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Patient Understanding Regarding Cardiac Rehabilitation in Bangladesh Medical University

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Abstract

Background: Cardiovascular diseases (CVDs) are the most common cause of mortality and morbidity worldwide and are a significant public health problem in low- and middle-income countries (LMICs), including Bangladesh. The prescribed cardiovascular rehabilitation (CR) has well-known survival benefits, but uptake has remained low with numerous barriers to access, such as a lack of awareness. This study aimed to evaluate patients' insights, understanding, and perception of obstacles to CR in a tertiary healthcare hospital in Bangladesh. ***Methods:*** This cross-sectional observational study was conducted at Bangladesh Medical University from June to December 2023. Convenience sampling was used to recruit 90 adult patients with cardiovascular conditions. A structured questionnaire on CR awareness, perceived benefits, and barriers to participation was used to collect the data. Descriptive statistics was used to analyze the demographic variables, knowledge, and response patterns. ***Results:*** Only 45.6% of participants were aware of the CR program, whereas healthcare providers were a significant source of information (45.6%). The most frequently recognized benefit was improved quality of life (67.8%), followed by decreased risk of recurrent cardiac events (65.6%). The primary barriers to CR participation were financial (30.0%), time (27.8%), and family support (23.3%) constraints. ***Conclusions:*** Limited knowledge and numerous barriers stand in the way of CR in Bangladesh. Strategies to improve CR utilization and cardiovascular health outcomes include enhancing patient education, increasing accessibility, and implementing financial and social support strategies.

Keywords: Cardiac rehabilitation; Patient knowledge; Barriers; Cardiovascular disease.

INTRODUCTION

Cardiovascular diseases (CVDs) continue to be the number one cause of global morbidity and mortality, with a substantial burden also seen in low- and middle-income countries (LMICs), including Bangladesh. Worldwide, in 2016, there were 17.9 million deaths due to CVDs, accounting for 31% of all deaths [1]. The burden of cardiovascular disease (CVD) has been increasing in Bangladesh and causing a considerable public health challenge [2].

Cardiac rehabilitation (CR) is a holistic, multispectral intervention that maximizes the physical, psychological, and social functioning of patients with cardiovascular conditions. It includes structured exercise training, instruction in heart-healthy behaviors and counselling to reduce stress and improve adherence to medical therapies [3]. Evidence shows that CR significantly lowers mortality and morbidity, improves health-related quality of life and decreases hospital readmission in cardiac patients [4].

Although CR has proven benefits, participation in CR programs remains very low, and CR programs especially among South Asians. Various barriers have been identified, such as cultural beliefs, language, and lack of knowledge of CR services [5]. The idea of CR is still an emerging one in Bangladesh, with few establishments providing structured programs [6]. Negative attitudes and a lack of awareness about CR among healthcare providers and patients limit the utilization of such services, as highlighted by a recent study [7].

The existing literature also highlights that

patient education and awareness are pivotal in improving CR participation rates. For example, a qualitative study of the experiences of South Asian cardiac patients suggested that a lack of CR knowledge and benefits was the most prominent barrier to CR engagement among that population [8]. Another highlighted that targeted educative interventions could effectively improve CR uptake in ethnic minorities [9].

Nonetheless, minimal literature is dedicated to investigating Bangladeshi patients' understanding of CR in tertiary hospital settings. Most studies have focused on Western or South Asian populations but do not consider Bangladesh's unique cultural and systemic features. This gap highlights the need for context-specific investigations to inform targeted interventions.

The primary purpose of this study is to assess the knowledge of cardiac rehabilitation among patients in a tertiary hospital in Bangladesh. The research aims to identify gaps in knowledge and misconceptions, which can guide the development of culturally appropriate educational strategies to increase CR participation. We hypothesize that limited awareness about CR in the patient community and limited knowledge of CR programs result in poor enrollment in existing programs.

Objective

This study aimed to evaluate the patient awareness and understanding of the barriers to cardiac rehabilitation at Bangladesh Medical University.

METHODOLOGY & MATERIALS

This cross-sectional observational study was conducted at the Department of Cardiology, Bangladesh Medical University, from June 2023 to December 2023. It includes 90 patients with cardiovascular conditions receiving care at Bangladesh Medical University, regardless of their prior knowledge or participation in cardiac rehabilitation.

