



Original Research

Evaluation of Patients' Satisfaction toward Quality of Nursing Care post Cardiac Catheterization

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Abstract:

Objectives: This study aimed to evaluate patients' satisfaction toward quality of nursing care post cardiac catheterization and determine the associated factors with their satisfaction.

Method: A cross-sectional descriptive study conducted at the Diwaniyah Center for Cardiac Surgery and Cardiac Catheterization for the period from November 2023 to April 2024. The study sample consisted of a non-probability (purposive) sample of 200 patients. questionnaire was validated by experts and its reliability was verified by a pilot study. The total number of items included in the questionnaire was 16 items to evaluate patient satisfaction. Data were collected through interviews and analyzed by applying descriptive and inferential statistical analysis.

Results: Results indicated that the average age of participants was 54.71 ± 10.91 years, (56%) male, (65.5%) married and residing in urban areas. More than half (56.5) were satisfied to a certain extent with the quality of nursing care after cardiac catheterization. There was a relationship between patient satisfaction and age, gender, marital status, occupation, and monthly income ($P > 0.05$).

Conclusions: It was found that patients' satisfaction with the quality of nursing care after cardiac catheterization was suboptimal and affected by various factors such as age, gender, marital status, occupation, and monthly income.

Recommendations: Need for interventions that focus on communication, empathy and compassion to enhance overall satisfaction, with specific considerations of age, gender, marital status, occupation and income in designing nursing care.

Key-words: Patients' Satisfaction, Quality of Nursing Care, Cardiac Catheterization.

Introduction :

Catheterization is the culminating procedure in the treatment of cardiac patients. Ordinarily, the cardiac catheterization is the diagnostic and interventional procedure most commonly used in cardiovascular diseases ⁽¹⁾. The success of recovery of the patients is highly dependent on the quality of care provided by cardiac nurses, so nursing care following catheterization must be of excellent standard. Assessment of the patient's satisfaction with the quality of

nursing care is going to assist in finding out the healthcare outcomes with intention of improving the overall patient experience ⁽²⁾. It is as common nowadays as it is with millions of people having it just like millions of people undergo surgery annually. The high incidence is predominantly noticeable in developed countries whose health infrastructure is highly developed, where medical services are easily accessible, and in which medication is readily available. The major cause of the high procedural frequency is the growing rates of cardiovascular diseases, such as coronary artery disease, valvular heart disease, and congenital heart defects, which represent the main pointers for cardiac catheterization ⁽³⁾. Cardiac catheterization is a method of catheterization through which heart diseases can be diagnosed and treated, depending on a route, which is blood vessel, e.g. coronary artery disease or heart valves irregularity. Performing surgery is only half of the battle; nurses now need to rise up to the challenges of supervising all the potential complications during the period of recovery, and addressing any post-operative problem ⁽⁴⁾. On the other hand, the quality of nursing care is directly linked to patients' satisfaction and is the foremost element that facilitate patients' healthcare experience and hospital reputation. Several components of patient care are used to measure the level of satisfaction of the patients they have received functioning procedures after catheterization of the coronary arteries. The list may include various factors such as the level of communication between the nursing staff and the person suffering, pain relief, fulfilling people's needs, and creating the proper environment for hospital ^(5,6). The communication

between healthcare providers and patients is vital to the understanding of and solving of patients' concerns by the said providers. This also helps them with giving clear post-procedure instructions and developing a trust and comfort between them. This specific discipline of research attaches a prime importance to patient centered treatment, leading to better patient satisfaction ⁽⁷⁾. The phrase shows the significance of the individual engagement with the patient to identify their own specifications and then adjust accordingly. The next decade's data shows that the number of nurses can be the limiting factor for the quality of care, and the studies that have been done point to the need of having an adequate number of staff members on board to provide the best possible care for each patient ⁽⁸⁾. In view of this, this study was carried out to assess patient's satisfaction with quality of care provided by the nurses after cardiac catheterization.

