Original Article

Patients' Perspective of Barriers to Participating in Supervised Exercise-based Cardiac Rehabilitation Program: A Qualitative Study

Varoon Chandramohan Jaiswal[1], Sneha Deepak Ghuman[1], Snehal Avinash Ghodey[2]

[1]Department of Cardiovascular and Respiratory Physiotherapy, MAEER'S Physiotherapy College, Pune, Maharashtra, India, [2]Department of Musculoskeletal Physiotherapy, MAEER'S Physiotherapy College, Pune, Maharashtra, India

ABSTRACT

Background: Benefits of the cardiac rehabilitation (CR) program are well documented in the literature. Despite proven benefits, enrollment rates in cardiac rehab programs remain low. Patients' perceived barriers influencing the enrollment rates in CR programs remain unclear. **Purpose:** Underutilization of CR facilities remains a major problem. Identification of patients' perceived barriers to participating in supervised exercise-based outpatient CR programs will help in developing strategies to improve the enrollment rates and to increase the utilization of CR services. This study aims to record the barriers that patients face by conducting focused group discussions (FGDs). **Methods:** We conducted five FGDs until we reached the saturation point. FGDs were conducted as per the standard guidelines. Discussions were recorded by the note keeper and later transcribed. Thematic analysis was done to identify the barriers perceived by the patients to attend the supervised outpatient CR programs. **Results:** After analyzing the verbatims, we identified seven different themes as patient-perceived barriers to participating in supervised exercise-based outpatient cardiac rehab programs: (1) Transport distance, time, and cost, (2) lack of family support, (3) lack of interest, (4) work timings, (5) financial constraints, (6) comorbid conditions, and (7) lack of willingness. **Conclusion:** Reaching the cardiac rehab facility, lack of family support, lack of interest in joining the program, unsuitable work timings, financial constraints, disabling comorbid conditions, and lack of willingness to join the program are the patient-perceived barriers to participate in supervised exercise-based outpatient cardiac rehab programs. Enrollment rates and adherence to cardiac rehab programs can both be enhanced by addressing these barriers. Future research should emphasize addressing patient-related barriers to enrolling in a CR program.

Key words: Cardiovascular diseases, chronic diseases, health systems reform

INTRODUCTION

Coronary artery disease (CAD) is a leading cause of death and disability worldwide.[1] Over the past six decades, the prevalence of CAD in India has increased from 1% to 9–10% in the urban population and <1% to 4–6% in rural areas.[2] The disability due to CAD has substantially increased in low- and middle-income countries.[3,4] Due to the increasing number of disability-adjusted life years, CAD is a significant threat to public health and burdens the health-care system.[5] Increased levels of disability associated with CAD are strongly associated with decreased health-related quality of life.[6]

Cardiac rehabilitation (CR) is a multidisciplinary approach and has proved instrumental in reducing mortality and morbidity in CAD patients.[7] CR reduces hospitalization and improves health-related quality of life

Access this article online	
Website: https://www.themmj.in	Quick Response Code
DOI: 10.15713/ins.mmj.64	

Address for correspondence:
Varoon Chandramohan Jaiswal, Department of Cardiovascular and Respiratory Physiotherapy, MAEER'S Physiotherapy College, Talegaon Dabhade, Pune, Maharashtra, India. E-mail: drvaroon@gmail.com

and functional status.[8] The American Heart Association and the American College of Cardiology have given Class 1 A recommendations to CR for CAD patients.[9] Despite proved benefits and clinical practice guidelines recommendations, CR facilities remain underutilized.[8] Underutilization of CR facilities has been reported as a global problem.[10] Various barriers have been identified and they can be broadly classified as health-care system-related barriers, health-care professional-related barriers, and patient-related barriers.[8,11] Literature regarding the patient-related barriers influencing participation in CR programs has not been studied in depth. The top barriers identified in the Indian scenario are lack of referral from the treating physician and lack of financial resources. Identifying and overcoming patient-related barriers are a vital step in improving the delivery of CR services in India.[12] Focused group discussions (FGDs) can elicit patients' perspectives on the barriers to participation in outpatient CR programs. To the best of our knowledge, no study has used FGD to identify in-depth patient-related barriers influencing outpatient cardiac rehab program enrollment rates.

METHODS

We conducted a FGD with CAD patients admitted to a tertiary care hospital after the acute coronary event. FGDs were conducted as per the standard guidelines.[13] Each group consisted of five patients, a moderator, and a note keeper. The moderator regulated the discussions in the group. Semi-structured questions were asked by the moderator to regulate the discussion. The moderator is a CR expert who directs the CR department at the same tertiary care hospital. The note keeper was instructed to record all the conversations that took place in the FGD. The entire discussion was recorded by a video camera, which helped with analysis later. A silent and conducive room was selected for FGD.

