ORIGINAL RESEARCH ARTICLE

Self-Care Activities by Patients with Chronic Cardiovascular Morbidities: Explanatory Sequential Facility-Based Mixed Method Study in West Bengal, India

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ABSTRACT

Background: Chronic cardiovascular morbidities are major public health concern. The objective was to assess awareness and practice of selfcare activities among patients with chronic cardiovascular morbidity in Burdwan Medical College (BMC) and to explore constraints in selfcare practice.

Materials & Methods: A facility-based, explanatory sequential, mixed-method study was conducted in Cardiology super-specialty outpatient department of BMC, West Bengal. A calculated sample of 185 patients with chronic cardiovascular morbidity were selected randomly; interviewed with predesigned, pretested schedule (adapted from H-SCALE) for quantitative component. For qualitative component, eight study participants, selected purposively, were interviewed with In-depth-interview guide. Multivariable logistic regression was done to find out predictors of selfcare practice. Thematic inductive analysis was done to explore constraints.

Results: 73% study participants were aware about overall selfcare practices; 43.8% performed satisfactory overall selfcare practice. Below secondary level educational status [AOR:0.412, 95% CI (0.178-0.956)] and lower & lower-middle socioeconomic status [AOR:0.063, 95% CI (0.017-0.230)] were found to create negative influence on favourable self-care practice. Thematic analysis revealed false belief, lack of motivation, lack of proper knowledge, emotional disturbances and Covid-19 pandemic impact as major constraints in selfcare practice.

Conclusion: Selfcare awareness & practice both are low. Interventions are needed to ensure healthy lifestyle of patients.

Key words: Awareness, Chronic cardiovascular morbidity, Practice, Selfcare

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INTRODUCTION

Self-care is defined as the decisions and strategies undertaken by the individual in order to maintain life, healthy functioning and well-being. Self-care behavior of a person can be universal, disease-related or developmental. Self-care in chronic diseases relies on personal resources and enables the persons suffering from chronic disease to be in charge of their own care.[1]

Chronic cardiovascular morbidity is defined as coexistence of one or more chronic cardiovascular diseases like coronary artery disease, peripheral vascular disease, post-myocardial infarction, atrial fibrillation, angina pectoris, valvular heart disease, congestive heart-failure, ischemic heart disease etc.in patients with multi-morbidity.[2] A systematic review[3] on patterns of multi-morbidity in primary care has highlighted on hypertension, diabetes, obesity & dyslipidemia as the most frequently found multi-morbidities. Chronic cardiovascular diseases are estimated to account for 46% of non-communicable disease death worldwide and 15-20% of all death in India.[4] It has been observed that up to 50% of hospital re-admissions may be prevented if patients comply with self-care activities regularly; along with suitable treatment plan and sufficient social support.[5]

The set of self-care activities required for different chronic cardiovascular morbidities are similar. American Association of Diabetes Educators (AADE) and American College of Cardiology Foundation (ACCF) recommend[6] different self-care activities for chronic cardiovascular patients, such as dietary practice, regular medication, smoking-cessation, alcohol-abstinence, physical exercise, blood monitoring, weight monitoring and immunization.The Joint National Committee-7 (JNC-7) on prevention, detection and treatment of high blood pressure also has recommended similar lifestyle modifications for patients with chronic cardiovascular morbidities all over the world.[7]

Several dietary patterns like Dietary Approach to Stop Hypertension (DASH), Healthy Eating Index (HEI) and Mediterranean diet have been identified and tested for western population for prevention and management of NCDs; where a healthy-heart diet[8] contains cereals like brown rice-whole wheat-oats, pulses, vegetables, fruits, skin-out chicken, egg white, fish, low fat milk, paneer, curd, restricted intake of raw salt, sweets, red meat, street foods and full-fat dairy products. However, the SCRIPT study[9]in 2015 and CURES[10] in 2001 have shown that Indians, being culturally different, have diverse dietary and culinary habits. Indians generally have excess consumption of calories, saturated fats, trans fats, simple sugars, salt and low intake of fiber. Such dietary transition and sedentary lifestyle lead to obesity and diet related NCDs like diabetes, cardiovascular disease etc. Consensus dietary guidelines for Indians[11] include reduction in intake of carbohydrates, reduction in saturated fat, trans fat intake, restricted intake of sugar and lower intake of salt. Regular physical exercise, at least 30 mints per day for five days per week or 150 minutes of moderate exercise per week is recommended by ACCF and JNC-7.[12] Other recommendations from ACCF include adult immunization practice[13] against Covid-19, Pneumococcal pneumonia, Influenza and regular blood-monitoring practice to check co-morbidities[14]. Smoking cessation, alcohol abstinence practices are also recommended by ACCF/JNC-7 as they increased risk of heart attack and stroke alarmingly.[15] Periodic weight monitoring practice, at least once per week, is another recommendation from ACCF/JNC-7 for chronic cardiovascular patients.[16] These guidelines are applicable to Asian Indians in any geographical setting. Treatment of chronic cardiovascular morbidities is often expensive[17] and long-standing. In a resource limited country like India, regular practice of self-care activities can be hugely beneficial for the patients.

