment of enthusiastic flimsiness as dejection, tension, stress, and outrage is essential and critical to control diabetes.

Through endocrine changes, mental elements may influence glycemic control in diabetic patients that occurred amid horrible encounters which prompt endocrine changes. Besides this, the patients are more disposed to be less agreeable with the treatment design amid pressure. Irritating occasions in nature is the genuine meaning of pressure (Rosenham, 1989).

Diabetes has unsafe impact on the mental health. The span of diabetes relies upon indications of perpetual pressure. It is high hazard factor for therapeutic confusions and mental aggravation (Connell, 1994). The pressure can be the beginning of diabetes. It can harmfully affect glycemic control and it can impact personal satisfaction (Lloyd, 2005). The absence of vitality, relentless low mind-set, loss of joy, anhedonia, loss of weight or craving, general discomfort, bothered rest, decreased focus, feeling of uselessness, misery and vulnerability, passing wishes and repetitive self-destructive ideation are the sign and side effects of melancholy.

Since the depression has been related with imperfect glycemic control, the fundamental point of diabetic treatment is the assurance of good glycemic control.It is very imperative and noteworthy to distinguish and control gloom less than ideal. The discouragement is identified with low quality of life, underprivileged treatment recognition, raises the cost of healthcare and increased dangers of difficulties and passing (Bot, & Pouwer, 2012). Most importantly, diabetes is connected to high danger of uneasiness and

depression.There is under location of rates of these passionate issues in diabetes patients (Ouwer, 2006).

It is anticipated that by the year 2020 coronary heart disease (CHD) will overwhelm infectious disease as the world's driving reason for death and inability. Despondency will take second place (Murray, 1997). Research headings in the field of coronary heart disease have changed significantly finished the most recent couple of decades. Other than the customary biomedical components, more consideration is being centered on the part of psycho-social factors and financial position in the etiology and visualization of CHD. Both psycho-social and financial components are found to have critical effect on the personal satisfaction, among individuals experience the ill effects of cardiovascular disease (Albus, 2005). As Kuper and Marmot (2005) have reasoned that financial contrasts in CHD have expanded all through Europe over the most recent couple of decades.

Diabetes and depression are the most widely recognized variables of general medical problems which are influencing individuals radically. Around 220 million individuals are evaluated to affliction from diabetes and a large portion of the general population is from low and center pay nations (WHO, 2008). Diabetes causes 1.256 passings internationally in 2008. Diabetes was positioned nineteenth driving reason for death on the planet. Depression was positioned at third driving reason for passings all around in 2004 and these diseases will be the main source of passings in 2030 (MHCI, 2010). The International Federation of Diabetes has focused on the significance of coordinating mental care in the administration of diabetes (IDF Clinical Guidelines Task Force, 2005).

Various studies revealed that diabetic patients have higher chances of depression as compared to non-diabetic patients (Nouwen, & Winkley, 2010). Globally, an estimated 43 million diabetics have symptoms of depression (MHCI, 2010). It is fact that diabetes is linked with anxiety (Kruse, 2003). Depression causes complications of managing diabetes

(Subramaniam, 2009). It leads to disability (Bruce, 2005) and high level of hyperglycemia (Anderson, 2002). Depression also causes decreased adherence to medication and inappropriate diet among diabetic patients (Kilbourne, 2005) along with poor quality of life (Das-Munshi, 2007) and increased risk of mortality (Egede, 2005). Properly managed depression reduces the risk of mortality about five years among diabetic patients (Bogner, 2007).

Link between Diabetes and Cardiac Diseases

With passage of time, high blood glucose can damage blood vessels and the nerves that control heart and blood vessels. In chronic diabetes, there are higher chances developing heart disease. People with diabetes also have heart disease at early age than people without diabetes. Adults with diabetes are nearly twice as likely to die from heart disease or stroke as people without diabetes. Prospective studies have demonstrated that diabetic patients have a many times propensity to develop coronary artery disease (CAD) and myocardial infarction (MI), establishing that type -II DM is an independent risk factor for stroke and heart disease.

Rationale of the Study

Cardiovascular and coronary heart diseases are on the increase drastically in Pakistan. These are main reasons of deaths in Pakistan. These diseases cause 12 deaths per hour in Pakistan. Cardiovascular disease causes 30 to 40 percent deaths annually in Pakistan. Mortality rate due to CHD have been reached about 200000 per year in Pakistan. The major causal factors of heart diseases in Pakistan are the use of nicotine, alcoholic drinks, high blood pressure and cholesterol, obesity, diabetes, physical inactivity, stress and unhealthy diet and unhealthy lifestyle (Pakistan Observer, 2017). As observed in National Survey conducted in 2016-2017, 26% of Pakistani population is suffering from diabetes. 35 to 37.5 million

people above 20 years are suffering from diabetes in Pakistan (Non Communicable Diseases Survey -Pakistan, 2016).

Depression, anxiety, stress and uncontrolled anger among diabetic and cardiac patients mostly remain undiagnosed and untreated (Nichols, 2007; Bowman, 2010; Pouwer, 2009). There are several studies about the depression, anxiety, stress and uncontrolled anger among diabetic and cardiac patients, the gap is found that there is no significant research to study both diseases together and compare them with the level of depression, anxiety, stress and anger.The present study is significant in this respect that this study explored the prevalence of internalizing problems, quality of life and coping strategies in Punjab province. This study shed light on the importance of psychological intervention along with medical treatment for cardiac and diabetic patients in Pakistan. Similarly, the significance of psychological intervention for cardiac patients should be understood that now there is new branch of psychology named psychocardiology has been developed, as this study had shed light on the importance of psychological intervention for diabetic patients and will help to develop a new field of psychology for diabetic patients with the name of psychodiabetes.

Objectives of the Study

The objectives of this study are:

1. To investigate the presence of depression, anxiety, stress, and anger and their impact on quality of life in diabetic and cardiac patients.
2. To assess the effects of depression, anxiety, stress and anger on coping strategies in diabetic and cardiac patients.
3. To measure the effects of coping strategies on quality of life in diabetic and cardiac patients.

4. To analyze the mediating role of coping strategies and their relationship with internalizing problems and quality of life in diabetic and cardiac patients.

Hypotheses

Following are Hypotheses of this study:

1. Internalizing problems (depression, anxiety, stress, and uncontrolled anger) are negatively correlated with quality of life in diabetic and cardiac patients.

2. Internalizing problems negatively affect the quality of life in diabetic and cardiac patients.

3. Internalizing problems influence the coping strategies indiabetic and cardiac patients.

4. Coping strategies are affected by quality of life in diabetic and cardiac patients.

5. Coping strategies perform mediating role in internalizing problems and quality of life in diabetic and cardiac patients.

Chapter 2

METHOD

Sample

Cross sectional research design is used for the present research. The sample for the study was taken from different government and private diabetic and cardiac care centres in Multan. Multan is a big city and it covers not only south Punjab but also Sind and Baluchistan and some parts of KPK.Purposive & convenient sampling techniques were used to select the samples. Sample consisted of 300 patients including 150 diabetic and 150 cardiac patients, 199 were males and 101 were females.

Conceptual Framework
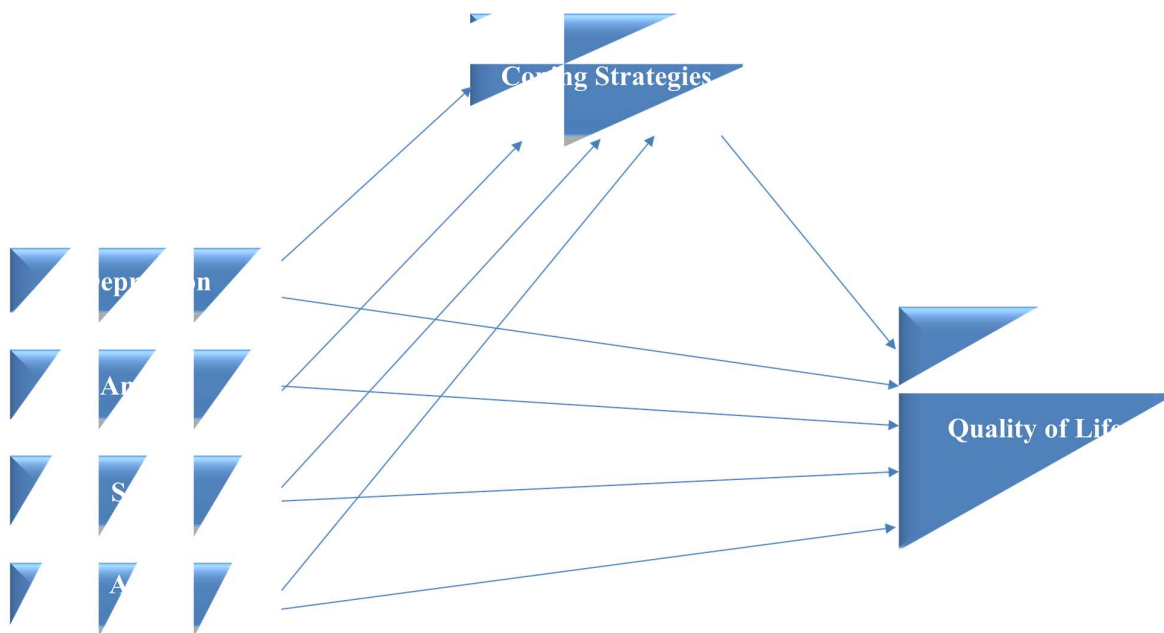
Research Tools

The following research instruments with Urdu translation were used in this study:

The Quality of Life Scale (QOLS)

The Quality of Life Scale (QOLS) was made initially by American Psychologist John Flanagan in 1970's.The scale has been received for use in perpetual sickness groups in different examinations. The scale has low direct connection with physical wellbeing status and infection measures. This scale measures relationshiops and material well being, Health and functioning and personal, social and community commitment. In this study we only focus on the overall quality of life rather than the subdimensions because this study is related to the helath related issues, not with social or personal life. Therefore, overall quality of life is measured in this study.In any case, content legitimacy investigation demonstrates that the instrument measures spaces that are different persistent groups with ceaseless ailment characterize as personal satisfaction. The QOLS is a substantial instrument for estimating personal satisfaction crosswise over patient gatherings and societies and is adroitly particular from wellbeing status or other causal pointers of personal satisfaction. This scale was interpreted in Urdu dialect by M.Nasar Khan in 2002 and specified that form as solid and legitimate to use in Pakistan. The QOLS was utilized as a part of the present examination.This scale is consisting of 26 items which measure four domains physical health, psychological health, social relationships and environment.

Novaco Anger Scale (NAS)

The Novaco Anger Scale was developed by Raymond W. Novaco, PhD in 2003. This 25 items scale measures how particular individuals experience anger and what kind of situation provokes it. In 2015, Naz and Khalily have given the Urdu translation of the NAS,

so that the subjects can easily understand what is being asked. The scores from 0-45 show remarkably low level of anger. Scores 46-55 show that the individual is more peaceful than an average person.Scores 56-75 show that the individual has life's annoyances with average amount of anger. Scores 76-85 show that individuals show angry reactions in frustration. 86-100 scores show intense level of anger.