Institutional Ethics Committee approval was obtained. After receiving written informed consent from the participants, five FGDs were conducted, which included 25 patients altogether. Diagnosed cases of CAD who were eligible to participate in CR were included in the FGD. The demographic characteristics of the participants are described in Table 1. All the FGDs were recorded by the note keeper and verbatim of each discussion was prepared by a researcher not involved in the study. Interview extracts were noted verbatim and codes were prepared to do the thematic analysis, please refer to Table 2. Further, FGDs were not conducted as we reached the saturation point.

Table 1: Demographic data

Characteristics	Group	Total
Gender	Men	18
	Women	07
Mean age	Men and women	70

Data Analysis

Data were analyzed using thematic analysis. The recorded discussions were transcribed, interview extracts were created, and codes were generated. Codes were then clubbed under respective themes.

RESULTS

Based on the research question, the contents of the interviews were classified into seven superordinate thematic categories: (1) Transport distance, time, and cost, (2) lack of family support, (3) lack of interest, (4) work timings, (5) financial constraints, (6) comorbid conditions, and (7) lack of willingness. The results were formed based on these seven categories.

Transport Distance, Time, and Cost

Statements related to the transportation of the patients to the cardiac rehab facility were grouped and coded as public transport, time to reach, traveling distance, cost of transportation, from a distant place under the broad theme transport distance, time, and cost. Following are the discussion statements in which the patients address the barriers related to the transport distance, time, and cost theme.

"*The distance is too much, there is no public transport available, and it will be difficult for me to commute on daily basis.*"

"*We have only 1 state transport bus available and the time is not fixed*" "*it takes 2 h to reach this hospital, it's difficult*" "*The cost of daily traveling is going to cost me a lot*"

In this conversation, patients expressed their barriers by mentioning the difficulties of commuting from their homes to the hospital. Because of a lack of adequate public transportation, they will have to commute every day for at least 6–8 weeks to complete the CR program.

Lack of Family Support

Discussion statements related to lack of family support were coded as support from family, busy family members, and family responsibility. These codes are grouped under a theme of lack of family support. Following are

Table 2: Thematic analysis

S. No.	Interview extracts	Codes	Themes
1.	1. No public transport is available 2. It will take a lot of time to reach the rehab center 3. Commuting is difficult I stay 40 km away 4. Traveling this distance will cost me a lot 5. I come from a different geographical region will go back once I am discharged so I cannot attend	• Public transport • Time to reach • Traveling distance • Cost of transport • From distant place	Transport distance, time, and cost
2.	1. Everyone in the family is busy, no one will accompany me 2. All family members go out for work 3. My spouse is very old I need some support to reach the hospital 4. I have the responsibility of the entire family cannot join 5. I am ready to join if someone from my family accompanies me to the hospital	• Support from family • Busy family members • Family responsibility	Lack of Family support
3.	1. I am ok, I do not require any rehab 2. Exercises are boring to me 3. I am very busy with my routine work	• Thinks he does not require any rehab • No interest in exercises	Lack of interest
4.	1. Work timing does not match with the hospital OPD timings	• Rehab OPD timing clashes with work schedule	Work timings
5.	1. Cannot afford to lose 1-day income as timing matches with my occupation timing 2. Can come only if it is free of cost. I am very poor.	• Financial problems	Financial constraints
6.	1. Difficult for me to walk because of age-related weakness and diabetes 2. I have gone through some lower limb surgery because of some trauma 3. I am suffering from dizziness and some ophthalmic problems	• Unable to join because of other comorbid conditions	Comorbid conditions
7.	1. I do not want to join (no specific reason given)	• Not willing to participate	Lack of willingness

the discussion statements in which patients conveyed their barrier as a lack of family support.

"*We are very old and there is no one in our family to accompany us to this hospital*"

"*Everyone in the family has to go for their job no one can bring me to hear as I cannot travel alone*"

"*I am dependent on someone from the family to join*"

The above discussion statements convey the barrier related to lack of family support. Patients require assistance from their own families to reach the cardiac rehab facility.

Lack of Interest

Sentences in the discussion showing a lack of interest from the patient's side to join the cardiac rehab program were coded as, thinks does not require rehab, no interest in exercises. These codes were grouped under the theme of lack of interest.

"*I am ok I don't require any rehab*",

"*Exercises are boring to me*"

"*I am already very busy with my daily routine work*"

With the above statements in the discussion, patients conveyed that they are not interested in joining a cardiac rehab program to improve their functional status.