OBJECTIVES

The study was conducted to assess the awareness and practice of self-care activities among patients with chronic cardiovascular morbidity attending a Super-Specialty Care Hospital of Purba Bardhaman district, West Bengal. The study analyse relationship, if any, between socio-demographic characteristics and self-care practice among these patients and also to explore the constraints faced by study participants in practicing the self-care activities.

METHODOLOGY

Study design, setting and duration: It was a facility based sequential mixed-method study, the quantitative descriptive part with cross-sectional design followed by a qualitative part through phenomenological approach. The study was done in cardiology outpatient department of Anamoy Super-Specialty hospital, Purba Bardhaman district, West Bengal. The duration of study was six months (July 2021 to December 2021).

Study population: Diagnosed patients (age >18 years) of chronic cardiovascular morbidity, attending Cardiology outpatient department of Anamoy Super-Specialty Hospital, during the period of data collection, were included in study population. Patients who were seriously ill, with psychiatric illness or cognitive impairment or not willing to give informed consent, were excluded from the study.

Sample size and sampling technique:

Quantitative part: As per similar clinic based study[18] in Singur, West Bengal taking the proportion of overall good self-care practice as 37.1%, the minimum sample size was calculated as sample size (n) = $z^2p(1-p)/d^2$ [Where (z) = 1.96, absolute precision (d)

= 7.5%, (p) = 37.1%, Confidence Interval (CI) = 95%]. The calculated sample size was ≈160. Taking nonresponse rate 15%, the final sample size came to be ≈ 185.

Regarding sampling of cases, during OPD hours, the patient fulfilling inclusion criteria (Patient's age & medical diagnosis ascertained by his/her prescription) of the study, with whom the researcher met first in Cardiology OPD of Anamoy Specialty hospital, was selected for the first interview of the day. It took approx. 15-20 minutes to complete one interview. After completion of one interview, the immediately next available patient in Cardiology OPD at that moment, fulfilling eligibility criteria of the study, was selected for next interview. In this way, 8-10 patients were interviewed per day on twice per week basis.

Qualitative part: To explore the constraints faced in practicing self-care activities, In-depth-interviews (IDI) were done with those study participants who were aware about any of the recommended self-care activities and had time to go for in-depth-interview with the researcher, till the point of data saturation. Finally, eight IDIs were conducted with eight study participants.

Data collection, tools and techniques: Data was collected after ethical clearance and approval of the synopsis by the Institutional Ethics Committee of Burdwan Medical College and Hospital, Burdwan, West Bengal. Prior to data collection, administrative authority of Anamoy Super-Specialty Hospital was communicated and briefed about the purpose of the study, their permission was also taken. During the OPD hours, 8-10 randomly selected patients were interviewed per day on twice per week basis, for convenience of data collection.

A semi-structured, pre-designed, pre-tested schedule which included background information of study participants in initial part and assessment of awareness and selfcare practices in later part.

Assessment of awareness in different self-care activities: Awareness was assessed on eight self-care domains i.e., dietary practice, physical exercise, weight monitoring, regular medication, blood monitoring, smoking cessation, alcohol abstinence and adult immunization. Total 18 items were present. Responses recorded as 'yes' or 'no'. Score 1 for each 'yes' response & score 0 for each 'no' response awarded. Maximum attainable score was 18, minimum score 0 and median score 9. Scores ≥ 9 taken as satisfactory overall awareness.