Depression, Anxiety, Stress Scale (DASS)

Depression, Anxiety, Stess Scale (DASS) were developed by Lovibond, S.H and Lovibond P.F 1995). It is translated by Huma and Khaliliy Urdu translation. And adaption of this scale is published in 2015. The DASS is used in the present study. In this scale, normal stress range is 0-26 and 27-42 scores show severe stress. Normal range of anxiety is 0-14 and 15-42 scores show severe anxiety, similarly normal range of depression is 0-20 and 21-42 scores show severe to extreme depression.

Brief Coping Scale

Brief Cope Scale developed by Carver (1997) contains 28 items and measure 14 coping behaviors including Self-distraction, Active coping, Denial, Substance use, Use of emotional support, Use of instrumental support, Behavioral disengagement,Venting,Positive reframing, Planning,Humor, Acceptance,Religion, Self-blame .The Brief Coping Scale is used for the present study.

Operational Definitions

Quality of Life

It is a standard dimension that comprises of the desires for an individual or society for a decent life. These desires are guided by the qualities, objectives and

socio-cultural setting in which an individual lives. This study measuers this standard level of expectations of an individual with respect to cardiac disease, diabetes, internalizing problems and quality of life.

Internalizing Problems

An internalizing disorder (or internalizing problem) is one kind of passionate and conduct disorder, alongside externalizing disorders. One who has an internalizing disorder will remain quiet about their problems, or disguise the problems.This study measures internalizing problems as an element or indicator of cardiac and diabetic disease.

Coping Strategies

Coping strategies allude to the particular endeavors, both social and mental, that individuals utilize to ace, endure, decrease, or limit distressing occasions. In this study coping stratigies are measured with reference to internalizing problems in cardiac and diabetic patients.

Inclusion and Excludion Criteria

The cardiac and diabetic patients who were going to doctors last 6 months were included in this study because they mostly had develop internalizeing problems as compare to newly diagnosed patients, newly diagnosed patients were excluded and the only patients with atleast 6 months treatment history were included in the study. The patients who have only single disease either they cardiac or diabetic were included.

Procedure

The heads of the department were contacted of different government and private diabetic and cardiac hospitals to get institutional approval for data collection. They were briefed about the objectives of the research.After that the patients who come in outdoor to checkup were listed and contacted. The patients were informed about the objectives of the study. The researcher additionally guaranteed the confidentiality of the data by expressing to the participants that the data taken from them will be utilized just for academic research purpose. Brief oral and composed directions were given to the participants and informed consent was taken in composed form. In the wake of taking informed consent survey were controlled to the participants of the exploration. The researcher gave careful consideration and stayed watchful amid the fulfillment of the polls and helped the participants in issues with respect to comprehension of any inquiries. Toward the end, the researcher expressed gratitude toward the concerned specialists and the prompt participants for their collaboration in the examination.

Chapter 3

Results

The current study was aim to investigate the levels of internalizing problems (depression, anxiety, stress, and anger) and quality of life and to assess the effects of internalizing problems on the quality of life and coping strategies among diabetic and cardiac patients. In addition to, analyze the mediating role of coping strategies between the relationship of internalizing problems with quality of life in diabetic and cardiac patients.

To assess the relationship between internalizing problems (depression, anxiety, stress, and anger) and quality of life variables a Pearson's correlation coefficient was used. An independent sample *t*-test and one-way ANOVA were used to examine the difference between groups on major study variables.

To examine the effects of internalizing problems on the quality of life and coping strategies among diabetic and cardiac patients simple linear regression and multiple regression analysis were carried out.

To explore the mediating effect of coping strategies between internalizing problems (depression, anxiety, stress, and anger) and quality of life a mediation analysis by Process Macros were used.

The basic assumptions such as normality, linearity, homogeneity, multicollinearity and an independence of data were ensured before performing parametric analysis.

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

Variables	Categories	N	%	M	SD	Range
Age				47.02	13.33	20-81
Gender						
	Male	199	66.3			
	Female	101	33.7			
Marital Status						
	Single	281	93.7			
	Married	19	6.3			
Residence						
	Urban	176	58.7			
	Rural	124	41.3			
Education						
	Illiterate	56	18.7			
	Primary	34	11.3			
	Middle	38	12.7			
	Secondary	79	26.3			
	Higher Secondary	32	10.7			
	Bachelor	31	10.3			
	Master	30	10.0			
Diseases						
	Cardiac	150	50.0			
	Diabetic	150	50.0			
Duration of disease in years				5.28	5.40	1-31

Table 1 showed that a total of 300 patients (cardiac patients = 150, diabetic patients = 150) had mean age 47.02 ± 13.33 and mean duration of illness 5.25± 5.40 were recruited for this study. Most of them were male (n = 199, 66.3%) and unmarried (n = 281, 93.7%). About 59% were from urban area. Seventy nine patients (26%) had matric educational level followed by 72 (22%) below matric and 56 (18.7%) illiterate.

Table 2   *Psychometric Properties of Study Major Scales*

Measures	k	A	Range Potential	Range Actual	M	SD	Skew.	Kurt.
QOLS	26	.88	26-130	41-116	83.24	14.72	-0.07	-0.58
BCS	28	.73	28-122	37-109	68.66	12.01	0.33	0.96
NAS	25	.91	0-100	0-100	52.71	20.36	-0.40	0.18
Depression	14	.91	0-42	0-42	17.73	9.42	0.25	-0.43
Anxiety	14	.86	0-42	042	18.82	8.05	0.02	-0.59
Stress	14	.86	0-42	0-42	20.32	8.21	0.13	-0.24

Note. QOLS = Quality of Life Scale; NAS = Novaco Anger Scale; BCS = Brief Cope Scale; Skew = Skewness; Kurt = Kurtosis.

Table 2 shows that scales including quality of life scale, brief cope scale, navaco anger scale, depression anxiety and stress scale and its sub-scales has satisfactory to high reliability coefficients ranging from .73 to .95. The reliabilities are good and acceptable.In addition the values of skewness and kurtosis less than +2 and -2 indicating that data fulfill the normality assumption (Muthen&Kaplin, 1985). Quality of life scale is very important scale to measure chronic diseases.It is also a significant tool to measure the impact of helath care in the absence of cure. This scale measue five dimentions of quality of life (1) Material and Physical Well-being (2) Relationships with other People (3) Social, Community, and Civic Activities (4) Personal Development and Fulfillment (5) Recreation. The mean score for this scale in my study was 83.24. Brief Coping Scale is an important scale to measue the psychological and behavioral coping techniques developed or adoped by the individuals. This scale is consisted of 28 items which measue 14 coping strategies and each coping strategy is measured by 2 items. The mean score of this scale in my study was 68.66 Novaco Anger Scale is another important scale to measure anger among chronic patients. It is a 25 item scale which measue the intensity of anger through presenting different situations and notes

the reactions of individuals. The mean score of anger in my study was 52.71. DAAS is a very significant scale to measue and compare the level of depression, anxiety and stress at the same time in an individual. I used 42 item DAAS scale in my research. This scale consisted on 14 items for depression, 14 itmes for anxiety and 14 items for stress. This scale is very useful in longitudional researches to measue the fluctuation in level of depression, anxiety ans stress over time. In my study the mean score of depression was 17.73, for anxiety mean score was 18.82 and for stress the mean score was 20.32 which indicate that cardiac and diabetic patients have higher level of stress as compared to depression and anxiety.

Table 3   *Pearson correlation among variables*

Variables	1	2	3	4	5	6	7	8
1. QOLS	1	-.02	-.48**	-.43**	-.38**	-.29**	-.16**	-.04
2. NAS		1	.29**	.30**	.42**	.36**	.32**	.29**
3. Depression			1	.85**	.84**	.07	.17**	.31**
4. Anxiety				1	.81**	.10	.21**	.33**
5. Stress					1	.13**	.22**	.34**
6. EFC						1	.62**	.44**
7. PFC							1	.53**
8. DC								1

Note. QOLS = Quality of Life Scale; NAS = Novaco Anger Scale; EFC = Emotion Focused Coping; PFC = Problem Focused Coping; DC = Dysfunctional Coping.**p< .01; *p<.05

   Table 3 shows results of the Pearson correlation. The quality of life was significantly negatively associated with depression (r = -.48, p<.01), anxiety (r = -.43, p<.01) stress (r = -.38, p<.01) emotion focused coping (r = -.29, p<.01) and problem focused coping (r = -.16, p<.01). Anger was significantly positively associated with depression (r = .29, p<.01), anxiety (r = .30, p<.01) stress (r = .42, p<.01) emotion focused coping (r = .36, p<.01) problem focused coping (r = .32, p<.01) and dysfunctional coping (r = .29, p<.01).Except emotion focused coping, depression was significantly positively associated with anxiety (r = .85, p<.01) stress (r = .84, p<.01) problem focused coping (r = .17, p<.01) and dysfunctional coping (r = .31, p<.01). Except emotion focused coping, anxiety also was significantly positively associated with stress (r = .81, p<.01) problem focused coping (r = .21, p<.01) and dysfunctional coping (r = .33, p<.01). In addition stress was significantly positively associated with emotion focused coping (r = .13, p<.01) problem focused coping (r = .22, p<.01) and dysfunctional coping (r = .34, p<.01). However quality of life was negatively

associated with anger and dysfunctional coping but the relationship was not statistically

significant.

Table 4 *Mean differences between cardiac and diabetic patientsin terms of major study variables*

Variable	Cardiac (n = 150)		Diabetic (n = 150)		t (298)	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
1. QOLS	80.77	14.13	85.70	14.92	2.94	<.01	-8.23	-1.62	.34
2. NAS	50.28	18.84	55.13	21.57	2.08	.04	-9.45	-0.25	.24
3. Depression	17.94	9.34	17.53	9.53	0.38	.71	-1.73	2.56	-
4. Anxiety	18.57	7.73	19.07	8.34	0.54	.59	-2.33	1.33	-
5. Stress	20.28	8.17	20.35	8.28	0.08	.94	-1.94	1.80	-

Note. QOLS = Quality of Life Scale; NAS = Novaco Anger Scale

Table 4. An independent-samples t-test showed that there was no significant difference between cardiac and diabetic patients in terms of depression, anxiety and stress. However, quality of life mean score was significantly higher for diabetic patients (M = 85.70, SD = 14.92) than cardiac patients (M = 80.77, SD = 14.13), t (298) = 2.94, p <.01. In addition, anger mean score was also significantly higher for diabetic patients (M = 55.13, SD = 21.57) than cardiac patients (M = 50.28, SD = 18.84), t (298) = 2.08, p <.05.

Table 5 *Multiple Regression analysis demonstrating effect of internalizing problems on Emotion Focused Coping (N=300)*

Predictors	Model 1 B	95% CI LL, UL
(constant)	19.82***	[18.16, 21.49]
Anger	.07*	[.04, .09]
Depression	-.04	[-.16, .08]
Anxiety	.10	[-.03, .23]
Stress	.02	[-.11, .14]
R^2	.12	
F	09.99**	

*** p<.001; **p< .01; *p<.05

Table 5 shows results of multiple regression analysis with internalized problem as predictor variables whereas emotion focused coping as outcome variables. The .12 value of R^2 indicates that model explains 12% of variance. Results showed that only anger positively predicts emotion focused coping.

