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A study to assess fatigue among patients with cardiac disease

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Abstract

A descriptive study was conducted to assess fatigue among cardiac patients at K.S.Hedge Medical College hospital, Mangalore. All the patients attended cardiac OPD with cardiac disease were selected using convenience sampling technique and sample size comprised of 55 patients. A standardized tool, Multidimensional fatigue inventory- 20 was used to collect the self reports. The findings revealed that 96.4% of the respondents reported that they experience fatigue with cardiac disease. And 61.8 % of respondents had self reported that they experience more of general fatigue than other aspects. The fatigue scores were computed with various cardiac diseases to explore association and it was found general fatigue, physical fatigue and reduced motivation aspects were significantly associated with cardiac diseases at P< .05 level of significance whereas mental fatigue and reduced activity showed no significant association. There was no association between the fatigue scores and demographic variables as well.

Key words: Fatigue; Multidimensional fatigue inventory- 20; cardiac disease.

Introduction

Cardiovascular diseases (CVD) are the world's largest killers, claiming 17.1 million lives a year. According to the recent estimates cases of CVD may increase from 2.9 crore in 2000 to as many as 6.4 crore in 2015. Deaths from CVD will also become more than double. Most of this increase will occur on account of coronary heart disease such as acute myocardial infarction, angina, congestive heart failure and inflammatory heart disease [1].

Data also suggest that although the prevalence rates of CVD in rural populations will remain lower than that of urban populations, they will continue to increase, reaching around 13.5% of the rural population in the age group of 60 -69 years by 2015. The prevalence rates among younger adults aged 40 years and above is also likely to increase. Also, prevalence rates among women will keep pace with those men across all age groups [2] .

Cardiovascular disease strikes Indians early and kills many in their productive mid life years. Deaths due to CVD in the age group of 35 to 64 years resulted in 9.2 million potentially productive years of life being lost in 2000 and are expected to rise to a loss of 17.9 million in 2030 [3].

Fatigue is a frequent compliant during CVD and can sometimes constitute the first clinical manifestation of this disease. It is responsible for deterioration of the quality of life and prognosis [4]. Reports of fatigue preceding cardiac events have recently been confirmed by large prospective studies [5].

Fatigue is one of the most prevalent symptoms in patients with systolic heart failure [6,7]. The prevalence of fatigue in heart failure ranges from 50% to 96% [6,8] and fatigue in this population is associated with poor quality of life [6,8,9], restricted physical activity [10] and worsening heart failure prognosis [11]. A study was conducted to examine the role of clinical and psychological characteristics as predictors of fatigue in congestive heart failure.The results of this study identified exertion fatigue and general fatigue as different manifestations of fatigue. And the findings showed that fatigue was related to both clinical and psychological characteristics. Also the study suggested that use of this knowledge may lead to a better understanding and treatment of the clinical

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manifestations of fatigue in congestive heart failure [10].

A study was conducted to describe the fatigue experience and its relationship to hemoglobin concentration and its effect on quality of life. It was found 33% patients were anemic and the perception of fatigue differed significantly between patients with congestive heart failure and healthy individuals. And anemic patients reported significantly more fatigue compared to non- anemic patients. The study suggested that subjective experience of fatigue in patients with congestive heart failure is associated with low hemoglobin concentration and reduced functional status [12] .

Yet, another study was carried out to assess the importance of self- reported severity of symptoms as predictors of outcomes in congestive heart failure. The results of this study revealed worse scores of breathlessness, orthopnea and fatigue were all significantly related to increased mortality and development of worsening heart failure. And fatigue remained a significant predictor for developing worsening heart failure [11].

In the light of aforementioned studies and with the personal experience of the investigator, it is evident that fatigue is a significant symptom among patients with heart disease. The investigator has taken up this study to explore the extent of fatigue among patients with heart disease such as ischemic heart disease, heart failure, cardiomyopathy, infections of the heart and so on. This proposed study is focused further to describe multidimensions of fatigue such as general fatigue, physical fatigue, mental fatigue, reduced activity and reduced motivation.

