Original Paper

Quality of Life among Patients with Coronary Heart Disease Admitted in a Selected Tertiary Level Hospital

Hossain MM[1], Wahab MA[2], Al-Azad MAS[3], Tumpa RR[4]

Abstract

Introduction: Coronary heart disease and cerebrovascular disease are the two main contributors of global morbidly and mortality. Coronary Heart Disease deaths in Bangladesh reached 1,63,769 or 17.11% of total deaths and reaches 25th in world. Importantly quality of life among them can modify the coronary heart disease. The opportunity for improved quality of life should be a factor in the health care provider's decision to recommend the treatment procedure.

Objective: To ascertain the physical and mental health component of Quality of Life with sociodemographic characteristics and health-related morbidity status among admitted coronary heart disease patients.

Materials and Methods: This cross-sectional study was conducted from January 2013 to December 2013 among coronary heart disease patients admitted in Cardiology department of Combined Military Hospital, Dhaka. The data were collected purposively by using Medical Outcomes short form SF-36 invented by RAND corporation, UK for measuring health-related quality of life among Bangladeshi patients where data were expressed as a score on a 0-100 scale. Data analysis was done by using software SPSS version 19.

Results: A total of 105 cases were selected purposively amongst which majority were in the age group of 50-60 years with mean age of 55.27 years. Among the respondents 97.1% were males and 98.1% were Muslims. Majority (41%) of them were retired personnel. The mean monthly income was Tk. 16,393.56. Regarding education level 73% of the study population were SSC pass and below. Among the study group, 27(25.7%) patient had undergone coronary artery bypass graft operation. The study group possessed a total quality of life obtaining 63.4% score in their interviews as per SF-36. Among the whole study group, mental components score (63.61%) was found slightly higher than physical components score (63.2%). CABG operated patients mental component score (69.43%) was found relatively higher than Non CABG patients mental component score (60.01%). Patients having better monthly income as well as better educational level possess better mental component and total quality of life than others.

Conclusion: It is of paramount importance to maintain the quality of life among coronary heart disease patients. Mental assurance and surgical intervention can improve quality of life among coronary heart disease patients.

Key-words: Coronary heart disease, Coronary artery bypass graft, Quality of life, Tertiary level hospital.

Introduction

The non-communicable disease accounts for a large and increasing burden of disease worldwide. It is currently estimated that non communicable disease accounts for approximately 59% of global death and 43% of global disease burden. It is projected to increase to 73% of death and 60% of disease burden by 2020. Cardiovascular disease is the most important single cause of Non communicable disease, accounting in 2001 for 29% of all death and 10% of global disease burden. Coronary heart disease and cerebrovascular disease are the two main contributors of global morbidity and mortality[1].

South Asia represents more than a quarter of developing world and is likely to be strongly affected by increase cardiovascular disease. South Asians especially Bangladeshi, Indian, Pakistanis, have the highest rate of coronary heart disease compared to ethnic group studied in different western countries course[2]. According to the latest WHO data published in April 2011 Coronary Heart Disease Deaths in Bangladesh reached 163,769 or 17.11% of total deaths and ranks 25 in world[3]. A substantial percentage of the population is undergoing treatment in coronary heart disease

1. **Maj Molla Muntasir Hossain**, MBBS, MPH (HSM&P), CCD, Trainee officer, AFMI, Dhaka 2. **Lt Col Md Abdul Wahab**, MBBS, MD, Commanding Officer, Border Guard Hospital, Guimara, Khagrachari 3. **Lt Col Md Abdus Samad Al-Azad**, MBBS, MCPS, DFM, Assistant Professor of Forensic Medicine, AFMC, Dhaka 4. **Dr Rubaiya Reza Tumpa**, MBBS, FCPS (Surgery), Assistant Professor of Surgery, Mark's Medical College, Mirpur, Dhaka.

in Bangladesh. It is of paramount importance to find out the quality of life among them. The opportunity for improved Quality of life should be a factor in the healthcare provider's decision to recommend the treatment procedure. Coronary heart diseases tend to have a greater risk of mortality and morbidity among the cardiovascular diseases, and a significant improvement in Quality of life would justify the risk of the procedure as well as take measures in the improvement of Quality of life among Coronary heart disease patients[4].

Materials and Methods

This descriptive type of cross-sectional study was conducted from January 2013 to December 2013 among 105 selected coronary heart disease patients aged between 46-60 years, admitted in Cardiology Department of Combined Military Hospital, Dhaka who underwent 3 months or more treatment to find out their quality of life after treatment. The patients who are unable to respond and critically ill were excluded. A semi-structured questionnaire as per the instruction of SF-36 form derived from Rand Corporation, UK was used as research instrument which consists of questions measuring physical and mental health status in relation to health concepts (Physical functioning, Role physical, Bodily pain, General health, Vitality, Social Functioning, Role emotional, Mental health) expressed as a score on a 0-100 scale for each of the eight health concepts. A separate study conducted by Feroz AH[5] has found the interviewer- administered Bengali SF-36 appears to be an acceptable, reliable and valid instrument for measuring health-related quality of life in Bangladeshi patients. Proper written permission was taken from CMH authority as well as Cardiology department with informing the study topic and instrument used. Data collection was carried out through a face-to-face interview. At the end of each day, data were entered into the computer with the help of software SPSS program version 19. An analysis plan was developed keeping in view with the objective of the study.