Table 6   *Multiple Regression analysis demonstrating effect of internalizing problems on Problem Focused Coping (N=300)*

Predictors	Model 1 B	95% CI LL, UL
(constant)	13.47***	[12.24, 14.70]
Anger	.06*	[.04, .08]
Depression	-.05	[-.13, .04]
Anxiety	.04	[-.06, .13]
Stress	.01	[-.09, .10]
R^2	.13	
F	11.00**	

Note: Table header "Problem Focused Coping" spans the Model 1 B and 95% CI columns.

*** p<.001; **p< .01; *p<.05

Table 6 shows results of multiple regression analysis with internalized problem as predictor variables whereas problem focused coping as outcome variables. The .13 value of R^2 indicates that model explains 13% of variance. Results showed that only anger positively predicts problem focused coping.

Table 7   *Multiple Regression analysis demonstrating effect of internalizing problems on Dysfunctional Coping (N=300)*

Predictors	Dysfunctional Coping	
	Model 1 *B*	95% CI *LL, UL*
(constant)	18.68***	[16.27, 21.08]
Anger	.07*	[.03, .11]
Depression	-.02	[-.15, .19]
Anxiety	.14	[-.04, .32]
Stress	.09	[-.10, .27]
R²	.15	
F	13.19**	

*** p<.001; ***p*< .01; *p<.05

Table 7 shows results of multiple regression analysis with internalized problem as predictor variables whereas dysfunctional coping as outcome variables. The .15 value of R^2 indicates that model explains 15% of variance. Results showed that only anger positively predicts dysfunctional coping.

Table 8   *Multiple Regression analysis demonstrating effect of Coping Strategies on Quality of Life (N=300)*

	Quality of Life	
Predictors	Model 1 B	95% CI LL, UL
(constant)	65.36***	[56.07, 74.64]
Emotion Focused Coping	.01	[-.45, .48]
Problem Focused Coping	1.43**	[.84, 2.02]
Dysfunctional Coping	-.24	[-.52, .04]
R^2	.10	
F	10.40**	

*** $p<.001$; ** $p< .01$

Table 8 shows results of multiple regression analysis with coping strategies as predictor variables whereas quality of life as outcome variables. The .10 value of R^2 indicates that model explains 10% of variance. Results showed that only problem focused coping positively predicts quality of life.

Table 9   *Multiple Regression analysis demonstrating effect of internalizing problems on Emotion Focused Coping among Cardiac Patients (N=150)*

	Emotion Focused Coping	
Predictors	Model 1 *B*	95% CI *LL, UL*
(constant)	19.44***	[17.40, 21.48]
Anger	.05*	[.01 .09]
Depression	-.08	[-.21, .06]
Anxiety	.05	[-.09, .21]
Stress	.10	[-.05, .25]
R²	.11	
F	04.62**	

*** p<.001; **p< .01; *p<.05

Table 9 shows results of multiple regression analysis with internalized problem as predictor variables whereas emotion focused coping as outcome variables. The .11 value of R^2 indicates that model explains 11% of variance. Results showed that only anger positively predicts emotion focused coping among cardiac patients.

Table 10   *Multiple Regression analysis demonstrating effect of internalizing problems on Problem Focused Coping among Cardiac Patients (N=150)*

Predictors	Problem Focused Coping	
	Model 1 B	95% CI *LL, UL*
(constant)	13.29***	[11.65, 14.94]
Anger	.04**	[.01, .07]
Depression	-.07	[-.18, .03]
Anxiety	.05	[-.07, .17]
Stress	.07	[-.05, .19]
R^2	.11	
F	04.51**	

*** p<.001; **p< .01; *p<.05

Table 10 shows results of multiple regression analysis with internalized problem as predictor variables whereas problem focused coping as outcome variables. The .11 value of R^2 indicates that model explains 11% of variance. Results showed that only anger positively predicts problem focused coping among cardiac patients.

Table 11   *Multiple Regression Analysis demonstrating effect of Internalizing Problems on Dysfunctional Coping among Cardiac Patients (N=150)*

Predictors	Dysfunctional Coping	
	Model 1 *B*	95% CI *LL, UL*
(constant)	21.51***	[18.26, 24.75]
Anger	.04	[.02, .10]
Depression	-.03	[-.18, .24]
Anxiety	.04	[-.21, .28]
Stress	.05	[-.17, .29]
R²	.06	
F	02.02	

*** p<.001; **p< .01; *p<.05

Table 11 shows results of multiple regression analysis with internalized problem as predictor variables whereas dysfunctional coping as outcome variables. The .06 value of R^2 indicates that model explains 06% of variance. Results showed that none of the single internalized problems significantly predicts dysfunctional coping among cardiac patients.

Table 1

2 *Multiple Regression Analysis demonstrating effect of Coping Strategies on Quality of Life among Cardiac Patients (N=150)*

	Quality of Life	
Predictors	Model 1 B	95% CI LL, UL
(constant)	67.28***	[52.61, 81.96]
Problem Focused Coping	.89*	[0.00, 1.77]
Emotion Focused Coping	-.09	[-.83, .64]
Dysfunctional Coping	.04	[-.37, .45]
R^2	.04	
F	1.92	

*** p<.001; **p< .01

Table 12 shows results of multiple regression analysis with coping strategies as predictor variables whereas quality of life as outcome variables. The .04 value of R^2 indicates that model explains 04% of variance. Results showed that only problem focused coping positively predicts quality of life among cardiac patients.

Table 13   *Multiple Regression analysis demonstrating effect of internalizing problems on Emotion Focused Coping among Diabetic Patients (N=150)*

	Emotion Focused Coping	
Predictors	Model 1 *B*	95% CI *LL, UL*
(constant)	21.04***	[18.47, 23.62]
Anger	.07*	[.03, .11]
Depression	.05	[-.14, .24]
Anxiety	.10	[-.10, .30]
Stress	-.07	[-.28, .13]
R^2	.12	
F	04.86**	

*** p<.001; **p< .01; *p<.05

Table 13 shows results of multiple regression analysis with internalized problem as predictor variables whereas emotion focused coping as outcome variables. The .12 value of R^2 indicates that model explains 12% of variance. Results showed that only anger positively predicts emotion focused coping among diabetic patients.

Table 14 *Multiple Regression analysis demonstrating effect of internalizing problems on Problem Focused Coping among Diabetic Patients (N=150)*

Predictors	Model 1 B	95% CI LL, UL
	Problem Focused Coping	
(constant)	13.79***	[11.92, 15.67]
Anger	.07***	[.04, .10]
Depression	-.01	[-.15, .13]
Anxiety	.03	[-.11, .17]
Stress	-.06	[-.21, .09]
R^2	.16	
F	06.65***	

*** p<.001; **p< .01; *p<.05

Table 14 shows results of multiple regression analysis with internalized problem as predictor variables whereas problem focused coping as outcome variables. The .16 value of R^2 indicates that model explains 16% of variance. Results showed that only anger positively predicts problem focused coping among diabetic patients.

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Table 15   *Multiple Regression Analysis demonstrating effect of Internalizing Problems on Dysfunctional Coping among Diabetic Patients (N=150)*

Predictors	Model 1 B	95% CI LL, UL
(constant)	16.58***	[13.06, 20.10]
Anger	.07*	[.02, .13]
Depression	.03	[-.23, .29]
Anxiety	.18	[-.09, .45]
Stress	.16	[-.12, .44]
R^2	.26	
F	12.75***	

*** p<.001; **p< .01; *p<.05

Table 15 shows results of multiple regression analysis with internalized problem as predictor variables whereas dysfunctional coping as outcome variables. The .26 value of R^2 indicates that model explains 26% of variance. Results showed that only anger positively predicts dysfunctional coping among diabetic patients.

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Table 16 *Multiple Regression Analysis demonstrating effect of Coping Strategies on Quality of Life among Diabetic Patients (N=150)*

Predictors	Quality of Life	
	Model 1 *B*	95% CI *LL, UL*
(constant)	68.69***	[56.56, 81.01]
Problem Focused Coping	2.11***	[1.33, 2.89]
Emotion Focused Coping	-.16	[-.78, .46]
Dysfunctional Coping	-.53**	[-.90, -.16]
R^2	.19	
F	11.50***	

*** p<.001; **$p< .01$

Table 16 shows results of multiple regression analysis with coping strategies as predictor variables whereas quality of life as outcome variables. The .19 value of R^2 indicates that model explains 19% of variance. Results showed that problem focused coping apositively predicts quality of life and dysfunctional coping negatively predicts quality of life among diabetic patients. However the role of emotion focused coping was not significant.

A simple mediation analysis was conducted using ordinary least square regression based method by PROCESS macro (Hayes, 2013). For the regression models tested in this study, the Variance Inflation rates (VIF) for individual predictors were found below 10 and tolerance rates for all the individual predictors were found above 0.20 (Bowerman & O'Connell, 1990; Menard, 2000). A total of twelve mediation models were tested. The brief details of these models are given as follow:

1. Mediating role of Emotion focused coping between Anger and Quality of Life.

2. Mediating role of problem focused coping between Anger and Quality of Life.

3. Mediating role of dysfunctional coping between Anger and Quality of Life.

4. Mediating role of Emotion focused coping between Depression and Quality of Life.

5. Mediating role of problem focused coping between Depression and Quality of Life.

6. Mediating role of dysfunctional coping between Depression and Quality of Life.

7. Mediating role of Emotion focused coping between Anxiety and Quality of Life.

8. Mediating role of problem focused coping between Anxiety and Quality of Life.

9. Mediating role of dysfunctional coping between Anxiety and Quality of Life.

10. Mediating role of Emotion focused coping between Stress and Quality of Life.

11. Mediating role of problem focused coping between Stress and Quality of Life.

12. Mediating role of dysfunctional coping between Stress and Quality of Life.

Table 17 *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Novaco Anger Inventory (NAI) via Emotion Focused Coping (EFC)*

		M (EFC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	*ρ*		*Coeff.*	*SE*	*ρ*
X (NAI)	α	.07	.01	<.001	Ć	-.06	.04	.17
M (EFC)		-	-	-	B	.57	.19	<.01
Constant	i_2	20.85	.71	<.001	i_2	72.25	4.59	<.001
		R^2= .10				R^2= .03		
		$F(298, 1) = 34.33$***				$F(297, 2) = 4.62$**		

Note. NAI Novaco Anger Inventory; EFC Emotion Focused Coping; QOL Quality of Life.

Table 18   *Unstandardized and Standardized Indirect Effect of Novaco Anger Inventory (NAI) on Quality of Life (QOL) through Emotion Focused Coping (EFC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.04	.02	.02	.08
Standardized	.06	.02	.02	.11

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that Anger influenced quality of life vicariously through its impact on emotion focused coping. As can be seen in Table, anger significantly predicted emotion focused coping (α= .07; p<.001), further emotion focused coping significantly predicted quality of life (b=.57; p<.05). As mentioned in Table 18, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.04) based on 10,000 bootstrap samples is clearly above the zero (.02-.08). However, data suggests that there is no evidence of independent effect (direct effect) of anger on quality of life regardless of emotion focused coping (ć= -.06; p>.05). This indicates that emotion focused coping significantly mediates between the relationship of anger and quality of life.

