ORIGINAL ARTICLE

Assessment of Quality of Life in Coronary Artery Disease Patients Using who QOL Bref

ADEEL AHMED[1], MUHAMMAD MUNEEB[2], ATTAULLAH KHAN NIAZI[3], KANZA SANA UMER[4], ZANIB JAVED CHATHA[5], SANA RASHEED[6]
[1]PGR, Pediatric Surgery
[2]Assistant Professor, Department of Cardiology, Shalamar Medical & Dental College, Lahore
[3]Assistant Professor, Department of Cardiovascular Surgery, Shalamar Medical & Dental College, Lahore.
[4]Clinical Psychologist, Kingdom of Saudi Arabia
[5]House Officer Cardiology Department, Shalamar Hospital
[6]Consultant Gynaecologist
Correspondence to: Adeel Ahmed, Email: aadeel93@hotmail.com

ABSTRACT

Study Objective: The objective of my study is assess the quality of life in coronary artery disease patients using WHO QoL BREF and to identify the different variables and factors which are affecting the quality of life in CAD patients in our population in general and the economic progress of the country in particular.

Material & Methods: The study design will be cross-sectional and purposive sampling technique will be used. The study population will be the patients presenting in cardiology OPD of Shalamar hospital & Punjab Institute of Cardiology Lahore. Inclusion criteria will be the patients of both sexes above 30 years and exclusion criteria will be the patients with ailments other than coronary artery diseases.

Results: A total of 611 CAD patients includes in for the research. 305 from Public & 306 from private hospital. Mean age was 56 years out of which 377 (61.7%) were male patients and 234 (38.3%) were females. Out of 611 patients that were included in the study 19 (3.1%) rated their quality of life very poor; 265 (43.4%) poor; 200 (32.7%) neither poor nor good & 127 (20.8%) good.

Conclusion: The study showed life's quality and general wellbeing, with the majority of patients having a "poor" life's quality . The relationship among quality of life and patients' perceptions of health and age was statistically significant.

INTRODUCTION

Heart diseases affect millions of people worldwide.

Researchers always focus mainly on mortality and morbidity as an outcome in patients with CAD. However, there has recently been a surge in interest in assessing their quality of life, as there is a growing realization that clinical decision-making based purely on morbidity and mortality is insufficient. The health-related quality of life (HrQoL) is regarded as a key indicator of the intervention's success. HrQoL has been linked to increased severity of coronary artery disease, depression and fatigue symptoms, and poorer cognitive function.[1, 2, 4, 6]

Quality of life is defined by the World Health Organization (WHO) as an individual's self-perception of their place, position, and status in the culture and society in which they live, as well as how well their goals, standards, and demands fulfil their expectations. It is a multi-faceted notion influenced by one's physical and psychological well-being, personal views, level of independence, and social interactions. [3, 5, 7] Different studies has tried to find out the relationship that what factors affect the quality of life of CAD patients. Several investigations have attempted to analyse QOL result to determine the effects of CAD on QOL. Depression was defined as being as essential as heart function in terms of QoL among individuals with coronary artery disease, and as one of the most important predictors of poor mental and physical health. Depressive symptoms have also been linked to poor treatment adherence.[8]

Even when compared to patients in a higher New York Heart Association class, patients with negative mood states report poorer QoL and greater functional impairment than non-depressed patients, implying that interpretations of function, rather than clinical condition, drive QoL outcomes. Although depression is less common than anxiety, it has a considerable cardiotoxic influence on heart failure patients' prognosis, morbidity, and mortality. After correcting for baseline cardiac function, neuroticism, gender, and age, depressed people have a 36% increased risk of mortality (vs. 16%) and an 87 percent increased chance of hospital readmissions (vs. 74%) compared to non-depressed people. Furthermore, compared to their non-depressed colleagues, depressed individuals with heart failure are twice as likely to die prematurely, and they produce a mortality rate of 12%.[9]

Another study in Philadelphia, USA, found that the best quality of life was inversely linked with long-term mortality, both vascular and non-vascular, regardless of baseline primary vascular risk factors, social support, cognition, depression, and functional status. Non-fatal vascular events were not linked with QoL.[10]

Patients in the panic disorder associated chest pain group had a worse quality of life than those in the CAD and healthy control groups, according to a study conducted in Delhi, India on quality of life in patients with coronary artery disease and panic disorders. This emphasises the importance of a thorough diagnosis and quick treatment of panic disorder in these people in order to improve their quality of life.[11]

Young women (55 years) who present with acute myocardial infarction (AMI) are a distinct, high-risk phenotype with a much higher risk of in-hospital death than men of the same age. However, the disparities in men's and women's health state (symptoms, functioning, and quality of life) from the time of their AMI through the next year are poorly understood.[12]

Study Rationale: Patients with CAD were included in the majority of previous research worldwide, independent of their initial diagnosis or surgical intervention. It's crucial to look at QOL outcomes in a smaller cohort of CAD patients. Pakistan is a Muslim-majority country, there is no study available which has tried to determine the quality of life of CAD patients and factors which affect the quality of life of the patients. There is no previous research and it's a neglected area because most of the patients have no idea and perception about the risk factors. This study will assess the quality of life in CAD patients and identify the risk factors affecting the quality of life.