Results

A total of 105 cases were interviewed face to face by using a semi-structured questionnaire based on Medical outcome short form SF-36. The study revealed that majority ie; 82(78.09%) were in the age group of 50-60 years with mean age of the patients were 55.27 years (SD±8.579) but all were within 46-60 years. Among them 102(97.1%) were male and 03(2.9%) were female and 103(98.1%) respondents were Muslims and 2(1.9%) were Hindus. The Average monthly income of the respondents were 16,393.56Tk (Table-I).

Table–I: Distribution of the respondents by sociodemographic data (n=105)

Sociodemographic Data	Status	Number	Percentage
Age group in years	50 years and above	82	78.09
	46-50 years	23	21.90
Sex	Male	102	97.10
	Female	03	02.90
Marital Status	Unmarried	01	01.00
	Married	101	96.20
	Widow	02	01.90
	Widower	01	01.00
Religion	Muslim	103	98.10
	Hindus	02	01.90
	Others	00	00.00
Occupational Status	Unemployed	11	10.50
	Service	39	37.10
	Business	09	08.60
	Retired	43	41.00
	Others	03	02.90
Education Level	SSC and below	73	69.52
	Above SSC	32	30.48
Monthly Income	20000tk and above	24	22.86
	<20000tk	81	77.14

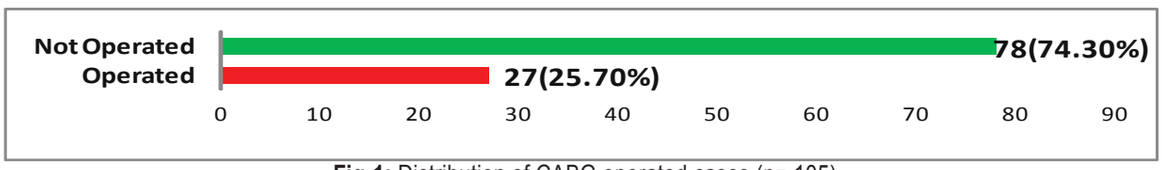

Fig-1: Distribution of CABG operated cases (n= 105)

Fig-1 shows that among 105 cases, 27(25.70%) were from CABG Operated and 78(74.30%) were CABG Non Operated.

Table-II: Distribution of scores of domains of Physical Component of quality of life

Physical Domains	CABG (27)			Non-CABG (78)			Total (105)		
	Mean	SD	%	Mean	SD	%	Mean	SD	%
Physical functioning (Out of 1000)	698.00	311.15	69.80	695.56	304.30	69.56	696.19	285.27	69.62
Role physical (Out of 400)	211.12	111.75	52.78	205.13	102.30	51.28	206.67	142.62	51.67
Bodily pain (Out of 200)	126.19	76.70	63.10	123.24	71.10	61.62	124.00	75.359	62.00
General health (Out of 300)	280.20	162.50	70.05	277.37	155.30	69.34	278.10	159.879	69.50
Total Physical Component (Out of 1900)	1315.51	611.15	63.93	1297.81	579.70	62.95	1304.96	615.782	63.20

Physical Components of Quality of Life between CABG and Non-CABG group was compared by student's 't' test and were found statistically not significant (p>0.05)

Table-III: Distribution of scores of domains of Mental Component of quality of life

Mental Domains	CABG (27)			Non-CABG (78)			Total(105)		
	Mean	SD	%	Mean	SD	%	Mean	SD	%
Vitality (Out of 400)	274.80	190.52	68.70	255.13	265.7	63.78	260.19	118.63	65.05
Social functioning (Out of 400)	290.40	170.76	72.60	242.81	255.6	60.70	274.10	138.22	68.53
Role Emotional (Out of 200)	153.04	164.39	76.50	146.96	157.4	73.48	148.52	156.45	74.20
Mental health (Out of 500)	299.50	199.90	59.90	210.43	214.8	42.09	233.33	62.92	46.67
Total Mental Component (Out of 1500)	763.31	787.50	69.43	641.49	657.9	60.01	687.11	693.2	63.61

Mental Components of Quality of Life between CABG and Non-CABG group was compared by student's 't' test and were found statistically not significant (p>0.05)

Table-IV: Distribution of scores of Physical, Mental Component and Total quality of life

Population Group	Physical Component	Mental Component	Total Quality
CABG(27)	63.93 %	69.43 %	66.68 %
Non CABG(78)	62.95 %	60.01 %	61.48 %
Total Population	63.20 %	63.61 %	63.40 %

Table-V: Prevalence of co-morbidity among CHD Patient

Disease	CABG (27)		Non CABG (78)		Total (105)	
	Number	Percentage	Number	Percentage	Number	Percentage
HTN	11.00	40.74	39.00	50.00	50.00	47.60
DM	07.00	25.93	25.00	32.05	32.00	30.50
COPD	07.00	25.93	15.00	19.23	22.00	21.00

