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KNOWLEDGE, ATTITUDE AND PRACTICE OF NURSES REGARDING CARDIAC REHABILITATION AT TERTIARY CARE HOSPITALS PESHAWER

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ABSTRACT

Background: According to the World Health Organization 2016 disease assessment report, cardiovascular diseases are the leading cause of death for the last ten years. Therefore, treatment of CVDs is very necessary to minimize the mortality and improve the quality of life of the population been affected. So cardiac rehabilitation is one of the best Service to improve the quality of life of the cardiac patients. Moreover, as nurses are the key health care providers so they must have sufficient knowledge regarding cardiac rehabilitation programs.

Results: The data was analyzed by SPSS version 26.0, different statistical tests like ANOVA and Chi Square were used. knowledge among nurses was categorized to poor (6.8%) good (65.9%) and very good (27.7%). Mostly the attitudes of the participants were found poor and unsatisfactory, while most of them held responsible the policymakers to initiate cardiac rehabilitation programs in Pakistan.

Conclusion and recommendations: As the study highlighted that knowledge of the nurses was satisfactory but instead needs further programs to develop their attitudes and practices regarding the benefits of the programs so that to ensure the high efficacy in this concern because through such programs one can reduce the morbidity and mortality of a society due to cardiovascular diseases.

Keywords: Cardiac Rehabilitation, Registered Nurses, Tertiary Care hospitals, cardiovascular diseases (CVDs)

INTRODUCTION

Globally coronary heart disease has become a primary cause of premature death and morbidity so it is a global health related problem now. According to the World Health

Organization 2016 disease assessment report, cardiovascular diseases are the leading cause of death for the last ten years (1).

A study conducted states that approximately 15.5 million people are affected by coronary heart disease in the United States. Therefore, treatment of CVDs is very necessary to minimize the mortality and improve the quality of life of the population been affected. So cardiac rehabilitation is one of the best service to improve the quality of life of the cardiac patients, this truly means that cardiac rehabilitation should be incorporated in the treatment of such patients. As nurses are the key health care providers so they must have sufficient knowledge regarding cardiac rehabilitation programs (2).

According to the public health services of the United States, Cardiac Rehabilitations are long term and comprehensive programs that includes counseling, medical evaluation, education, prescribed exercises and modification of the related risk factors. So cardiac rehabilitation simply means gathering all the services which help the patient having cardiovascular disease to enhance his/ her functional abilities, tolerate the physical activity and minimize the symptoms and to gain the optimal health (3)

Another study conducted underlines that a reduction in blood pressure and heart rate was noted after having four weeks of regular physical exercise. So cardiac rehabilitation programs have been proved to be effective in improving the quality of life (4).

A very few studies have been conducted internationally but no study found nationally regarding the topic of the study. Qualitative and randomized control trial studies have been done but mostly cross sectional observational studies have been conducted globally.

This topic has been selected for the study because there is no available published study on this topic (from Pakistani context) to assess cardiac rehabilitation knowledge, attitudes and practices of the Pakistani nurses.

Objective:
To assess the knowledge, attitude and practices regarding cardiac rehabilitation among the registered nurses at Khyber Teaching Hospital and Peshawar Institute of Cardiology of Peshawar.

Operational Definitions
Knowledge: In this study knowledge stands for the interpretation of respondent's correct responses through self-administered questionnaires. Total Score is 30 for assessing the knowledge among the participants. Score above 24 shows Very good knowledge, 16 to 24 reflects good knowledge while less than 15 indicates poor knowledge.

Registered Nurses: Those nurses having valid PNC cards after completion of either B.Sc Nursing or Diploma in nursing.

Cardiac Rehabilitation: Cardiac Rehabilitation refers to the achievement of potentials like Social, educational, vocational, psychological and physical consistent with physiological impairment of the cardiac patients.

