ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 9| Issue: 9| September 2023|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2023: 8.224 || ISI Value: 1.188

CARDIAC REHABILITATION: THE VITAL ROLE OF NURSES IN CARDIOTHORACIC PATIENT RECOVERY

Sherin P Shaji
PhD Scholar (Nursing) Medical Surgical Nursing (Cardiothoracic Nursing) People's University, Bhopal

ABSTRACT

Cardiac rehabilitation (CR) plays a pivotal role in the recovery of cardiothoracic patients, with nurses at the forefront of this multidisciplinary effort. This article explores the multifaceted responsibilities of nurses in CR, emphasizing their vital contributions to patients' physical, psychological, and emotional well-being. Nurses are involved in patient assessment, education, exercise supervision, medication management, psychosocial support, and risk factor control. Their proactive involvement is supported by a robust body of evidence demonstrating the positive impact of nurse-led CR programs on exercise capacity, quality of life, and cardiovascular risk factors. Recognizing and valuing the indispensable role of nurses in CR is essential for enhancing patients' overall cardiovascular health and well-being.

INTRODUCTION

Cardiovascular diseases (CVDs) are a leading cause of death worldwide, accounting for millions of lives lost each year. Despite the significant advancements in medical science and technology, CVDs continue to pose a formidable challenge to healthcare systems globally. Cardiothoracic surgeries, including coronary artery bypass grafting (CABG), valve replacement, and heart transplantation, are often the last resort for patients with severe cardiovascular conditions. While these surgical interventions can be lifesaving, the success of these procedures relies heavily on post-operative care and rehabilitation.

Cardiac rehabilitation (CR) is a comprehensive and multidisciplinary approach aimed at optimizing the physical, psychological, and social well-being of patients with cardiovascular diseases. CR programs encompass risk factor management, exercise training, patient education, and psychosocial support. In this article, we will explore the vital role of nurses in cardiac rehabilitation and their contributions to the recovery of cardiothoracic patients. We will delve into the multifaceted responsibilities of nurses, the evidence supporting their involvement, and the importance of recognizing their role in improving patients' cardiovascular health.

CARDIAC REHABILITATION: AN OVERVIEW

Phases of Cardiac Rehabilitation

Cardiac rehabilitation programs are typically divided into phases, each serving a distinct purpose in the patient's recovery journey:

Phase I: In-Hospital Phase

The first phase of cardiac rehabilitation, also known as the in-hospital phase, begins immediately after cardiothoracic surgery. During this stage, patients are still recovering from their surgical procedures and may require intensive medical care and monitoring. Nurses in this phase play a crucial role in:

- Monitoring vital signs and post-operative complications.
- Administering medications and intravenous therapies.
- Providing emotional support and reassurance to anxious patients.
- Educating patients on the importance of early ambulation and respiratory exercises to prevent complications like deep vein thrombosis and atelectasis.

Phase II: Outpatient Phase

Phase II of cardiac rehabilitation typically begins after the patient is discharged from the hospital. This phase focuses on further recovery and the transition to a more active lifestyle. Nurses continue to provide essential care and support by:

- Conducting thorough assessments to identify patients' physical and psychological needs.
- Developing personalized exercise plans and closely supervising patients during their workouts.
- Educating patients about their medications, dietary guidelines, and lifestyle modifications.
- Monitoring and managing risk factors such as hypertension, diabetes, and high cholesterol.
- Offering psychosocial support to help patients cope with anxiety, depression, and the emotional challenges of living with cardiovascular disease.
- Collaborating with other healthcare professionals, including cardiologists, dietitians, physiotherapists, and psychologists, to ensure a holistic approach to patient care.

THE ROLE OF NURSES IN CARDIAC REHABILITATION

Patient Assessment

Nurses are often the first healthcare professionals to interact with cardiothoracic patients. They conduct comprehensive assessments that encompass not only the patient's physical health but also their emotional and psychological well-being. These assessments are essential for tailoring the rehabilitation

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 9| Issue: 9| September 2023|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2023: 8.224 || ISI Value: 1.188

plan to the individual patient's needs. Nurses evaluate factors such as:

- Cardiovascular risk factors (e.g., smoking, obesity, family history).
- Comorbid conditions (e.g., diabetes, hypertension).
- Surgical history and recovery progress.
- Medication regimens and potential drug interactions.
- Psychosocial factors affecting the patient's mental health and emotional state.

By gathering this information, nurses can create a holistic picture of the patient's health and develop a personalized rehabilitation plan.

