



# Determination of Coronary Care Unit Nurses' Knowledge Regarding Patient Rehabilitation After Myocardial Infarction

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**Abstract Background:** Cardiovascular disease (CVD) is the number one cause of death worldwide. **Objective:** To determine of coronary care unit nurses' knowledge regarding patient rehabilitation after myocardial infarction. **Methodology:** A cross-sectional study was designed in the Cardiac Care Unit of Al-Diwaniyah Teaching Hospital and the Specialized Center for Cardiac Surgery and Catheterization for the period from (November 7, 2022) to (May 12, 2023). A non-probability (purposive) sample consisting of (75 nurses) working in the above-mentioned study site. To determination of coronary care unit Nurses' knowledge regarding patient rehabilitation after myocardial infarction, the researcher used a tool that consists of two parts: The first part: is the demographic data of the study sample, and the second part: nurses' knowledge about patient rehabilitation after myocardial infarction includes 28 items. **Results:** The study showed that (48%) of the nurses in the study sample had fair levels of knowledge regarding patient rehabilitation after myocardial infarction. It also showed that there is a statistically significant relationship between the nurses' knowledge and their age. **Conclusion:** The current study concluded that the largest percentage of the participants in the study have fair knowledge about patient rehabilitation after myocardial infarction, while a small number of them have satisfactory knowledge.

**Key Words** Nurses' knowledge, Patient rehabilitation, Myocardial infarction

## 1. Introduction

Cardiovascular diseases (CVDs) represent the top cause of mortality around the world, with about 17.5 million patients succumbing to different heart diseases, including coronary heart disease (CHD), stroke, rheumatic heart, and myocardial infarction. Cardiac rehabilitation (CR) was a cost-effective way to provide secondary prevention services that can reduce cardiovascular morbidity and mortality in patients with cardiovascular disease [1]. Contemporary cardiac rehabilitation programs encompass a holistic approach that entails fitness training, health education, lifestyle modification guidance, and psychological counseling, with the aim of mitigating cardiovascular risk factors. The typical programmer in the United Kingdom generally follows an outpatient-based model, typically attending sessions once a week for a duration of 6 to 10 weeks [2].

According to the latest guidelines, systematic evaluations have revealed a 20% decrease in all-cause mortality as evidence supporting the effectiveness of cardiac rehabilitation. Nevertheless, this numerical value is mostly derived from experiments conducted over 30 years ago. The WHO Eu-

ropean multi-center collaborative trial, the only relatively large trial in the early 1970s, reported in 1983 the results for 2605 patients in 17 (of 24) centers and concluded that 'the trial failed to provide an answer to the question of whether comprehensive programmes could reduce mortality and morbidity after acute myocardial infarction [3].

A limited number of studies have provided data on the outcomes related to other possible advantages of rehabilitation. A total of 26 out of the 40 trials included in the Cochrane review revealed instances of non-fatal cardiac re-infarction. However, there was no statistically significant reduction observed in these cases (relative risk (RR)=0.88, 95% CI 0.70 to 1.12).The World Health Organization (WHO) research demonstrated slight enhancements in maximal heart rate and workload, albeit exclusively among male participants aged below 59 years [4]. However, whether knowledge mastery toward cardiac rehabilitation of nursing staff play a role in the utilization of this treatment remains unclear. In order to more comprehensively analyze the factors affecting cardiac rehabilitation, we conducted a survey of the nursing staff in

the Cardiology Departments of two hospitals to explore of coronary care unit nurses' knowledge about patient rehabilitation after myocardial infarction.

### 2. Methodology

A cross-sectional study design has been used to carried out this study form the period of (November 7, 2022) to (May 12, 2023). The official permissions were obtained from Al-Diwaniyah Teaching Hospital, and The Specialized Center for Cardiac Surgery and Catheterization in Al-Diwaniya in order to ensure the agreement and cooperation.

A non-probability (purposive) sampling was used to select the study participants. The study sample included (75) nurses those working in Al-Diwaniya Teaching Hospital and the specialized center for catheterization. The representative sample of the study sample was calculated through Yamane's Formula for Calculating Sample Size:

$$N = \frac{N}{1 + N(e^2)}$$

$$n = \frac{92}{1 + 92(0.05^2)} \quad n = 75$$

To achieve the study objectives, the researcher constructed the study instrument which consists of two parts: part one the study instrument is concerned with the collection of demographic data that obtained from the study participants nurses and consists of (six) items. These items are (age, gender, educational level, years of experience in nursing, marital status, and educational training courses related to cardiometabolic Syndrome). Second part was constructed to evaluate nurses' knowledge about patient rehabilitation after myocardial infarction in both Al-Diwaniya Teaching Hospital especially in (CCU), and the Center for Cardiac Surgery and Catheterization in Al-Diwaniya. It consisted of (28) multiple-choice questions. Face validity was determined by evaluation of the multiple-choice questions through a panel of (11) experts.