Table-1. Self-care domain wise distribution of items, type of responses and domain scores:

No.	Self-care domains	Domain wise items	Individual items	Response noted as	Maximum domain score
1.	Dietary practice	5	1.Raw salt with diet. 2.Red meat. 3.Sweets. 4.Street foods. 5.Soft drinks (In last 7 days)	Yes/No. Score (1/0) for each item	5
2.	Physical exercise	2	1.Brisk walking. 2.Swimming/yoga/ meditation. (Minimum 5 days/week)	Yes/No. Score (1/0) for each item	2
3.	Regular medication	3	1.Taking all medicine. 2. In right dosage. 3. In right time. (In last 7 days)	Everyday/skip once/skip more than once. Score (2/1/0) for each item	6
4.	Blood monitoring	1	Blood testing (Within last three months)	Yes/No. Score (1/0) for each item	1
5.	Weight monitoring	1	Weigh measurement (Within last three months)	Every week/within last 3 months/did not measure. Score (2/1/0) for each item	2
6.	Adult immunization	4	1.Pneumococcal 2.Covid-19 3.Influenza 4.Hepatitis-B	Un-immunized/Partial/Full-immunized. Score (2/1/0) for each item	8
7.	Smoking cessation	1	Smoking	Never smoke/Not in last 7 days/ Occasional/Regular smoker. Score (3/2/1/0) for each item	3
8.	Alcohol abstinence	1	Alcohol intake	Never drink/Not in last 7 days/Occasional/Regular drinker. Score (3/2/1/0) for each item.	3
Total items		18	**Total score**		30

Assessment of self-care practices (based on ACCF/ JNC-7 guidelines)[7,19]: Self-care practice was assessed on similar 18 items adapted from Hypertension Self-Care Activity Level Effects (H-SCALE) which was a validated tool[20]. According to local context and objectives of the study, the measure was modified. Reliability of this tool was acceptable & satisfactory as Cronbach's alpha value was found to be 0.757. The tool was translated into Bengali and again converted back to English to maintaining linguistic equivalence. The 18 items were distributed in eight self-care domains. Responses in each domain were assigned with scores. The self-care domains with scores were illustrated in table 1.

Maximum score was 30, minimum score 0 and median score 15. Scores ≥ 15 were taken as satisfactory overall-selfcare practice. In case of individual domain, score of 50% or more taken as satisfactory practice in that self-care activity.

Recall period was preceding seven days of data collection except in blood & weight monitoring where recall period was preceding three months of data collection.

Pre-testing was done on 15 patients of chronic cardiovascular disease in General-Medicine OPD of Burdwan Medical College and necessary adjustments were done accordingly to make the tool ready for final use.

For quantitative part of the study, patient-interviews (PI) were done with the semi-structured, pre-designed, pre-tested schedule. And for the qualitative part, in-depth interviews (IDI) were done with in-depth-interview guide.

Ethical considerations: Ethical clearance was obtained from the Institutional Ethics Committee of Burdwan Medical College and Hospital, Burdwan, West Bengal. Prior to data collection informed consent was obtained from each patient. Confidentiality and anonymity of information was maintained.

Data management and analysis: Collected data was checked for completeness and consistency. Then principles of descriptive statistics were applied to organize and present the data in tables and diagrams. Data was finally analyzed using Statistical Package for Social Sciences (SPSS) version 23. Qualitative data were transcribed verbatim and analyzed thematically with inductive approach. The data were entered and analyzed by using Nvivo (release 1.0, QSR International) software. The report was prepared following the reporting guidelines of COREQ.

RESULTS

Background characteristics of study participants: A total of 185 patients were included in the study as none of the eligible patients withdrew their consent to participate in the study. Study participants aged from 38 to 80 years with mean age 58.54 years (SD 9.12) and 20% study participants belonged to below 50 years age group. 57.8% study participants were male, 58.9% were married, 34.1% had spouse death, 52.4% came from urban areas and 80% belonged to joint families. 48.6% study participants were Hindu, 38.9% were Muslim and remaining 12.4% were Christian. 19.5% study participants were illiterate and 56.2% had below secondary level education. 7% study participants belonged to lower most socioeconomic class and 21.6% were from lower-middle class. 88% study subjects were hypertensive, 58% were diabetic, 38.4% were obese and 43.8% had family history of cardiovascular disease. 36.2% study participants were dealing with cardiovascular disease for ≥5 years (Table-2).

Awareness in different self-care activities: Regarding awareness in different self-care activities, 51.9% participants were aware for dietary practice, 63.8% for regular physical exercise, 69.7% for smoking cessation, 81.1% for alcohol abstinence, 79% for regular medication, 38.7% for immunization, 70.8% for regular blood monitoring and 31.4% for weight monitoring. 73% study participants had over-all awareness regarding self-care activities (Figure-1).

Practice in different self-care activities: Favourable self-care practice, in different domains of self-care activities, was found in following proportion of study subjects – 64% in regular medication, 75% in alcohol abstinence, 26% in immunization, 51% in smoking cessation, 47% in dietary practice, 44% in regular physical exercise, 46% in regular blood monitoring and 17% in weight monitoring. Regarding overall self-care practice, 81 (43.8%) study participants showed favourable practice and 104 (56.2%) participants showed un-favourable practice (Figure-1). Overall self-care practice scores varied from 3 to 24 with mean score 13.42 (SD 5.19).