Patient Education

Education is a cornerstone of cardiac rehabilitation. Nurses are responsible for providing patients with the knowledge and tools they need to manage their condition and make informed decisions about their health. Education encompasses various aspects, including:

- **Medications**: Nurses explain the purpose, dosage, and potential side effects of medications prescribed to the patient. They ensure that patients understand how to take their medications correctly and adhere to their prescribed regimen.
- **Dietary Guidance**: Nutrition plays a pivotal role in cardiovascular health. Nurses work with dietitians to educate patients about heart-healthy diets, portion control, and strategies for managing conditions like diabetes and hyperlipidemia through dietary choices.
- **Lifestyle Modifications**: Patients are encouraged to adopt a heart-healthy lifestyle, which includes regular exercise, smoking cessation, and stress management. Nurses provide guidance on safe exercise practices and help patients set achievable goals for physical activity.
- **Symptom Recognition**: Patients learn to recognize the signs and symptoms of worsening cardiac conditions, such as angina or heart failure exacerbation. This knowledge empowers them to seek timely medical attention.
- **Self-Monitoring**: Some patients may need to monitor specific parameters like blood pressure, blood glucose levels, or weight at home. Nurses teach patients how to use monitoring devices and interpret the results.

By equipping patients with this knowledge, nurses empower them to actively participate in their own care and improve their overall cardiovascular health.

Exercise Supervision

Exercise is a fundamental component of cardiac rehabilitation. Regular physical activity has been shown to improve cardiovascular function, increase exercise tolerance, and enhance overall well-being. However, it is essential that exercise is tailored to each patient's individual capabilities and monitored closely to ensure safety.

Nurses, often certified in advanced cardiac life support (ACLS) and exercise physiology, play a crucial role in supervising exercise sessions. Their responsibilities include:

- **Exercise Prescription**: Nurses work with physiotherapists and exercise specialists to develop exercise programs tailored to each patient's fitness level and medical condition.
- **Monitoring**: During exercise sessions, nurses continuously monitor patients' vital signs, electrocardiograms (ECG), and symptoms. This real-time assessment allows them to identify any adverse reactions promptly.
- **Safety**: Nurses are trained to respond to emergencies such as arrhythmias or chest pain that may occur during exercise. They ensure that exercise equipment is used safely and that patients are well-hydrated and not overexerting themselves.
- **Progress Tracking**: As patients progress in their rehabilitation, nurses adjust exercise plans accordingly, gradually increasing intensity and duration. They celebrate milestones and encourage patients to continue their efforts.

The supervision and guidance provided by nurses in the exercise component of cardiac rehabilitation contribute significantly to improving patients' physical fitness and cardiovascular health.

Medication Management

Many cardiothoracic patients require medications to manage their cardiovascular conditions. Nurses are responsible for administering these medications, monitoring their effects, and educating patients about proper medication management. This role is critical in preventing complications and optimizing treatment outcomes. Specific nursing responsibilities in medication management include:

- **Administration**: Nurses ensure that patients receive the correct medications at the prescribed times, often intravenously in the immediate post-operative phase.
- **Monitoring**: They monitor patients for potential side effects and assess the medication's effectiveness in controlling symptoms and risk factors.
- **Patient Education**: Nurses educate patients about the purpose of each medication, potential side effects, and the importance of compliance. Patients are encouraged to ask questions and express concerns about their medications.
- **Medication Reconciliation**: Nurses work closely with pharmacists and physicians to reconcile medications during care transitions, such as hospital discharge, to prevent errors or duplications.

By managing medications effectively, nurses contribute to the overall success of the patient's cardiac rehabilitation and post-operative recovery.

Psychosocial Support

The emotional well-being of patients is as important as their physical health, particularly in the context of cardiac rehabilitation. Cardiothoracic surgery can be a traumatic experience, and patients often grapple with anxiety, depression, and fears about their future. Nurses provide invaluable psychosocial support by:

- **Emotional Counseling**: They listen to patients' concerns, fears, and anxieties, offering a compassionate and empathetic presence. Nurses validate patients' emotions and provide reassurance.

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 9| Issue: 9| September 2023|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2023: 8.224 || ISI Value: 1.188

- **Mental Health Assessment**: Nurses assess patients for signs of depression or anxiety and collaborate with mental health professionals when needed. Timely intervention can prevent the worsening of these conditions.
- **Support Groups**: Some cardiac rehabilitation programs include support groups where patients can share their experiences and learn from others facing similar challenges. Nurses may facilitate these groups or refer patients to them.
- **Stress Management**: Nurses teach stress-reduction techniques such as mindfulness, relaxation exercises, and coping strategies to help patients manage the emotional toll of their condition.