$\chi 2$ test were done to see the association of co-morbidity factors with groups and found statistically not significant (P>0.05)

Table-VI: Distribution of Physical, Mental and Total Quality of life Irrespective of Monthly Income Group

Monthly Income	Number	Percentage	Physical Comp score	Mental Comp score	Total Quality score
20000 tk and Above	24.00	22.85	58.30 %	73.38 %	65.84 %
<20000tk	81.00	77.14	56.95 %	65.01 %	60.98 %

Monthly income between <20000 tk and 2000tk and above group were compared by student's 't' test and were found statistically not significant (p>0.05)

Table-VII: Distribution of Physical, Mental and Total Quality of life Irrespective of Educational group

Educational Group	Number	Percentage	Physical Comp score	Mental Comp score	Total Quality score
SSC and below	73.00	69.52	54.46 %	63.62 %	59.04 %
Above SSC	32.00	30.48	63.71 %	71.85 %	67.78 %

An educational level between SSC and below group and above SSC group was compared by student's 't' test and were found statistically not significant (p>0.05)

Table-II shows the physical component score of the total population is 63.20% which indicates total study population is maintaining a good level of physical component of quality of life. Table-III shows Coronary artery bypass graft patients posses higher mental component score (69.43%) than the Non-Cororнary artery bypass graft patients mental component score (60.01%). A mental component score of the total population is 63.61% which indicates total study population is maintaining a good level of mental component of quality of life. Table-IV shows CABG group posses higher score both physically (63.93) and mentally (69.43) than the Non-CABG group. The study shows that among the total population 50(47.60%) patients were hypertensive 32(30.50%) patients are having Diabetes mellitus and 22(21.00%) patients are having Chronic obstructive pulmonary disease. Table-VI shows monthly income 20,000tk and above group possess better mental component and quality of life than that of income group <20.0000tk group. Table-VIII shows educational level above SSC group leads better quality of life as well as better mental component score than that of SSC and below group.

Discussion

World Health Organization report (1982) states that Cardio-vascular diseases are one of the leading causes of death in industrial countries and also appearing as a public health problem in developing countries like India, Sri Lanka, and Bangladesh[6]. Among cardiovascular disease Coronary heart disease has been emerging as a notorious public health problem in Bangladesh and both conservative and surgical treatments are the treatment of choice for coronary heart disease patient[7].

Age between of 46-60 years in this study indicates total CHD patients were more in this age which coincides with study conducted by Ahmed GU et al[8] and Islam MZ et al[9] where highest frequency of CHD found in the age group of 40-49 and 40-60 years respectively.

In this study in Non-Coronary artery bypass graft patients, physical component score (62.95) is slightly higher than the mental component score (60.01). But in Coronary artery bypass graft patients mental components score (69.43) was found higher than the physical component score (63.93). These findings are similar to a study conducted by Ho SE et al[10] on "Quality of life amongst bypass patients at the National Heart Institute, Malaysia" where it was shown that post bypass respondent possessed the total quality of life score 57.80. In that study Mental component score (64.02) was also found higher than Physical Component score (51.0) and income level is influenced by both physical and mental component ($p<0.05$) Whereas in this study CHD patients with monthly income tk 20,000 and above group possess better mental component (73.38) but it is not statistically significant ($p>0.05$).

In this study, the prevalence of Hypertension and Diabetes Mellitus among Coronary heart disease patients was found 47.6% and 30.5% respectively. In another study conducted by Saquib N[11] where the prevalence of Hypertension and Diabetes Mellitus were 13.7% and 6.7% respectively in Bangladesh. This difference is may be due to that the study population was limited only to admit Coronary heart disease patients in Combined Military Hospital, Dhaka.

Study conducted by Irfan SMN[12] at Cardiovascular Surgery Department in Combined military hospital, Dhaka among 90 selected CABG patients where higher education, better occupation and good monthly income of the respondents were found to posses better quality of life than others was not similar with this study. This may be due to operated cardiac patient was only 27 among 105 CHD patients in this study.

Study conducted by Unsar S et al[13] at Cardiology Department, Trakya University, Turkey between normal and coronary heart disease patients showed that Coronary Artery Disease usually negatively affects Total quality of life but on admission to hospital quality of life scoring improves which is similar with this study.

Conclusion

Improvement of Quality of life among coronary heart disease patients is a challenge for the healthcare provider and clinicians. Health care providers and policymakers have to give emphasis on creating awareness about the disease at the age between 46-60 years, as the number of heart disease patients is more at this age. Measures should be taken for improvement of the physical component of Quality of life by regular physical activities. Special education program should be introduced to create alertness about Coronary heart disease patients especially at the secondary school level. Measures should be taken for screening and follow up of hypertensive patients. Rehabilitation program and psychosocial support should be arranged for old aged coronary heart disease patient for improvement of mental component of Quality of life. Further in-depth study on larger sample size can be carried out for a more accurate result on quality of life after coronary heart disease.

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