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Effectiveness of Chest Pain Nursing Management on the Satisfaction of Patients with Angina in Emergency Unit

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ABSTRACT

Objective(s): to assess the effectiveness of chest pain nursing management on patients' satisfaction with angina in the emergency unit .

Methods: A quasi-experimental study design was implemented in the emergency room of Al-Rifai General Hospital in Al-Nasiriya City, from December 9th, 2022 to June 18th, 2023. A non-probability (purposive) sampling of (100) patients who divided into two groups: the study group, which included (50) patients who received an urgent nursing intervention, and the control group included (50) patients who received routine urgent nursing intervention. The study used the Patient Satisfaction Nursing Care Quality Questionnaire, which included (17) questions. To determine the differences between the study and control groups, descriptive statistics (frequency, percentage, arithmetic mean, and standard deviations) and inferential statistics (Chi-square test and Independent T-test) were applied to the analysis of the data.

Results: The research's findings demonstrated that there are substantial differences between the study group and the control group about pain severity, with the study group showing a decrease in pain severity when compared to the control group.

Conclusion: The study concluded that chest pain nursing management was a suitable intervention. Compared to patients in the control group, patients were satisfied with prompt nurse assistance.

Recommendations: The research suggested improving patient satisfaction, relieving or lessening pain intensity, and preventing complications, continue this nursing intervention by giving out booklets often to angina patients in the emergency room that provide guidelines for an optimal nurse response.

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تأثير الإدارة التمريضية لإلام الصدر على الرضا لمرضى الذبحة الصدرية في وحدة الطوارئ

المستخلص

الهدف: تهدف الدراسة لتقويم فعالية الإدارة التمريضية لإلام الصدر في تحسين الرضا لمرضى الذبحة الصدرية في وحدة الطوارئ.

المنهجية: تم إجراء دراسة شبه تجريبية في وحدة الطوارئ في مستشفى الرفاعي العام في مدينة الناصرية للفترة من ٩ كانون الأول ٢٠٢٢ إلى ١٨ حزيران ٢٠٢٣. تكونت الدراسة من عينة غرضية غير احتمالية تكونت من (١٠٠) مريضاً، مقسمة الى مجموعتين. تكونت مجموعة البحث من (٥٠) مريضا تعرضوا للتداخل التمريضي للإدارة الالام الصدر بينما (٥٠) مريضا تم اختيارهم كمجموعة ضابطة حيث تلقوا التداخل الروتيني التمريضي فقط. ولقياس فعالية التداخل التمريضي في تحسين الرضا لمرضى الذبحة الصدرية في وحدة الطوارئ، تم استخدام استبيان جودة الرعاية التمريضية لرضا المرضى والذي تضمن (١٧) سؤال. تم التحقق من مصداقية الاداة من خلال عرضها على (١٣) خبير في حين تم تحديد اداة ثبات القياس من خلال اسلوب الاختبار واعادة الاختبار. تم تحليل البيانات من خلال استخدام الإحصاء الوصفي (التكرارات، النسبة المئوية، الوسط الحسابي والانحراف المعياري) والإحصاء الاستدلالي (، اختبار مربع كاي، اختبار، الاختلافات بين مجموعة الدراسة والمجموعة الضابطة).

النتائج: أظهرت نتائج الدراسة أن هناك اختلافات واضحة بين مجموعة الدراسة والمجموعة الضابطة فيما يتعلق بالرضى حيث كانت هناك زيادة في رضى المرضى حول الإدارة التمريضية لإلام الصدر بنسبة (٩٠%) بمجموعة الدراسة مقارنه بالمجموعة الضابطة بنسبة (٤٠%).

الاستنتاجات: استنتجت الدراسة إلى أن التداخل التمريضي في قسم الطوارئ هو تدخل مقبول. معظم المرضى راضين عن التدخل التمريضي السريع أكثر من المرضى في المجموعة الضابطة

التوصيات: أوصت الدراسة بالإبقاء على هذا الإدارة التمريضية لإلام الصدر بشكل مستمر عن طريق توفير منشورات تحتوي على توجيهات التداخل التمريضي المثالي بشكل دوري لمرضى الذبحة الصدرية في وحدة الطوارئ من أجل تعزيز رضا المرضى وأزاله أو تقليل شدة الألم ومنع حدوث المضاعفات

الكلمات المفتاحية: الرضا، التداخل التمريضي، الذبحة الصدرية، وحدة الطوارئ.

