

Effect of Nursing Intervention Guidelines on Symptom Burden among Patients with Angina

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Abstract

Background: Angina is a serious health condition, with a wide range of patients' symptoms which add extra burdens to their health. Providing nursing guidelines reduces symptoms burden and improves the patients' quality of life. **This study aimed to** evaluate effect of nursing intervention guidelines on symptom burden among patients with angina. **Materials and methods:** A quasi-experimental design was used. A convenience sample of 100 patients with angina in the outpatient cardiac clinic unit at Suez Canal University Hospital, 50 patients for the study group and 50 patients for the control group. Data were collected using a patient demographic and medical information questionnaire and the angina symptom questionnaire (ASQ). **Results:** The study group exhibited significant decreases in comparison to the control group for all parameters evaluated, with significant effect sizes (η^2 ranging from .38 to .44, $p < 0.001$). The total symptom burden scores of the study and control groups indicate a statistically significant reduction within the study group. Post-intervention and follow-up scores showed statistical differences. In comparison to the control group (Post: 28.54 ± 6.30 ; Follow-up: 26.62 ± 4.81), the study group showed significantly lower scores at follow-up (9.72 ± 1.33) and post-intervention (14.12 ± 3.46) with very significant p-values (both $p < 0.001$). The observed differences had significant effect sizes (Post: $d = 2.8$; Follow-up: $d = 4.8$, $\eta^2 = .63$). Sizes (η^2 ranging from .38 to .44, $p < 0.001$). **Conclusion:** There was a statistically significant difference between the study and control group regarding symptom burden after implementation of intervention nursing guidelines. **Recommendations:** Intervention guidelines should be conducted for Angina patients as they are the key to reducing symptom burden.

Keywords: Angina, Intervention guidelines, Symptom burden.

Introduction

Coronary artery disease is a global health issue. Its incidence is expanding around the world, including Egypt. Coronary artery disease is an ischemia or necrotic heart disease that results from myocardial hypoxia induced by coronary artery stenosis or blockage. It is the leading cause of death from heart disease, accounting for nearly one out of every seven deaths in the United States each year. Coronary artery disease is among the top causes of death worldwide. The Global Burden of Diseases study reported 26.6 million deaths and 706 million disability-adjusted life years. Importantly, ischemic heart disease was the leading cause, accounting for 8.38 million

deaths (Blumenthal et al., 2021).

Angina is the most typical sign of coronary heart disease, which is a major cause of death and disability globally. Angina is the cardinal symptom among patients with ischemic heart disease. While frequent angina is related to life-threatening events, its key influence is seen on patients' health status angina is characterized by the predictable occurrence of pain or discomfort in the sub sternal and adjacent areas of the chest. Symptoms can vary in terms of severity and may include angina equivalents such as nausea, breathlessness upon exertion, and fatigue. The classic presentation of angina is featured by the reversibility of symptoms and repetitiveness of angina episodes over time, typically months or years (Abbas & Hassan, 2023).

Angina is both a symptom and a warning indication of cardiovascular disease. Most angina patients report chest pain or pressure. Alternatively, people describe a squeezing or tightening sensation in the chest. The soreness usually starts behind breastbone. Pain or discomfort in the chest may spread to other areas of the upper body. These include the neck, jaw, shoulders, arms, back, and abdomen. Other symptoms, known as "angina equivalents," might occur when the heart does not receive enough oxygen. Fatigue, nausea or vomiting, shortness of breath, and excessive sweating are examples of non-chest symptoms (**El-Hussein & Hakkola, 2023**).

Fire angina pain is a common cause for individuals seeking medical attention. Patients commonly use the word "chest pain" to describe various unpleasant or uncomfortable sensations in the front part of the chest, which raise concerns about a potential heart-related issue. Acute chest pain refers to pain that is either newly experienced or differs in terms of pattern, intensity, or length from earlier occurrences in a patient with recurring symptoms. Stable chest pain is characterized by chronic symptoms that occur consistently in response to triggers such as physical activity or mental stress (**Gulati et al., 2022**).

One cause for angina patients' poor health outcomes is the necessity for continued post-attack care, which requires patients to accept and adhere to a complex set of interventional guidelines. Stop smoking, limit alcohol consumption, eat a low-sodium diet, exercise, monitor symptoms, and take prescribed medication on time (**Goyal et al., 2022**).