Methods:

Study Design:

The descriptive cross-sectional study design technique was adopted by standard questioning individuals of the study population with the sole purpose of describing the examined phenomena in terms of its nature and degree of presence was conducted during the period from November 2023 to April 2024.

Study Setting and Sample

The study was conducted AL-Diwaniya center for heart surgery and cardiac catheterization. Sample of the study A purposive (non - probability) sample of (200) Patients from post-cardiac catheterization at Al-Diwaniya Center for Cardiac Surgery and Cardiac Catheterization was chosen based on a set of criteria include: 1) patients who are post cardiac catheterization, 2) who are different level of education, 3) who are different age groups and 4) volunteer to participate in the study after his consent

Study Instrument

Instrument questionnaire used in this study The Arabic version of the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ), developed by ⁽⁹⁾. Permission was obtained from the

author to modify the tool to better fit the research objectives. Necessary adjustments were subsequently made.

This questionnaire consists of four parts include the followings.

Part I: Socio-demographic characteristics include patients age, gender, marital status, residents, education level, occupation, and monthly income

Part II: Clinical Data form

The second part composes of patient's clinical data form which consists of (8) items, that include Type of catheterization, number of admissions, Body Mass Index (BMI), Previous treatment in a health institution outside of Iraq, History of cardiac catheterization, Duration of coronary artery disease, Presence of chronic diseases and Smoking status.

Part III: General Evaluation

The Third part composes of (2) items, this section is designed to gather your overall feedback regarding the quality of care and services you received during your hospital stay.

Part IIII: Patient Satisfaction toward Quality of Nursing Care

The fourth part composes of (Sixteen items), statements are organized in the form of series, covering other aspects of nursing care, including adequate and clear information, communication with the family and friends, and personal attention, caring and professionalism demonstrated by nursing staff.

Validity and Reliability

The rating of level satisfaction is measured by a 5-point Likert Scale (1= poor, 2=Average,3=Good,4=Very Good, 5= Excellent), and the available score of 16-80. As average goes higher, it signifies more satisfaction. The questionnaire passed the expert validation and the pilot study was conducted to determine the questionnaire's dependability. Present Cronbach-alpha rating is 0.81, which is stable. Satisfaction levels are categorized based on the mean score as follows: 1-1.66 unsatisfied,1.67-2.33 indicates

satisfaction to a certain limit, and 2.34-3 signifies satisfied.

Ethical considerations:

Before data collection started, the relevant University of Baghdad/College of Nursing, Clinical Research Ethics Committee, institutional permission from the Faculty of Nursing, and ethical boards from the chosen hospitals provided the ethical permission (Ethics Committee Permission Number: (22/11/2023). Patients gave their written, informed consent after being advised that their answers would be kept private and that participation was entirely optional.

Data Collection

Data were collected using the questionnaire, which measures health-related properties considered to affect patient satisfaction and a questionnaire, designed in the light of related literature, to record socio-demographic characteristics and medical history. A questionnaire consisting of 16 items pertaining to variables affecting patient satisfaction was developed according to these characteristics. The data were collected by the researcher. The patients completed the questionnaires prior to their discharge from the hospital. The patients who agreed to participate in the study were provided with an explanation about the purpose of the study and they signed informed consent forms. The self-report questioner techniques were used one-on-one. Participants took about 15–20 minutes to fill the questionnaire.