Tertiary care hospitals: The Khyber Teaching Hospital and Peshawar Institute of cardiology.
1.1 **Search Strategy**
The literature search was done using different databases, i.e., Google Scholar, PubMed, and Science Direct. The keywords "knowledge", "Attitude", "Practice", "Nurses", "Cardiac", and "Rehabilitation" and Boolean words AND, and OR were used. To specify the results, the articles were searched from the year 2013 to 2024, full form and in English language. Those articles were included having only one of the variable which is mentioned in our topic like knowledge, attitude and practice of nurses regarding cardiac rehabilitation. And those articles which are available free on data bases. Those studies were excluded which were conducted other than hospitals.

Cardiac rehabilitation is a multidisciplinary approach that combines exercise, training, cardiac risk factor management, and psychological evaluation (5). Nurses must be knowledgeable in order to give optimal

treatment and rehabilitation to myocardial infarction patients. They must specifically counsel patients with such advanced coronary heart disease on the potential causes, possible functional, and any lifestyle adjustments that may be required. It is also necessary that they are aware of, and understand how to counteract, the widespread 'cardiac myths' that may impede recovery and cause unneeded grief to patients and their families (6). One of the health professionals that had a part in the adoption of cardiac rehabilitation was the nurse. The nurse's numerous functions in cardiac rehabilitation have a 'spider in the web-like' nature, and they act as a container, a counsellor, a coach, and an educator depending on the stage of the patient's recovery (7). The detailed description of nurse's knowledge, attitude and practice regarding cardiac rehabilitation are followed.

Knowledge:
A comparative study was done in United Kingdom which revealed that it is consequently critical that nurses are intimately knowledgeable about the causes of MI and the likelihood of recovery. Furthermore, if nurses are to educate patients for the possibility of post-discharge symptoms and teach them how to manage if they do occur, they must have a reasonable understanding of them (8).

 Another descriptive cross sectional study conducted in Faisalabad Pakistan which have explored the knowledge of nurses and stated that there was a low level of nurses' knowledge and practices concerning hospital discharge education of cardiovascular patients at the Faisalabad Institute of Cardiology. It was shown that the majority of nurses, 52.0%, strongly agreed that discharge planning is critical in the cardiac ward. It was also resulted that the vast majority of nurses (58%) agreed that Staff Nurses should give discharge education to patients (9).

A cross sectional survey in china states that patients' understanding of cardiac rehabilitation was inadequate, particularly in terms of fundamental facts concerning CR, -optimized medicine, and heart rate. As a result, health-care professionals should support the establishment of CR programmed and increase education on them. Additionally, nurses' expertise has a direct influence on patients' awareness (10).

A survey was conducted in Sudan which shows that, cardiac rehabilitation to be successful, the nurse must be better knowledgeable about external conditions. It is essential to look into the patients' systematic experiences. Internal or personal factors, such as extensive clinical experience, a healthy lifestyle, dedication to the work, and depth in addition to broad academic knowledge, are also required. Handling a patient with a potentially fatal disease such as myocardial infarction, uncontrolled bleeding necessitates not only extensive clinical experience and theoretical knowledge in cardiovascular nursing and cardiac rehabilitation, but also self-awareness and life experience spanning several years (11).

From the different study which shows that interdisciplinary teams bring together people with specialized expertise and abilities to collaborate on providing coordinated care through an agreed-upon treatment plan. Because no single profession can provide the knowledge, skills, and resources required to meet the needs of today's patient for cardiac rehabilitation, contributions from all team members are valued: patients and support people, physicians, nurses, social workers, physiotherapists, occupational therapists, dieticians, pharmacists, physical activity specialists, and psychologists (12).

A qualitative study was carried out to evaluate health professionals' perspectives on the knowledge and abilities required to provide high-quality patient education to persons newly diagnosed with coronary heart disease. Patient education required current theoretical and clinical knowledge, as well as excellent communication skills. Evidence-based patient education necessitates knowledgeable healthcare workers with advanced communication skills and educational abilities to encourage patients and deliver effective patient-centered lifestyle guidance (9).