There was wide variability in the approach of study participants towards practice in different self-care activities. 29.5% participants avoided raw salt intake with food, 35% avoided fast food, 23.3% avoided red meat and 22.8% avoided cake/pastry/sweets in the preceding week of data collection. 34% study participants performed brisk walking at least 30 minutes/day for minimum 5 days in a week and 24.4% exercised yoga/swimming/meditation/cycling at least 5 days in a week. 27.2% study participants were current smokers. 78.4% participants received Covid-19 vaccine whereas 17.3% received pneumococcal vaccine, 7% received Hepatitis-B vaccine and 3.8% received Influenza vaccine.

Relationship between practice of self-care activities and background characteristics of patients:

Overall self-care practice of study participants was statistically significantly associated with their educational status (p 0.00), socioeconomic status (p 0.00), religion (p 0.002) and duration of chronic heart disease (p 0.004) (Table-2).

Table:2. Distribution of study subjects as per their background characteristics and overall self-care practice (N=185)

Descriptive characteristics	Total study participants (n=185) (%)	Overall self-care practice		Chi-square (χ^2) Value	df	p-value
		Favorable (n=81) (%)	Un-favorable (n=104) (%)			
Age (in years)						
<50	37 (20.0)	16 (43.2)	21 (56.8)	2.001	2	0.368
50-60	70 (37.8)	35 (50)	35 (50)			
>60	78 (42.2)	30 (38.4)	48 (61.6)			
Gender						
Male	107 (57.8)	42 (39.2)	65 (60.8)	2.117	1	0.146
Female	78 (42.2)	39 (50)	39 (50)			
Religion						
Hindu	90 (48.6)	50 (55.6)	40 (44.4)	**12.731**	**2**	**0.002**
Muslim	72 (38.9)	27 (37.5)	45 (62.5)			
Christians	23 (12.4)	4 (17.4)	19 (82.6)			
Educational status						
Illiterate	36 (19.5)	3 (8.3)	33 (91.7)	**50.605**	**4**	**0.000**
Primary (I-IV)	50 (27.0)	15 (30)	35 (70)			
Secondary (V-X)	54 (29.2)	26 (48.1)	28 (51.9)			
Higher-sec (XI-XII)	31 (16.8)	24 (77.4)	7 (22.6)			
Above higher-sec	14 (7.60)	13 (92.9)	1 (7.1)			
Socioeconomic status[1]						
Upper	5 (2.70)	5 (100)	0 (0)	**54.112**	**4**	**0.000**
Upper middle	52 (28.2)	37 (71.2)	15 (28.8)			
Middle	75 (40.5)	36 (48)	39 (52)			
Lower middle	40 (21.6)	2 (5)	38 (95)			
Lower	13 (7.00)	1 (7.7)	12 (92.3)			
Type of family						
Nuclear	37 (20.0)	21 (56.8)	16 (43.2)	3.162	1	0.075
Joint	148 (80.0)	60 (40.5)	88 (59.5)			
Residential area						
Urban	97 (52.4)	38 (39.2)	59 (60.8)	1.760	1	0.185
Rural	88 (47.6)	43 (48.9)	45 (51.1)			
Duration of chronic heart disease						
<5 years	118 (63.8)	61 (51.7)	57 (48.3)	**8.285**	**1**	**0.004**
≥5 years	67 (36.2)	20 (29.9)	47 (70.1)			

Note:1. As per Modified B G Prasad scale, CPI-IW value July 2021:330.; df= degree of freedom