Work Timings

The patient's work timings not matching with the hospital outpatient timings. These sentences were coded as, timing clashes with the work schedule. This code was grouped under the theme "Work timings."

"*My work timings clash with the hospital OPD timings*"

"*I cannot leave my work and come to the hospital*"

Financial Constraints

Patients came from low-income families because the hospital is charitable. Sentences recorded in the discussion reflected financial constrain as a theme and are coded as financial problems.

"*Cannot afford to lose 1-day income as timing matches with my occupation timing*"

"*Can come only if it is free of cost I am very poor*"

Comorbid Conditions

Patients with other disabling comorbid conditions stated that they will be unable to participate in cardiac rehab program due to their existing medical condition.

Sentences reflecting comorbid conditions as a barrier were coded as unable to join because of other comorbid conditions. This code was grouped under the theme of comorbid conditions.

"It is difficult for me to walk because of age-related weakness and diabetes, I will not be able to join"

"I have gone through some lower limb surgery because of some trauma so cannot join"

"I am suffering from dizziness and some ophthalmic problems so I can't join"

Lack of Willingness

There was a direct reply from the patient saying he does not want to join the CR program and he did not have any specific reason for it. This particular sentence was coded, not willing to participate, under the theme of lack of willingness.

"I don't want to join."

DISCUSSION

We wanted to understand the patient's perspective on barriers to participating in a supervised outpatient cardiac rehab program in depth. FGDs and thematic analysis can explore the patient's views on not joining the outpatient CR program. After thematic analysis, we identified seven different themes as a patient perspective of barriers to joining a supervised outpatient CR program: (1) Transport distance, time, and cost, (2) lack of family support, (3) lack of interest, (4) work timings (5) financial constraints, (6) comorbid conditions, and (7) lack of willingness.

Transport distance, time, and cost were the major barrier themes narrated by patients who participated in the FGD. The outpatient cardiac rehab facility where the study was conducted is in the rural tertiary care center. Patients come from distant places for their health care, which can be a reason for the barrier of transport distance, time, and cost of transportation. Distance as a barrier for utilization of CR has also been reported by Leung *et al*.[14]

Lack of family support is another major barrier. The majority of the patients were from remote areas. The patients were dependent on their family members to accompany them to the rehab facility. Family support is essential and can affect the rehabilitation course of the patients, and the same was documented by Tapp and Kärner *et al*.[15,16]

Lack of interest and willingness may be barriers due to a lack of awareness and understanding of cardiac rehab in the rural Indian health-care delivery system.[17]

Many patients were the primary wage earners in the family, and returning to work was of more importance to them for earning a livelihood. Their work time was noted down as a barrier.[18] Participants reporting financial constraints as a barrier may be from a low socioeconomic background. It is reported that rural inhabitants and low socioeconomic patients face more barriers to attend CR programs.[19] A large proportion of CAD patients suffers from comorbid conditions, which disable them to reach the outpatient cardiac rehab department.[20]

Considering the low utilization of CR programs, a strategy should be planned to overcome the discussed barriers. A cardiac rehab delivery model should be developed which can overcome the barriers and enable the patients to utilize cardiac rehab programs. Strategies like a semi-supervised cardiac rehab program should be implemented which will increase the enrollment rates and overcome major barriers such as the distance between the rehabilitation center and the residence. Workplace-based or home-based programs can also be implemented which can address barriers such as work timings, family support, and financial constraints. Future research must focus on the role of semi-supervised and home-based cardiac rehab programs in reducing barriers to enrollment and improving adherence of CAD patients in cardiac rehab programs.

CONCLUSION

Reaching the cardiac rehab facility, a lack of family support to travel to and attend rehab, lack of interest in joining the program, unsuitable work timings, financial constraints, disabling comorbid conditions, and lack of willingness to join the program are the patient-perceived barriers to participating in supervised exercise-based outpatient cardiac rehab programs. Enrollment rates and adherence to cardiac rehab programs can both be enhanced by addressing these barriers. Future research should focus on developing strategies to overcome patient-related barriers to participating in a CR program. A similar kind of study in different geographical regions can be conducted, to study the regional differences in the patient-related barriers to participating in supervised exercise-based CR programs.

Clinical Implication

An in-depth study of the barriers to attending CR programs is necessary so that an appropriate strategy can be developed to increase the delivery or enrollment rates in CR programs.

Limitations

Data analysis was done manually due to the non-availability of the software. NVivo, ATLAS, and MAXQDA are the generally used software used in health-care research for qualitative data analysis. Participants of our study were only from one geographic region. A similar study can be replicated in different geographic regions to document and study the regional differences in the barriers.