Attitude:
Coronary heart disease patients were enthusiastic about Cardiac rehabilitation programs (CRPs) such as outpatient. Social pressure, group dynamics, social support, and Chinese cultural influences on exercise behavior may be key facilitators of exercise retention. The findings should help healthcare practitioners with Cardiac rehabilitation programs (CRPs) such as outpatient strategy planning and ongoing assistance to

enhance exercise behavior maintenance among Chinese Coronary heart disease patients in the community (13).

A descriptive community based cross sectional study was conducted in Nepal and home based interview was taken which describes views regarding various elements of cardiac disease. In terms of lifestyle and preventative actions, 25% of men and 30% of women thought they were at risk of CVD. More over half of those polled said they did not want to change their existing way of life. About 23% claimed they ate more; approximately 82% assessed themselves to be overweight, with males thought to be significantly more overweight (p0.05); nearly 32% said they did not have enough time to take care of themselves; and three-fifths did not feel that modifying their behavior would reduce their cardiovascular risk (14).

A study was conducted in Belgium that examined nurses' perspectives on family involvement in patient care. The outcome, however, indicated that attitudes regarding actively engaging families to participate in patient care were less positive (15).

A study done in Saudi Arabia regarding nurses' perception of cardiac rehabilitation and barriers, the nurses' shows positive attitude and indicated their concurrence on the usefulness of cardiac rehabilitation in enhancing clinical outcomes. Furthermore, it was also recommended that cardiac rehabilitation administration in a home-based programed with supportive care was as an important factor (16).

According to the research, cardiovascular nurses have a positive attitude and provide evidence-based nursing care for treating cardiovascular disorders and providing cardiovascular rehabilitation (17).

Another study done in Malaysia where the knowledge and attitude of nurses regarding cardiac rehabilitation were assessed and found that the mean score for attitude and perception was not adequate since it was less than 50% of the normal. This might be because the nurses' attitude for attending CRP was extremely low, and only a small number of nurses engaged in the CRP and CNE training program, which could have a direct influence on their practices in their day-to-day operations (18).

Regarding knowledge and attitude of cardiac rehabilitation of the medical staff in china shows a strong understanding of cardiac rehabilitation. However, it was found that the employees with a lower education level and job title, as well as less specialized work experience, had a more unfavorable attitude regarding rehabilitation implementation (10).

In general, registered nurses were in favor of involving families in patient care. Yet, views regarding include families in the planning of cardiac rehabilitation and inviting them to actively participate in heart failure nursing care are less encouraging (19).

Practice:

An exploratory study was done in Sydney, Australia to examine that the nurses in cardiac rehabilitation act as clinicians, database collectors, counsellors, health educators, supervisors, coordinators, and most importantly, listeners. Specialist CR nurses, on the other hand, have clearer tasks that include recruiting patients, physical evaluation, on-site exercise instruction, giving individual and group counseling/education, guiding group discussion, beginning psychosocial therapies, and coordinating and interfacing with other services, including home-based programs. The ultimate goal of these duties and actions is to prevent subsequent CVD problems (20).

A quasi experimental study done in Iraq shows that the nurses have very little experience with restarting cardiac rehabilitation after a heart attack. Furthermore, the nurses do not have enough cardiac rehabilitation experience. Nurses' practice and performance were negatively correlated with their educational level in pre and post training (21).

A descriptive cross sectional study was done at Sudan, which shows that nurses across New South Wales, Australia, and nursing professionals from the Cardiac Society of Australia and New Zealand (CSANZ) that revealed a lack of knowledge and practice in Atrial flatter and anticoagulation, as well as a study conducted in multiple centers in the United States. It has been demonstrated that the knots of nursing infants are low. The high percentage of bad practice is due to a lack of nursing expertise and a lack of cardiac training courses, or ineffective courses if they are available (22).