Statistical Analysis

All statistical analyses were performed using the IBM SPSS 20.0 software. Numbers and percentages were employed to rank the variables, while mean and standard deviation were utilized to statistically describe the continuous variables. A straightforward linear regression test was employed to evaluate the hypothesis of the relationship between the study's variables. Two popular techniques for evaluating the distribution of data are the Kolmogorov-Smirnov (K-S test) and Shapiro-Wilk tests. Additionally, the Mann-Whitney U and Kruskal-Wallis H tests were run to evaluate any statistical differences between the

groups. Correlation coefficient to correlate statistical significance was used between study variables. A 0.05 threshold for

Results:

Table (1): Socio-Demographic Characteristics

Socio-demographic data	Classification	No.	%
Age/years	20 to less than 30	3	1.5
	30 to less than 40	10	5.0
	40 to less than 50	56	28.0
	50 to less than 60	55	27.5
	60 to less than 70	47	23.5
	70 to less than 80	29	14.5
	Min–Max	28–78	
	Mean ± SD	54.71 ± 10.91	
Gender	Male	112	56.0
	Female	88	44.0
Marital status	Single	14	7.0
	Married	131	65.5
	Divorced	10	5.0
	Separated	7	3.5
	Widowed	38	19.0
Residents	Urban	129	64.5
	Rural	71	35.5
Education level	Illiterate	32	16.0
	Read & Write	56	28.0
	Primary school	39	19.5
	Middle school	28	14.0
	Secondary school	24	12.0
	Diploma	10	5.0
	Bachelor's	11	5.5
Occupation	Employee	37	18.5
	Free-business	23	11.5
	Unemployed	35	17.5
	Retired	40	20.0
	Housewife	65	32.5
Monthly income	≤300,000 IQD	88	44.0
	301 to less than 600 IQD	51	25.5
	600 to less than 900 IQD	19	9.5
	900 to less than 1200 IQD	29	14.5
	1,200 to less than 1,500 IQD	10	5.0
	≥1,501,000 IQD	3	1.5

No. Number; %= Percentage

The study included 200 patients with ages ranging from 28 to 78 years (average age: Pairing audio with visual content may also have a positive effect on memory, as this combination helps reinforce the information. The audio component (90.71 ± 12.91). It was 56% of the total population were male and only 65.5% of the women were married. There

were 64.5% of urban dwellers, and people from rural areas accounted for 35.5 %. Education, the category with the highest percentage, was basic literacy (28.0%). Occupation, the second highest, was housewife (32.5%). On the economic front, 44% of the respondents indicated that they had monthly incomes less than 300,000 Iraqi dinars

.Table (2): Overall patients' satisfaction with the quality of nursing care

Scale	Min.	Max.	M	SD	Score	No.	%	Evaluation
Patients Satisfaction (16 Q)	22	76	46.74	13.88	Unsatisfied	49	24.5	Satisfied to certain limit
					Somehow	113	56.5	
					Satisfied	38	19.0	
					Total	200	100.0	

Min.: Minimum; Max.: Maximum, M: Mean for total score, SD=Standard Deviation for total score

Level of Evaluation [Unsatisfied=16-37.33; Somehow Satisfied= 37.34-58.66; Satisfied= 58.67-80]

The study's findings bring the patient feedback on the quality of nursing care after cardiac catheterization to the light, demonstrating the

variation in the overall satisfaction from 22 to 76 on the assessment scale. The group's average rating was (46.74 ± 13.88). The main criterion for the study is to emphasize that at least half of the patients (56.5%) have either a neutral or a positive feeling about the given limits.

Table (3). Relationship between patients' satisfaction and their age

Correlation Statistics		Age
Patients Satisfaction	Pearson Correlation	-.440**
	Sig. (2-tailed)	.000
	N	200

** . Correlation is significant at the 0.01 level (2-tailed).

The findings suggest that there was statistically significant correlation (reverse) observed between patients' satisfaction towards quality of nursing care post cardiac catheterization and their age groups ($r = -.440$; $p = .000$).

Table (4). Statistical differences in patients' satisfaction with regard their gender

Variable	Gender	No.	Mean Rank	cz _	Sig.
Patients Satisfaction	Male	112	113.96	3420.500	.001
	Female	88	83.37		

^c= Mann-Whitney Test; No.= number, sig.= significant level at 0.05.