Egypt is the most common country in the Middle East and North Africa, accounting for more than 15% of cardiovascular fatalities in the region; nonetheless, little is known regarding the prevalence of traditional risk factors and treatment techniques in angina patients throughout Egypt. CAD has been Egypt's main cause of early death since the 1990s (**El-Moselhy et al., 2018 & Reda et al., 2020**).

Nursing Intervention Guidelines have emerged as an important component of high-efficiency and high-quality medical

interventions in modern nursing management standards. Providing Nursing Intervention Guidelines to patients is a critical step toward improving prognosis. It is also a manifestation and extension of nurses' high-quality nursing care. Angina illness has a significant impact on daily living, and the treatment cycle is lengthy. Because of the severity of the symptoms, people with angina require constant treatment (**Dibben et al., 2021**).

Nursing Intervention Guidelines can also take personalized nursing measures based on the patient's condition, guide patients in using pharmaceuticals responsibly, monitor the progression of patients' conditions, and assist patients in developing a healthy lifestyle. Although several studies of continuous nursing intervention on coronary artery disorders have been published, there is still a lack of systematic evaluation of Nursing Intervention Guidelines on angina. Therefore, it is vital to perform an objective evaluation of Nursing Intervention Guidelines on Symptom Burden among Patients with Angina based on evidence-based practices and promote continuous nursing (**Pagliaro et al., 2020; Norekvål et al., 2020 & Zhou et al., 2021**). Since there is an increasing demand for a tailored approach in angina guidelines management, it is critical to improve patient outcomes such as symptom relief (**Cacciatore, et al., 2023**).

Significance of the Study:

Coronary artery disease accounted for 46.2% of total mortality in Egypt, and the National Hypertension Project reported an adjusted overall prevalence of CAD of 8.3%. Given the aging of the population and the achievement in extending the survival of patients with coronary events, angina represents a substantial and growing public health burden (**El-Reda et al., 2020**).

Angina primarily gives rise to heightened susceptibility to cardiac arrest in the absence of timely detection and intervention. Myocardial infarction may develop suddenly if any form of angina is disregarded and left untreated (**Manfredi et al., 2022**). An important objective of angina management is to alleviate the patient's symptoms. To accomplish this, nurses must methodically evaluate symptom burden.

Conducting a thorough assessment of symptoms allows nurses to determine the efficacy of interventions aimed at alleviating the burden of symptoms, which is of utmost importance to patients (Sakr et al. 2019).

Aim of the study

This study aimed to evaluate the effect of nursing intervention guidelines on symptom burden among patients with angina.

Research Hypothesis:

H0: There is no significant reduction in symptom burden among patients with angina after the implementation of nursing intervention guidelines.

H1: there is a significant reduction in symptom burden among patients with angina after the implementation of nursing intervention guidelines.

Subjects and method

Research design:

A quasi-experimental research design was utilized in this study with an experimental group receiving nursing intervention guidelines and a control group receiving standard care.

Technical design:

Setting:

The study was conducted in the outpatient cardiac clinic unit at Suez Canal University Hospital. Located on the right side, the first floor of the hospital buildings which divided into four rooms, firstly are three clinic rooms for cardiac treatment, and a lecture room one of them for male patients and the other for female patients, its capacity is about 50 patients daily.

Participants:

The participants of the study were a convenience sample of adult patients diagnosed with angina, cognitively aware and willing to participate in the study were potentially eligible for participation. Participants with communication impairment and mental disorders were excluded

Sample size

By Dawson (2004), the determination of an appropriate sample size for a study involves consideration of several factors, such as the desired level of confidence and power, as well as the expected proportions of outcomes. The critical values for these considerations are specified as $Z_{\alpha/2}$ (1.96) and Z_{β} (0.84) respectively. In this context, the sample size (n) can be calculated using the formula

Where

P_1 represents the proportion post-intervention (0.62), p_2 represents the proportion pre-intervention (0.20), and $1-p$ represents the complement of the respective proportions (Ahmed et al. 2017). **Total sample size** 50 participants (50 for the study group and 50 for the control group)

Tools:

It consists of two tools.

Tool 1- Patients' Profile Questionnaire:

This tool was developed by the researchers based on a recent literature review (Münzel, 2022) & (Schmitz, et al, 2019). It was used to assess patients' status and includes the following parts:

Part I: Demographic Data: included the following data; patient's age, sex, marital status, educational level, residence, and occupation.