The study found evidence that better nurse staffing practices, a greater percentage of RNs with baccalaureate degrees, and more encouraging work cultures are cross-sectionally related to saving patients' lives and lowering death rates (23).

A randomized control trial study done in China to examine the effect of cardiac rehabilitation. The finding shows that a cardiac rehabilitation programed guided by a nurse can considerably improve health behaviors and cardiac physiological risk markers in individuals with coronary heart disease. Nurses can fill great therapeutic deficiencies in the relative risk care of patients suffering from coronary heart disease (24).

A randomized control trial study done in India to check the impact of cardiac rehabilitation on quality of life the finding shows that in the first and second post - test, the mean score regarding general quality of life steadily decreased in the control group and gradually improved in the experimental group. Furthermore, nurses working in cardiac departments play an important role in teaching and monitoring the health of patients with heart failure. The provision of cardiac rehabilitation to individuals with heart failure improves their quality of life. Nurses working in cardiology departments should urge patients with heart failure to participate in cardiac rehabilitation for a longer amount of time in order to enhance their quality of life (25).

A descriptive cross-sectional study carried out in Oman, these results serve as a foundation for improving nursing practices, knowledge, and abilities. Increasing the use of EBP in treating cardiac patients requires continuing education for nurses and removing obstacles (26).

METHODOLOGY
Study Design: Descriptive cross sectional study.

Study Settings: 1. Peshawar Institute of cardiology 2. Khyber teaching hospital Peshawar.

Study Duration: six months.

Sample Size: Sample size calculated through Rao soft Software which is 220, by using 5% marginal error and 95% confidence level.

Sampling Technique: Convenience sampling method was utilized. This method was used because it takes less time and it is easy to collect data. Data was collected from first to 25th December 2022.

Inclusion Criteria:
1.   Registered Nurses working in Cardiology ward and CCU
2.   Nurses having working Experience at least six months

Exclusion Criteria:
1.   Those registered Nurses who have attended any seminar or sessions regarding cardiac rehabilitation.
2.   Those who are absent from duty.
3.   Those that were been on long leave.
4.   Managerial staff and head nurses.

Data Collection Procedure:
First written permission for data collection was taken from the concerned institutes. The participants were approached in different shifts; the study information's were shared. Written consent was obtained from the participants, who agreed to participate, and the adopted questionnaire includes demographic information and items on knowledge, attitude and practices regarding cardiac rehabilitation were filled from the participants. There are four sections that is section A, B, C and D of the adopted questionnaire. Section A includes socio-demographic information while remaining sections are about knowledge, attitude and practices regarding cardiac rehabilitation.

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The data was collected using adopted questionnaire with Cronbach Alpha value of 0.970. A hard copy of printed questionnaire in English language was distributed among the participants. Informed consent was taken from all of the participants after giving brief information to the participants about study purpose, its benefits, its risks to the participants, if any, and giving full assurance of confidentiality to all of the participants.

Data Analysis

The data was analyzed through SPSS version 26. The analysis is consisted of descriptive statistics like frequencies, means, median and standard deviation and different statistical tests such as the Pearson correlation, ANOVA for the degree of association between demographic and knowledge, attitude and practices of the participants.

RESULTS

Participants characteristics: Most participants 69.5% were from age group 21-30 years. Moreover, only two participants were from age group 41-50 years, as given below in table 1:

Age of the respondents: Table 1

Age (years)	f	percentages
21-30	153	69.5%
31-40	65	29.5%
41-50	2	0.9%
Total	220	100%

Gender of the respondents: Mostly that is 64.5% female participated in the study while 35.5% males were the part of study too. As mentioned in table 2.