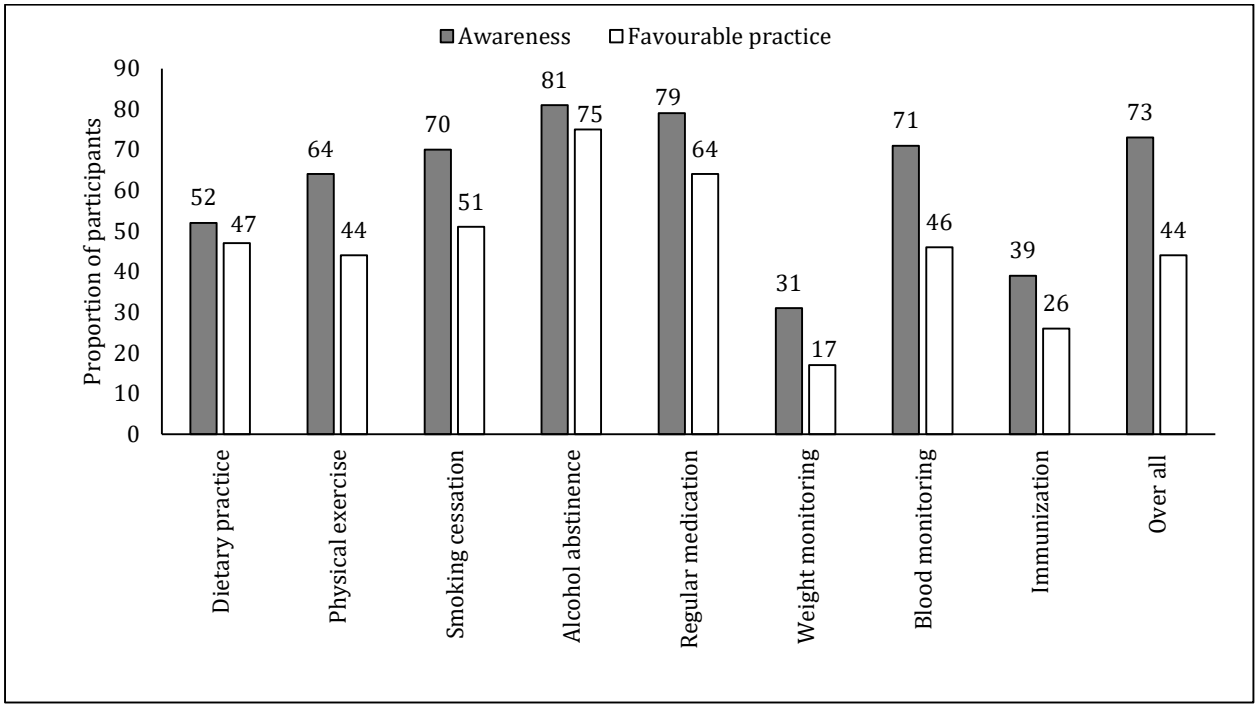

Figure:1. Distribution of study participants as per their awareness and favourable practice in different self-care activities (n=185)

Table-3. Multivariable logistic regression of socio-demographic factors with favorable overall self-care practice by study subjects (n=185)

Sociodemographic variables	Participants (n=185)	Overall favorable self-care practice (n=81) (%)	aOR (95% CI)	p-value
Age (in years)				
<50	37	16 (43.2)	0.535 (0.229-1.248)	0.148
≥50	148	65 (43.9)	Ref	
Educational status				
<Secondary	87	19 (21.8)	**0.412 (0.178-0.956)**	**0.039**
≥Secondary	98	62 (63.3)	Ref	
Socioeconomic status*				
Lower-middle & Lower	53	3 (5.6)	**0.063 (0.017-0.230)**	**0.000**
Upper, upper-middle & middle	132	78 (59.1)	Ref	
Type of family				
Nuclear	37	21 (56.7)	0.781 (0.326-1.868)	0.578
Joint	148	60 (40.5)	Ref	
Religion				
Hindu	90	50 (55.5)	1.143 (0.526-2.485)	0.736
Muslim & Christians	95	31 (32.6)	Ref	
Residential area				
Urban	97	38 (39.1)	1.522 (0.755-3.070)	0.241
Rural	88	43 (48.9)	Ref	

Nagelkerke R^2 value 0.385; Hosmer-Lemeshow test value 0.157
aOR- Adjusted Odds Ration, CI-Confidence Interval; *As per Modified B G Prasad scale, [CPI-IW value January 2021: 330]

Multivariable logistic regression analysis was done between sociodemographic characteristics of study participants and favourable self-care practice. After adjustment of variables, Educational status < secondary school level [AOR:0.412 (0.178-0.956)] and Lower & lower-middle socioeconomic class [AOR: 0.063 (0.017-0.230)] werefound to create negative impact on favourable self-care practice ($p < 0.05$). Hosmer-Lemeshow test value was 0.157 which suggested goodfit of the model and 38.5% variation of dependable variable (overall favourable self-care practice) could be explained by this model (Table-3).

Constraints in self-care practices by study participants:

Through thematic inductive analysis the study explored the difficulties and constraints faced by patients with chronic cardiovascular morbidity, in practicing their self-care activities. Eight patients with chronic cardiovascular morbidity were interviewed in depth for the study, till there was data saturation on simultaneous analysis. Out of eight patients, five were male and three were female. Mean age of the patients was 52 years. They represented from two Indian states – Jharkhand and West Bengal, spoke in Bengali and were distributed in various socio-economic strata and literacy levels. Their perception about illness showed much variability.