The Mann-Whitney U Test indicate that there were significant differences in patients' satisfaction towards quality of nursing care post cardiac

catheterization based on their different gender (p=0.001).

Table (5). Statistical differences in patients' satisfaction with regard their marital status

Variable	Ranks			^b χ ²	d.f	Sig.
	Marital status	No.	Mean Rank			
Patients Satisfaction	Single	14	157.14	18.357	4	.001
	Married	131	100.71			
	Divorced	10	74.20			
	Separated	7	70.79			
	Widowed	38	91.32			

^b= Kruskal Wallis Test; No.= number, sig.= significant level at 0.05.

The Kruskal-Wallis analysis suggests that there were statistically significant differences in patients satisfaction towards quality of nursing care post

cardiac catheterization between groups of marital status (p=0.001).

Table (6). Statistical differences in patients' satisfaction with regard their Residents

Variable	Residents	No.	Mean Rank	^c z _	Sig.
Patients Satisfaction	Urban	129	95.84	3978.500	.124
	Rural	71	108.96		

^c= Mann-Whitney Test; No.= number, sig.= significant level at 0.05.

The Mann-Whitney U Test indicate that there were no significant differences in patients satisfaction towards quality of nursing care post cardiac

catheterization between those who are residents in urban or rural areas (p=0.124).

Table (7). Statistical differences in patients' satisfaction with regard their education levels

Variable	Ranks			^b χ ²	d.f	Sig.
	Education level	No.	Mean Rank			
Patients Satisfaction	Illiterate	32	111.72	3.403	6	.757
	Read & write	56	90.79			
	Primary school	39	98.92			
	Middle school	28	99.61			
	Secondary school	24	108.92			
	Diploma	10	104.20			
	Bachelor's	11	103.41			

^b= Kruskal Wallis Test; No.= number, sig.= significant level at 0.05.

The Kruskal-Wallis analysis indicate that there were no statistically significant differences in patients satisfaction towards quality of nursing care

post cardiac catheterization between groups of different education levels (p=0.757).

Table (8). Statistical differences in patients' satisfaction with regard their occupation

Variable	Ranks			^b χ ²	d.f	Sig.
	Occupation	No.	Mean Rank			
Patients Satisfaction	Employee	37	115.20	11.473	4	.019
	Free-business	23	67.02			
	Unemployed	35	112.06			
	Retired	40	101.33			
	Housewife	65	97.25			

^b= Kruskal Wallis Test; No.= number, sig.= significant level at 0.05.

The Kruskal-Walli's analysis indicate that there were statistically significant differences in patients' satisfaction towards quality of nursing

care post cardiac catheterization between groups of different occupation (p=0.019).

Table (9). Relationship between patients' satisfaction and their monthly income

Correlation Statistics		Monthly income
Patients Satisfaction	Pearson Correlation	-.367**
	Sig. (2-tailed)	.000
	N	200

** . Correlation is significant at the 0.01 level (2-tailed).

The findings suggest that there was statistically significant correlation (reverse) observed between patients' satisfaction towards quality of nursing care post cardiac catheterization and their monthly income (r= -.367; p= .000).

Discussion:

Socio-Demographic Characteristics of the Study Sample

Different demographic variables have a significant influence on the formation of the sample for satisfaction among patients after cardiac catheterization nursing. The 28-78years old group which is made of 54.71±10.91-year-old people appear to be a mixed group, having a broad age disparity in it ranging from younger to the aged. It is even more important to have a diversity here since the medical experiences of the older and

younger people are different and in order to conduct a thorough research, we need a full understanding of the specific viewpoints of people who belong to different life stages. Likewise, these findings are complemented by studies carried out by Baghdad City Cardiac Centers, whereby the most vulnerable patients are the ones under 40 and the ones above 60 ⁽¹⁰⁾.