Gender of the participants: Table 2:

Gender	frequency	percentage
Male	78	35.5%
Female	142	64.5%
Total	220	100%

Qualification of the participants: Table 3

| Qualification	frequencies	percentages
Diploma	61	27.7%
Baccalaureate	155	70.5%
Master	4	1.8%
Total	220	100%

Total 70.5% of the baccalaureates participated in the study while 27.7% were the diploma holders participants.as given in table 3 above.

145 participants had their job experience in-between 1 and 5 years (65.9%). So it was the least experience group in the study. Only 8 respondents participated whose experience was falling in 16-20 years.

ANOVA was applied but no difference along the mean age found, moreover, Across the categories of years of experience, significance was found in 1 to 5 and 6 to 10 years' experience group (p value: 0.0031). In addition, chi square test was applied to determine the association between qualification and knowledge. No Association was found in between knowledge and qualification. While using the chi Square test significant association was found between age and knowledge.

Knowledge of Registered Nurses regarding Cardiac Rehabilitation (CR).

categories of score
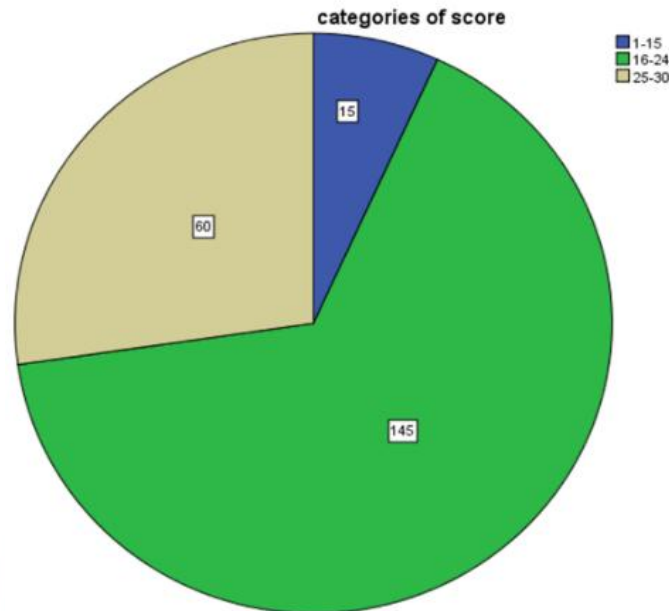
Categories of knowledge by marks: Table 4

Categories of knowledge by marks	Poor knowledge	Good knowledge	Very good knowledge
1-15	6.8%		
16 - 24		65.9%	
25 - 30			27.2%

So knowledge among nurses was categorized to poor (6.8%) good (65.9%) and very good (27.7%).

Attitude of the registered nurses regarding Cardiac Rehabilitation

The result also provides information regarding the attitudes of the registered towards the cardiac rehabilitation. In total score of 75 the minimum score got was 38. The median obtained was 56, moreover those below the median value were 138 of 220 that is 62.7%. so the nurses with negative attitudes were 62.7% while the nurses with positive attitudes were 82 of total 220 that is 37.3%.

Categories of attitude: Table 5

Categories of attitude	Frequency	Percentage	Name of the attitude
Below the median	138	62.7%	Negative Attitude
Above the median	82	37.3%	Positive Attitude
Total	220	100%	

Practices of the registered nurses towards cardiac rehabilitation

The results for practices shows the participants views regarding the kind of patients that are eligible to begin a cardiac rehabilitation. Most of the participants (79.1%) mentioned that cardiac patients should be eligible for cardiac rehabilitation. On asking the question that is it difficult for nurses to refer a patient to cardiac

rehabilitation in Pakistan, so most of them were responded with not facing difficulty. About half of them (38.6%) responded that Policy providers should take initiatives to begin the cardiac rehabilitation. In addition, 27.3% of the participants stood the insurance companies responsible for initiating the cardiac rehabilitation. on asking that how much patients did you care in last month at home who were suffering from cardiac diseases so only 4.5% of the participants responded that they have cared more than 20 patients in the last month.

