

SHORT COMMUNICATION

CARDIAC REHABILITATION AS A DEDICATED CLINICAL SERVICE:
RECENT ACHIEVEMENTS AND REMAINING CHALLENGES

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ABSTRACT

Cardiac rehabilitation reduces the risk of cardiovascular disease (CVD), is a concept easy to understand but difficult to implement in practice. Pillars of cardiovascular health maintenance include smoking cessation or avoidance, a prudent diet, weight management, regular exercise, stress management, and regular blood sugar, cholesterol, and blood pressure checks.

Our primary objective in AFIC & NIHD is to provide a high-touch compassionate care to our patients. Our department consists of a Cardiologist, Clinical Dietitian, Psychologist, Physiotherapist and a Research Officer who are working to educate and counsel our cardiac patients regarding healthy lifestyle in wards and outdoor clinics.

Despite robust evidence of clinical and cost effectiveness, uptake of cardiac rehabilitation is not as good due to several factors, including physicians' reluctance to refer some patients, psychological wellbeing, geographical location, access to transport, and a dislike of group-based rehabilitation sessions. In countries like Pakistan treatment options are expensive and limited and most of the population does not have access to the tertiary care hospitals. It would therefore be more logical to concentrate on prevention of diseases

Keywords: Cardiac rehabilitation, Clinical services.

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Cardiac Rehabilitation

Cardiac rehabilitation (CR) is a complex intervention offered to patients diagnosed with heart disease, which includes components of health education, advice on cardiovascular risk reduction, dietary intake, physical activity and stress management.^{1,2}

In the US, the participation rate in CR programs is only 20-30%. It has been estimated that increasing this rate to 70% would save 25000 lives and prevent 18000 hospitalizations per year.³ Worldwide, only 38.8% of countries have CR programs: 68% of high-income countries, 28.2% of median-income countries and 8.3% of low-income countries. The availability of CR is much lower than that of other evidence-based interventions, such as revascularization and pharmacological therapy. In high-income countries, the density of CR programs ranges from 1:100 000 to 300 000 population.⁴

Globally, the leading cause of deaths is cardiovascular disease (CVD). A total of 19% deaths are a result of CVDs, with age standardized death rates of 255 and 295 per 100,000 for males and females, respectively.¹ In developing countries with high population density, the prevalence of risk factors such as physical inactivity, poor diet, obesity, smoking, type-2 diabetes,

hypertension, and abnormal lipid profile is increasing. As a result, the prevalence of non-communicable diseases, such as CVD, is increasing in developing countries where nearly one quarter (24.3%) of people above the age of 18 years have been reported as hypertensive. Similarly, 25% of people above the age of 40 years were found to be suffering from coronary artery diseases (CAD).⁵

As one of the country's finest hospitals, Armed Forces Institute of Cardiology and National Institute of Heart Diseases (AFIC-NIHD) has a proud heritage of serving the county for more than 35 years. This tertiary care cardiac hospital with 404 beds is located in the heart of Rawalpindi. It has the honor to serve large population of upper Punjab, The Federal Capital, Khyber Pakhtunkhwa, Azad Kashmir, northern areas and referred cases from the Military hospitals of all over the country. The hospital is noted for its devotion to patients, dedication to its professional goals, motivation to the achievement of excellence and a very caring and collaborative spirit. Evidence that cardiac rehabilitation reduces mortality, morbidity, and unplanned hospital admissions in addition to improvements in exercise capacity, quality of life and psychological well-being is increasing, and it is now recommended in international guidelines.^{1,2} This review focuses on what cardiac rehabilitation is and the evidence of its benefit

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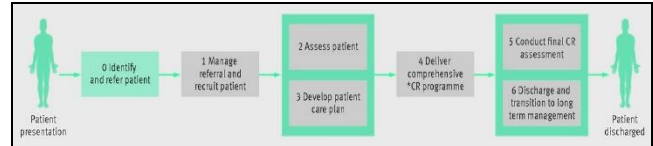
and effects on cardiovascular mortality, morbidity and quality of life.

Patient Groups who Benefit from Cardiac Rehabilitation

- Patients with acute coronary syndrome - including ST elevation myocardial infarction, non-ST elevation myocardial infarction, and unstable angina - and all patients undergone reperfusion (such as coronary artery bypass surgery, primary percutaneous coronary intervention, and percutaneous coronary intervention).
- Patients with newly diagnosed chronic heart failure and chronic heart failure with a step change in clinical presentation.
- Patients with heart transplant and ventricular assist device.
- Patients who have undergone surgery for implantation of intra-cardiac defibrillator or cardiac resynchronization therapy for reasons other than acute coronary syndrome and heart failure.
- Patients with heart valve replacements for reasons other than acute coronary syndrome and heart failure.