Introduction

Ischemic heart disease, the world's largest cause of mortality and disability, most frequently manifests as angina. Every year, 4.1 million individuals in Europe pass away from heart disease (CAD), with adults over 65 making up 82% of those fatalities [1]. Angina has been shown to increase the possibility of major cardiovascular events by twice [2].

When exercising, the heart's greater need for oxygen is met by vasodilation of the coronary arteries [3], but in situations of coronary atherosclerosis, this mechanism is compromised, leading to ischemic and chest discomfort [1]. Similar to stable angina, vasospastic angina—also referred to as variant angina or Prinzmetal angina—occurs while at rest but is independent of cardiovascular disease [4].

Regarding the significant prevalence of the problem worldwide, the World Health Organization (WHO) predicts that by 2020, there will be a total of 47 million disability-adjusted life years (years lost due to illness, disability, or deaths) [5]. According to these results, lifestyle modifications—especially those involving physical activity, high blood pressure, sugar levels, food, smoking, and emotional problems—are crucial to the management of angina. Therefore, it would make it impossible to discount their importance. The symptoms of angina are lessened by medical treatment, which also protects from stroke and myocardial infarction, among other two cardiovascular problems. The prescription of a specific type of drug is advised in addition to the stable angina guidelines [6].

Care provided by nurses represents one of the essential components of medical services [7,8,]. Numerous studies have found that the most important indicator of patients' general happiness with medical facilities is their satisfaction with the nursing service they receive. [9,10,].

Evaluating how satisfied patients are regarding care provided by nurses may help improve nursing service delivery by simplifying the formulation of care standards and monitoring both outcomes and their assessments of quality [11,12].

In all contexts, nurses are essential in providing psychological and emotional support to patients and their families. This includes helping individuals receive a diagnosis and guaranteeing they receive the best care available. In addition to providing technological support, registered nurses need to possess the professional knowledge, disposition, and skills necessary to provide educational, emotional, and practical support. [13,7,10].

Multiple researches have highlighted recurring issues such as high traffic, resource shortages, and interpersonal challenges in emergency rooms, contributing to safety concerns for patients and adversely impacting their satisfaction levels. Given that patient satisfaction with nursing care significantly influences their overall contentment with healthcare services, it becomes crucial to establish and enhance effective nursing care protocols. [14,15,16]

Receiving excellent nursing care also helps patients feel more satisfied by reducing the amount of time they must wait for treatment and care [17,18]. The knowledge gap that this study filled is that there was no previous study that studied the effect of chest pain management on the satisfaction of patients with angina in the emergency unit.

Methods

Study Design and Setting

A quasi-experimental design was used with the application of a post-test-only approach for both groups (study and control). The study was conducted at Al-Rifai General Hospital (Emergency unit) in Al-Nasiriyah City, Iraq.

Study Sample and Sampling

A non-probability purposive sampling and a non-random sample. The size of the sample was 100 angina patients divided into groups each consisting of 50 patients as a control group and study group. The study group was exposed face-to-face to a nursing intervention, and the control group was exposed only to routine nursing care by the hospital.

The Interventional Program

The nursing intervention was designed and constructed based on the results of the need assessment for satisfaction toward nursing intervention for patients with angina in the emergency unit at Al-Rifai General Hospital. The intervention was designed to provide nursing care for patients with angina at the emergency unit regarding the vital sign monitor (blood pressure, pulse rate, respiration rate, and temperature), monitoring the level of oxygen saturation, placing the patient on monitor and reading electrocardiography (ECG)every 10 minute, assess the pain, administer prescribed of medication to patient, prevent complication, and give patients information about angina before discharge The content of the intervention was evaluated by experts in different fields.

Data Collection and the Study Instrument

Data collection was performed through the use of the questionnaire and the application of the nursing intervention.

To evaluate the effect of nursing intervention on the satisfaction of patients with angina, the questionnaire has been constructed based

on previous studies and the experience of the researcher to achieve the objectives of the study. The study instrument consists of three parts including the following:

Part 1: Socio-demographic data form consisting of (age, gender, level of education, marital status, occupation, smoking status, amount of cigarette smoking, duration of smoking, residence, and living level).

Part 2: Clinical characteristics of the angina patients consisted of (the past medical history, surgical history, and drug history).