MATERIAL AND METHODOLOGY

Study Design: Cross sectional study,

Study Duration: 2 months after the approval of synopsis.

Study Population: Patients presenting in the Cardiology OPD of Shalamar Hospital & PIC Lahore.

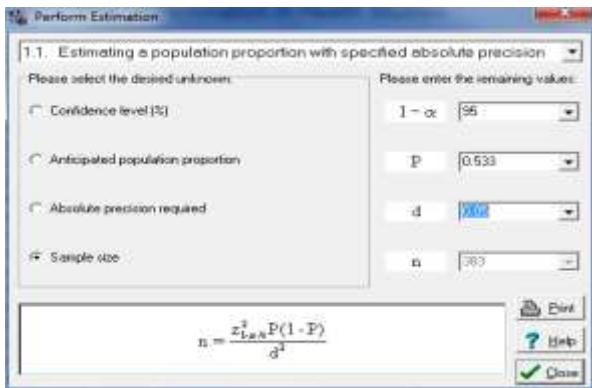**Inclusion Criteria:** Both Sexes

Age above 30 years.

Exclusion Criteria: Patients with Cardiac ailments other than Coronary Artery Diseases.

Sample Size: Sample size will be calculated by using formula
n= [DEF*Np(1-p)/[(d^2/Z^{2}1-a/2*(N-1)+p*(1-p)]
n= 611

Sampling Technique: Purposive Sampling.

The sample size was calculated on the basis of proportion derived from the following study:

Data Collection Procedure: A structured questionnaire comprising of different variables to identify the factors affecting the quality of life and WHO QoL BREF questionnaire for the assessment of quality of life was used. The researcher himself sat in the OPD of Shalimar hospital & PIC Lahore and conducted the interviews of the CAD patients qualifying inclusion criteria using the study instruments.

The study instrument has two parts;

Part I (Socio Demographic Profile): Required the patient to provide information in terms of name, age, gender, education, profession, family income, Place/location of residence and all other identified factors.

Data Analysis: SPSS version 20.0 was used to enter, clean, and analyse the data. For each possible variable, frequency tables will be generated. For continuous data, means and other central tendency characteristics will be determined. The Chi Square test was used to determine the relationship between categorical variables. When appropriate, the means were compared using the student's t test or ANOVA. For categorical data, bar and pie diagrams were employed, whereas for continuous data, line, histogram, scatterplot, and boxplot were used.

RESULTS

A total of 611 Coronary Artery Disease (CAD patients were included in the study from two teaching hospitals of Lahore (305 Public, 306 Private).

The mean age of the patients was 56 years. Out of which there were 377 (61.7%) male patients and 234 (38.3%) were females.

Patient's presented at OPD were 319 (52.2) with ACS and 292 (47.8%)with CSA.

The LV function test was < 40% for 126 (20.7%) patients, 40–50% for 285 (46.8%) and > 50% for 198 (32.5%) patients. **(Table No. 1)**

Out of 611 patients that were included in the study 19 (3.1%) rated their quality of life very poor; 265 (43.4%) poor; 200 (32.7%) neither poor nor good & 127 (20.8%) good. **(Table 2)**

As far as perception about health is concerned 1 (0.2%) was very dissatisfied; 198 (32.4%) were dissatisfied; 281 (46.0%) were neither satisfied nor dissatisfied & 131 (21.4%) were satisfied with their health. **(Table 3)**

The extent to which physical pain prevents patients from doing daily activities were reported as a little by 168 (27.5%); a moderate amount by 285 (46.6%); very much by 156 (25.5%) & an extreme amount by 02 (0.3%).The need of medical treatment to function in daily life by patients were reported as a little by 187 (30.6%); a moderate amount by 307 (50.2%) & very much by 117 (19.1%).The extent to which patients feel their life to be meaningful were reported as not at all by 2 (0.3%); a little by 149 (24.4%); a moderate amount by 314 (51.4%) & very much by 146 (23.9%). Regarding safety results were reported as not at all by 2 (0.3%); a

little by 189 (30.9%); a moderate amount by 320 (52.4%) & very much by 100 (16.4%). In case of satisfaction with sleep, 8 (1.3%) were very dissatisfied; 231 (37.8%) were dissatisfied; 221 (36.2%) were neither satisfied nor dissatisfied & 151 (24.7%) were satisfied.