The other large part of the work which is the distribution of the gender that are 56% male and 44% female. This observer and the results from Al-Muthana Teaching Hospitals were consistent to

each other in regard to the imbalance between genders which brought forth the questions about such gender-specific expectations and experiences in the nursing care ⁽¹¹⁾. Research indicates involvement of gender factor in patient satisfaction and communication preferences in healthcare settings thus points to the fact that nurses must take the gender issue into account.

Another factor that also played a central role in our study was the marital status which indicated that 65.5% of participants were married. This might be the dimension that they might be drawn to if they consider the services that they eventually receive after recovery. The relation between the marital status and health status is highlighted by the research, and it is also found that the way in which singles and married peoples differ in their healthcare needs is the one that most hinders their engagement with healthcare ⁽¹²⁾.

Residential distribution is also an exceptional case in the survey, the fact that 64.5% of respondents are urban dwellers while 35.5% live in the rural areas. Discrimination on the basis of rural–urban divide is, particularly, a reason for not accessing health care resources and it is likely to bring down the quality of health provided. The study at Jumhuriyah Teaching Hospital has demonstrated that the number of the city residents was more than the number of the rural residents as per the majority of the patients in the city ⁽¹³⁾. People who live in rural areas might have some problems with health infrastructure like being limited, and this can affect their satisfaction with the post-catheterization nursing care ⁽¹⁴⁾.

In addition to education background that took over 50% of the participants, basic literacy skills was identified amongst the rest who accounted for 28.0% of the participants. These facts are supported by the data obtained by the survey in Baghdad city, that showed that the majority of the respondents had completed only elementary school ⁽¹⁵⁾. Thus, this would draw the public and individuals' attention to their health literacy and the outcome of patients' interactions with the medical personnel. Illiterate people usually experience difficulty to read medical information well; therefore, efficient communication

techniques which aims at the various levels of literacy become inevitable ⁽¹⁶⁾.

According to the information about occupation, 32.5 percent of the interviewees of the study regarded themselves as housewives. This is also true based on the fact that the highest number of patients taking services in Al-Rusafa District Health Centers are housewives ⁽¹⁷⁾. On the contrary, only 18 out of 27 who were from Karbala were a housewife ⁽¹⁸⁾. The fact that women are unemployed as housewives could lead to limited chances to get a healthcare appointment and also to their participation in decision making about their health matters. Understanding their roles and responsibilities is a basic blood stream that enables healthcare providers to be able to provide care that is centered on the patients ⁽¹⁹⁾.

In terms of the economic state of the matter, the data has colors because here 44% of the respondents admit that their monthly income is less than 300,000 Iraqi dinars. Financial issues may be one of a big deciding factors for the establishing of the pathway towards healthcare services and the following obligatory treatments. The gap in socio-economic status is an eye opener of the need for specific solutions as well as support systems for equitable and excellent nursing care after cardiac catheterization to every social class ^(20, 21).

The nursing care for the treatment after cardiac catheterization were reviewed and findings revealed that the participants response were very satisfied to non-satisfied. The evaluation has been performed by using a scale of scores from 22 to 76, which is an excellent way to show the diversity of patients. Possibly the average of 46.74 ± 13.88 point to a good level of the overall satisfaction. Different mean scores are obtained among the patients, that is, the perceptions and appraisal of nursing care quality vary among them. One of the things the study says categorically is that the number of patients who fall in the middle satisfaction level is quite high. The figure of 56.5% was thus considered to be within the range of confidence for satisfaction, given the predetermined criteria of the study. For them, this could mean the huge number of patients' population that had undergone coronary catheterization in the past will have to deal the same way they dealt with the nursing care

they got. Such a bunch of satisfied patients attested to the fact that there is a necessity to look for the components that can be found in all the success stories of our patients and the delivery of the tailored nursing care to those who aspire such experiences as a rule. The findings, nonetheless, go along with the studies performed in different health care settings in the past. The literature affirms that patient satisfaction is multidimensional in nature and the quality of patient care incorporates good communication, empathy, and compassion^(22, 23). Thus, the approaches that focus on the aspects of nursing care which affect the patient's satisfaction are the one of the methods used as a goal to achieve the aim of the improvement of the patient's satisfaction.