Part 3: Satisfaction Scale, the scale consists of 17 items about features of a wide range of nursing activities including nurses' attention, kindness, respect, courtesy, skills, competence, and fulfilment of patient needs. The scale also includes a general perceptions section consisting of four additional questions designed to measure satisfaction with the overall quality of care and treatment received during hospitalization, and the overall quality of nursing care. The patient's satisfaction nursing care Quality Questionnaire is a 5-point Likert scale that ranges from poor to excellent. Levels of patient satisfaction with nursing care quality (17) items, with a minimum score of 17 and a maximum score of 102.

Validity and Reliability of the Questionnaire

The revision was made to the intervention contents based on these experts' recommendations and suggestions. The experts have agreed that the intervention able to improve the satisfaction in patients with angina. The reliability of the study instrument (questionnaire) was determined through the use of a test and re-test approach on (10) patients with angina patients toward satisfaction, and the interval period was two weeks to determine of internal consistency of patient's satisfaction. The result of the reliability discloses that the person correlation coefficient for satisfaction is(r=0.96) which is considered statistically acceptable.

Ethical Consideration

After ethical approval was obtained from the College of Nursing, University of Baghdad, the Ministry of Health agreed to ethical considerations for conducting the research, and each participant in the study signed an agreement to participate in the study.

Data Analysis

Data analysis was performed through the application of descriptive statistics (frequency, percentage, arithmetic mean, standard deviations) and inferential statistics (Pearson Correlation Coefficient, Chi-square test, T-test, and ANOVA) to identify the differences between the study and control groups.

Results

Table 1. Socio-demographic Characteristics for Patients with Angina

Variable	Groups	Study group		Control group	
		F	%	F	%
Age Groups	23-30 years	0	0.0%	5	10.0%
	31-38 years	4	8.0%	4	8.0%
	39-46 years	8	16.0%	10	20.0%
	47-54 years	8	16.0%	9	18.0%
	55-62 years	10	20.0%	11	22.0%
	63-70 years	9	18.0%	10	20.0%
	71-78 years	8	16.0%	1	2.0%
	79-86 years	3	6.0%	0	0.0%
	M±SD	58.14±14.13		50.42±13.29	
Gender	Male	29	58	29	58
	Female	21	42	21	42

Level of education	Does not read or write	19	38.0%	16	32.0%
	Read and write	8	16.0%	16	32.0%
	Elementary graduate	7	14.0%	8	16.0%
	A middle school graduated	5	10.0%	3	6.0%
	Preparatory graduate	5	10.0%	3	6.0%
	Institute graduate	3	6.0%	1	2.0%
	University graduate	3	6.0%	2	4.0%
	Postgraduate graduate	0	0.0%	1	2.0%
Marital status	Married	35	70.0%	34	68.0%
	Single	1	2.0%	5	10.0%
	Widow	10	20.0%	8	16.0%
	Absolute	4	8.0%	2	4.0%
	Separate	0	0.0%	1	2.0%
Occupation	Government employee	8	16.0%	7	14.0%
	Free Business	9	18.0%	6	12.0%
	Earner	14	28.0%	14	28.0%
	Retired	4	8.0%	6	12.0%
	Housewife	15	30.0%	17	34.0%
Living standard	Enough	25	50.0%	28	56.0%
	Fairly enough	12	24.0%	16	32.0%
	Not enough	13	26.0%	6	12.0%
Smoking	Yes	26	52.0%	23	46.0%
	No	20	40.0%	21	42.0%
	Ex-smoker	4	8.0%	6	12.0%
The amount of smoking	Less than 10	15	50.0%	13	44.83%
	10 or More	15	50.0%	16	55.17%
Duration of smoking	10-19	14	46.67%	13	44.83%
	20-29	9	43.33%	12	41.38%
	30-40	7	23.33%	4	13.79%
Residence	Urban	29	58.0%	37	74.0%
	Rural	21	42.0%	13	26.0%

F=frequency, **%**= percentage, **M**±SD = Mean, and Standard Deviation.

Table (1) shows that the most of participants (22.0%) were in the age group 55-62 years, (58.0%) were male. (70%) were Married. Regarding smoking, (52.0%) were smoking. About urban or rural residences for the current study, the high percentage of urban residents was (74.0%).