As far as satisfaction with yourself is concerned, 02 (0.3%) were very dissatisfied, 166 (27.2%) were dissatisfied; 282 (46.2%) were neither satisfied nor dissatisfied & 161 (26.4%) were satisfied. Regarding satisfaction with personal relationships results were reported as 113 (18.5%) were dissatisfied; 322 (52.7%) were neither satisfied nor dissatisfied & 176 (28.8%) were satisfied. Satisfaction regarding access to health services were reported as 2 (0.3%) were very dissatisfied; 95 (15.5%) were dissatisfied; 286 (46.8%) were neither satisfied nor dissatisfied & 227 (37.2%) were satisfied & 1 (0.2%) was very satisfied. In case of negative feelings experienced results were reported as never by 3 (0.5%); seldom by 86 (14.1%); quite often by 333 (54.5%) & very often by 189 (30.9%). **(Table No. 4)**

In Correlation of QOL Domains Score with Age: Domain 1 the mean + SD is 11.4+1.683, correlation is -0.127 & p-value is 0.002 (significant). Domain 2 the mean + SD is 17.7+2.649, correlation is -0.137 & p-value is 0.001 (significant). Domain 3 the mean + SD is 9.3+1.690, correlation is -0.133 & p-value is 0.001 (significant). Domain 4 the mean + SD is 24.1+3.679, correlation is -0.135 & p-value is 0.001 (significant). Total QOL the mean + SD is 56.3+10.971, correlation is -0.156 & p-value is 0.000 (significant). **(Table No. 15)**

In association between categories of QOL & perception about health 284 (46.5%) reported poor, 200 (32.7%) reported average & 127 (20.8%) reported good perception about health. **(Table No. 16)**

Table 1: Frequency Distribution of Demographic Variables (n-611)

Variables		Number (n)	Percentage (%)
Age		Mean: 56	
Gender	Male	377	61.7%
	Female:	234	38.3%

Table 2: Distribution of the CAD Patients by overall quality of life.

Level of Quality of Life	Frequency	Percentage (%)
V Poor	19	3.1 %
Poor	265	43.4%
Neither Poor nor Good	200	32.7%
Good	127	20.8%
V Good	0	0
Total	611	100%

Table 3: Distribution of the CAD Patients by Perception about Health.

Perception of Health	Frequency	Percentage (%)
V Dissatisfied	1	0.2 %
Dissatisfied	191	32.4%
Neither satisfied nor Dissatisfied	288	46%
Satisfied	131	21.4%
V Satisfied	0	0
Total	611	100%

Table 4: Frequency Distribution of Different Variables of QOL-BREF.

Variables	Number (n)	Percentage (%)
Extent to which physical pain prevents you from doing daily activities.	A little: 168	27.5
	A moderate amount : 285	46.6
	Very Much: 156	25.5
	An extreme amount: 02	0.3
How much do you need any medical treatment to function in your daily life?	A little: 187	30.6
	A moderate amount: 307	50.2
	Very Much: 117	19.1
To what extent do you feel your life to be meaningful?	Not at all: 2	0.3
	A little: 149	24.4
	A Moderate amount: 314	51.4
	Very Much: 146	23.9
How safe do you feel?	Not at all: 2	0.3
	A little: 189	30.9
	A moderate amount: 320	52.4

	Very Much: 100	16.4
How satisfied are you with your sleep?	Very dissatisfied: 8	1.3
	Dissatisfied: 231	37.8
	Neither satisfied Nor dissatisfied: 221	36.2
	Satisfied:151	24.7
How satisfied are you with yourself?	Very dissatisfied: 02	0.3
	Dissatisfied: 166	27.2
	Neither satisfied Nor dissatisfied: 282	46.2
	Satisfied: 161	26.4
How satisfied are you with your personal relationships?	Dissatisfied: 113	18.5
	Neither satisfied Nor dissatisfied: 322	52.7
	Satisfied: 176	28.8
How satisfied are you with your access to health services.	Very dissatisfied: 2	0.3
	Dissatisfied: 95	15.5
	Neither satisfied Nor dissatisfied: 286	46.8
	Satisfied: 227	37.2
	Very satisfied: 1	0.2
How often do you have negative feelings?	Never: 3	0.5
	Seldom: 86	14.1
	Quite Often: 333	54.5
	Very often: 189	30.9

Table 5: Correlation of QOL Domains Score with Age (n= 611).

