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Research Article

Relationship between Health-related Quality of Life and Selected Variables of Cardiac Patients

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ABSTRACT

Aim: The aim of the study was to find the association between health-related quality of life (HRQOL) and cardiac disease patient. **Materials and Methods:** A descriptive research design was used to find the relationship between HRQOL of cardiac disease patients, 158 samples were selected from Himalayan Hospital, Dehradun, Uttarakhand, by purposive sampling technique. Data were collected by SF-36 tool for which the test-retest method was used to find the reliability of the standardized SF-36 tool and it was established as r = 0.97. Data for HRQOL were collected with structured interview method. **Results:** The finding shows that there was a significant relationship between domains of HRQOL and selected variables. Domain of HRQOL, that is, social functioning (P = 0.002) with age in years, domain of HRQOL, that is, general health (P = 0.001) with educational status, and domain of HRQOL, that is, social functioning (P = 0.004) with occupational status of sociodemographic variables of participants. **Conclusion:** The study concluded that the domains of HRQOL of cardiac patients were affected by their selected variables.

Keywords: Cardiac disease patients, Health-related quality of life, Structured interview method.

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Introduction

It was considered that cardiovascular disease is more frequently occurs in male rather than female from many years, but in fact, occurrence of cardiovascular disease is higher in female than male.[1]

Cardiac vascular disease covers the most prevalent, serious, and common problem in developing countries and these problems vary rapidly growing, because the developing country's peoples do not get the benefit of the integrated primary health-care services for early detection and treatment of peoples those who have risk of cardiovascular diseases.[2] Approximately 17.9 million morbidity rates were due to cardiovascular diseases which were higher in lower- and medium-income countries by 2016 that show 37% of global morbidity rate. CVD is the emerged and the leading cause of death in all over India.[3]

Prabhakaran and Jeemon in 2016 reported that worldwide death rate due to cardiovascular is 235 per 100,000 population and in India it is higher, that is, 272 per 100,000 population. In the year 1910, mortality rate because of cardiovascular diseases was 10% diseases, but in 2000, it was increased to 50%. Premature mortality rate because of CVD is increased by 59%. In India, 23.2 million deaths were recorded due to CVD in 1990 which increased to 37 million in 2010.[2]

Bahall *et al*. in 2020 physical and mental health-related quality of life (HRQOL) can worsen with psychological

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factor such as depression and other comorbidities. Young Indo-Trinidadians are more likely being affected than Afro-Trinidadians because of significant age and ethnicity interaction effects.[4]

Problem statement

A study was to assess relationship between health-related quality of life (HRQOL) of cardiac patients attending outpatient department with their selected variables in a selected hospital, Dehradun, Uttarakhand.

Objective

The objective of the study was to find the relationship between HRQOL among cardiac patients with their selected variables.

Materials and Methods

Quantitative research approach was used and purposive sampling technique was used to select 158 cardiac patients of Himalayan Hospital, Dehradun, Uttarakhand. The test-retest method was used to find the reliability of the standardized SF-36 tool and it was established as r = 0.97. Standardized SF-36 was used for data collection and scoring was calculated by online SF-36 score calculator. One hundred and fifty-eight cardiac patients were selected after taken written consent and interview method was used for data collection.

Analysis and interpretation

Section 1: Frequency and percentage distribution of selected variables of cardiac patients.

Table 1 shows the frequency and percentage of selected variables of the cardiac disease patients. Majority of the participants (59%) were in the age group of 41–60 years.

About 62% were male. One hundred and twenty-one (77%) were educated. About 70% were employed, 44% belongs to Hindu religion. About 57% had family income per month more than Rs. 20,001. About 78% were non-vegetarian. About 70% were residing in urban area, 72% belongs to nuclear family, and 81% were married.

About 83% having cardiovascular diseases, 56% of participants suffering with cardiac disease more than 3 years, and 44% suffering with cardiac disease <3 years.

About 65% of participants reported about they have no any contributed disease condition and 55 (35%) had contributed disease. Out of 55, majority (73%) had diabetes mellitus and 27% had respiratory disease.