IDIs were done with an IDI guide. The one-to-one interviews were recorded, audio-taped with proper consent. Hand-written notes were also taken simultaneously by the researcher. Collected notes and audio records were gone through word by word and then transcribed as verbatim. The transcripts were again read multiple times to gain familiarity and then compared with the hand-written notes. This was done to ensure that the data was captured with those non-verbal responses. The transcripts were then coded inductively. Code-compilation was done and finally, the coded texts were condensed into different themes.

The emergent themes regarding constraints in self-care practice were – false belief about heart disease, lack of motivation, emotional disturbance, lack of proper knowledge and Covid-19 pandemic impact. False perception about age, denial towards diagnosis, lack of thought clarity, lack of communication, fatalistic mindset and trust deficit in health system were the sub-themes under the theme of false belief about heart disease. Reluctance, hectic job schedule, over rely on caregiver, excess pill dependency and associated illness were the sub-themes under the theme of lack of motivation. Anxiety & depression, spiritualism, agony of broken family were the sub-themes under the theme of emotional disturbance. Superstition, misleading information, contradictory information were the sub-themes under the theme of lack of proper knowledge. Restricted out-door activities, costly medicines, increased financial hardships and demise of loved ones were the sub-themes under the theme of Covid-19 pandemic impact (Figure-2).

Emergent themes: Five themes are emerged after analysis of transcribed data. They are described along with the subthemes and sample verbatim.

False belief about heart disease:

False perception about age: Although the patients were getting specialty care, still they had certain extent of false perception that the disease progression was chiefly related to their age. As one of the interviewee said,

"*As I am advancing in age, these problems are occurring more frequently*."

Denial towards diagnosis: Some of the patients had

hesitations in accepting their illness. One of the interviewees said,

"My doctor says that I have problems in heart, but I think it may be related with my digestion problems."

Fatalistic mindset: Some of the patients presumed that the illness would eventually turn out to be worse for them, so they found no point in trying to change the outcome. One of the interviewee said,

"It will not be cured any more, I have left all to own destiny."

Lack of clarity in thoughts: Some of the patients were also found to be lacking the clarity in their thoughts about selfcare practice. One of the interviewee said,

"Because of acidity problems, I often skip meals at night, eating less will do no harm to me."

Trust deficit in healthcare system: Few patients had expressed their mistrust on current healthcare system. One of the interviewee said,

"So, I'm thinking to go south India next month for better treatment."

Lack of communications: Some of the patients told that they were not aware about the need of selfcare activities as they were not adequately adviced about it by doctors. One of the interviewee said,

"But doctors have not said anything clearly to me yet about this."

Lack of motivation for selfcare practice:

Reluctance in selfcare practice: Few patients responded reluctantly about selfcare practices. Regarding regular medicine intake, one of the interviewee said,

"At times pills are missed when I am outside the home."

Hectic job schedule: Some of the patients inculpated their hectic job schedule for not performing selfcare activities regularly. One of the interviewee said,

"I don't get time to go for morning-walks as I have to travel early morning in train to reach office."

Over-rely on care-givers: Regarding taking medicines regularly in specific dose & time, one of the interviewee said,

"Actually, my daughter looks after all these things, I can't remember them well."