The findings of this research strongly indicate a significant relationship between the patients' satisfaction about the quality of nursing care delivered to them after this surgery and their age groups. The relevance of this relationship is demonstrated by the data, which is the Pearson's correlation is a reverse relation, $r = -.440$, $p = .000$. This study makes evident the idea that aged patients are increasingly not happy with the care they receive from nurses as they grow older. Correlation coefficient of -0.440 indicates that negative, though only moderate relationship occurs between the patients' age and the quality of nursing care. That is why, the elderly patients are considered to be not satisfied with the quality of nursing care as the young ones are. The outcome of this study matches with other studies aimed at exploring the correlation between the age and the patient satisfaction level in healthcare facilities. As an instance, the study which was conducted has confirmed that the levels of satisfaction older patients express toward the care they get cannot be compared to the satisfaction of the younger patients, because of the variety of factors that can influence the choice of patients (communication difficulties, complex health problems, and long hospital days)⁽²⁴⁾. Furthermore, the same conclusion that giving particular attention to the peculiar needs of older people to have them embrace health services more easily is a major determinant⁽²⁵⁾.

Evidently, the research results show there is a clear divide between the satisfaction of the patients on

the quality of nursing care after cardiac catheterization depending on their gender, indicating that the satisfaction differs with each gender. The mean rank of the males recorded as 113.69, and that of the females 83.37. It shows that sex-related issues should be considered in the patient satisfaction assessment with nursing care after cardiac catheterization. It corresponds with the results of studies undertaken in the UK where males were much happier with the quality of care compared to females who were treated the same for myocardial infarction⁽²⁶⁾.

The results indicate the presence of statistically significant difference in patients' satisfaction towards quality of nursing care post cardiac catheterization between patient groups divided by their marital status ($p=0.001$). To make these data more applicable in research, previously, have particularly recommended that social support adds to the satisfaction level of patients with health services⁽²⁷⁾. Marital status, also which is a major indicator of social support, is frequently the main factor under which the patients are satisfied after the cardiac intervention⁽²⁸⁾.

Results indicated that there is statistically significant difference in regards to the patient satisfaction according to nursing care quality related to cardiac catheterization between the different categories of occupations ($p=0.019$). The studies which are in line with previous ones show that employees who have permanent job often report better health status and higher satisfaction with healthcare services⁽²⁹⁾.

This catching fact that there is a negative correlational relation (it's statistically significant) between the quality of nursing care for those patients who've been through a coronary catheterization and their monthly income is a statement which we should pay attention to. A negative correlation coefficient (0.367) shows that the satisfaction with nursing services increases as people's income goes down. However, a negative correlation undermines the old-fashioned thinking that income level is the vanguard of a better healthcare experience and better patient satisfaction, and that the other factors are the ones that majorly influence the outcome of cardiac catheterization.

That result is matching with the evidence showing that patient satisfaction is a complex outcome. Consistent with the conclusion that states the social-economic factors shaping patient's experiences and satisfaction taking into consideration the report. The implication from the researchers indicates that income and patient satisfaction are not linear as to be expected⁽³⁰⁾.

Conclusions:

It was found that patients' satisfaction with the quality of nursing care after cardiac catheterization was suboptimal and affected by various factors such as age, gender, marital status, occupation, and monthly income.

Recommendations:

Need for interventions that focus on communication, empathy and compassion to enhance overall satisfaction, with specific considerations of age, gender, marital status, occupation and income in designing nursing care.

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Conflict of interest

There are no conflicts of interest in this study.