Reliability testing was used as a statistical analysis method to determine the concordance among the items of the questionnaire using the reliability coefficient. The degree of reliability was (0.84) which means that the study instrument is reliable in measuring the study phenomenon at any time in the future. The ethical permission (Ethics Committee Permission Number: 15/10/2022-988) came from the relevant University of Baghdad, College of Nursing, Clinical Research Ethics Committee, institutional permission from the Faculty of Nursing, and from the selected hospitals' ethical boards before data collection began. Participation was completely voluntary, with written informed consent from nurses, who were assured that their responses would be confidential.

Descriptive and inferential statistical procedures were conducted. The descriptive analysis was presented with frequency, percentage, and mean and standard deviation. The Chi square test was employed to determine the association between positive health behaviors and certain demographic characteristics. Statistically significant when the p-value is

Demographic Data	Rating and Intervals	Frequency	Percent
Age / years	20-30	60	80
	31-40	7	9.33
	41-50	6	8
	50 and above	2	2.66
	Total	75	100.0
Mean = 28.56±6.405			
Gender	Male	33	44
	Female	42	56
	Total	75	100.0
Educational Level	Secondary School of Nursing	19	25.33
	Diploma in Nursing	27	36
	Bachelor in Nursing	27	36
	Master	2	2.66
	Doctor of Philosophy	0	0
	Total	75	100.0
Years of Experience in nursing	Less than 5	55	73.3
	6-10	14	18.6
	11-15	4	5.3
	16-20	2	2.6
	Total	75	100.0
Marital Status	Single	37	49.33
	Married	36	48
	Divorced	2	2.66
	Widower	0	0
	Separate	0	0
	Total	75	100.0
A training course for the cardiac rehabilitation	No	14	18.6
	Inside Iraq	59	78.6
	Outside Iraq	2	2.6
	Total	75	100.0

Table 1: Study Sample Demographic Data

Level of Nurses' Knowledge	Frequency	Percent	Mean	Std. Deviation
Poor	21	28	1.502	.321
Fair	36	48		
Good	18	24		
Total	75	100.0		

Table 2: Distribution Overall Assessment of Knowledge among Nurses.

< 0.05. All the data were analyzed with SPSS Statistics (version 26).

### 3. RESULTS

A total of 87 questionnaires were distributed in this study, of which 12 were removed due to incomplete answers. Therefore, 75 valid questionnaires were retrieved, indicating a response rate of 93%. Of the 75 responders, (56% 44%) were female and male, respectively. The average age of the participants was 28.56±6.405, the majority of the study participants (80%) were between the ages of 20 and 30, and 36 percent of the nurses had a bachelor's degree. regarding years of experience in nursing nearly three quarter of nursing have less than 5 employees in nursing. Majority of them (49.33%) were married. Concerning the training session, the majority of them (78.6.6%) have training session.

Demographic Data	Chi-Square Value	D.F.	P-Value
Age	2.467	6	.016
Level of education	1.945	8	.641
Gender	1.789	2	.617
Years of Experience in nursing	2.847	6	.032
Marital Status	1.932	8	.459
A training course	1.394	6	.983

Table 3: Association between the Overall Assessment of Nurses' Knowledge and Their Demographic Data

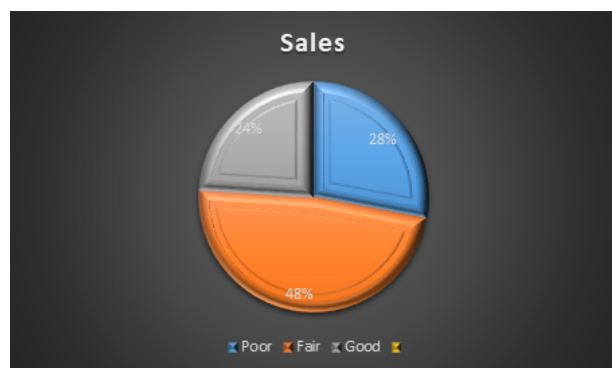


Figure 1: Overall Clinical Nurses' Knowledge toward patient rehabilitation after myocardial infarction

#### 4. Discussion

The study finding in the Table 1 is related to the socio-demographic characteristics of the sample, the results reflect descriptive statistics of socio-demographic characteristics in terms of frequencies and percentages. Out of (75) subjects participated in our study, the majority of the age group was among the ages 20-30 years of old and constituted (80%) of the study sample, the older than 50 years were the small ratio. These results are consistent with many studies carried out by (5-8), who stated that most participants (77%) of the nurses were in the age group (20-30) years old [5].

The researchers have observed that nurses within the age range of 20-30 possess the highest level of knowledge regarding patient rehabilitation following myocardial infarction. At Al-Diwaniya Teaching Hospital, healthcare professionals who have just completed their education are employed, as they possess up-to-date knowledge and skills. Additionally, because nursing colleges and institutes are now receiving outstanding students in preparatory studies because of central appointment.