Part II: Patient Medical Data: included associated medical disease, and health habits such as smoking and exercise.

Tool II: The Angina Symptom Questionnaire (ASQ): -

The Angina Symptom Questionnaire (ASQ) was a tool used to assess the presence and severity of angina symptoms in patients with coronary artery disease (CAD). ASQ is a self-reported measure that asks patients to rate the frequency and severity of their angina

$$n = \left[\frac{Z_{\alpha/2} + Z_{\beta}}{P_1 - P_2} \right]^2 (p_1 q_1 + p_2 q_2)$$

symptoms over the past four weeks. The questionnaire consists of nine items that cover different aspects of angina symptoms, including the location, duration, and quality of pain or discomfort, as well as associated symptoms like shortness of breath, fatigue, and dizziness. Each item is rated on a 0-4 scale, with higher scores indicating greater frequency or severity of symptoms. The total score on the ASQ ranges from 0 to 36, with higher scores indicating a greater symptom burden (Weintraub et al., 2011).

Validity and Reliability: -

The ASQ has been found to have good content validity, which means that the questions in the questionnaire are relevant to the assessment of angina symptoms. It has also been shown to have good criterion validity, which means that the scores on the ASQ are related to other measures of angina symptoms, such as exercise tolerance and stress test results. The ASQ has been found to have good test-retest reliability, which means that scores on the questionnaire are stable over time when administered to the same individuals. It has also been shown to have good inter-rater reliability, with intraclass correlation coefficients ranging from 0.72 to 0.92 over periods of 1 to 6 months. Inter-rater reliability: One study reported good inter-rater reliability for the ASQ, with intraclass correlation coefficients ranging from 0.91 to 0.98 for different raters, which means that different raters can obtain consistent scores on the questionnaire when assessing the same patient. Additionally, the ASQ has been found to have good sensitivity to change, which means that it can detect changes in angina symptoms over time or with treatment.

Pilot study:

A pilot study was carried out on 10% of the total study sample to test the clarity and practicability of the tools and to estimate the needed time to fill in each form. Necessary modifications were made according to the pilot study results. Pilot subjects were later excluded from the main study sample.

Operational design: -

Fieldwork:

A. Preparatory Phase: -

- Patient's agreement for voluntary

participation was obtained; the purpose and the nature of the study were explained to the patients. A review of current and past, local and international related literature on the various aspects of the problem using books, articles, and periodicals was done. The nursing intervention guidelines booklet was designed based on an analysis of the actual patients' needs and a literature review. A group of three medical-surgical nursing professors re the educational nursing guidelines. Some changes were made based on the expert panel's feedback, which was tested on a 5-point Likert scale with a content validity index of 0.81, and the final frame was created. After securing the administrative approval, the data collection was started. Patients who were selected in the outpatient cardiac clinic during the period of data collection were included in the study after obtaining their informed consent.

A. Assessment phase:

The researchers conducted interviews with patients in the outpatient cardiac clinic in lecture room to assess patients' profile questionnaire as a pretest, and then pre-assess angina symptom questionnaire, each tool took 15-20 minutes to be filled (Pre-Test Assessment).

B. Planning and Implementation phase:

Data were collected from April 2023 to October 2023. Researchers designed educational nursing intervention guidelines to improve symptom burden for angina patients. Implemented the designed nursing intervention guidelines in 10 sessions at the outpatient cardiac clinic in lecture room. The designed educational nursing intervention guidelines for patients with angina disease consisted of the following: basics about angina disease including the definition of angina disease, anatomy, and physiology of the heart, pathophysiology, and causes of angina, signs, symptoms, types, and complications of angina. The guidelines included education on angina symptom monitoring, symptom management, intervention guidelines about medication, non-pharmacological management including breathing and coughing exercises, back massage, guidelines for angina syndrome, and lifestyle modifications.

The researchers provided study group patients educational ten (10) educational sessions five of them about theoretical content and the other five sessions were about practical content, and each session took 45 to 50 minutes. The researcher used educational materials like PowerPoint presentations, posters, booklets, demonstrations, and remonstrations about skills.

Evaluation phase (Post Test assessment):

After implementing intervention nursing guidelines, the researcher evaluated the patients of the study and control groups, and after three months, the researcher had done follow-up for the control group and the study group on angina symptoms burden.