Addressing the psychological aspect of recovery is crucial, as mental health influences patients' motivation to adhere to their rehabilitation plans and make sustainable lifestyle changes.

Risk Factor Control

Cardiovascular diseases often coexist with other risk factors such as hypertension, diabetes, and dyslipidemia. Nurses assist patients in managing these risk factors to reduce the overall burden of cardiovascular disease. Their responsibilities include:

- **Blood Pressure Management**: Nurses monitor blood pressure and educate patients on the importance of blood pressure control. They may assist in adjusting medications or recommending lifestyle modifications.
- **Diabetes Management**: For patients with diabetes, nurses provide guidance on blood glucose monitoring, insulin administration, and dietary choices. They work closely with endocrinologists and diabetes educators to optimize glycemic control.
- **Lipid Management**: Nurses educate patients about lipid-lowering medications, dietary strategies, and lifestyle changes to manage cholesterol levels effectively.
- **Smoking Cessation**: Smoking is a major risk factor for CVD. Nurses play a pivotal role in counseling patients on smoking cessation and connecting them with smoking cessation programs if needed.
- **Weight Management**: For overweight or obese patients, nurses offer support and resources for weight management, which can significantly impact cardiovascular risk.

Addressing these risk factors in the context of cardiac rehabilitation helps patients reduce their overall cardiovascular risk and prevent future cardiac events.

Team Collaboration

Cardiac rehabilitation is a multidisciplinary endeavor that involves collaboration among various healthcare professionals. Nurses are essential team players who work closely with other members of the healthcare team, including:

- **Cardiologists**: Nurses collaborate with cardiologists to ensure that patients receive appropriate medical management and timely interventions.
- **Dietitians**: Dietitians and nurses jointly educate patients on heart-healthy diets, monitor nutritional status, and address dietary concerns.
- **Physiotherapists**: Nurses and physiotherapists work together to develop and implement exercise programs tailored to the patient's needs and abilities.
- **Psychologists/Psychiatrists**: In cases of significant psychological distress, nurses may collaborate with mental health professionals to provide specialized care.
- **Pharmacists**: Pharmacists help nurses manage medication regimens, ensure medication safety, and provide guidance on drug interactions.
- **Social Workers**: Social workers assist with patients' social and financial concerns, connecting them with community resources when necessary.

This collaborative approach ensures that patients receive comprehensive and holistic care that addresses all aspects of their health and well-being.

Evidence-Based Practice

The effectiveness of nurses' involvement in cardiac rehabilitation is supported by a body of evidence demonstrating positive outcomes for patients. Numerous studies have highlighted the impact of nurse-led cardiac rehabilitation programs on improving exercise capacity, quality of life, and cardiovascular risk factors.

One notable study by Taylor et al. (2017) conducted a systematic review and meta-analysis of exercise-based cardiac rehabilitation for heart failure. The researchers found that nurse-led CR programs led to significant improvements in exercise capacity, quality of life, and cardiovascular risk factors among participants. This meta-analysis underscores the substantial contribution of nurses to the success of CR programs.

CONCLUSION

Cardiac rehabilitation is an integral component of the continuum of care for cardiovascular disease patients, and nurses play an indispensable role in its success. Their multifaceted contributions encompass patient assessment, education, exercise supervision, medication management, psychosocial support, and risk factor control. Evidence-based practice underscores the importance of nurses in achieving positive outcomes for cardiothoracic patients.

As healthcare continues to evolve, recognizing and valuing the indispensable role of nurses in cardiac rehabilitation is essential. Collaboration between healthcare professionals and ongoing research should further enhance the quality of care provided to cardiothoracic patients, ultimately improving their overall cardiovascular health and well-being.

In conclusion, the role of nurses in cardiac rehabilitation extends far beyond the clinical tasks they perform; it encompasses compassion, education, and empowerment, making nurses a cornerstone of cardiovascular care.