Table 19 *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Novaco Anger Inventory (NAI) via Problem Focused Coping (PFC)*

Antecedent		Consequent						
		M (PFC)				Y (QOL)		
		Coeff.	*SE*	*P*		*Coeff.*	*SE*	*P*
X (NAI)	α	.06	.01	<.001	ć	-.11	.04	.01
M (PFC)		-	-	-	b	1.45	.25	<.001
Constant	i_2	13.53	.52	<.001	i_2	64.50	4.03	<.001
		R^2= .13				R^2= .01		
		$F(298, 1) = 42.84$***				$F(297, 2) = 17.27$***		

Note. NAI Novaco Anger Inventory; PFC Problem Focused Coping; QOL Quality of Life.

Table 20   *Unstandardized and Standardized Indirect Effect of Novaco Anger Inventory (NAI) on Quality of Life (QOL) through Problem Focused Coping (EFC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.09	.02	.05	.14
Standardized	.12	.03	.07	.19

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that Anger influenced quality of life vicariously through its impact on problem focused coping. As can be seen in Table, anger significantly predicted problem focused coping (α= .06; p<.001), further problem focused coping significantly predicted quality of life (b=1.45; p<.001). As mentioned in Table 20, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.09) based on 10,000 bootstrap samples is clearly above the zero (.08-.14). In addition, data suggests that there is an evidence of independent effect (direct effect) of anger on quality of life regardless of problem focused coping (ć= -.11; p<.05). This indicates that problem focused coping significantly mediates between the relationship of anger and quality of life.

Table 21   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Novaco Anger Inventory (NAI) via Dysfunctional Coping (DC)*

Antecedent		M (DC)				Y (QOL)		
		Coeff.	*SE*	ρ		*Coeff.*	*SE*	ρ
X (NAI)	α	.10	.02	<.001	ć	-.03	.04	.52
M (DC)		-	-	-	b	.11	.13	.40
Constant	i_2	21.62	1.06	<.001	i_2	81.80	3.66	<.001
		R^2= .09				R^2= .003		
		$F(298, 1) = 27.75$***				$F(297, 2) = .44$		

Note. NAI Novaco Anger Inventory; DC Dysfunctional Coping; QOL Quality of Life.

Table 22 *Unstandardized and Standardized Indirect Effect of Novaco Anger Inventory (NAI) on Quality of Life (QOL) through Dysfunctional Coping (DC)*

Types of Effects	*Coeff.*	*SE*	*LLCI*	*ULCI*
Unstandardized	.01	.01	-.01	.04
Standardized	.01	.02	-.02	.05

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that Anger doesn't influenced quality of life vicariously through its impact on dysfunctional coping. As can be seen in Table, anger significantly predicted dysfunctional coping (α= .10; ρ<.001), however dysfunctional coping doesn't predicted quality of life (b=.11; ρ>.05). As mentioned in Table 12, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.01) based on 10,000 bootstrap samples contains the zero (-.01-.04). In addition, data suggests that there is no evidence of independent effect (direct effect) of anger on quality of life regardless of dysfunctional coping ($\acute{c}$= -.03; ρ>.05). This indicates that emotion focused coping doesn't significantly mediates between the relationship of anger and quality of life.

Table 23   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Depression (Dep) via Emotion Focused Coping (EFC)*

Antecedent		M (EFC)				Y (QOL)		
		Coeff.	*SE*	ρ		*Coeff.*	*SE*	ρ
X (Dep)	α	.09	.03	<.01	ć	-.82	.08	<.001
M (EFC)		-	-	-	b	.77	.16	<.001
Constant	i_2	23.23	.57	<.001	i_2	78.66	3.93	<.001
		$R^2= .03$				$R^2= .29$		
		$F(298, 1) = 9.08**$				$F(297, 2) = 60.46***$		

Note. DepDepression; EFC Emotion Focused Coping; QOL Quality of Life.

Table 24   *Unstandardized and Standardized Indirect Effect of Depression (Dep) on Quality of Life (QOL) through Emotion Focused Coping (EFC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.07	.03	.01	.14
Standardized	.04	.02	.008	.09

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that depression influenced quality of life vicariously through its impact on emotion focused coping. As can be seen in Table, depression significantly predicted emotion focused coping (α= .09; ρ<.05), further emotion focused coping significantly predicted quality of life (b=.77; ρ<.001). As mentioned in Table 24, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.07) based on 10,000 bootstrap samples is clearly above the zero (.01-.14). In addition, data suggests that there is an evidence of independent effect (direct effect) of depression on quality of life regardless of emotion focused coping (ċ= -.82; ρ<.001). This indicates that emotion focused coping significantly mediates between the relationship of depression and quality of life.

Table 25   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Depression (Dep) via Problem Focused Coping (PFC)*

		Consequent						
		M (PFC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	ρ		*Coeff.*	*SE*	ρ
X (Dep)	α	.02	.02	.26	ć	-.78	.07	<.001
M (PFC)		-	-	-	b	1.37	.20	<.001
Constant	i_2	16.29	.43	<.001	i_2	74.18	3.58	<.001
		$R^2= .003$				$R^2= .34$		
		$F(298, 1) = 1.28$				$F(297, 2) = 75.27***$		

Note. Dep Depression; PFC Problem Focused Coping; QOL Quality of Life.

Table 26   *Unstandardized and Standardized Indirect Effect of Depression (Dep) on Quality of Life (QOL) through Problem Focused Coping (EFC)*

Types of Effects	*Coeff.*	*SE*	*LLCI*	*ULCI*
Unstandardized	.03	.03	-.03	.11
Standardized	.02	.02	-.02	.07

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that depression influenced quality of life vicariously through its impact on problem focused coping. As can be seen in Table, depression doesn't predicted problem focused coping (α= .02; ρ>.05), however problem focused coping significantly predicted quality of life (b=1.37; ρ<.001). As mentioned in Table 26, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.03) based on 10,000 bootstrap samples contains the zero (-.03-.11). In addition, data suggests that there is an evidence of independent effect (direct effect) of depression on quality of life regardless of problem focused coping (ć= -.78; ρ<.001). This indicates that problem focused coping doesn't significantly mediates between the relationship of depression and quality of life.

Table 27   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Depression (Dep) via Dysfunctional Coping (DC)*

		Consequent						
		M (DC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	ρ		*Coeff.*	*SE*	ρ
X (Dep)	α	.22	.04	<.001	ć	-.85	.08	<.001
M (DC)		-	-	-	b	.44	.11	<.001
Constant	i_2	22.86	.81	<.001	i_2	86.53	2.97	<.001
		$R^2 = .09$				$R^2 = .27$		
		$F(298,1) = 30.75***$				$F(297, 2) = 54.77***$		

Note. Dep Depression; DC Dysfunctional Coping; QOL Quality of Life.

Table 28   *Unstandardized and Standardized Indirect Effect of Depression (Dep) on Quality of Life (QOL) through Dysfunctional Coping (DC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.10	.04	.04	.21
Standardized	.06	.03	.02	.13

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that depression influenced quality of life vicariously through its impact on dysfunctional coping. As can be seen in Table, depression significantly predicted dysfunctional coping (α= .22; p<.001), further dysfunctional coping significantly predicted quality of life (b=.44; p<.001). As mentioned in Table 28, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.10) based on 10,000 bootstrap samples is clearly above the zero (.04-.21). In addition, data suggests that there is an evidence of independent effect (direct effect) of depression on quality of life regardless of dysfunctional coping (ć= -.85; p<.001). This indicates that dysfunctional coping significantly mediates between the relationship of depression and quality of life.

Table 29   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Anxiety (Anx) via Emotion Focused Coping (EFC)*

| | | Consequent | | | | | |
| Antecedent | | M (EFC) | | | | Y (QOL) | | |
		Coeff.	*SE*	ρ		*Coeff.*	*SE*	ρ
X (Anx)	α	.12	.03	<.001	$\acute{c}$	-.88	.09	<.001
M (EFC)		-	-	-	b	.81	.16	<.001
Constant	i_2	22.42	.67	<.001	i_2	79.82	4.09	<.001
		$R^2 = .05$				$R^2 = .25$		
		$F_{(298,\ 1)} = 14.04***$				$F_{(297,\ 2)} = 48.64***$		

Note. Anx Anxiety; EFC Emotion Focused Coping; QOL Quality of Life.

Table 30   *Unstandardized and Standardized Indirect Effect of Anxiety (Anx) on Quality of Life (QOL) through Emotion Focused Coping (EFC)*

Types of Effects	*Coeff.*	*SE*	*LLCI*	*ULCI*
Unstandardized	.10	.04	.03	.20
Standardized	.05	.02	.02	.11

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that anxiety influenced quality of life vicariously through its impact on emotion focused coping. As can be seen in Table, anxiety significantly predicted emotion focused coping (α= .12; ρ<.001), further emotion focused coping significantly predicted quality of life (b=.81; ρ<.001). As mentioned in Table 30, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.10) based on 10,000 bootstrap samples is clearly above the zero (.03-.20). In addition, data suggests that there is an evidence of independent effect (direct effect) of anxiety on quality of life regardless of emotion focused coping (ć= -.88; ρ<.001). This indicates that emotion focused coping significantly mediates between the relationship of anxiety and quality of life.

Table 31 *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Anxiety (Anx) via Problem Focused Coping (PFC)*

		Consequent						
		M (PFC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	ρ		*Coeff.*	*SE*	*P*
X (Anx)	α	.04	.03	.08	ć	-.85	.09	<.001
M (PFC)		-	-	-	b	1.43	.21	<.001
Constant	i_2	15.90	.51	<.001	i_2	75.21	3.75	<.001
		$R^2 = .01$				$R^2 = .30$		
		$F(298, 1) = 3.07$				$F(297, 2) = 62.80***$		

Note. Anx Anxiety; PFC Problem Focused Coping; QOL Quality of Life.

Table 32   *Unstandardized and Standardized Indirect Effect of Anxiety (Anx) on Quality of Life (QOL) through Problem Focused Coping (EFC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.06	.04	-.02	.16
Standardized	.03	.02	-.008	.09

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that anxiety influenced quality of life vicariously through its impact on problem focused coping. As can be seen in Table, anxiety doesn't predicted emotion focused coping (α= .04; ρ>.05), however problem focused coping significantly predicted quality of life (b=1.43; ρ<.001). As mentioned in Table 32, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.06) based on 10,000 bootstrap samples contains the zero (-.02-.16). However, data suggests that there is an evidence of independent effect (direct effect) of anxiety on quality of life regardless of problem focused coping (ć= -.85; ρ<.001). This indicates that problem focused coping doesn't mediates between the relationship of anxiety and quality of life.

Table 33   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Anxiety (Anx) via Dysfunctional Coping (DC)*

		Consequent						
		M (DC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	*ρ*		*Coeff.*	*SE*	*P*
X (Anx)	α	.28	.05	<.001	ć	-.90	.10	<.001
M (DC)		-	-	-	b	.43	.12	<.001
Constant	i₂	21.58	.96	<.001	i₂	88.77	3.14	<.001
		R^2= .11				R^2= .22		
		$F(298, 1) = 35.27$***				$F(297, 2) = 41.68$***		

Note. Anx Anxiety; DC Dysfunctional Coping; QOL Quality of Life.

