Bridging the Gap: Implementing cardiac rehabilitation programmes in Pakistan's healthcare system

Hammad Najam[1], Muhammad Furqan Hassan[2], Zara Khalid[3], Farooq Azam Rathore[4]

Abstract

Cardiac rehabilitation (CR) is a secondary prevention programme aimed at reducing the mortality and frequency of recurrent cardiac events and contributes to improvement in quality of life of the patients suffering from cardiovascular diseases (CVD). While the healthcare system around the world has revolutionized, provision of CR services is still lacking in its implementation. According to statistics, < 54% of the countries actually provide CR and this percentage drops at an alarming rate of about 8% and 28% in low income and lower-middle income countries (LICs/LMICs) respectively, even though the need of this programme has increased exponentially. Pakistan is one of the lower-middle income countries facing many challenges in implementing successful healthcare programmes. One such field which is neglected and often overlooked is cardiac rehabilitation. Establishing and promoting CR programmes in low-middle income countries is crucial as it can alleviate the financial strain of prolonged hospital stays and help in prevention from dependency on families. This review highlights the dilemma regarding lack of CR programmes in Pakistan, as well as factors affecting the utilization and applicability of this programme.

Keywords: Cardiac rehabilitation, cardiovascular diseases, exercise training, primary prevention, secondary prevention.

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Introduction

Cardiovascular diseases have emerged as one of the most prevalent non-communicable diseases, significantly contributing to the rise in global mortality rates and premature disability over the past two decades.[1] The annual rate of mortality from CVD is 17.9 million amounting to 32% of deaths worldwide, out of which 85% of deaths occur due to heart attack and stroke. CVD also accounts for 38% of premature deaths out of 17 million deaths from all causes. Additionally, it is to be noted that more than 75% of the deaths from cardiovascular diseases occur in low income and lower-middle income countries (LICs/LMICs).[2] The reason for this high mortality in LICs/LMICs is mostly due to restricted access to healthcare facilities rather than increased risk factors for developing CVD.[3] These statistics highlight the urgent need for developing and implementing programmes aimed at preventing CVD among healthy population and reducing the burden of disease among diseased populations in LMICs such as Pakistan. Such initiatives can reduce the incidence of CVD and enhance health-related quality of life. Furthermore, these programmes could not only benefit at an individual level but can also alleviate the economic healthcare burden.[4] This review aims to examine the current status of cardiac rehabilitation (CR) in Pakistan, highlighting its neglected state within the healthcare system and identifying key challenges hindering the implementation and utilization of CR programmes. Furthermore, it explores potential strategies and future directions for improving the availability, accessibility, and effectiveness of cardiac rehabilitation services in Pakistan, with insights that may be applicable to similar LIC/LMIC.

What is cardiac rehabilitation?

Cardiac rehabilitation is a secondary prevention programme aimed at reducing the mortality and frequency of recurrent cardiac events and contributes to improvement in quality of life among patients suffering from CVDs.[5] CR includes several important components like patient education, risk factor stratification and modification, structured exercise training, and stress management. These services are provided by a multidisciplinary team, including cardiologists, rehabilitation medicine physicians, physical therapists, occupational therapists, dieticians, rehabilitation nurses and psychologists to ensure comprehensive delivery of all secondary prevention recommendations. The comprehensive plan focusses not only on improving cardiovascular fitness and strength through exercise but also counselling the patient regarding importance of risk factor reduction, lifestyle modification, guidance on dietary intake, optimization of pharmacotherapy and also supporting the psychological wellbeing of the patient. All

[1,3]Foundation University College of Physical Therapy, Foundation University Islamabad, [2,4]Quetta Institute of Medical Sciences, Quetta, Pakistan.

Correspondence: Farooq Azam Rathore. **Email:** farooqrathore@gmail.com

ORCID ID: 0000-0002-4759-0453

of these elements when combined and executed together constitute a CR programme.[4] CR is an individually tailored programme which is modified according to the need and condition of an individual enrolled in this programme. Patients with conditions such as ischaemic heart disease, heart failure, coronary artery disease, pre and post op surgical cases such as coronary angioplasty, coronary artery bypass grafting and heart transplant, can benefit from this programme by increasing by patients functional capacity and reducing morbidity, mortality and re-hospitalizations.[6]

Despite the well-established benefits of CR programmes, their implementation and accessibility vary significantly across different regions and healthcare systems. To understand the current state of CR and the challenges it faces, particularly in countries like Pakistan, it is important to examine its global availability and utilization patterns. According to an estimate, less than 54% of the countries around the globe provide CR and this percentage drops to an alarming rate of about 8% and 28% in LIC/LIMC respectively even though the emphasis on the need of this programme has been increased exponentially.[7,8] Moreover, socio-economic disparities in cardiovascular disease mortality pose a significant public health challenge in most industrialized nations. Even in high-resource regions like Europe and America, there is inequality in the delivery of such care. A survey in 76 centers of 22 European countries, reported that CR programmes in Europe are underutilized, with inadequate referral and low participation rates, along with significant variations between countries.[9,10]