What kind of patients do you consider suitable for cardiac rehabilitation after discharging from hospital?
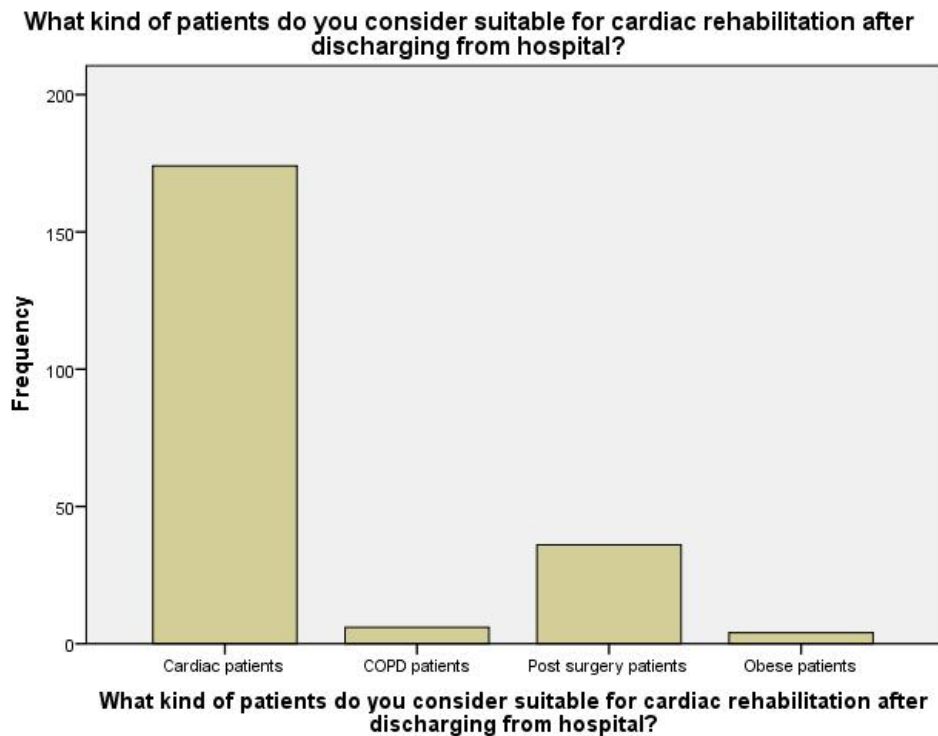
DISCUSSION:
The aim of the study was to assess the knowledge, attitude and practices regarding cardiac rehabilitation in Peshawar. The results are meeting our expectations and is supported by other studies conducted globally. So in discussion we have focused those parts which are more relevant to nurses to play their role in cardiac rehabilitation. A study conducted at Lebanon supports our results that most of the participants' knowledge assessed was good, but it is going contrary regarding the attitude of the participants, as most of the participant's attitude were found negative in our study but in their study, the most of them had positive attitude (27). another study conducted at Al-Najaf center is going contrary to our results for the knowledge and attitudes. As in their study knowledge among the participants was poor but had high willing and bigger desire to go through cardiac rehabilitation programs (28). Another descriptive cross sectional study conducted in Baoding city of China supports our study states that most of the participants had good knowledge towards the cardiac rehabilitation (29). same cross sectional study conducted in Iran states that poor knowledge regarding cardiac rehabilitation programs was assessed among the study participants which is going against our findings (30).

CONCLUSION
As indicated the role of Nurses is very crucial in cardiac rehabilitations programs. This study was conducted in tertiary care hospitals of Peshawar to assess the knowledge attitude and practices of the registered nurses towards cardiac rehabilitation, who are the backbone of the hospitals can play best role in such programs. As the study highlighted that knowledge of the nurses was satisfactory but instead needs further programs to develop their attitudes and practices regarding the benefits of the programs so that to ensure the high efficacy in this concern because through such programs one can reduce the morbidity and mortality of a society due to cardiovascular diseases.

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