Table 34   *Unstandardized and Standardized Indirect Effect of Anxiety (Anx) onQuality of Life (QOL) through Dysfunctional Coping (DC)*

Types of Effects	*Coeff.*	*SE*	*LLCI*	*ULCI*
Unstandardized	.12	.06	.03	.24
Standardized	.07	.03	.02	.13

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that anxiety influenced quality of life vicariously through its impact on dysfunctional coping. As can be seen in Table, anxiety significantly predicted dysfunctional coping (α= .28; p<.001), further dysfunctional coping significantly predicted quality of life (b=.43; p<.001). As mentioned in Table 34, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.12) based on 10,000 bootstrap samples is clearly above the zero (.03-.24). In addition, data suggests that there is an evidence of independent effect (direct effect) of anxiety on quality of life regardless of dysfunctional coping (ć= -.90; p<.001). This indicates that dysfunctional coping significantly mediates between the relationship of anxiety and quality of life.

Table 35 *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Stress via Emotion Focused Coping (EFC)*

		Consequent						
		M (EFC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	*ρ*		*Coeff.*	*SE*	*P*
X (Stress)	α	.13	.03	<.001	ć	-.78	.09	<.001
M (EFC)		-	-	-	b	.79	.17	<.001
Constant	i_2	22.19	.71	<.001	i_2	79.54	4.23	<.001
		$R^2 = .05$				$R^2 = .20$		
		$F(298, 1) = 15.10^{***}$				$F(297, 1) = 37.63$		

Note. EFC Emotion Focused Coping; QOL Quality of Life.

Table 36 *Unstandardized and Standardized Indirect Effect of Stress on Quality of Life (QOL) through Emotion Focused Coping (EFC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.01	.04	.03	.19
Standardized	.06	.02	.02	.11

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that stress influenced quality of life vicariously through its impact on emotion focused coping. As can be seen in Table, stress significantly predicted emotion focused coping (α= .13; p<.001), further emotion focused coping significantly predicted quality of life (b=.79; p<.001). As mentioned in Table 36, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.01) based on 10,000 bootstrap samples is clearly above the zero (.03-.19). In addition, data suggests that there is an evidence of independent effect (direct effect) of stress on quality of life regardless of emotion focused coping (ć= -.78; p<.001). This indicates that emotion focused coping significantly mediates between the relationship of stress and quality of life.

Table 37   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Stress via Problem Focused Coping (PFC)*

		Consequent						
		M (PFC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	*ρ*		*Coeff.*	*SE*	*P*
X (Stress)	α	.06	.03	.02	ć	-.76	.09	<.001
M (PFC)		-	-	-	b	1.47	.21	<.001
Constant	i₂	15.59	.53	<.001	i₂	74.10	3.84	<.001
		R^2= .02				R^2= .26		
		$F(298, 1) = 5.30$*				$F(297, 2) = 52.68$***		

Note. PFC Problem Focused Coping; QOL Quality of Life.

Table 38   *Unstandardized and Standardized Indirect Effect of Stress on Quality of Life (QOL) through Problem Focused Coping (EFC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.08	.003	.00	.18
Standardized	.05	.03	.00	.10

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that stress influenced quality of life vicariously through its impact on problem focused coping. As can be seen in Table, stress significantly predicted emotion focused coping (α= .06; ρ<.05), further problem focused coping significantly predicted quality of life (b=1.47; ρ<.001). As mentioned in Table 38, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.08) based on 10,000 bootstrap samples is clearly above the zero (.001-.18). In addition, data suggests that there is an evidence of independent effect (direct effect) of stress on quality of life regardless of problem focused coping ($\acute{c}$= -.76; ρ<.001). This indicates that problem focused coping significantly mediates between the relationship of stress and quality of life.

Table 39   *Summary of Mediation Analysis Predicting Quality of Life (QOL) from Stress via Dysfunctional Coping (DC)*

			Conseq	uent				
		M (DC)				Y (QOL)		
Antecedent		*Coeff.*	*SE*	p		*Coeff.*	*SE*	*P*
X (Stress)	α	.28	.05	<.001	ć	-.79	.10	<.001
M (DC)		-	-	-	b	.40	.12	<.001
Constant	i_2	21.06	1.01	<.001	i_2	88.52	3.26	<.001
		$R^2 = .11$				$R^2 = .17$		
		$F(298, 1) = 38.43***$				$F(297, 2) = 31.31***$		

Note. DC Dysfunctional Coping; QOL Quality of Life

Table 40   *Unstandardized and Standardized Indirect Effect of Stress on Quality of Life (QOL) through Dysfunctional Coping (DC)*

Types of Effects	Coeff.	SE	LLCI	ULCI
Unstandardized	.11	.05	.03	.23
Standardized	.06	.03	.02	.13

Note. Coefficients, Standard Errors, Lower Level and Upper Level Confidence Intervals were calculated based on 10,000 bootstrap samples.

Findings indicated that stress influenced quality of life vicariously through its impact on dysfunctional coping. As can be seen in Table, anger significantly predicted emotion focused coping (α= .28; p<.001), further dysfunctional coping significantly predicted quality of life (b=.40; p<.001). As mentioned in Table 40, a bias-corrected bootstrap confidence interval for the indirect effect (αb=0.11) based on 10,000 bootstrap samples is clearly above the zero (.03-.23). In addition, data suggests that there is an evidence of independent effect (direct effect) of stress on quality of life regardless of dysfunctional coping (ć= -.79; p<.001). This indicates that dysfunctional coping significantly mediates between the relationship of stress and quality of life.

Additional Findings

Table 41   *Mean differences between Male and Female patients in terms of major study variables (N=300)*

Variable	Male (n = 199)		Female (n = 101)		t (298)	p	95% CI	
	M	SD	M	SD			LL	UL
1. QOLS	82.45	13.60	84.78	16.68	1.30	0.20	-5.87	1.21
2. BC	68.23	12.60	69.51	10.79	0.87	0.38	-4.17	1.61
3. NAS	52.75	20.69	52.61	19.81	0.06	0.96	-4.76	5.04
4. Depression	17.58	9.73	18.03	8.83	0.39	0.70	-2.72	1.82
5. Anxiety	18.44	8.34	19.57	7.43	1.15	0.25	-3.07	0.80
6. Stress	20.48	8.53	20.00	7.58	0.48	0.64	-1.50	2.45

Note. QOLS = Quality of Life Scale; BC = Brief Cope; NAS = Novaco Anger Scale

Table 41. An independent-samples t-test showed that there was no significant difference between male and female patients in terms of quality of life, coping strategies, anger, depression, anxiety and stress.

Table 42   *Mean differences between Single and Married patients in terms of major study variables (N=300)*

Variable	Single (n = 19)		Married (n = 281)		t (298)	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
1. QOLS	81.18	12.75	83.38	14.89	0.60	0.55	-5.07	9.47	--
2. BC	71.24	14.66	68.55	11.88	0.89	0.37	-8.60	3.24	--
3. NAS	51.47	14.48	52.84	20.74	0.27	0.79	-8.68	11.42	--
4. Depression	21.00	7.60	17.55	9.51	1.47	0.14	-8.08	1.18	--
5. Anxiety	22.94	7.04	18.59	8.08	2.17	0.03	-8.30	-1.41	0.57
6. Stress	23.18	6.50	20.15	8.30	1.48	0.14	-7.07	1.00	--

Note. QOLS = Quality of Life Scale; BC = Brief Cope; NAS = Novaco Anger Scale

Table 42. An independent-samples t-test showed that the anxiety mean score was significantly higher for single patients (M = 22.94, SD = 7.04) than married patients (M = 18.59, SD = 8.08), t (298) = 2.17, p <.05. However there was no significant difference between single and married patients in terms of quality of life, coping strategies, anger, depression and stress.

Table 43   *Mean differences between Urban and Rural patients in terms of major study variables*
(N=300)

Variable	Urban (n = 176) M	SD	Rural (n = 124) M	SD	t (298)	p	95% CI LL	UL	Cohen's d
1. QOLS	86.25	13.87	79.03	15.29	4.29	<.001	3.91	10.53	0.49
2. BC	69.97	12.30	66.70	11.37	2.34	0.02	0.51	6.03	0.28
3. NAS	54.81	19.81	49.65	20.91	2.17	0.03	0.47	9.84	0.25
4. Depression	17.38	9.63	18.21	9.17	-0.75	0.47	-3.02	1.35	--
5. Anxiety	18.57	7.86	19.11	8.34	-0.57	0.57	-2.40	1.32	--
6. Stress	20.58	8.49	19.90	7.83	-0.70	0.48	-1.23	2.58	--

Note. QOLS = Quality of Life Scale; BC = Brief Cope; NAS = Novaco Anger Scale

Table 43. An independent-samples t-test showed a significant difference between urban and rural patients in terms of quality of life, coping strategies and anger. The quality of life mean score was significantly higher for urban patients (M = 86.25, SD = 13.87) than rural patients (M = 79.03, SD = 15.29), t (298) = 4.29, p <.01. Similarly the coping strategies mean score was significantly higher for urban patients (M = 79.97, SD = 12.30) than rural patients (M = 66.70, SD = 11.37), t (298) = 2.34, p <.05. In addition anger mean score was also significantly higher for urban patients (M = 54.81, SD = 19.81) than rural patients (M = 49.65, SD = 20.91), t (298) = 2.17, p <.05. However there was no significant difference between urban and rural patients in terms of depression, anxiety and stress.

DISCUSSION

The studys showed that cardiac diseases affect individuals' cognitive, emotional and behavioral aspects and cause psychological or emotional disorders. Similarly psychological problems also lead to cardiac disease. Several research studies have confirmed the effects of hostility, anger, stress, depression and stress on cardiac health and functioning as well as the quality of life. The present study was aimed to examine the role of internalizing problems (depression, anxiety and stress) on quality of life among cardiac and diabetic patients. Strength of this study is that this study compares the cardiac and diabetic patients in regard of internalizing symptoms and quality of life whereas most of the studies just only focused on one disease. Results showed that depression, anxiety and stress are positively correlated with low quality of life and dysfunctional coping strategies among cardiac patients. Results revealed that diabetic patients have lower quality of life and anger as compared to cardiac patients; it could be due to that after diagnosis cardiac patients get more attention and care because cardiac diseases are considered more dangerous as compare to diabetes.

Whereas cardiac and diabetic are non-significant in depression anxiety and stress.Dysfunctional, emotion focused and problem focused coping strategies are found in both patients cardiac and diabetic. These results are similar to found by Day et al (2005), results showed that negative emotions such as depression, anxiety and stress, and thoughts play role in increasing the severity of cardiac disease as well as diabetic also. We can say that results are consistent with previous researches. Use of positive emotions and appropriate coping strategies helps to reduce the severity of the cardiac diseases and improve the cardiac functioning (Gross &

John, 2003). It is also revealed by literature that poor cognitive strategies such as rumination, catastrophizing and self-blame, cause emotional disturbance, whereas positive coping strategies are less vulnerable to cause cardiac diseases (Garnefski & Kraaij, 2006), Thus, the findings of the present study support the assumption that inappropriate coping strategies to deal with life problems leads to cardiac diseases (Martin & Dahlen, 2005). "Cognitive emotion regulation strategies" seems to be important in health and it is believed that "cognitive emotion regulation strategies" help people to manage and control negative emotions (Gross & John, 2003; Kraaij, Pruymboom, & Garnefski, 2002; Campbell-Sills & Barlow, 2007). Mostly, research studies indicate the strong relation between negative emotions and cardiac diseases (Rottenberg & Gross, 2003; Garnefski et al., 2001; Gross & John, 2003; Kraaij et al., 2010; Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2004). Therefore effective "cognitive emotion regulation strategies" or coping techniques are recommended for mental and psychological wellbeing along with medical interventions for cardiac diseases (Hasani, 2011).