Statement of the problem:

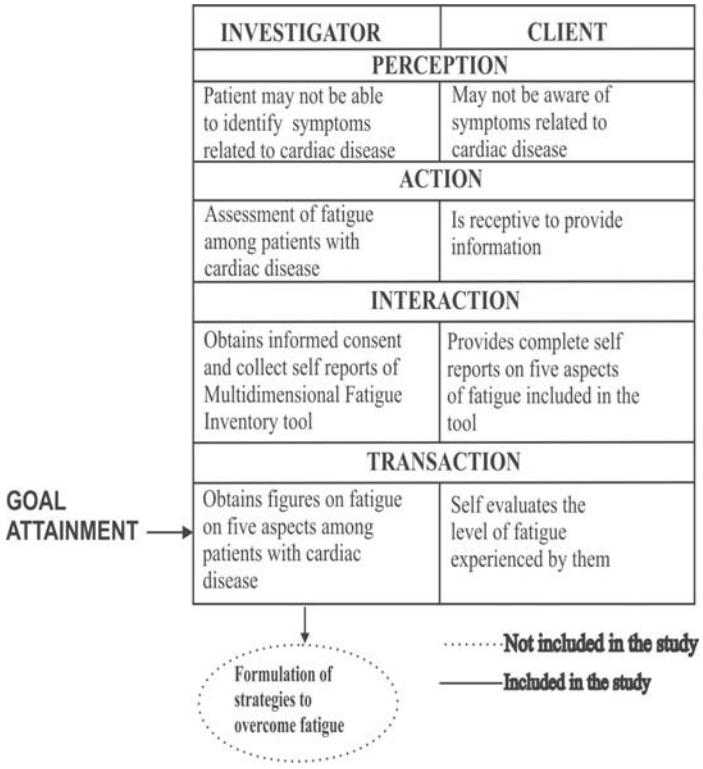
A study to assess fatigue among patients with cardiac disease attending cardiac OPD at KSHEMA, Mangalore

Objectives of the study:

1. Assess the scores of fatigue among patients with cardiac disease.
2. Find out association with scores of fatigue and various cardiac diseases.
3. Explore the association with the scores of fatigue and selected demographic variables.

Is based on modified Imogene King's Goal attainment model. The goal of the study is to assess the level of fatigue among various cardiac diseases.

Fig 1. Schematic representation of conceptual framework based on modified Imogene King's Goal Attainment Theory (1981)



The concepts of perception, action, interaction and transaction were selected and shown in Figure 1.

Materials and methods

The schematic representation of the research methodology is shown in figure 2.

Research methodology

The research design adopted for the study is descriptive exploratory survey.

Research setting

The setting for the study is cardiac OPD at K.S.Hedge Medical College Hospital, Mangalore.

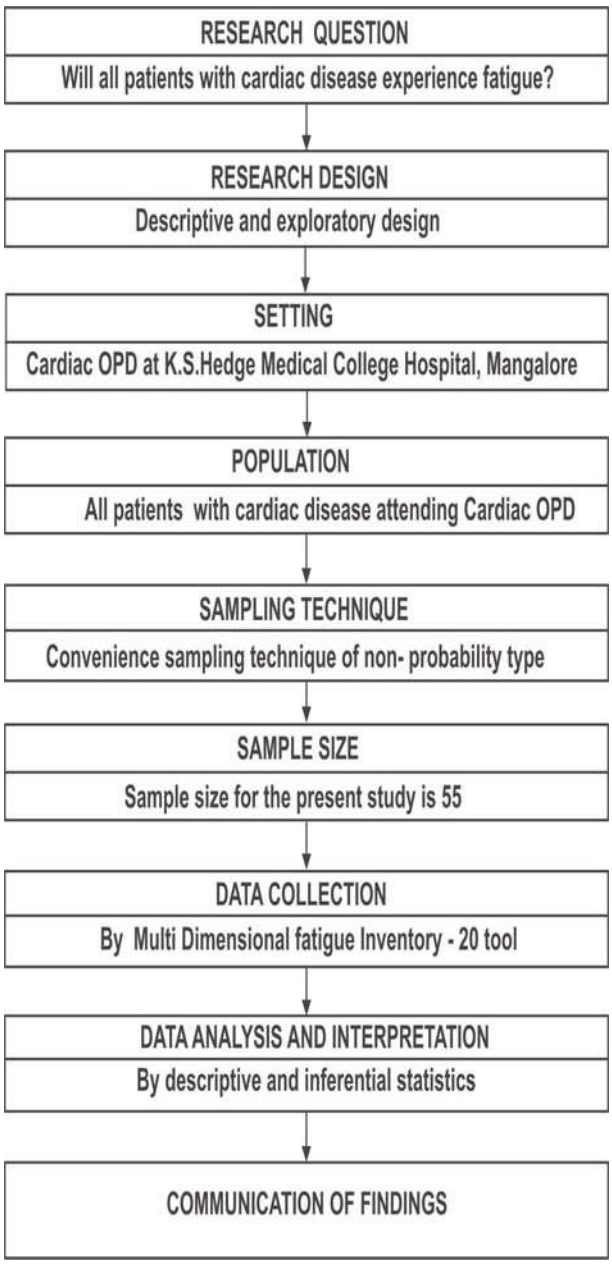
Population

Target population: All patients diagnosed to have cardiac disease.