References:

1. Schranz D, Akintuerk H, Esmaeili A, Latus H, Apitz C. Heart failure therapy based on interventricular mechanics and cardiovascular communications. *Cardiovascular Diagnosis and Therapy*. 2021 Aug;11(4):1080.
2. Parkinson J, Vidal JA, Kline-Rogers E. Nursing care of the cardiac catheterisation patient. *Interventional Cardiology and Cardiac Catheterisation: The Essential Guide*. 2019 Apr 24:89.
3. Mir MA, Malik AB, Dar MA. Navigating the Heart's Highway: Effective Management of Coronary Artery Disease. *International Journal of Current Research in Physiology and Pharmacology*. 2023 Sep 30:39-49.
4. Al-Hijji MA, Lennon RJ, Gulati R, El Sabbagh A, Park JY, Crusan D, Kanwar A, Behfar A, Lerman A, Holmes DR, Bell M. Safety and risk of major complications with diagnostic cardiac catheterization. *Circulation: Cardiovascular Interventions*. 2019 Jul;12(7):e007791.
5. Imran M, Javed R, Raza MA, Akhtar P. Comparative Studies of Coronary Artery Disease: Insights into Risk Factors, Diagnostic Approaches, and Treatment Strategies. *Journal of Computing & Biomedical Informatics*. 2023 Jun 5;5(01):295-307.
6. Henedy WM, El-Sayad HE. Nurses' Knowledge and practice regarding patient's safety Post Cardiac Catheterization. *IOSR Journal of Nursing and health science*. 2019 May;8(3):43-52.
7. Elgazzar S, Keshk L. Effect of a construction educational protocol on nurses' knowledge, performance, and its effect on patient satisfaction undergoing cardiac catheterization. *International Journal of Advanced Nursing Studies*. 2018;7(2):100-6.
8. Ebrahimi Z, Patel H, Wijk H, Ekman I, Olaya-Contreras P. A systematic review on implementation of person-centered care interventions for older people in out-of-hospital settings. *Geriatric Nursing*. 2021 Jan 1;42(1):213-24.
9. Albashayreh A, Al-Rawajfah OM, Huda AA, Karkada S, Al Sabei SD. Psychometric properties of an Arabic version of the patient satisfaction with nursing care quality questionnaire. *Journal of Nursing Research*. 2019 Feb 1;27(1):e1.
10. Pérez-Francisco DH, Duarte-Clímets G, del Rosario-Melián JM, Gómez-Salgado J, Romero-Martín M, Sánchez-Gómez MB. Influence of workload on primary care nurses' health and burnout, patients' safety, and quality of care: Integrative review. *InHealthcare* 2020 Jan 3 (Vol. 8, No. 1, p. 12). MDPI.
11. Mousa AM, Mansour K. Effectiveness of an Instructional Program Concerning Healthy