The findings indicated that Anger influenced quality of life vicariously through its impact on emotion focused coping. As can be seen in table, anger significantly predicted emotion focused coping, further emotion focused coping significantly predicted quality of life. As mentioned in Table 10, a bias-corrected bootstrap confidence interval for the indirect effect based on 10,000 bootstrap samples is clearly above the zero. However, data suggests that there is no evidence of independent effect (direct effect) of anger on quality of life regardless of emotion focused coping. This indicates that emotion focused coping significantly mediates between the relationship of anger and quality of life.

The findings indicated that Anger influenced quality of life vicariously through its impact on problem focused coping. As can be seen in Table, anger significantly predicted problem

focused coping, further problem focused coping significantly predicted quality of life. As mentioned in Table 12, a bias-corrected bootstrap confidence interval for the indirect effect based on 10,000 bootstrap samples is clearly above the zero. In addition, data suggests that there is an evidence of independent effect (direct effect) of anger on quality of life regardless of problem focused coping. This indicates that problem focused coping significantly mediates between the relationship of anger and quality of life. These findings of our study are consistent with previous researches.

The results of this study also indicate that depression, anxiety, stress and anger mediate the quality of life through dysfunctional, problem focused and emotion focused coping strategies. It means that inappropriate coping strategies cause more negative emotions which cause more severe consequences for cardiac and diabetic patients.

The findings also revealed that depression influenced quality of life vicariously through its impact on emotion focused coping. As can be seen in table, depression significantly predicted emotion focused coping, further emotion focused coping significantly predicted quality of life. As mentioned in table 16, a bias-corrected bootstrap confidence interval for the indirect effect based on 10,000 bootstrap samples is clearly above the zero. In addition, data suggests that there is an evidence of independent effect (direct effect) of depression on quality of life regardless of emotion focused coping. This indicates that emotion focused coping significantly mediates between the relationship of depression and quality of life.

Relation between socio-economic status and cardiac or diabetic diseases and mental health are complex and it was difficult to properly investigate in this study due to some limitations. The analysis were made on the basis of cross sectional data therefore I could not

possible to make properly relationship between cardiac diseases, diabetic diseases, internalizing problems, coping strategies and socio-economic status.

According to results it is important for medical professionals to examine the "quality of life" of cardiac and diabetic patients and find ways to improve it. The results of this study showed that diabetic patients have lower quality of life as compared to cardiac patients which supports the previous studies (Reilly, 2011; Bosić, 2012).

My results indicate that diabetic patients have higher quality of life as compared to cardiac patients (Table 4). Similarly diabetic patients found to have higher level of anger than cardiac patients whereas the anxiety and depression level was nonsignificant. These results could be due to the perception about the diabetic and cardiac diseases such as diabetic is considered less dangerous than cardiac diseases in our culture. The comparative literature is very little in this regard I could only found only one study regarding the comparison of depression anxiety and stress among cardiac, diabetic and migraine patients conducted by Hamedi et.al (2013) who found significant difference in anxiety, stress anger and depression in all these groups whereas my findings show difference between cardiac and diabetic patients only with anger. My findings indicate the diabetic patients have higher level of anger as compared to cardiac patients whereas the anxiety, stress and depression are nonsignificatn. Results also indicate anger as predictor of emotion focused and problem focused coping strategies among cardiac patients. Similarly only problem focused coping strategy is found as predictor of good quality of life among cardiac patients. Similarly anger is found as predictor of emotion focused, problem focused and dysfunctional coping strategy among diabetic patients. Anger is different as predictor of dysfunctional coping strategy between cardiac and diabetic patients. Anger is found only in diabetic patients as predictor of dysfunctional coping strategy. Similarly only problem focused

found as positive predictor of quality of life among diabetic patients. Same findings are in cardiac patients in my study.

Gender difference is found nonsignificnt with regard to quality of life, anxiety, depression, stress and anger in diabetic and cardiac patients. Similarly marital status was also nonsignificant in all aspects. Quality of life found higher in urban patients of urban areas as compared to rural areas the reason is the availability of facilities available in urban areas such as pure water, financial conditions, hospitals etc. Anger is found higher in urban patients as compared to rural patients because urban patients have less opportunity of emotional catharsis and leisure activities.

Cultural and regional factors are also important factors for cardiac and diabetic diseases in Pakistan. The people have no concept of quality of life and healthy life style. Foods with high calories and fats are mostly used in our diet such as Banaspati Ghee, fats, meats and cooking ingrediants which could cause serious problems in health. Similarly lack of education and health facilities are also a significant reason of such diseases in South Punjab. Poverty is considered main hindrance in treatment of such diseases on regular basis.

Conclusion:

Diabetes and Cardiac diseases are affecting millions of people every years and situation is very dangerous in developing countries. Mostly, these diseases are treated physiologically and psychological aspects of these diseases are ignored even in the developing countries. In fact, psychological factors such as anger, anxiety, stress and depression play major role in the severity and maintenance of these diseases as revealed in the findings of this study. Similarly, low quality of life also negatively effect in these diseases also revealed in my findings and other literature. All mentioned above factors indirectly affected by individuals coping strategies. These issues are

studied separately among diabetic and cardiac patients in most of the studies and literature. The aim of this study was to compare both of these diseases along these factors. Findings of this research indicate that anger, anxiety, stress and depression negatively affect quality of life and play mediating role in emotion focus, problem focus and dysfunctional coping strategies. There is need to do psychological intervention of these patients along with medical treatment and there is need to work on the development of psychological strategies to deal with mental health problems associated with cardiac and diabeted diseases. The findings indicate that diabetic patients have low quality of life as compare to cardiac patients; it could be after diagnosis, cardiac patients get more attention and care because cardiac diseases are considered more dangerous as compare to diabetes.

Practical Implication

- This study is beneficial to the society as it elaborates psychological problems in cardiac and diabetic patients and provides the coping mechanism to the patients in dealing with the psychological problems.

- The study is pioneering in the regard that it analyses the role of coping strategies used for solving the psychological problems because of diabetes and cardiac diseases. Furthermore, the study will help to understand the defensive or coping behaviors of patients suffering from the diseases.

- This study will assist the researchers to explore certain coping strategies and their comparison with the behaviors of the patients suffering from other diseases (e.g. tuberculosis and cancer).

Limitations:

1. The major limitation of this study is the cross-sectional design, which make complex to find out casual relation of variables with socio-economic status because cross sectional design have more complex and variable data which make difficult to find exact casual relation of variables.

2. The other limitation of this study is, not to make casual relation of variables with gender which is an important element related to cardiac and diabetic diseases because there is no equal data regarding gender of the participants as mentined in results females were only 34% of overall population which were about half of the males 66%. Therefore, casual relation with regard to gender may not be appropriately generalizable.

3. Cultural and regional factors are not studied in this study due to the diversity of regional culture.

Suggestions:

1. There is need to conduct longitudinal research on such significant issues.

2. There are vast cultural differences found in Pakistan so a comparative study related to cultural patterns and cardiac or diabetic diseases should be made.

3. There is need to study the internalizing problems and quality of life by comparing province wise.

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Appendices

Appendix-A

Informed Consent

Effects of Internalizing Problems on Quality of Life in Diabetic and Cardiac Patients: Mediating Role of Coping Strategies

This research is going to conduct for the purpose investigate the effects of mental health problems such as anxiety, depression, stress and anger on quality of life of cardiac and diabetic patients as well as to investigate that what is the role of copig strategies in this perspective.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any),(4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

_____

Participant's Name (Printed)*

_____   _____

Participant's signature*   Date

_____   _____

Name of person obtaining consent (Printed)   Signature of person obtaining consent

Participants wishing to preserve some degree of anonymity may use their initials (from the American Psychological Association Code of Ethics)

If your study involves use of assessment procedures which may unveil psychological or physical problems of which your participants might be unaware and which may endanger their present or future well-being, the following is an example of the kind of required additional language likely appropriate.

I am aware that participation in this study involves completion of some standardised tests [specify as relevant] which are routinely used as preliminary screens for clinical conditions/impairments of which I might not be aware. I understand that these assessments are not sufficient for diagnostic purposes, nor will they be used in this manner in this study. I also understand that the researchers cannot inform participants of individual test scores, but in the event that I produce scores of potential clinical concern, researchers should (check one and provide relevant contact information):

_____Contact me at:_____

_____Contact my GP at _____

_____Do nothing. I absolve the researchers of any obligation to contact me about this.

Appendix-B

<div dir="rtl">

کوائف

نام: ـــــــــــــــــــ   عمر: ـــــــــــــــــــ

تعلیم: ـــــــــــــــــــ   جنس: ـــــــــــــــــــ

ازدواجی حیثیت: ـــــــــــــــــــ   پیشہ: ـــــــــــــــــــ

بیماری: ـــــــــــــــــــ   بیماری کو کتنا عرصہ ہوا: ـــــــــــــــــــ

علاقہ: دیہی   شہری

</div>

Appendix-C

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ڈی اے ایس الیس (سکیل)

نام:............................   تاریخ:............

ہدایات: برائے مہربانی ہر فقرے کا مطالعہ کریں اور ایک نمبر 0-1-2 یا 3 پر دائرہ لگائیں جو یہ ظاہر کرنے کی گزشتہ ہفتے کہ بیان آپ پر کس حد تک لاگو ہوا۔ کوئی غلط یا درست جوابات نہیں ہیں۔ کسی بھی بیان پر بہت زیادہ وقت صرف مت کریں۔ کسی بھی جواب کی شدت کو معیار کو جانچنے کا پیمانہ درج ذیل ہے۔

0 = مجھ پر بالکل بھی لاگو نہیں ہوتا۔

1 = مجھ پر کسی حد تک یا کچھ وقت کے لیے لاگو ہوتا ہے۔

2 = مجھ پر کافی حد تک یا کافی وقت کے لیے لاگو ہوتا ہے۔

3 = مجھ پر بہت حد تک یا زیادہ وقت کے لیے لاگو ہوتا ہے۔

مجھ پر بہت حد تک یا زیادہ تر وقت کے لئے لاگو ہوتا ہے	مجھ پر کافی حد تک یا کافی وقت کے لئے لاگو ہوتا ہے	مجھ پر کسی حد تک یا کچھ وقت کے لئے لاگو ہوتا ہے	مجھ پر بالکل بھی لاگو نہیں ہوتا	فقرے	نمبر شمار
3	2	1	0	میں نے آپ کو معمولی باتوں کی وجہ سے پریشان پایا	1
3	2	1	0	میں اپنا منہ خشک ہونے کے بارے میں جانتا تھا	2
3	2	1	0	میں کسی بھی قسم کے مثبت احساس نہیں رکھ سکا	3
3	2	1	0	مجھے سانس لینے میں دشواری کا سامنا ہوا (مثلًا سانس کا زیادہ ہو تیزی سے چلنا،جسمانی مشقت کی غیر موجودگی میں سانس لینے میں وقت ہوتا)	4
3	2	1	0	میں خود کو کام کرنے کے لیے مستعد نہ پا سکا	5
3	2	1	0	میرا رد عمل صورت حال کی مناسبت سے شدید ہوتا	6
3	2	1	0	مجھے لرکھڑانے / کانپنے کا احساس ہوا (مثلًا ہاتھوں کا جواب دینا)	7
3	2	1	0	مجھے پرسکون رہنا مشکل محسوس ہوا	8
3	2	1	0	میں نے خود کو ایسی صورت حال میں پایا جس نے مجھے بہت پریشان کر دیا۔ میں نے ان کے ختم ہونے پر بہت بہتر محسوس کیا۔	9