REFERENCES

1. Khan MA, Hashim MJ, Mustafa H, Baniyas MY, Al Suwaidi SK, AlKatheeri R, *et al*. Global epidemiology of ischemic heart disease: Results from the Global Burden of disease study. Cureus 2020;12:e9349.
2. Gupta R, Mohan I, Narula J. Trends in coronary heart disease epidemiology in India. Ann Glob Health 2016;82:307-15.
3. Moran AE, Forouzanfar MH, Roth GA, Mensah GA, Ezzati M, Murray CJ, *et al*. Temporal trends in ischemic heart disease mortality in 21 world regions, 1980 to 2010: The global burden of disease 2010 study: The global burden of disease 2010 study. Circulation 2014;129:1483-92.
4. Gaziano TA, Bitton A, Anand S, Abrahams-Gessel S, Murphy A. Growing epidemic of coronary heart disease in low-and middle-income countries. Curr Probl Cardiol 2010;35:72-115.
5. Le J, Dorstyn DS, Mpfou E, Prior E, Tully PJ. Health-related quality of life in coronary heart disease: A systematic review and meta-analysis mapped against the international classification of functioning, disability and health. Qual Life Res 2018;27:2491-503.
6. Roth GA, Mensah GA, Johnson CO, Addolorato G, Ammirati E, Baddour LM, *et al*. Global Burden of cardiovascular diseases and risk factors, 1990-2019: Update from the GBD 2019 study. J Am Coll Cardiol 2020;76:2982-3021.
7. Wenger NK. Current status of cardiac rehabilitation. J Am Coll Cardiol 2008;51:1619-31.
8. Sérvio TC, Britto RR, de Melo Ghisi GL, da Silva LP, Silva LD, Lima MM, *et al*. Barriers to cardiac rehabilitation delivery in a low-resource setting from the perspective of healthcare administrators, rehabilitation providers, and cardiac patients. BMC Health Serv Res 2019;19:615.
9. Chindhy S, Taub PR, Lavie CJ, Shen J. Current challenges in cardiac rehabilitation: Strategies to overcome social factors and attendance barriers. Expert Rev Cardiovasc Ther 2020;18:777-89.
10. Ritchey MD, Maresh S, McNeely J, Shaffer T, Jackson SL, Keteyian SJ, *et al*. Tracking cardiac rehabilitation participation and completion among medicare beneficiaries to inform the efforts of a national initiative. Circ Cardiovasc Qual Outcomes 2020;13:e005902.
11. Babu AS. Veluswamy SK. Barriers to cardiac rehabilitation in India. J Prev Cardiol 2016;5:871-6.
12. Babu AS, Turk-Adawi K, Supervia M, Jimenez FL, Contractor A, Grace SL. Cardiac rehabilitation in India: Results from the international council of cardiovascular prevention and rehabilitation's global audit of cardiac rehabilitation. Glob Heart 2020;15:28.
13. Wong LP. Focus group discussion: A tool for health and medical research. Singapore Med J 2008;49:256-60.
14. Leung YW, Brual J, Macpherson A, Grace SL. Geographic issues in cardiac rehabilitation utilization: A narrative review. Health Place 2010;16:1196-205.
15. Tapp DM. Dilemmas of family support during cardiac recovery: Nagging as a gesture of support: Nagging as a gesture of support. West J Nurs Res 2004;26:561-80.
16. Kärner AM, Dahlgren MA, Bergdahl B. Rehabilitation after coronary heart disease: Spouses' views of support. J Adv Nurs 2004;46:204-11.
17. Mampuya WM. Cardiac rehabilitation past, present and future: An overview. Cardiovasc Diagn Ther 2012;2:38-49.
18. Pack QR, Squires RW, Valdez-Lowe C, Mansour M, Thomas RJ, Keteyian SJ. Employment status and participation in cardiac rehabilitation: Does encouraging earlier enrollment improve attendance? J Cardiopulm Rehabil Prev 2015;35:390-8.
19. Shanmugasegaram S, Oh P, Reid RD, McCumber T, Grace SL. Cardiac rehabilitation barriers by rurality and socioeconomic status: A cross-sectional study. Int J Equity Health 2013;12:72.
20. Dunlay SM, Witt BJ, Allison TG, Hayes SN, Weston SA, Koepsell E, *et al*. Barriers to participation in cardiac rehabilitation. Am Heart J 2009;158:852-9.

How to cite: Jaiswal VC, Ghuman SD, Ghodey SA. Patients' Perspective of Barriers to Participating in Supervised Exercise-based Cardiac Rehabilitation Program: A Qualitative Study. MIMER Med J 2021;5(3):18-22.

Source of Support: Nil. **Conflict of Interest:** None declared.