The study indicates that more than half (56 %) were females. Highest percentage and the remaining (44%) of them are male. This finding from the current study agreed with a study conducted by [5], which showed that the majority of the study sample were females more than half (62.4%). Also, This study is consistent with a study conducted by [6]–[10], that found females more involved than males. The researchers have observed that the most extensive knowledge regarding patient rehabilitation after myocardial infarction in Al-Diwaniya teaching hospital is possessed by female nurses. This can be attributed to two factors.

Firstly, the nursing specialty in this context tends to admit females with lower academic qualifications compared to their male counterparts. Secondly, there is a nursing preparatory school exclusively available for females, which may contribute to their enhanced understanding in this area. Concerning with the level of education, the findings of the present study show that highest percentage (36%) with nursing college and Diploma in nursing and the lowest percentage (2.66%) Master's degree. This result is confirmed by [11],

they found that more than half (60%) of participants were graduated from the college of nursing.

The researchers have observed that nurses with a diploma in nursing possess the highest level of knowledge regarding cardio metabolic syndrome at Al-Diwaniya Teaching Hospital. This can be attributed to the fact that the Faculty of Nursing at Al-Qadisiyah University is equipped with modern facilities and has not produced a larger number of graduates compared to the diploma in Nursing program. Therefore, the result of this table shows that more than one third of the nurse sample (37%) of them were single. These results of the study conducted by [12], which showed that the majority of the study sample were single (62.4%) and supported findings of current study.

Concerning with the experience in the hospital. This table shows that the majority (73.3%) of the years of experience in CCU between years (less than 5). The results were found in a study conducted by [13], which clarified that less than two third nurses (62 %) had experience less than (5) years this will support results of the current study. Finally, in this table, regarding a training course for the patient rehabilitation after myocardial infarction. Most of the study sample (78.6%) Where have training courses inside the Iraq and (2.6%) outside of the Iraq. The findings of this study indicate that all nursing personnel who were polled had participated in courses on cardiac rehabilitation. This observation may be indicative of the growing emphasis on patient rehabilitation following myocardial infarction training in China in recent times. The dissemination of knowledge on cardiovascular rehabilitation has been observed in numerous cardiovascular communication conferences, consistently reaffirming the advantages of patient rehabilitation following myocardial infarction.

Through Table 2, related to overall Nurses' Knowledge associated about patient rehabilitation after myocardial infarction the finding indicated that Nurses' Knowledge have fair T mean of score (1.502). also Figures 1 show that less than half (48%) reported a fair level of Knowledge, followed by those who reported poor levels (28%), and those who reported good levels (24%). The researchers posit that the insufficient knowledge of patient rehabilitation after myocardial infarction among CCU nurses at Al-Diwaniya teaching hospital can be attributed to various factors. These include the absence of training courses on this topic and the inadequate emphasis on patient rehabilitation after myocardial infarction in the continuing education curriculum provided by hospitals. This findings from the current study were agreed with a study conducted by [14] found the majority of nurse (86.7%) reported for poor of knowledge scores (1.40) in university hospital in Upper Egypt.

The results of study were also partly in line with a similar study by [15], who stated that finding of study indicted the Pre test and post test frequency and percentage of knowledge scores of subjects regarding CR revealed pre test(47.5%) subjects had poor knowledge (47.5%). Based on the aforementioned findings, it can be inferred that the implementation of

an ongoing educational program has the potential to elevate and augment the knowledge of nurses across the board. The research method can be utilized to enhance the knowledge of nurses, enabling them to address genuine problems that arise in various health conditions and provide optimal quality of care to patients. The findings may serve as a catalyst for all stakeholders to adopt comparable objectives within their educational programs (The researcher).

As for Table 3, related to there is a statistically significant relationship just between the age, years of experience in nursing and their knowledge, while there is no significant relationship between their knowledge and their other demographic data at p-value more than (0.05).

The current study is supported by the study conducted by [15]–[18] showed that there were significant association between the age of the nurses and their knowledge at a p-value of (0.01). While, Majeed stated that regarding there is significant relationship between the knowledge of nurses and their educational level. A study that there is significant relationship between nurses knowledge and their years of experience [19]. As for the absence of a statistically significant relationship between the knowledge of the nurses with the other demographic data. The results of the current study agree with a study conducted in Mosul in terms of the existence of a statistically significant relationship between the knowledge of nurses and their age. It also agrees with the result of the absence of a statistically significant relationship between the age and years of experience of the nurses with their level of knowledge. In addition, this study disagrees with the current finding regarding marital status.

## 5. Conclusion

On the basis of the findings, the investigator concluded that the staff nurses have satisfactory knowledge regarding cardiac rehabilitation. The study strongly suggest that it is very important to enhance the knowledge of the staff nurses regarding cardiac rehabilitation to improve the quality of life of cardiac patients through encourage the nurses' part pants in educational cession concerning cardiac rehabilitation. There is no significant association between the knowledge scores with socio demographic variables.

## Conflict of Interest

The authors declare no conflict of interests. All authors read and approved final version of the paper.

## Authors Contribution

All authors contributed equally in this paper.

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