</div>

3	2	1	0		
3	2	1	0	مجھے محسوس ہوا کہ میرے پاس آئندہ کرنے کے لیے کچھ نہیں ہے۔	10
3	2	1	0	میں نے محسوس کیا کہ میں جلدی پریشان ہو جاتا ہوں	11
3	2	1	0	میں نے محسوس کیا کہ میں بہت زیادہ اعصابی توانائی استعمال کرتا رہا ہوں۔	12
3	2	1	0	میں نے خود کو غمگین اور افسردہ محسوس کیا	13
3	2	1	0	جب بھی مجھے کسی معاملے میں دیر ہوئی میں نے خود کو بے صبر محسوس کیا (مثلاً لفٹ میں، ٹریفک لائٹس کی وجہ سے یا انتظار کروانے پر)	14
3	2	1	0	مجھے بے ہوشی کا احساس ہوا	15
3	2	1	0	مجھے احساس ہوا کہ میں نے ہر چیز میں دلچسپی کھو دی ہے	16
3	2	1	0	مجھے احساس ہوا کہ بحیثیت انسان میری کوئی اہمیت نہیں	17
3	2	1	0	مجھے احساس ہوا کہ میں ذرا احساس طبیعت کا مالک ہوں	18
3	2	1	0	مجھے احساس ہوا کہ زندگی بڑی بے وقعت ہے	21
3	2	1	0	مجھے کام ختم کرنا مشکل محسوس ہوا	22
3	2	1	0	مجھے نکلنے میں دشواری کا سامنا ہو	23
3	2	1	0	مجھے اپنے کئے ہوئے کاموں سے کسی لطف کا احساس نہیں ہوا	24
3	2	1	0	کسی بھی جسمانی مشقت کی غیر موجودگی میں، میں اپنے دل کی حرکت سے آگاہ با خبر تھا (مثلاً دل کی دھڑکن بڑھنے کا احساس، دل کی دھڑکن میں بے قاعدگی)	25
3	2	1	0	میں نے بے دلی اور مایوسی محسوس کی	26
3	2	1	0	مجھے احساس ہوا کہ میں بہت چڑچڑا ہوں	27
3	2	1	0	مجھے احساس ہوا کہ میری پریشانی حد سے بڑھ گئی ہے	28
3	2	1	0	جب بھی کسی بات نے مجھے پریشان کیا۔ اس کے بعد مجھے پرسکون ہونے میں دشواری کا سامنا کرنا پڑا	29
3	2	1	0	مجھے اس بات کا ڈر محسوس ہوا کہ میں کسی معمولی مگر غیر مانوس کام کی وجہ سے نکال دیا جاؤں گا	30
3	2	1	0	میں کسی بھی چیز کے بارے میں پر جوش ہونے کے قابل نہیں تھا	31

3	2	1	0	میں نے اپنے کام کے دوران مداخلت کو برداشت کرنے میں مشکل محسوس کی	32
3	2	1	0	میں اعصابی تناؤ کی حالت میں تھا	33
3		1	0	میں نے محسوس کیا میں کافی غیر اہم تھا	34
3	2	1	0	میں نے ایسی کسی بھی بات کو برداشت نہیں کیا جو میرے کام کو جاری رکھنے میں مداخلت کرتا تھا	35
3	2	1		میں نے خود کو خوفزدہ محسوس کیا	36
3	2	1	0	مجھے مستقبل میں کوئی ایسی چیز نظر نہیں آئی جس کے متعلق میں پُرامید ہوں	37
3	2	1	0	مجھے محسوس ہوا کہ زندگی بے معنی ہے	38
3	2	1	0	میں نے خود کو بے چین ہوتے محسوس کیا	39
3	2	1	0	میں ان صورت حال کے بارے میں پریشان تھا جن سے میں خوفزدہ ہو جاتا اور خود کو بے وقوف بناتا	40
3	2	1	0	میں نے کپکپاہٹ محسوس کی (مثلاً ہاتھوں میں)	41
3	2	1	0	میں نے کسی بھی کام کے پہل کرنے میں مشکل محسوس کی	42

Appendix-D

Novaco Anger Inentory (short Form)

اس سکیل میں کچھ ایسی صورت حال بیان کی گئی ہیں جو غصہ دلانے والی ہیں ۔ ایسا تصور کرنے کی کوشش کریں کہ یہ واقعہ آپ کے ساتھ ہوتو آپ کو کس حد تک غصہ آئے گا ۔ اور اسکی شدت کے مطابق نشان لگا ئیں ۔ حقیقت میں کچھ اور جوبات بھی غصہ کی شدت پر اثر انداز ہوسکتی ہیں (مثلاً صورت حال کیا تھی کیسے ہوا، کس وجہ سے ہوا) جو اس میں بیان نہیں کی گئی ہے ۔ یہ سکیل آپ کے عمومی ردِعمل کے بارے میں ہے ۔ اسلئے خاص وجو ہات کو حذف کر لیا ہے ۔ براہ مہربانی اپنے جوابات عام ردِعمل کے طور پر ہی دیں ۔

مندرجہ ذیل صورت حال میں آپ کو کتنا غصہ آئے گا ۔ غصہ کی شدت والے خانے میں (درست) کا نشان لگا ئیں ۔ (براہ مہربانی کسی ایک خانہ میں ہی نشان لگا ئیں)

بہت زیادہ	زیادہ	کسی حد تک (درمیانہ سا)	کم	بہت کم	صورت حال	نمبر شمار
					آپ نے مشین کھولی جو ابھی لے کر آئے تھے اسکو چالو (No) کیا اور پتہ چلا کہ کام نہیں کرتی ۔	1
					کسی نے آپ سے کوئی چیز ٹھیک کروانے کے زیادہ پیسے لے لئے ہوں ۔	2
					صرف آپ کو غلطی سدھارنے کو کہا جائے جب کہ دوسروں کا وہی عمل نظر انداز کر دیا جائے ۔	3
					جب آپ کی گاڑی کیچڑ یا ریت میں پھنس جائے ۔	4
					آپ کسی سے بات کر رہے ہوں اور وہ آپ کو جواب نہ دے ۔	5
					جب کوئی خود کو ویسا ظاہر کرے جیسا وہ نہیں ہے ۔	6
					آپ کیفے ٹیریا میں چار کپ کافی اپنی میز کی طرف لے جانے کی کوشش کر رہے ہو کوئی آپ سے ٹکرا جائے اور کافی گر جائے ۔	7
					آپ نے کپڑے لٹکائے ہوئے تھے کسی نے نیچے گرا دیئے اور اٹھا کر واپس نہیں لٹکائے ۔	8
					اجوں ہی آپ سٹور میں داخل ہوئے ایک سیلز مین آپ کے ساتھ ساتھ پھرنے لگا ۔	9
					آپ کسی شخص کے ساتھ کہیں جانے کا انتظام کیا ہوا اور وہ آخری منٹ پر جانے سے انکار کر دیئے ۔	10
					کوئی آپ کو طنزیہ مزاح کا نشانہ بنائے ۔	11

					ٹریفک سگنل پر آپ کی گاڑی کا انجن بند ہو جائے اور آپ کے پیچھے والا آدمی مسلسل ہارن دے رہا ہو۔	12
					آپ نے کار پارکنگ میں غلطی سے، غلط طرح موڑ لیا جیسے ہی آپ گاڑی سے نکلتے ہیں کوئی آپ پر چلانے لگے، "تم نے گاڑی چلانا کہاں سے سیکھا"	13
					کوئی شخص خود غلطی کرکے اس کا الزام آپ پر لگا دے۔	14
					آپ پوری توجہ سے کوئی کام کرنا چاہتے ہیں لیکن ساتھ بیٹھا ہوا آدمی مسلسل اپنا پاؤں زمین پر مار رہا ہو۔	15
					اگر آپ کسی کو کوئی اہم کتاب یا چیز ادھار دیں اور وہ واپس نہ کرے۔	16
					آپ کا دن بہت مصروف گزر رہا ہو اور آپ جس کے ساتھ رہ رہے ہو وہ آپ سے لگہ کرے کے جو کام کرنے کو کہا تھا وہ آپ بھول گئے۔	17
					آپ اپنے بہت قریبی شخص سے کوئی بہت اہم بات کرنا چاہتے ہو لیکن وہ آپ کو اپنی بات بتانے کا موقع نہیں دے رہا۔	18
					کسی ایسے شخص سے بحث پر جس کو موضوع کے بارے میں بہت کم علم ہو لیکن وہ اپنی بات پر ڈٹا رہے	19
					جب آپ کسی سے بات کر رہے ہوں اور کوئی تیسرا اس میں مداخلت کرے	20
					آپ کو کہیں پہنچنے کی جلدی ہو اور آپ کے آگے جانے والی کار 60 کلومیٹر گھنٹہ جانے والی لائن میں 40 کلومیٹر گھنٹہ سے جا رہی ہے اور آپ اس سے آگے بھی نہیں جا سکتے۔	21
					اگر آپ کا پاؤں چیونگم پر آ جائے	22
					جب آپ کہیں سے گزریں اور لوگوں کا ایک گروہ آپ کا مذاق اڑانے لگے۔	23
					کہیں پہنچنے کی جلدی میں آپ کا بہترین سوٹ کسی نوکیلی چیز سے اٹک کر پھٹ جائے	24
					آپ نے فون ملانے کے لیے آخری سکہ استعمال کیا لیکن اس سے پہلے کہ نمبر ملے فون کٹ گیا اور سکہ ضائع ہو گیا۔	25

Appendix-E

Brief Cope Inventory

اس سوال نامہ میں موجود بیانات ان طریقوں کے متعلق ہیں جن کے ذریعے آپ اپنی زندگی میں اس حادثہ کی وجہ سے پیدا ہونے والے ذہنی دباؤ سے نپٹ رہے ہیں۔ مسائل سے نبرد آزما ہونے کے بہت سے طریقے ہیں۔ لیکن میری دلچسپی میں ہے کہ آپ کس طرح ان حالات سے نبرد آزما ہو رہے ہیں۔ ہر بیان مسائل/مشکلات سے نپٹنے کے ایک خاص طریقے کو ظاہر کرتا ہے لیکن ہم یہ جاننا چاہتے ہیں کہ کتنے تسلسل سے آپ اس کا استعمال کرتے رہے ہیں۔ جواب دیتے وقت یہ خیال نہ کریں کہ یہ بیان آپ کو درست لگ رہا ہے یا نہیں بلکہ آپ ایسا کرتے ہیں یا نہیں اور اس کے لیے موزوں جوابی ردِعمال کا استعمال کریں۔ ہر بیان کا جواب دینے سے پہلے غور سے پڑھیں، سوچیں اور پھر اس کے مطابق جواب دیں۔ ہم آپ سے امید رکھتے ہیں کہ آپ اپنے بارے میں سچ بتائیں گے۔