Accessible population

Patients diagnosed with cardiac disease attending cardiac OPD, at K.S.Hedge Medical College Hospital, Mangalore.

Fig 2. Schematic representation of the research methodology



Sampling technique

The sampling technique adopted for this study is convenience sampling of non- probability type.

Sample size

The sample size for the study is 55.

Sampling criteria

Inclusion criteria

• Patients with the diagnosis of any cardiac disease, both male and females

• Patients who can read English, Kannada or Malayalam

• Patients who are willing to participate in this study

• Patients who are available during data collection period

Exclusion criteria:

• Patients who are not oriented

• Patients who are blind

Tools for data collection

Section- A: Consists of demographic data

Section - B: Comprises of Multidimensional Fatigue Inventory- 20, a standardized instrument to assess fatigue.

Method of data collection

Permission was obtained from the authorities of the hospital and the respondents meeting the inclusion criteria were selected using convenience sampling method. The tool was distributed to them and collected after the completion of the self reports. The duration of data collection was two weeks. The respondents were very cooperative.

Data analysis and interpretation

The demographic characteristics of the respondents are shown in table 1

The frequency of fatigue among respondents relating to five aspects of fatigue inventory is depicted in table 2.

Table 3 reveals the association of the scores of fatigue aspect wise with cardiac diseases. Except mental fatigue and reduced activity it shows statistically significant at P<.05 level with aspects of general fatigue, physical fatigue and reduced motivation.

An association with aspects of fatigue scores and selected demographic variables were computed and it was found except occupation there is no significant association.

Discussion

The discussion is followed corresponding with the objectives of the study. The first objective of the study was to assess the scores of fatigue among cardiac patients. The findings of the study revealed that 96.4% of the respondents reported that they experience fatigue with cardiac disease. It was further explored with each aspect of fatigue. The majority 61.8 % of respondents had self reported that they experience more of general fatigue than other aspects. With regard to general fatigue the percentage of respondents self reported as true and very true of experience of fatigue were 61.8 and 21.6; physical fatigue were 56.4 and 34.5; mental fatigue were 40 and 9.1; reduced activity 56.4 and 21.8; and reduced motivation 49.1 and 3.6 respectively. Several studies have given the similar findings that fatigue is common in patients among cardiac diseases. The aim of the study was to examine the effect of ischemic heart disease stage on fatigue and depressive symptoms at 12-month follow-up. Increased levels of fatigue and/ or depression have been found in coronary heart disease, post-myocardial infarction, and congestive heart failure patients [13]. And a qualitative study done among women with chronic heart failure also brought out themes related to fatigue as 'living with the loss of physical energy' and 'striving for independence while being aware of deteriorating health' [14].

The second objective of the study was to find out association between the fatigue scores and cardiac diseases. An attempt was done to associate between each aspects of fatigue and cardiac diseases. It was found general fatigue, physical fatigue and reduced motivation aspects were significantly associated with cardiac diseases at P< .05 level of significance whereas mental fatigue and reduced activity showed no significant association. The findings of the present

Table 1. Percentage distribution of respondents by selected demographic variables N = 55