	Mean+SD	Correlation	P-Value
Domain1 Physical Health	11.4+1.683	-0.127	0.002
Domain2 Psychological Health	17.7+2.649	-0.137	0.001
Domain3 Social Health	9.3+1.690	-0.133	0.001
Domain4 Environmental Health	24.1+3.679	-0.135	0.001
Total QOL	56.3+10.971	-0.156	0.000

Table 6: Association between categories of QOL and Perception about Health.

QOL Cat		Health Perception			
		Dissatisfied	Average	Satisfied	
	Poor	119 (59.8%)	164 (58.4%)	1 (0.8%)	284 (46.5%)
	Average	80 (40.2%)	111 (39.5%)	9 (6.9%)	200 (32.7%)
	Good	0 (0%)	6 (2.1%)	121 (92.4%)	127 (20.8%)
Total		199	281	131	611 (100%)

Chi Square: 520.4
P value: 0.000

DISCUSSION

A total of 611 Coronary Artery Disease (CAD patients were included in the study from two teaching hospitals of Lahore (305 Public, 306 Private).

The mean age of the patients was 56 years. Out of which there were 377 (61.7%) male patients and 234 (38.3%) were females. Regarding history of Diabetes, Hypertension and MI, the number of patients were 350 (57.3%), 373 (61%) and 374 (61.2%) respectively.

WHO QOL BREFF consists of 4 domains Physical health, Psychological Health, Social relationships & Environmental Health.

In our study the comparison of means with number of attacks of chronic stable angina in all the domains was not significant which showed that number of attacks didn't affect quality of life much in CAD patients. The majority (43.4%) of the CAD patients had poor quality of life which is opposite to a study conducted by Mandal et al who reported that majority of patients have an average quality of life65.

In a 2013 Swedish study, Baumeister et al. demonstrated that coronary heart disease patients were significantly low physical health value.13 Other publication, Lee et al. find strong relation an among HRQOL and physical health, with good HRQOL outcomes in physically active individuals.1, In our study, gender was also strongly correlated because of the quality of life in women are inferior to men. Hayes et al. describe a study in which coronary heart disease was more common in men (56%) than in women (%) because it was well known and said that coronary heart disease affected men more than women, prior to 60 years of age. 15,

In one study, Ho et al. reveal that age & education level are significantly associated with HRLQ, with men with HRLV having better self-perception than women, younger patients scoring higher in physical n `health and happincr5cf To fight et al. showed that a study in an Iranian hospital showed that coronary heart disease quality of life disruption increased with age, decreased with higher education and income, and increased in women compared with men.17 percent compared to men. 18,

Skovoda et al. Reported HRQOL was higher in patients with active coronary artery disease or with regular exercise, compared with sedentary patients.19, In our study, the majority of patients (5 .5%) had episodes negative feelings, i.e. pallor, hopelessness, anxiety and depression.

Our study shows that age is a major determinant of the quality of life of patients with coronary artery disease because the quality of life decreases with age and vice versa. In one study, Ho et al. found that age and education were significantly associated with HRQuality, with men with HRLQ having better self-perceptions than women, younger patients scoring higher in physical health and well-being benefits-generally, and people with lower education have a lower quality of life than those with higher education.32Tofighi et al. showed that a study conducted in an Iranian hospital showed that the disordered HRHL of coronary heart disease increased with age, decreased with higher education and income, higher in women than in men.[20, 21, 22]

CONCLUSION

Studies have shown that in terms of overall quality of life and overall health, the quality of life of most patients is "poor." The correlation between overall quality of life and health perception & patient age is statistically significant. Eventually, we can deduce that adverse socio-economic status, female gender, higher psychological distress, history of other diseases, type of intervention, smoking, deceased physical activity and cost of treatment CAD patients more prone to decreased QOL. Thus, these factors should be addressed in planning of tailored interventions for improvement of QOL in patients with CAD. Most of the patients included in the study had poor quality of life.