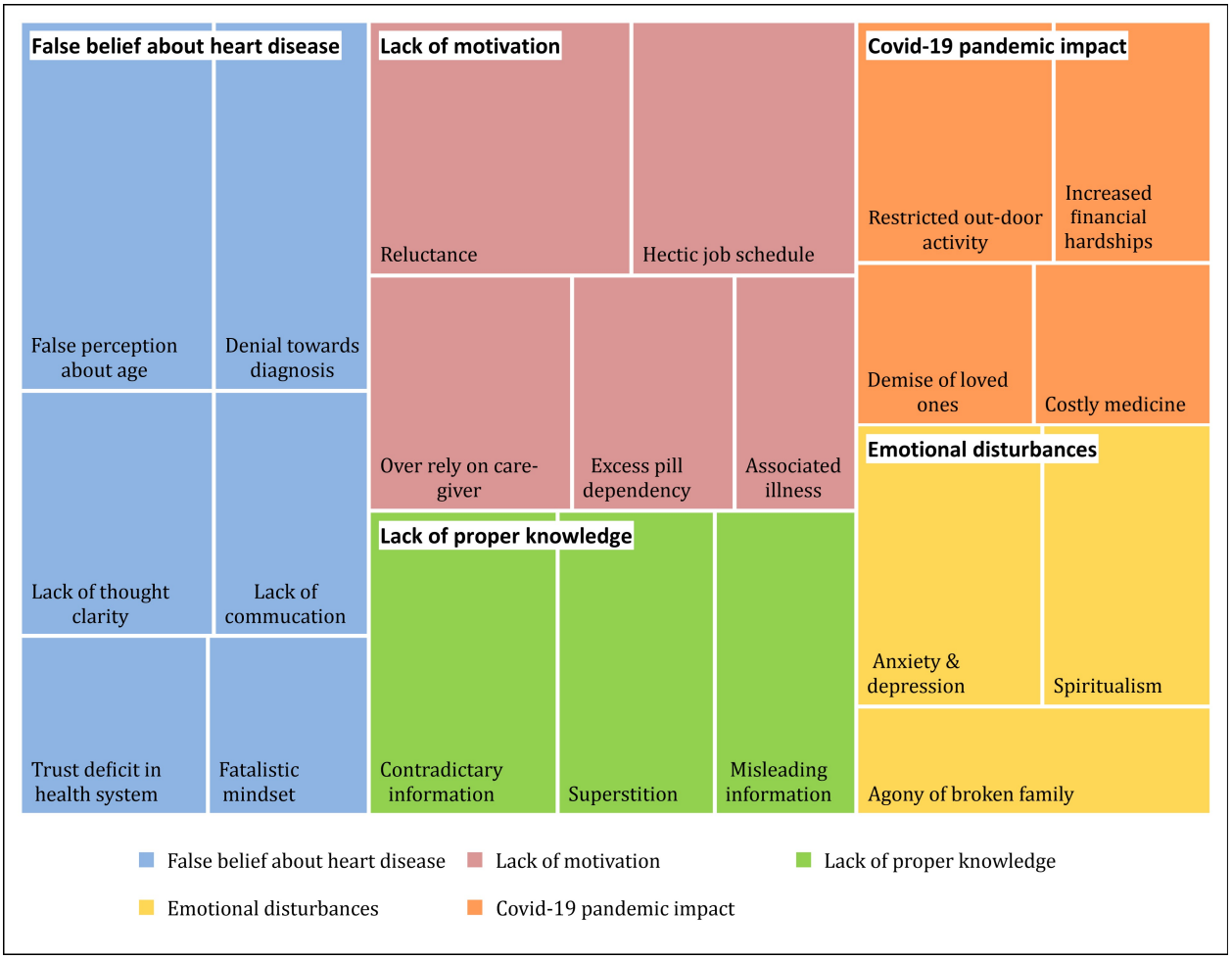

Figure-2. Tree map showing the themes & sub-themes regarding constraints faced by study participants in practicing self-care activities

Excessive pill-dependency: Majority of the patients felt that pills alone were sufficient to control their disease. One of the interviewee said,

"I don't prefer street foods, but…. I take two pegs of alcohol every day at bedtime for my sleep, but most importantly, I take all the medicines regularly."

Associated illness: One of the interviewee said,

"Due to pain in low back &knees, I can't do morning walks for the last 2-3 months."

Emotional disturbances:

Anxiety & depressions related to prolonged illness: Due to prolonged disease suffering, patients were found to be enduring significant amount of anxiety and depressions. One of the interviewee said,

"At times I feel so depressed with my illness that I don't even want to continue treatment anymore."

Spiritual thinking: With prolonged suffering, patients were highly emotional about their ill-health. One of the interviewee said,

"I'm quite frustrated in taking medicines for months after months and even after that chest pain recurs; I have left it now on destiny."

Agony of broken family: One of the interviewee said,

"We have lost our reasons to live after demise of our single child in an accident last year."

Lack of proper knowledge in selfcare activities:

Superstitions regardingheart disease: Instead of following doctor's advice and performing self-care activities, some of the patients were more keen in finding irrational/mythical ways to get relief. One of the interview said,

"One renowned astrologer suggested me to wear a blue sapphire in right hand, since then I wear it and it has actually helped a lot to reduce my illness."

Misleading information from others: One of the interviewee said,

"My colleagues often ask me to eat foods like meat, eggs daily to increase immunity."

Contradictory informations in mass-media: One of the interviewee said,

"I have seen in TV that mustard oils are good for heart."

Covid-19 pandemic impacts:

Restricted outdoor activity during lock-down period: During the lock-down period, practice of selfcare activities was greatly diminished. As one of the interviewee said,

"In the last one and half years, due to Covid restrictions, I only walk in the garden within my house in the morning, don't go outside due to fear of getting corona."