About 82% family member of the participants are not suffering with heart disease while 29 (18%) family members

Table 1: Frequency and percentage distribution of selected variables of cardiac patients. *n*=158

S. No.	Selected variables	F	%
1	Age (in years)		
	18–40	24	15
	41–60	93	59
	>61	41	26
2	Gender		
	Male	98	62
	Female	60	38
3	Educational status		
	Non-educated	37	23
	Educated	121	77
4	Occupation status		
	Employed	110	69.6
	Unemployed	48	30.4
5	Religion		
	Hindu	69	44
	Muslim	38	24
	Other	51	32
6	Family income per month in Rs.		
	<20,000	68	43
	>20,001	90	57
7	Dietary habits		
	Vegetarian	34	22
	Non-vegetarian	124	78
8	Place of residence		
	Rural	48	30
	Urban	110	70
9	Type of family		
	Nuclear family	113	72
	Joint family	45	28
10	Marital status		
	Single	30	19
	Married	128	81
11	Present cardiac disease		
	Cardiovascular disease	132	83
	Structural disease	20	13
	Cardiogenic shock	6	4
12	Duration of present cardiac disease (*n*=158)		
	<3	70	44
	>3	88	56
13	Any contributed disease conditions?		
	Yes	55	35
	No	103	65
13.1	If yes please specify the diagnosis (*n*=55)		
	Diabetes mellitus	40	73
	Respiratory disease	15	27
13.2	Duration of disease condition (*n*=55) (year)		
	<3	20	36
	>3	35	64
14	Any family member is suffering with heart disease		
	Yes	29	18
	No	129	82
14.1	If yes please specify the diagnosis (*n*=29)		
	Hypertension	19	66
	CAD	7	24
	MI	3	10

(*Contd...*)

Table 1: (*Continued*)

S. No.	Selected variables	F	%
15	Have you ever smoke?		
	Yes	115	73
	No	43	27
15.1	Are you still smoking? (*n*=115)		
	Yes	76	66
	No	39	34
15.2	If yes duration since how many years (*n*=76) (year)		
	<3	26	34
	>3	50	66
15.3	In a day how many cigarette/bidi (*n*=76)		
	<10	59	78
	>10	17	22
15.4	If NO when you quit it (*n*=39) (year)		
	<3	32	82
	>3	7	18
15.5	How many years you smoked? (*n*=39) (year)		
	<3	23	59
	>3	16	41
16	Have you ever taken alcohol?		
	Yes	103	65
	No	55	35
16.1	Are you still taking alcohol? (*n*=103)		
	Yes	70	44
	No	33	20
16.2	If yes duration since how many years (*n*=70) (year)		
	<3	17	24
	>3	53	76
16.3	Quantity of taking alcohol in a day (*n*=70) (ml)		
	<100	33	47
	>100	37	53
16.4	If NO when you quit it (*n*=33) (year)		
	<3	29	88
	>3	4	12
16.5	How many years you had taken alcohol? (*n*=33) (year)		
	<3	17	52
	>3	16	48

are suffering with heart disease. Out of 29, most of the family members (66%) are suffering with hypertension, 24% suffering with CAD, and 10% suffering with MI.

One hundred and fifteen(73%) participants were smoker. Out of 115, majority 76 (66%) were still smoker and 39 (34%) were not presently smoker. In continuation of still smoking out of 76, most (66%) participants were smoker since >3 years and 34% were smoker from <3 years. About 78% of participants smoke <10 number of cigarette/bidi in a day and 22% of participants smoke >10 number of cigarette/bidi in a day. Out of 39, most of the participants (82%) quitted smoking from <3 years and only 18% quitted smoking from more than 3 years. About 59% smoked more than 3 years.

One hundred and three (65%) had taken alcohol. In continuation of still taking alcohol out of 103, most 70 (44%) participants were still taking alcohol. Out of 70 samples, most of the participants (76%) were taking alcohol from more than 3 years. Regarding quantity of taking alcohol in a day, out of 70 samples more than 50%, 37 (53%) participants takes alcohol >100 ml in a day and less than 50%, 33 (47%) participants takes alcohol <100 ml in a day. Out of 33 participants, 88% quitted alcohol less than 3 years and in continuation of how many years you had taken alcohol out of 33 samples more than 50%, 17 (52%) had taken alcohol <3 years.

Section 2: Findings as per the objective of the study

Table 2 shows relationship between domains of HRQOL with age in years. The result indicated that the calculated *P*-value of social functioning in relation to different age group in years was 0.002 which was less than 0.05. Hence, the result revealed that there was a significant relationship between ages in years with social functioning whereas there was no significant relationship of age in years which was found with any other domains of HRQOL.