REFERENCES

1. *Taylor, R. S., Sagar, V. A., Davies, E. J., Briscoe, S., Coats, A. J., & Dalal, H. M. (2017). Exercise-based rehabilitation for heart failure. Cochrane Database of Systematic Reviews, 4(4), CD003331.*

2. *Wenger, N. (Ed.). (1999). Cardiac Rehabilitation: Guide to Procedures for the Twenty-first Century. CRC Press.*

BIBLIOGRAPHY

1. *Balady, G. J., Williams, M. A., Ades, P. A., Bittner, V., Comoss, P., Foody, J. M., ... & Wenger, N. K. (2007). Core components of cardiac rehabilitation/secondary prevention programs: a statement for healthcare professionals from the American Heart Association and the American Association of Cardiovascular and Pulmonary Rehabilitation Writing Group. Circulation, 115(20), 2675-2682.*
2. *Anderson, L., Thompson, D. R., Oldridge, N., Zwisler, A. D., Rees, K., Martin, N., ... & Taylor, R. S. (2016). Exercise-based cardiac rehabilitation for coronary heart disease. Cochrane Database of Systematic Reviews, 1(1), CD001800.*
3. *Halm, M., Penque, S., Doll, N., & Beahrs, M. (1999). Women and cardiac rehabilitation: referral and compliance patterns. Journal of Cardiovascular Nursing, 13(3), 83-92.*
4. *Kunjumon, S. (2023). The role of telehealth in cardiothoracic nursing: advantages and limitations. EPRA International Journal of Multidisciplinary Research (IJMR), 9(8), 325-327.*
5. *Piepoli, M. F., Hoes, A. W., Agewall, S., Albus, C., Brotons, C., Catapano, A. L., ... & Sechtem, U. (2016). 2016 European Guidelines on cardiovascular disease prevention in clinical practice: The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts) Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR). European Journal of Preventive Cardiology, 23(11), NP1-NP96.*
6. *Arena, R., Williams, M., Forman, D. E., Cahalin, L. P., Coke, L., Myers, J., ... & American Heart Association Exercise, Cardiac Rehabilitation and Prevention Committee of the Council on Clinical Cardiology, Council on Epidemiology and Prevention, and Council on Nutrition, Physical Activity and Metabolism. (2012). Increasing referral and participation rates to outpatient cardiac rehabilitation: the valuable role of healthcare professionals in the inpatient and home health settings: a science advisory from the American Heart Association. Circulation, 125(10), 1321-1329.*
7. *Mittag, O., China, C., Hoberg, E., Juers, E., Kolenda, K. D., Richardt, G., ... & Raspe, H. (2006). Outcomes of cardiac rehabilitation with versus without a follow-up intervention rendered by telephone (Luebeck follow-up trial): overall and gender-specific effects. International Journal of Rehabilitation Research, 29(4), 295-302.*
8. *James, A., Thomas, J., Shaji, S. P., Kunjumon, S., & Augustine, S. J. (2023). Technology And Innovation In Nursing Education: Discussing The Use Of Technology And Simulation In Nursing Education To Train Nurses For Both Psychiatric And Cardiothoracic Care. International Research Journal of Education and Technology (IRJEdT), 5(8), 357-362. Retrieved from [Publisher's Website URL]* (WWW.IRJWEB.COM)*
9. *Dhir, A. (2023). Resistance of Multiple Stakeholders to E-Health Innovations: Integration of Fundamental Insights and Guiding Research Paths.*
10. *Thompson, D. R., Bowman, G. S., Kitson, A. L., de Bono, D. P., & Hopkins, A. (1996). Cardiac rehabilitation in the United Kingdom: guidelines and audit standards. National Institute for Nursing, the British Cardiac Society and the Royal College of Physicians of London. Heart, 75(1), 89-93.*
11. *Jomon Thomas | Sherin P Shaji | Santhya Kunjumon | Priyanka Rajak | Arun James "**The Emotional Aspect of Cardiothoracic Nursing: Supporting Patients and Families"** Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-7 | Issue-4 , August 2023, URL: https://www.ijtsrd.com/papers/ijtsrd59809.pdf*
12. *Thomas, R. J., Beatty, A. L., Beckie, T. M., Brewer, L. C., Brown, T. M., Forman, D. E., ... & Whooley, M. A. (2019). Home-based cardiac rehabilitation: a scientific statement from the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Heart Association, and the American College of Cardiology. Circulation, 140(1), e69-e89.*
13. *Leong, J., Molassiotis, A., & Marsh, H. (2004). Adherence to health recommendations after a cardiac rehabilitation programme in post-myocardial infarction patients: the role of health beliefs, locus of control and psychological status. Clinical effectiveness in nursing, 8(1), 26-38.*