Demise of loved ones in Covid-19: Some of the patients were found who lost their loved ones in Covid-19 recently. One of the interviewee said,

"Recently I have lost my wife in Covid, we have lost interest in life completely."

Costly medicines: Patients could not avail free supply of all the prescribed drugs from the facility due to their irregular availability. One of the interviewee said,

"Often medicines are not fully available in hospital pharmacy, so they are to be purchased from outside and some of the drugs are very costly"

Increased financial hardships: Due to covid situation financial liabilities of people were much deteriorated. One of the interviewee said,

"Market price of domestic consumables has gone high; I even find it very difficult now to accumulate tuition fees for my children."

DISCUSSION

The study presented the awareness, practice and constraints in self-care activities among patients with chronic cardiovascular morbidity. This study is one of the rare studies showing awareness and practice in individual domains of self-care activities as well as exploring the constraints in practicing them. All the individual domains were used here to make a composite level of self-care practice.

The global scenario of self-care practice among chronic cardiovascular patients was somewhat similar with wide variability. Several studies from Nepal, China, Canada, Ethiopia, Bengaluru, Chennai and West Bengal (India) hint about varying degree of awareness and practice in self-care activities by patients with chronic cardiovascular morbidities.[21-29] In this study, lack of awareness regarding weight monitoring, immunization and dietary practice was found among the patients. This is fairly consistent with the findings of a study[21]in Pakistan which has also narrated low awareness among hypertensive patients for self-care. However, this is incompatible with another similar study[22] conducted in USA which have reported improved awareness. These differences in results can be attributed to significant difference in educational level as nearly half of the study participants in this study had poor educational status.

Excepting dietary practice, alcohol abstinence and regular medication, in rest of the self-care domains, there were significant gaps between existing awareness and practice of self-care. A facility-based study[23] done in Chennai, among predominantly urban, educated and working class of patients, showed high extent of self-care practices as compared to current study, where about 89% patients were practicing smoking cessation, 75% patients were avoiding raw salt with food and 64% patients were avoiding red

meet. In this study, females performed better than males regarding overall self-care practice. A similar study[24] conducted in Kerala showed that practice of physical exercise was 24%, weight management 11.4% and dietary practice 12.8% which were much lower than current study.

In this study, certain sociodemographic factors were associated with unfavourable self-care practice, such as lower & lower middle socioeconomic status and educational status below secondary level. This is fairly consistent with the findings of a facility-based study[25] in South-west Ethiopia which showed occupation, educational status and comorbidity of patients as factors significantly associated with their self-care practice. Practice of regular medication was found to be low in that study (40.4%), although regular physical exercise (76.7%) and alcohol abstinence practices (95.3%) were higher than current study.

In this study, the major hindering factors behind regular practice of self-care activities were false belief about heart disease, lack of motivation, lack of proper knowledge and emotional disturbances and Covid-19 pandemic impacts. In compatible with our study, a similar study[26] in a tertiary care setting in Bengaluru classified self-care determinants into three broad categories – negative determinants (passivity, entrenched beliefs, negative affect, lack of knowledge, fatalism, financial difficulties), intermediate factors (patient expectations, hospital hopping) and facilitators (intrinsic and extrinsic). Gender and cultural background of patients' up-bringing appeared to shape these determinants and thereby affecting their self-care decision making.

In a similar study[27] in rural setting of China among educated and working-class population, every domain of self-care practice was on higher side as compared to current study. Another study[28] done in a tertiary care centre at Kathmandu, Nepal among predominantly urban, educated patients, again showed higher extent of self-care practices than in current study – 80% patients were practicing smoking cessation and 64% patients were performing regular physical exercise, which actually hint about healthier life-style pattern of people in mountainous region. A similar facility-based study[29] in Toronto, Canada highlighted the differences in needs and challenges of Diabetes self-care management among men and women, which might inform about gender sensitive morbidity care, support and counselling.

The current study has assessed the awareness and practice in self-care activities along with the constraints in practicing them. But this does not deter future researchers to conduct larger studies in this domain. This study paves the way for future studies to diminish the gaps between existing knowledge and practice of self-care activities.

The findings of the study may be limited by the fact that despite shorter recall period for the study, some amount of recall bias and social desirability bias were inevitable to some extent in the study.

Conclusion

Awareness and practice both are low among study participants regarding recommended self-care activities. Educational & socioeconomic status both are significant predictors of their favorable self-care practice. Better patient counselling at facility level and public health interventions to enhance awareness about self-care needs are needed to ensure healthy lifestyle among study participants.

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