Inclusion Criteria:

- Adults (≥18 years) with cardiovascular conditions.
- Receiving care at Bangladesh Medical University.
- Able to provide consent and complete the survey.

Exclusion Criteria:

- Severe cognitive or psychiatric impairment.
- Acute medical conditions preventing participation.
- Declined consent or unwillingness to complete the survey.
- Prior comprehensive cardiac rehabilitation training.

Data collection: Data were collected from 90 participants at Bangladesh Medical University using a pre-structured questionnaire. The questionnaire assessed awareness, perceived benefits, barriers to cardiac rehabilitation, and demographic and health-related information. Informed consent was obtained from all participants. The data collection process took place in a private and confidential environment, ensuring participants' privacy and ethical considerations were met throughout the study.

Statistical data analysis: Data analysis was done using SPSS (version 26). Descriptive statistics are used to summarize demographic characteristics and responses. Percentages and frequencies were calculated for participants' awareness of cardiac rehabilitation, perceived benefits, and barriers to participation. Results were presented in tables to illustrate the distribution of responses across different categories. The significance level was set at $p < 0.05$.

RESULTS

Table 1: Demographic characteristics of the participants (n=90)

Demographic Variable		Frequency (n = 90)	Percentage (%)
Age Group (years)	18-30	17	18.9
	31-45	35	38.9
	46-60	27	30.0
	>61	11	12.2
Gender	Male	53	58.9
	Female	37	41.1
Education Level	No Formal Education	15	16.7
	Primary Education	31	34.4
	Secondary Education	25	27.8
	Tertiary Education	19	21.1
Comorbid Conditions	Hypertension	33	36.7
	Diabetes Mellitus	21	23.3
	Dyslipidemia	15	16.7

This table presents the demographic characteristics of the study participants, including age, gender, educational level, and comorbid conditions. The sample consisted of 58.9% males and 41.1% females, with the majority of participants (38.9%) aged 31-45 years. Regarding education, 34.4% had primary education, and 21.1% had tertiary education. The most common comorbid conditions were hypertension (36.7%) and diabetes mellitus (23.3%).

Table 2: Knowledge of cardiac rehabilitation (n=90)

Knowledge Aspect		Frequency (n = 90)	Percentage (%)
Awareness of Cardiac Rehabilitation	Yes	41	45.6
	No	49	54.4
Sources of Information	Healthcare Providers	41	45.6
	Television/Media	17	18.9
	Family/Friends	21	23.3
	Other (e.g., pamphlets, seminars)	11	12.2
Health Perception (Self-Reported)	Excellent	16	17.8
	Good	44	48.9
	Fair	21	23.3
	Poor	9	10.0

Table 2 summarizes participants' awareness and sources of information regarding cardiac rehabilitation. A slight majority (54.4%) were unaware of CR, with only 45.6% acknowledging its existence. The primary sources of information about CR were healthcare providers (45.6%), followed by family and friends (23.3%) and media (18.9%). Self-reported health status revealed that nearly 67% of participants rated their health as "good" or "excellent."

Table 3: Perceived benefits of cardiac rehabilitation (n=90)

Perceived Benefit	Frequency (n = 90)	Percentage (%)
Improvement in Quality of Life	61	67.8
Reduction in Recurrence of Heart Disease	59	65.6
Increased Physical Fitness	61	67.8
Psychological Benefits (e.g., Stress Relief)	44	48.9
Other (e.g., educational support)	18	20
Social Support	29	32.2

This table outlines participants' perceptions of the benefits associated with cardiac rehabilitation. The most commonly recognized benefits were improvements in quality of life and physical fitness, each reported by 67.8% of participants. Additionally, 65.6% acknowledged the reduction in heart disease recurrence, while 48.9% believed CR provided psychological benefits such as stress relief. Social support was perceived as a benefit by 32.2% of participants.

Table 4: Barriers to cardiac rehabilitation participation (n=90)

Barrier to Participation	Frequency (n = 90)	Percentage (%)
Financial Constraints	27	30.0
Physical Limitations (e.g., fatigue)	14	15.6
Time Constraints	25	27.8
Lack of Motivation	11	12.2
Other (e.g., transportation)	7	7.8
Lack of Family Support	21	23.3

Table 4 identifies the barriers participants face in accessing cardiac rehabilitation. The most significant obstacles were financial constraints (30%), time limitations (27.8%), and lack of family support (23.3%). Other barriers included physical limitations such as fatigue (15.6%) and a lack of motivation (12.2%). Transportation issues were less commonly reported, affecting 7.8% of participants.