Table 3 shows the calculated *P*-value of role limitation (PH) 0.004, and general health 0.001 in relation to educational status, which was found less than 0.05. The result interpreted that there was a significant relationship between role limitation (PH) and general health with educational status. Hence, there was no significant relationship which was found between other domains of HRQOL with educational status.

Table 4 indicates the calculated P value of social functioning 0.004 and pain 0.007 in relation to occupational status, which was found less than 0.05. The result interpreted that there was a significant relationship between social functioning and pain with occupational status. Hence, there was no significant relationship which was found between with other domains of HRQOL and occupational status.

Discussion

Overall result calculated *P*-value of social function and pain in relation to occupation is less than 0.05, which can be interpreted as HRQOL do not have any significant relationship with any domains of occupational status.

However, there are numerous studies which have reported on quality of life among patients with other comorbidities. Assari *et al*. in 2013 with a cross-sectional study which included 796 patients found consistent pattern in between somatic comorbidities and cardiovascular condition.[5]

Najafi in 2009 conducted a study with 283 patients the study states male gender and diabetes are the predictors of physical independency for higher quality of life, on the other hand, women with same condition had lower score in all components of quality life.[6]

Table 2: Relationship between the domains of HRQOL with age in years. *n*=158

S. No.	Domain	Age in years			*P*-value
		18–40 (*n*=24)	41–60 (*n*=93)	>61 (*n*=41)	
		Mean±SD	Mean±SD	Mean±SD	
1	Physical functioning	36.88±13.73	35.73±11.38	36.34±12.45	0.992
2	Role limitation (PH)	48.96±42.65	55.86±41.71	50.61±36.43	0.749
3	Role limitation (EP)	54.25±42.61	58.17±37.42	53.83±35.72	0.741
4	Energy/fatigue	53.96±15.32	51.77±17.50	48.90±19.08	0.706
5	Emotional well-being	46.42±12.15	44.86±12.23	47.10±13.07	0.753
6	Social functioning	64.71±19.40	61.94±15.70	52.24±15.56	0.002
7	Pain	67.96±18.37	64.04±19.76	68.00±25.19	0.436
8	General health	45.00±8.84	44.41±9.55	41.83±9.40	0.391

Table 3: Relationship between the domains of HRQOL with educational status. *n* = 158

S. No.	Domain	Educational status		*P*-value
		Non-educated (*n* = 37)	Educated (*n* = 121)	
		Mean±SD	Mean±SD	
1	Physical functioning	33.51±11.35	36.84±12.09	0.214
2	Role limitation (PH)	36.49±35.64	58.64±40.49	0.004
3	Role limitation (EP)	49.70±35.77	58.51±38.10	0.135
4	Energy/fatigue	55.41±19.62	50.12±16.81	0.320
5	Emotional well-being	47.54±11.92	45.11±12.54	0.144
6	Social functioning	61.27±18.65	59.40±16.27	0.765
7	Pain	67.03±17.02	65.25±22.20	0.527
8	General health	48.11±9.07	42.52±9.17	0.001

Table 4: Relationship between the domains of HRQOL with occupational status. *n*=158

S. No.	Domain	Occupational status		*P*-value
		Employed (*n*=110)	Unemployed (*n*=48)]	
		Mean±SD	Mean±SD	
1	Physical functioning	36.53±12.40	35.00±10.96	0.591
2	Role limitation (PH)	57.23±41.61	44.79±36.45	0.140
3	Role limitation (EP)	58.29±37.92	52.23±37.04	0.288
4	Energy/fatigue	51.68±17.41	50.63±18.14	0.810
5	Emotional well-being	45.49±12.52	46.10±12.26	0.860
6	Social functioning	62.26±16.54	54.298±16.26	0.004
7	Pain	62.99±20.54	71.79±21.20	0.007
8	General health	43.68±9.32	44.17±9.74	0.746

Conclusion

The findings of the study concluded that domain of HRQOL of cardiac patients was affected by their selected variables. There was a significant relationship which was found between three domains of HRQOL and selected variables such as age in years, educational status, and occupational status, whereas no significant relationship was found between domains of HRQOL and other selected variables.

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