Cardiac rehabilitation in Pakistan:

Non-communicable disease are increasingly prevalent in LIC/LMIC. Pakistan, a LMIC facing many challenges in implementing successful healthcare programmes, among which one often neglected domain is the primary and secondary prevention of CVDs through implementation of CR programmes.[11] In Pakistan, private medical treatment is expensive and inaccessible to most of the population due to limited access to tertiary care hospitals. Therefore, it is both logical and timely to establish and promote such programmes that prevent disease occurrence and increase quality of life. CR programmes in LIC/LMIC are crucial, as they are cost-effective and prevent long-term hospitalization costs, thereby reducing the burden on families.[12]

A 2019 cross-sectional survey assessed the availability and applicability of the CR programme in the Eastern Mediterranean Region (EMR). The results revealed that only half of the countries in EMR offer CR programmes with Iran providing the highest number (69% of the total 49 programmes). The study highlighted a greater need in Pakistan and Egypt, as these countries were most lacking in the availability and applicability of such programmes. The survey also reported that CR programmes were less frequently publicly funded compared to those worldwide, with patients paying out-of-pocket in three-quarters of the programmes.[4]

Apart from the limited availability of CR programmes, several factors also hinder the success of the few institutions that do offer these programmes. The participation rate in CR programmes is reported to be only 20-25%, which is very low. Despite a growing body of evidence supporting the positive impact of CR programmes on various populations with CVDs, the referral system is not strong, which is a significant setback for the success of these programmes. The reason for weak referral system has been attributed to reluctance shown by physicians to refer some patients to CR programmes.[12] Additionally, with limited availability of these programmes in few institutions, there is a lack of access to these facilities for the patients. CR programmes are long-term, typically consisting of 36 sessions of exercise, making transportation and compliance challenging, especially for the middle and lower-class populations. To overcome these challenges, innovative methods for delivering cardiac rehabilitation are emerging through tele-rehabilitation via the use of internet and mobile phones. Providing patients with an equitable choice between center-based, home-based or online programmes is likely to enhance participation among all groups of cardiac patients. Moreover, self-management and caregiver collaboration can further improve both participation as well as health outcomes.[12,13]

Call for action:

To realize these benefits, a coordinated effort from multiple stakeholders is urgently needed. Some of these include:

1. Policymakers must prioritize CR within national health strategies, allocating necessary resources and creating supportive policies for programme implementation.

2. Healthcare administrators particularly those working at the cardiac institutes should work towards integrating CR services into existing healthcare facilities and exploring innovative delivery models, such as home-based and tele-rehabilitation programmes, to overcome accessibility barriers.

3. Cardiologists and primary care physicians must increase their awareness of CR benefits and improve

referral rates for eligible patients.

4. Post graduate training in cardiology and cardiac surgery in the country should incorporate mandatory training on CR or rotations in rehabilitation medicine departments, into their curricula, ensuring future healthcare providers are well-versed in its importance and implementation.

5. Researchers should conduct Pakistan-specific studies to gather data on CR effectiveness, cost-benefit analyses, and culturally appropriate implementation strategies.

6. Patient advocacy groups and community leaders should work to raise public awareness about the importance of CR and advocate for increased access to these services.

The path to establishing a robust CR ecosystem in Pakistan will undoubtedly be challenging. However, the potential benefits in terms of lives saved, quality of life improved, and healthcare costs reduced make it an imperative worth pursuing. By addressing this neglected healthcare domain, Pakistan has the opportunity to become a regional leader in comprehensive cardiovascular care and set an example for other LMIC facing similar challenges.

The time for action is now. Every stakeholder in the Pakistani healthcare system must recognize the urgency of this issue and take concrete steps towards making cardiac rehabilitation an integral part of cardiovascular care. Only through collective effort and action, we can hope to bridge this critical gap in Pakistan's healthcare landscape and pave the way for a healthier nation.

Conclusion

Cardiac rehabilitation represents a critical, yet largely untapped resource in Pakistan's fight against the growing burden of cardiovascular diseases. As a developing nation with significant potential for growth across various sectors, Pakistan stands at a crucial juncture where investing in comprehensive CR programmes could yield substantial benefits for both individual health outcomes and the broader healthcare system. The current landscape of cardiac rehabilitation in Pakistan is characterized by limited availability, low referral rates, and poor participation. This review has highlighted the multifaceted challenges hindering the widespread implementation of CR programmes, including resource constraints, lack of awareness among healthcare providers and patients, and systemic barriers within the healthcare infrastructure. However, these challenges also present opportunities for innovative solutions and targetted interventions. Implementing robust CR programmes in Pakistan could potentially lead to reduced mortality and morbidity from CVDs, improved quality of life for patients with heart conditions, decreased rates of hospital readmissions and associated healthcare costs, enhanced secondary prevention strategies, improved health literacy and self-management skills among cardiac patients as well as potentially alleviating the long-term burden on the healthcare system.

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