بیانات کے جواب سے پہلے نیچے دی گئی مثال کو غور سے پڑھ لیں۔

مثال:

میں اکثر ایسا کرتا رہوں	میں کسی حد تک ایسا کرتا رہا ہوں	میں تھوڑا بہت ایسا کرتا رہا ہوں	میں قطعاً ایسا نہیں کرتا رہا ہوں	بیانات	نمبر شمار
				میں اس حادثہ کے متعلق باتوں کو بھولنے کے لیے تسبیح کرتا/کرتی ہوں	1

میں اکثر ایسا کرتا رہا ہوں	میں کسی حد تک ایسا کرتا رہا ہوں	میں تھوڑا بہت ایسا کرتا رہا ہوں	میں قطعاً ایسا نہیں کرتا رہا	بیانات	نمبر شمار
				میں اپنے ذہن سے ان چیزوں یا باتوں کو نکالنے کے لیے کام اور دیگر سرگرمیوں میں مصروف رہنے کی کوشش کرتا رہتا رہتا ہوں۔	1
				میں اپنی توجہ اپنے موجودہ حالات کو بہتر بنانے کی کوششوں پر مرکز رکھتا رکھتی ہوں	2
				میں اپنے آپ کو سمجھا تا رہتا رہتی ہوں کہ یہ حقیقت نہیں ہے۔	3
				میں بہتر محسوس کرنے کے لیے شراب اور نشہ آور ادویات استعمال کرتا رہتا رہتی ہوں	4
				مجھے دوسروں سے جذباتی سہارا ملتا رہتا ہے	5
				میں نے اس صورت حال سے نپٹنے کی کوشش نہیں کرتا/کرتی	6
				میں صورت حال کو بہتر بنانے کے لیے کچھ نہ کچھ کرتا رہتا رہتی ہوں۔	7
				میں اس بات پر یقین کرنے سے انکار کرتا رہتا/کرتی رہتی ہوں کہ یہ حادثہ ہوا ہے۔	8

				میں ایسی باتیں کرتا رہتا/رہتی ہوں جن سے مجھے اپنے ناخوشگوار احساسات سے چھٹکارا مل سکے۔	9
				میں دوسرے لوگوں سے مدد اور صلاح لیتا/لیتی ہوں	10
				میں اس صورت حال سے بچنے کے لیے شراب اور دیگر نشہ آور ادویات کا استعمال کرتا/کرتی ہوں۔	11
				میں اس حادثے کو مختلف پہلوؤں سے دیکھنے کی کوشش کرتا رہتا ہوں۔	12
				میں خود پر تنقید کرتا/کرتی ہوں۔	13
				میں ان حالات سے بچنے کے لیے کوئی حکومت عملی اپنانے کی کوشش کرتا/کرتی ہوں۔	14
				کوئی ہے جو میری صورت حال کو سمجھ سکتا/سکتی ہے اور یہ میرے لیے سکون کا باعث ہے۔	15
				میں اس صورت حال سے مقابلہ کرنے کی کوشش نہیں کرتا/کرتی ہوں۔	16
				میں اپنے ساتھ ہونے والے حادثے میں اچھی چیزیں تلاش کرنے کی کوشش کرتا/کرتی ہوں۔	17
				میں اس حادثے کے متعلق لطیفے بناتا رہتا/رہتی ہوں	18
				میں اس حادثے کے متعلق کم سوچنے کے لیے کچھ نہ کچھ کرتا/کرتی ہوں (مثلاً فلم یا T.V دیکھنا، پڑھنا، منصوبے بنانا، سونا اور زیادہ سونا اور زیادہ بیداری کرنا۔	19
				میں اپنے ساتھ ہونے والے حادثے کی حقیقت کو تسلیم کرتا/کرتی ہوں	20
				میں اپنے منفی احساسات کا اظہار کرتا/کرتی ہوں۔	21
				میں اپنے مذہب اور روحانی عقائد میں سکون تلاش کرتا/کرتی ہوں	22
				میں لوگوں سے مدد اور مشورہ لیتا/لیتی ہوں کہ اس حادثے سے بچنے کے لیے مجھے کیا کرنا چاہیے۔	23
				میں اس صورت حال میں رہنا سیکھ گیا/گئی ہوں۔	24
				میں بہت زیادہ سوچتا/سوچتی ہوں کہ مجھے ان حالات میں کیا اقدامات اختیار کرنے چاہییں۔	25
				میں اپنے ساتھ ہونے والے حادثے کے لیے خود کو الزام دیتا/دیتی ہوں۔	26
				میں دعایا وظائف کرتا/کرتی ہوں۔	27
				میں اس حادثے کو مزاحیہ انداز میں لیتا/لیتی ہوں۔	28

Appendix-F

WHO QCOL-BREF

برائے مہربانی ہر سوال کو غور سے پڑھیں اور پچھلے دو ہفتوں کے دوران اپنے احساسات کی روشنی میں سکیل میں دیئے گئے اس نمبر پر دائرہ لگائیں جو آپ کے احساسات کی بہترین ترجمانی کرتا ہو۔

بہت اچھی	اچھی	نہ خراب نہ اچھی	خراب	بہت خراب	
5	4	3	2	1	1۔ آپ اپنے معیار زندگی کو کس سطح پر پاتے ہیں؟

بہت مطمئن	مطمئن	نہ مطمئن نہ غیر مطمئن	کافی حد تک غیر مطمئن	بہت غیر مطمئن	
5	4	3	2	1	2۔ آپ اپنی صحت کے بارے میں کس حد تک مطمئن ہیں؟

مندرجہ ذیل سوالات ان تجربات سے متعلق ہیں جو پچھلے دو ہفتوں کے دوران آپ پر گزرے

انتہائی مقدار میں	کافی مقدار میں	درمیانی مقدار میں	معمولی مقدار میں	بالکل نہیں	
5	4	3	2	1	3۔ جو کام آپ کو کرنے کی ضرورت ہے آپ کا جسمانی درد اس میں کس حد تک رکاوٹ بنتا ہے؟
5	4	3	2	1	4۔ آپ کو اپنی روز مرہ زندگی میں کام کرنے کے لئے طبی علاج کی کتنی ضرورت ہے؟
5	4	3	2	1	5۔ آپ زندگی سے کتنا لطف اندوز ہوتے ہیں؟
5	4	3	5	1	6۔ آپ کس حد تک اپنی زندگی کو بامعنی محسوس کرتے ہیں؟

بہت زیادہ	بہت	درمیانہ/درمیانی	معمولی	بالکل نہیں	
5	4	3	2	1	7۔ آپ میں توجہ مرکوز کرنے کی صلاحیت کتنی اچھی ہے؟
5	4	3	2	1	8۔ آپ اپنی روز مرہ زندگی میں خود کو کتنا محفوظ محسوس کرتے ہیں؟
5	4	3	2	1	9۔ آپ کا طبی ماحول کتنا صحت مند ہے؟

مکمل طور پر	بہت حد تک	کچھ حد تک	تھوڑا سا/تھوڑی سی	بالکل نہیں	
5	4	3	2	1	10 ۔ کیا آپ روزمرہ زندگی کے لیے کافی توانائی رکھتے ہیں؟
5	4	3	2	1	11 ۔ کیا آپ اپنی جسمانی شکل وصورت کو قبول کر پاتے/اپاتی ہیں ۔
5	4	3	2	1	12 ۔ کیا آپ کے پاس اپنی ضروریات پوری کرنے کے لئے کافی رقم ہے؟
5	4	3	2	1	13 ۔ آپ کو پورو زمرہ کے زندگی کے لئے درکار معلومات کتنی میسر ہیں؟
5	4	3	2	1	14 ۔ آپ کو فرصت کے لمحات گزارنے کے مواقع کس حد تک میسر ہیں؟
5	4	3	2	1	15 ۔ آپ اپنے آپ کو کسی کام کے لئے جسمانی طور پر آمادہ کر پاتے ہیں؟

مندرجہ ذیل سوالات میں پوچھا گیا ہے کہ آپ نے اپنی زندگی کے مختلف پہلوؤں کے بارے میں گزشتہ دو ہفتوں کے دوران کتنا اچھا اور مطمئن محسوس کیا ۔

بہت مطمئن	مطمئن	نہ مطمئن نہ ہی غیر مطمئن	کافی حد تک غیر مطمئن	بہت غیر مطمئن	
5	4	3	2	1	16 ۔ آپ اپنی نیند سے کتنے مطمئن ہیں؟
5	4	3	2	1	17 ۔ آپ اپنے روزمرہ زندگی کے معمولات ادا کرنے کی اہلیت سے کتنا مطمئن ہیں؟
5	4	3	2	1	18 ۔ آپ کام کے لئے اپنی استعداد سے کتنے مطمئن ہیں؟
5	4	3	2	1	19 ۔ آپ اپنے آپ سے کتنا مطمئن ہیں؟
5	4	3	2	1	20 ۔ آپ اپنے ذاتی تعلقات سے کتنا مطمئن ہیں؟
5	4	3	2	1	21 ۔ آپ اپنی جنسی زندگی سے کتنے مطمئن ہیں؟
5	4	3	2	1	22 ۔ آپ اپنے دوستوں سے ملنے والے سہارے سے کتنے مطمئن ہیں؟
5	4	3	2	1	23 ۔ آپ جس جگہ رہتے ہیں وہاں کے حالات سے کتنا مطمئن ہیں؟
5	4	3	2	1	24 ۔ آپ طبی سہولیات تک اپنی رسائی سے کتنا مطمئن ہیں؟
5	4	3	2	1	25 ۔ آپ اپنے ذرائع آمد ورفت سے کتنا مطمئن ہیں؟

ہمیشہ	اکثر اوقات	بعض اوقات	شاذونادر	کبھی نہیں	
5	4	3	2	1	26 ۔ آپ کو کتنی بار منفی احساسات جیسا کہ افسردگی، مایوسی، اضطراب، ڈپریشن ہوتے ہیں؟

APPENDIX-E

TYPES OF CARDIAC DISEASES

Sr. No	Disease	Description
1	Coronary artery disease	This disease is also known as coronary heart disease and ischemic heart disease.
2	Peripheral arterial disease	This disease damages the blood vessels which supply the blood towards peripheries such as arms and legs.
3	Cerebrovascular disease	It affects the blood vessels which supply blood towards the brain; Stroke is also its type.
4	Renal artery stenosis and aortic aneurysm	There are different kinds of cardiovascular diseases that comprise the heart.
5	Cardiomyopathy	It affects the cardiac muscles
6	Hypertensive heart disease	This disease is caused by high blood pressure or hypertension.
7	Heart failure	A syndrome causes the heart's inability in supplying blood appropriately to the tissue to perform metabolic functions.
8	Pulmonary heart disease	In this disease, right side of heart is affected along with respiratory system.
9	Cardiac dysrhythmias	These are malfunctioning of the rhythm of the heart.
10	Inflammatory heart disease	It is endocarditic inflammation of the inner stratum of the heart.

11	The endocardium	The structures mostly involve the heart valves.
12	Inflammatory cardiomegaly	Inflammation of the myocardium, the muscular division of the heart, is also called as enlarged heart.
13	Valvular heart disease	It damages any valve of the heart.
14	Congenital heart disease	It is the abnormality of the structure of the heart.
15	Rheumatic heart disease	This disease causes permanent damage to valves of the heart caused by rheumatic fever.