- Lifestyle on Patients' Attitudes after Percutaneous Coronary Intervention at Cardiac Centers in Baghdad City. Iraqi National Journal of Nursing Specialties. 2020 Jun 30;33(1):1-1.
12. Hussein M, Ahmed S. Effectiveness of an Educational Program on Patients' Knowledge Concerning care of Vascular Access of Hemodialysis in Al-Muthana Teaching Hospitals. Iraqi National Journal of Nursing Specialties. 2020 Sep 27;33(1):33-43.
 13. Radhi MM. Evaluation of Consumers' Satisfaction towards Rural Primary Health Care Services in Babylon Governorate. International Journal of Scientific and Research Publications,(6). 2016;6.
 14. Abid JM, Mohammed WK. Effectiveness of an Instructional Program on Patients' Knowledge about Home Safety While Receiving Anti-Cancer Medications at Al-Karama Teaching Hospital in Al-Kut City. Iraqi National Journal of Nursing Specialties. 2021;34(2):8-15.
 15. Hermis AH, Abed RI. Effectiveness of Self-Regulation Fluid Program on Patients with Hemodialysis Self-Efficacy for Fluid Adherence in Al-Diwaniyah Teaching Hospital. Iraqi National Journal of Nursing Specialties. 2021;34(2):74-88.
 16. Qassim WJ, Yasir AA, Radhi MM. Assessment of Self Hardness and its Relationship to Treatment Acceptance for Patients with Diabetes Mellitus at Diabetic Center in Hilla City/Iraq. Journal of Pharmaceutical Sciences and Research. 2018;10(1):142-5.
 17. Yasir AA, Qassim WJ, Radhi MM. Assessment the feeling of psychological loneliness among wives of martyrs in the light of some social variables in Babylon Governorate/Iraq. Journal of Pharmaceutical Sciences and Research. 2018;10(1):40-4.
 18. Jasim BJ, Khalifa MF. Evaluation of Quality of Primary Health Care Services at Primary Health Care Centers in Baghdad City: A Comparative Study. Iraqi National Journal of Nursing Specialties. 2018;31(1).
 19. Hussain E, Mohammed Z. Parents' Attitudes toward Immunization and its Relation with Pediatric Immunization Compliance at Primary Health Care Centers in Karbala City, Iraq. Iraqi National Journal of Nursing Specialties. 2021 Jun 27;34(1):50-8.
 20. Abdullah BA, Abdulwahid HS. Reproductive-Related Factors Influencing Pregnant Women Satisfaction Towards Vaccination Services. Journal of Obstetrics, Gynecology and Cancer Research. 2023 Jul 7;8(4):404-10.
 21. Yaqoub RH, Abdulwahid HS. Self-body image and its association to quality of life among women undergoing to mastectomy. Onkologia i Radioterapia. 2023 Jul 1;17(7).
 22. Alkadem AT, Noori AK. Self-esteem and its Correlation with Quality of Life among Amputees. Iranian Journal of War and Public Health. 2023 Oct 10;15(3):315-21.
 23. Elgazzar S, Keshk L. Effect of a construction educational protocol on nurses' knowledge, performance, and its effect on patient satisfaction undergoing cardiac catheterization. International Journal of Advanced Nursing Studies. 2018;7(2):100-6.
 24. Henedy WM, El-Sayad HE. Nurses' Knowledge and practice regarding patient's safety Post Cardiac Catheterization. IOSR Journal of Nursing and health science. 2019 May;8(3):43-52.
 25. van Veghel D, Soliman-Hamad M, Schulz DN, Cost B, Simmers TA, Dekker LR. Improving clinical outcomes and patient satisfaction among patients with coronary artery disease: an example of enhancing regional integration between a cardiac centre and a referring hospital. BMC Health Services Research. 2020 Dec;20:1-8.
 26. Kanwar A, Roger VL, Lennon RJ, Gharacholou SM, Singh M. Poor quality of life in patients with and without frailty: co-prevalence and prognostic implications in patients undergoing percutaneous coronary interventions and cardiac catheterization.

- European Heart Journal-Quality of Care and Clinical Outcomes. 2021 Dec;7(6):591-600.
27. Wilkinson C, Bebb O, Dondo TB, Munyombwe T, Casadei B, Clarke S, Schiele F, Timmis A, Hall M, Gale CP. Sex differences in quality indicator attainment for myocardial infarction: a nationwide cohort study. *Heart*. 2018 Nov 23.
 28. Zaghlol HA. Health needs for patients undergoing cardiac catheterization. *Port Said Scientific Journal of Nursing*. 2018 Jun 1;5(1):204-22.
 29. Park K, Seo W. Effects of residential instability of renters on their perceived health status: findings from the Korean welfare panel study. *International Journal of Environmental Research and Public Health*. 2020 Oct;17(19):7125.
 30. Moore C, Coates E, Watson AR, de Heer R, McLeod A, Prudhomme A. "It's important to work with people that look like me": black patients' preferences for patient-provider race concordance. *Journal of racial and ethnic health disparities*. 2023 Oct;10(5):2552-64.