DISCUSSION

This study was conducted at Bangladesh Medical University to determine patients' understanding of and perceptions of cardiac rehabilitation (CR). The study showed that only 45.6% of participants knew CR programs. However, there was widespread belief in the benefits of CR, such as improved quality of life, decreased heart disease recurrence, and increased physical fitness. The most significant barriers to

participation were financial constraints, time constraints, and lack of motivation.

The results of this study corroborate previous studies in low-income and higher-income settings, indicating a global lack of awareness of CR programs. A systematic review by Namanja *et al.*, reported similar barriers to participation in Sub-Saharan Africa, including financial constraints and time as significant limitations [10]. These findings indicate that patients in Bangladesh face the same issues as those in other low-resource settings.

Furthermore, the study's finding that 45.6% of participants reported receiving information about CR from healthcare providers mirrors the results of research by Ghisi *et al.*, who found that healthcare providers were the most common source of CR-related patients' information [11]. However, this still highlights the need for more proactive and widespread patient education efforts to increase awareness of CR programs in healthcare settings. Only 18.9% of participants reported receiving information from television or media, which further suggests that the public health campaigns around CR in Bangladesh may be insufficient.

The other data showed that 67.8% of the study group considered CR to improve quality of life and fitness, but only 45.6% knew its existence. This disparity highlights the necessity for a dual strategy in patient education—one to raise awareness of CR programs and another to illustrate the long-term health benefits that follow. Cummings and Schluger pointed out that educational efforts must focus on the existence of healthcare programs and their impact on patients' health outcomes [12].

The research findings in this analysis confirm the obstacles discovered through worldwide research. The research of Meah *et al.*, found financial barriers and time restrictions that prevent United Kingdom adults from participating in CR programs [13]. This research demonstrates that Bangladesh requires immediate solutions to resolve these accessibility issues. It becomes essential to establish strategies for improving CR accessibility in Bangladesh because of financial constraints and expensive healthcare costs, which necessitate government-backed programs, insurance coverage or subsidized services. It is fundamentals to investigate CR implementation approaches for patient populations in community-oriented spaces with reduced transportation availability and better time flexibility.

The survey revealed interesting findings where psychological barriers, including low motivation combined with insufficient family support, protected significant barriers to care. The data from our study show that 12.2% of respondents named lack of motivation as an obstacle, which supports Grewal *et al.*'s findings about motivational interviewing and patient-centred care approaches as necessary barrier breakers for South Asian populations [5]. The findings demonstrate that insufficient family support remains a considerable hurdle to rehabilitation since 23.3% of participants indicated this as an obstacle. Families' support is an essential element that drives patients to participate in and follow CR programs. Future cardiac rehabilitation programs in Bangladesh must integrate family support interventions because this will boost patient participation.

The findings of this research introduce various operational and policy-related implications. The research results show that patients need better information about CR programs and their significance in healthcare. Studies by Anderson and Bozkurt emphasize the importance of enhanced CR awareness and enrollment because they help patients reach better healthcare results, especially when managing chronic heart diseases [14, 15]. Strategies for the affordability of CR services and primary healthcare integration require policy-level changes to improve CR accessibility.

CONCLUSION

The present study highlights that Bangladesh requires enhanced resources for comprehensive CR education and better CR facilities. Understanding the advantages of CR exists while substantial obstacles block the pathway, which needs comprehensive interventions at multiple community levels. The enhancement of CR uptake and better cardiovascular outcomes in this population will be achieved by utilizing evidence-based approaches that include physician-driven referrals, financial support systems, and social reinforcement strategies.

Limitations and Recommendations

This single-centre, cross-sectional study limits generalizability and causal inference. Self-reported data may introduce bias, and the small sample size may not capture demographic diversity. Future multicenter and longitudinal studies are needed. Educational interventions and policy initiatives should enhance awareness and reduce financial and logistical barriers to improve cardiac rehabilitation participation.

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