REFERENCES

1. Jafar TH, Qadri Z, Chaturvedi N. Coronary artery disease epidemic in Pakistan: more electrocardiographic evidence of ischaemia in women than in men. Heart. 2008 Apr 1;94(4):408-13.
2. Satish M. Coronary heart disease in clinical practice. London: Goldaming.
3. Williams DO, Vasaiwala SC, Boden WE. Is optimal medical therapy "optimal therapy" for multivessel coronary artery disease?: Optimal management of multivessel coronary artery disease.
4. Ridker PM, Cook NR, Lee IM, Gordon D, Gaziano JM, Manson JE, Hennekens CH, Buring JE. A randomized trial of low-dose aspirin in the primary prevention of cardiovascular disease in women. New England Journal of Medicine. 2005 Mar 31;352(13):1293-304.
5. Lilly LS, Braunwald E. Braunwald's heart disease: a textbook of cardiovascular medicine. Elsevier Health Sciences; 2012.
6. Duijndam S, Denollet J, Nyklíček I, Kupper N. Perceived Cognition after Percutaneous Coronary Intervention: Association with Quality of Life, Mood and Fatigue in the THORESCI Study. International journal of behavioral medicine. 2017 Aug 1;24(4):552-62.
7. Malik S, Afzal N. PREDICTORS OF QUALITY OF LIFE AND RESILIENCE AMONG OUTPATIENTS WITH HEART DISEASES. Journal of Pakistan Psychiatric Society. 2015 Jul 1;12(3).
8. Hallas CN, Wray J, Andreou P, Banner NR. Depression and perceptions about heart failure predict quality of life in patients with advanced heart failure. Heart & Lung: The Journal of Acute and Critical Care. 2011 Mar 1;40(2):111-21.

9. Najafi M, Sheikhvatan M, Montazeri A, Sheikhfathollahi M. Quality of life in opium-addicted patients with coronary artery disease as measured with WHOQOL-BREF. International Journal of Social Psychiatry. 2009 May;55(3):247-56.

10. Leifheit-Limson EC, Reid KJ, Kasl SV, Lin H, Jones PG, Buchanan DM, Parashar S, Peterson PN, Spertus JA, Lichtman JH. The role of social support in health status and depressive symptoms after acute myocardial infarction: evidence for a stronger relationship among women. Circulation: Cardiovascular Quality and Outcomes. 2010 Feb 16:CIRCOUTCOMES-109.

11. Vankova D, Kerekovska A, Kostadinova T, Todorova L. Researching health-related quality of life at a community level: results from a population survey conducted in Burgas, Bulgaria. Health promotion international. 2015 Mar 16;31(3):534-41..

12. Strik JJ, Denollet J, Lousberg R, Honig A. Comparingsymptoms of depression and anxiety as predictors ofcardiac events and increased health care consumptionafter myocardial infarction. J Am CollCardiol 2003; 42:1801-7.

13. Glower DD, Christopher TD, Milano CA, et al. Performance status andoutcome after coronary artery bypass grafting in persons aged 80 to 93years. Am J Cardiol1992; 70: 567–571.

14. Allen JK, Xu X. Coronary revascularization in women. Crit Care NursClin North Am 1997; 9: 497–509.

15. BotijaYagüe MP, LizánTudela L, GosalbesSoler V, BonetPlá A, FornosGarrigós A. How does intensive therapy to control cardiovascular riskfactors affect health-related quality of life in diabetic patients? AtenPrimaria2007; 39: 227–233.

16. Pischke CR, Weidner G, Elliott-Eller M, et al. Comparison of coronary risk factors and quality of life in coronary artery disease patients withversus without diabetes mellitus. Am J Cardiol2006; 97: 1267–1273.

17. Herlitz J, Sjoland H, Haglid M, et al. Impact of a history of diabetesmellitus on quality of life after coronary artery bypass grafting. Eur JCardiothoracSurg1997; 12: 853–861.

18. Stafford L, Berk M, Jackson HJ. Tobacco smoking predictsdepression and poorer quality of life in heart disease. BMCCardiovascDisord 2013 May;13:35.

19. John S. Prevalence and pattern of psychiatric morbidity andhealth related quality of life in patients with ischemic heartdisease in a tertiary care hospital. Indian J Psychiatry 2013Oct;55(4):353-359.

20. Khunti K, Stone M, Paul S, Baines J, Gisborne L, FarooqiA, et al. Disease management programme for secondaryprevention of coronary heart disease and heart failure inprimary care: a cluster randomised controlled trial. Heart2007 Nov;93(11):1398-1405.

21. Dogar IA, Khawaja IS, Azeem MW, Awan H, Ayub A, Iqbal J, Thuras P. Prevalence and risk factors for depression and anxiety in hospitalized cardiac patients in Pakistan. Psychiatry (Edgmont). 2008 Feb;5(2):38.

22. Mandal S, Ghosh SK, Rahman M, Majumder A, Ranjan R, Adhikary D, Hasan K, Islam MZ, Adhikary AB. Health related quality of life among the coronary heart disease patients. Cardiovascular Journal. 2016 Sep 7;9(1):43-8.