Table 2. Clinical Characteristics of Patients with Angina for Both Study and Control Groups

Variable	Groups	Study group		Control group	
		Freq.	%	F.	%
Hypertension	Yes	31	62.0%	36	72.0%
	No	19	38.0%	14	28.0%
Diabetes mellitus	Yes	36	72.0%	25	50.0%
	No	14	28.0%	25	50.0%
Open heart surgery	Yes	0	0	2	4.0%
	No	50	100%	48	96.0%
Cardiac Catheterization	Yes	14	28.0%	10	20.0%
	No	36	72.0%	40	80.0%
Anticoagulant drug	Yes	37	74.0%	38	76.0%
	No	13	26.0%	12	24.0%
Beta-blocker	Yes	31	62.0%	29	58.0%
	No	19	38.0%	21	42.0%
	Total	50	100%	50	100%

F=frequency, **%**= percentage.

Table (2) indicates that the majority of participants had hypertension (72.0%), (72.0%) had diabetes mellitus and the greatest percent of participants had Beta blockers and Anticoagulant drugs they accounted for (62.0%,76.0%

Table 3. Comparative between study and control groups regarding hemodynamic parameter

Variable	Group	N	x̄	Std. Deviation	T-test	P. Value
Systolic pressure	Study group	50	122.80	8.09132	3.382	0.510
	Control group	50	128.90	9.86077		
Diastolic pressure	Study group	50	81.600	4.56696	4.206	0.004*
	Control group	50	86.700	7.25695		
Pulse	Study group	50	77.020	12.03480	4.845	0.088
	Control group	50	89.540	13.75175		
Respiratory rate	Study group	50	18.400	8.62365	0.554	0.867
	Control group	50	17.680	3.16512		
Oxygen saturation	Study group	50	96.080	1.83881	3.789	0.072
	Control group	50	94.680	1.85648		

N= Number, x̄, Ari arithmetic Mean, Std Deviation= Standard Deviation, t-test= Independent T test, P value =????

Table (3) demonstrates differences between the study and control groups for hemodynamic parameters regarding the diastolic pressure (*p*. value= 0.004).

Table 4. Patient Satisfaction between Study and Control Groups.

Variable Satisfaction	Study group		Control group	
	F	%	F	%
Satisfactory	45	90.00%	30	60.00%
Un satisfactory	5	10.00%	20	40.00%
Total	50	100	50	100
Chi-Square	12.0			
Df	1			
P. Value	<0.001			

F= frequency, **%**= percentage, **P Value**= <0.001, df =degree of freedom.

Table (4) shows highly significant differences between the study and control groups in the mean of satisfaction with nursing care in the emergency unit among patients with angina (p. value= 0.0001).

Discussion

The study reveals that most participants were elderly. This result is supported by research conducted by Hassan, (2019) who reported that the mean age of angina patients was 53.54, with 41.66% falling within the age range of 50 to 59. [(19)]

According to the current study findings, angina is most common in people between the ages of 55 and 62 because their blood vessels are less flexible and have more difficult for blood flow. Plaques, or deposits of fat, accumulate throughout the walls of the arteries, decreasing the heart's blood flow.

The study reveals that most participants were men and this in line with the study of Kyto et al., (2015) found that, although males had a larger relative risk across all age groups, the gender difference in this incidence rate

ratio decreased with age. males were shown to have a higher incidence rate ratio of unstable angina pectoris than women. [20]

The present study gives a hint that men had a higher prevalence of angina patients because they experienced more stress from strenuous physical activity or behaviors than women. Men are also less able than women to articulate their emotional stress at work.

The study reveals that most participants were Illiterate. This finding was consistent with the study by Mckee et al., (2012) who found that a lack of education was linked to a 43% higher chance of misdiagnosed angina in a national survey of persons aged 40 and older. [21] The present study confirmed that low levels of education and understanding can also contribute to inadequate levels of medical knowledge concerning angina.

The study findings reveal that most participants were housewives. This result is supported by a previous study conducted by Mustafa and Hassan, (2020) found that 30% were housewives and (42%) were self-employed and IHD patients were employed compared with the control group, which had 56% of patients who were self-employed and 24% of whom were housewives. [22] According to the current study, individuals who start their businesses report better job satisfaction

Furthermore, the majority of participants were married. This result showing that 68% of angina patients were married were published by Baez and Younis Khider in 2015. [23] A previous study by Jasim et al., (2022) showed that 72% of angina patients included in the study group had approximately adequate income. [24] The outcome is connected to the fact that it is challenging to offer patients of all socioeconomic levels equal care. Before care is equalized amongst social groups, disparities in access to treatment, interventions, and prescribing practices must be addressed.