Fundamental to this is developing optimally structured and functional department of Preventive Cardiology with well-trained human resource, proper infrastructure and necessary resources in every institute and major hospitals, private hospitals and district hospitals especially those hospitals offering invasive cardiac services. Close liaison has to be encouraged between medical units, diabetic units, cardiac surgical units and these departments. It should provide facilities to assess risk factors like blood pressure, weight and waist measurement and check cholesterol and blood glucose. It should develop special literature about heart problems in local language, Urdu and English for educating general public visiting the clinics for any ailment. It should provide detailed information on specific risk factors –their importance and ways to control them for patients diagnosed to have specific risk factors. Such departments should establish free drug banks for treatment of hypertension, diabetes and cholesterol. Expert help should be available for quitting smoking and treating obesity in these special centers. They should hold regular seminars for general public awareness. They should develop special software for GP clinics for record keeping and more importantly for follow up. This may be centrally connected for a data base and regular follow up.^{6,7}

Historically, cardiac rehabilitation in the UK, US, and most European countries has been delivered to groups of patients in healthcare or community centres.⁸ Recent guidance from the UK Department of Health⁹ refers to a seven stage pathway of care that begins with diagnosis of a cardiac event and is followed by assessment of eligibility, referral, clinical assessment, and core delivery of cardiac rehabilitation before progressing to long term management.



Program and Services

Core components of cardiac rehabilitation included health behavior change and education, lifestyle risk factor management. The ongoing programs of preventive cardiology include:

1. Cardiac Rehabilitation.
2. Stress Management.
3. Healthy Diet Management.
4. Smoking Cessation.
5. Cardiac Risk Assessment.

Delivery of the core components requires expertise from a range of different professionals. The team may include:



Preventive Cardiology Clinic

Our expert cardiologists provide you the tools you need to live a heart healthy life. Our team's integrated approach to patient care includes an evaluation of your heart disease risk factors.

At clinic, a patient can expect:

- Plans tailored for you, with specific lifestyle recommendations and medication management as needed.
- Counseling and education to promote a healthy lifestyle.

In rehabilitation department approximately 944 patients are provided with psychological counseling, 1274 are provided with physiotherapy services and 2556 are provided with dietary counseling and diet plan from April - September 2021. Patients are not only counseled verbally but also given written plans and pamphlets. Cardiac rehabilitation program enrollment performance is maintained since Feb 2021 under the supervision of research department and has data regarding the lipid profile, blood glucose level, smoking status, co morbidities, exercise routine, psychological health of 705 patients.

Competing Goals and Conflicting Values in the COVID-19 Problem

At the time of writing, the world is facing a rapidly progressing COVID-19 fourth wave. It was difficult to gather discharged patients in an auditorium for cardiac rehabilitation program lecture. Previously 150 patients were educated regarding healthy lifestyle adoption through these lecture. Health care professionals including cardiologist, dietitian, physiotherapist and psychologist either visit each patient discharged from hospital in wards or these patients are referred to outdoor clinic.

Overcoming Barriers to Cardiac Rehabilitation

Despite robust evidence of clinical and cost effectiveness, uptake of cardiac rehabilitation varies worldwide and by patient group, with participation rates ranging from 20-50%.¹⁰ Poor uptake has been attributed to several factors, including physicians' reluctance to refer some patients, lack of resources, capacity, and funding. Adherence to cardiac rehabilitation programme is affected by factors such as psychological well-being, geographical location, access to transport, and a dislike of group-based rehabilitation sessions.¹¹ Although announcements were done prior to the preventive cardiology lecture, posters regarding time and information of the lecture were displayed on each floor, the patients were reluctant to join the lecture regularly. The most effective way to increase uptake and optimize adherence and secondary prevention is for clinicians to endorse cardiac rehabilitation by inviting patients still in hospital after a recent diagnosis of coronary heart disease or heart failure to participate and for

nurse led prevention clinics to be linked with primary care and cardiac rehabilitation services.¹²

Novel ways of providing cardiac rehabilitation are emerging using the internet and mobile phones. A recent systematic review has evaluated alternative models of delivery¹³ that can be provided via secondary prevention clinics. Offering patients a choice of center based, home, or online programmes on an equitable basis is likely to improve uptake across all groups of cardiac patients. Self-management and collaboration with care givers can also improve uptake and outcomes.

The burden of non-communicable diseases is rapidly increasing in the developing countries. With increase in the incidence of non-communicable diseases on one hand and inability to control the menace of infectious diseases on the other hand, leaves the developing countries extremely vulnerable. In countries like Pakistan treatment options are expensive and limited and most of the population does not have access to the tertiary care hospitals. It would therefore be more logical to concentrate on prevention of diseases.

Conflict of Interest: None.

Author's Contribution

MZ: Principal contribution, UI: Proof reading, AK, SM, MH: Manuscript writing, NK: Proof reading, AI: Intellectual contribution.

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