Variables		Category	Frequency	Percent
Age Group		Below 40 Years	6	10.9
		40 - 50 Years	6	10.9
		50 - 60 Years	12	21.8
		60 - 70 Years	17	30.9
		Above 70 Years	14	25.5
Gender		Male	43	78.2
		Female	12	21.8
Educational Qualification		No Formal Education	15	27.3
		Primary	13	23.6
		Secondary	13	23.6
		High School	3	5.5
		Pre Degree	7	12.7
		Graduate	4	7.3
Marital Status		Married	52	94.5
		Unmarried	3	5.5
No of Children		No Children	4	7.3
		2	15	27.3
		3	18	32.7
		More than 3	18	32.7
Occupation		Unemployed / Retired	23	41.8
		Government	1	1.8
		Private	9	16.4
		Business / Self Employed	8	14.5
		Agriculture	5	9.1
		Housewife	9	16.4
Family Income		Below 5000	18	32.7
		5000 - 9999	26	47.3
		10000 or More	11	20.0
Area of Residence		Rural	47	85.5
		Urban	8	14.5
Type of Family		Joint	45	81.8
		Nuclear	10	18.2
Risk factors &frequency	Smoking	Regular	19	34.5
		Occasional	02	3.6
		Never	34	61.8
	Alcohol	Regular	15	27.3
		Occasional	4	7.3
		Never	36	65.4
	Tobacco	Regular	0	0
		Occasional	2	3.6
		Never	53	96.34
Co morbid conditions	Hypertension	Yes	37	67.23
		No	18	32.77
	Diabetes Mellitus	Yes	22	40.0
		No	33	60.0
	Hyperlipidemia	Yes	2	3.6
		No	53	96.4
	Renal insufficiency	Yes	0	0
		No	55	100
	Anemia	Yes	3	5.5
		No	52	94.5
Symptom of dyspnea		Yes	45	81.8
		No	10	18.2
Regular exercise		Yes	8	14.5
		No	47	85.5
Balanced Nutrition		Yes	34	61.8
		No	21	38.2
Regular sleep		Yes	16	29.1
		No	39	70.9
Symptom of fatigue		Yes	53	96.4
		No	2	3.6
Duration of fatigue		6 months - 1year	8	14.5
		1 -3 years	26	47.3
		3 -6 years	13	23.6
		> 6 years	8	14.5
On beta blockers		Yes	47	85.5
		No	8	14.5
Diagnosis		Ischemic Heart Disease	45	81.8
		Cardiomyopathy	1	1.8
		Rheumatic heart disease With mitral stenosis	4	7.3
		Mitral valve prolapse, mitral regurgitation	1	1.8
		Mitral stenosis	2	3.6
		Atrial fibrillation	1	1.8
		Congestive heart failure	1	1.8

study are consistent with a study done on impact of fatigue in every day life among older people with chronic heart failure. The assessment of fatigue was done using multidimensional fatigue inventory and results showed patients self reported higher levels of general fatigue, physical fatigue and reduced motivation [15].

The third objective was to associate fatigue scores with selected demographic variables. It was found except occupation there was no significant association between them.

Table 2. Percentage distribution of respondents by aspects of Fatigue

Variables	Scores	Frequency	Percentage
General Fatigue	2	1	1.8
	3	7	12.7
	4	34	61.8
	5	13	23.6
Physical Fatigue	3	5	9.1
	4	31	56.4
	5	19	34.5
Mental Fatigue	2	5	9.1
	3	23	41.8
	4	22	40.0
	5	5	9.1
Reduced Activity	3	12	21.8
	4	31	56.4
	5	12	21.8
Reduced Motivation	2	2	3.6
	3	24	43.6
	4	27	49.1
	5	2	3.6

Nursing implications

• The findings of the present reveal that assessing level of fatigue and identifying the aspect of fatigue helps nurse to design interventions so as to help patients to adopt energy conserving techniques.

• The study contributes to the understanding of fatigue.

• The present study motivates to develop and evaluate interventions that may reduce fatigue.

Conclusion

Fatigue has a negative impact in meeting activities of daily living from physical level rather than mental level. It is suggested that patients should be made aware of these symptoms once the patient is diagnosed to have cardiac disease. Besides instilling awareness the strategies to conserve energy and activities to be avoided should be elaborated in detail as a secondary prevention measure.

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Table 3. Association between Fatigue and various cardiac diseases

Variables	Scores	Cardiac diseases							Chi - square
		Atrial fibrillation	Cardiomyopathy	CCF	IHD	MS	MVP / MR	RHD	
General Fatigue	2	0	1	0	0	0	0	0	64.76 S
	3	0	0	0	6	0	0	1	
	4	1	0	0	28	2	0	3	
	5	0	0	1	11	0	1	0	
Physical Fatigue	3	0	1	0	2	0	0	2	26.16 S
	4	0	0	0	28	1	0	2	
	5	1	0	1	15	1	1	0	
Mental Fatigue	2	0	1	0	4	0	0	0	24.23 NS
	3	0	0	0	19	1	1	2	
	4	1	0	0	18	1	0	2	
	5	0	0	1	4	0	0	0	
Reduced Activity	3	0	1	0	9	1	0	1	14.85 NS
	4	0	0	0	28	0	1	2	
	5	1	0	1	8	1	0	1	
Reduced Motivation	2	0	1	0	1	0	0	0	61.09 S
	3	0	0	0	19	1	0	4	
	4	1	0	0	24	1	1	0	
	5	0	0	1	1	0	0	0	

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