The present study confirmed that the majority of angina patients were cigarette smokers despite smoking had minimal effect on the type of ACS. A published Iraqi study conducted by Hammoudi and Hussein, (2023) found that more than half of people with coronary artery disease were smokers [25]. Also, Al-Abbudi et al., (2018) found that almost one-third of those with ischemia heart disease (33.3%) smoked, with 10 to 40 cigarettes consumed on average (26.3%), and up to 100 cigarettes consumed on average (3-100) cigarettes per day. [26] The present study confirmed that the majority of angina patients smoked, as smoking makes blood vessels stiffer, posing a greater risk of blood vessel breaking and making it more difficult for them to grow or shrink as needed. These changes in the blood vessels can cause angina

The study reveals that most participants were from city areas. This result is supported by research conducted by Quashie et al., (2019) who found that angina was more common among city rather than rural Chinese residents (p=0.047). [27] The study confirmed that a high proportion of town residents due to the count of obesity, cigarette and alcohol usage, diabetes, elevated blood pressure, and high total lipid levels.

Also, the study's findings demonstrated that the majority of the study sample had not undergone open cardiac surgery coronary artery bypass graft (CABG). Also, da Fonseca et al., (2018) stated that even though immediate CABG surgery is recommended, many centers postpone the treatment for these patients due to greater death rates among CAD patients as a result of the longer CABG waiting period. [28] Similar studies to this one's findings showed that antiplatelet and anticoagulant medications given to patients during acute coronary syndrome (ACS) and percutaneous coronary intervention (PCI) significantly reduced the risk of reinfarction and reduced mortality rates. [29,30] The majority of angina patients, except two individuals, did not have CABG, according to the study's findings. This is because the majority of patients who received a diagnosis of angina pectoris for the first time did not experience heart failure or a prognosis of myocardial infarction.

The study confirmed that the patients in the study group who got nursing intervention had lower heart rates and systolic blood pressure than those in the control group after engaging in educational activities. Also, a study conducted by Zuo et al., (2020) reported

that variations in blood pressure and the frequency of issues in the two groups were observed and compared. The blood pressure was substantially better and the frequency of problems was noticeably lower in the participant group. This illustrates how proactive and effective nursing actions may help patients' blood pressure to be maintained and their risk of issues to be increased. (31)

The results of the study demonstrated that, in contrast to patients in the control group, study group patients were much happier with the nursing care they received in the emergency room. This difference in experience was statistically significant. This finding agreed with the findings of the study conducted by Khaleel and Hussein, (2015) confirmed that the happiness of patients is a critical sign of success in the diagnosis and treatment of acute chest discomfort in the emergency room (32). An additional study by Jassem and Hassan, (2021) reported that after being exposed to the self-care program, the study sample's self-care practice improved, which had a beneficial impact on patient outcomes. (33) Another study conducted by Dadoosh and Sadeq, (2022) found that (88.5%) of hospitalized Iraqi patients were unsatisfied with the standard of nursing care that was given to patients. (34)

Moreover, Karaca and Duran, (2019) stated that examination of patient satisfaction for the nursing care quality questionnaire PSNCQQ patient satisfaction ratings, the question with the most favorable satisfaction scores (1.38 SD 0.66) was the " concern with Care by Nurses: Respect and Attention You Were Provided; Kindness and Love" item. The category with the lowest satisfaction scores was "Education" You Are Given: Whether clear and comprehensive the nurses' instructions were about examinations, therapies, and what to predict" (1.74 SD 0.86). The patients' total PSNCQQ scores varied from 1-4.05, with a median of 1.61 (SD 0.65). This showed a high level of satisfaction with nursing care. (35)

Conclusion

The intervention of chest pain nursing management was very effective in improving satisfaction towards nursing care of patients with angina pectoris in the emergency unit. The findings of this study intensify that nursing intervention in reducing chest pain in the emergency room is suitable and succeed. The study's findings showed that the study group's patients were much more satisfied with nursing care in the emergency unit.

Recommendations

More attention should be paid on applying continued education programs related to angina, especially with recent research and guidelines to keep updating with the new approaches related to nursing care for angina.

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