Administrative design: -

An official letter from the faculty of nursing was submitted to authorities of the outpatient cardiac clinic at Suez Canal University Hospital and the head of the cardiac department in the hospital. Permission to carry out the study was obtained from the director of the setting after an explanation of the purpose of the study.

Ethical considerations and human rights:

Before recruitment and data collection, approval was obtained from the Research Ethics Committee of the Faculty of Nursing (213:3/2023), a written consent was secured from each subject after being informed about the nature, purpose, and benefits of the study. Subjects were also informed that participation is voluntary and about their right to withdraw at any time without giving reasons. Confidentiality of any obtained information was ensured through the coding of all data. The researchers reassured Subjects that the data would be used for only the research purpose.

Statistical design:

The analysis was conducted using the Statistical Package for the Social Sciences (SPSS) Version 27 for Windows. Data analysis: Descriptive statistics can be used to summarize patient characteristics and baseline symptom burden scores. Group differences can be analyzed using the Least Significant Difference

(equivalent to no adjustments for adjustment for multiple comparisons or chi-squared tests including Monte Carlo, and Fisher exact test for categorical variables and analysis of variance (Repeated Measures ANOVA) for continuous variables while adjusting for baseline symptom burden scores. Cohen's d was utilized in the context of comparing means to quantify the magnitude of the difference in units of standard deviation. Partial Eta Squared is frequently used in the context of ANOVA to estimate the proportion of variance explained. P value was significant $<.05$

Results

Table (1): The comparison between the study and control groups across various variables age, gender, residence, education, marital status, and occupation revealed no statistically significant differences in most aspects. Both groups displayed similar distributions across these factors, with minor variations observed, notably in gender within the control group, without statistical significance with P value $>.05$

Table (2): The comparison between the study and control groups across various variables such as associated diseases, smoking, and exercise revealed no statistically significant differences with P value $>.05$.

Table 3 demonstrates that the study group's angina symptoms significantly improved over the evaluation periods. The study group exhibited significant decreases in comparison to the control group for all parameters evaluated, with significant effect sizes (η^2 ranging from .38 to .44, $p <.001$). Specifically, significant effect sizes were noted for occurrences of chest pain or discomfort during exertion (Post: $\eta^2 = 1.6$, $d = 1.8$, $p <.001$; Follow-up: $\eta^2 = 2.7$, $d = 2.7$, $p <.001$), at rest (Post: $\eta^2 = 2.1$, $d = 2.1$, $p <.001$; Follow-up: $\eta^2 = 3.04$, $d = 3.04$, $p <.001$), severity assessment (Post: $\eta^2 = 1.9$, $d = 1.9$, $p <.001$; Follow-up: $\eta^2 = 3.0$, $d = 3.0$, $p <.001$), impact on regular activities (Post: $\eta^2 = 2.0$, $d = 2.0$, $p <.001$; Follow-up: $\eta^2 = 3.0$, $d = 3.0$, $p <.001$), and interruptions in daily activities due to symptoms (Post: $\eta^2 = 2.2$, $d = 2.2$, $p <.001$; Follow-up: $\eta^2 = 2.5$, $d = 2.5$, $p <.001$). Furthermore, there were moderate to significant effect sizes for both the reduction of

dyspnea and its impact on activities (Post: $\eta^2 = 2.0$, $d = 2.0$ to 2.8 , $p < .001$; Follow-up: $\eta^2 = 2.9$, $d = 2.9$, $p < .001$).

Table 4 shows the total symptom burden scores of the study and control groups at different points of the assessment, indicating statistically significant improvements within the study group. Post-intervention and follow-up scores showed statistical differences, despite baseline scores showing minor variance between the study (31.90 ± 2.28) and control groups (32.54 ± 3.60) with a non-significant p-value ($p = .372$). In comparison to the control group (Post: 28.54 ± 6.30 ; Follow-up: 26.62 ± 4.81), the study group showed significantly lower scores at follow-up (9.72 ± 1.33) and post-intervention (14.12 ± 3.46) with very significant

p-values (both $p < .001$). The observed differences had significant effect sizes (Post: $d = 2.8$; Follow-up: $d = 4.8$, $\eta^2 = .63$).

Figure (1): In the control group, there was no significant decrease in mean scores: 32.54 at baseline to 28.54 immediate-post (28.54) and 26.62 three months after. The interval widths follow a non-significant decrease: 1.02 to 1.79 and then to 1.37 across time points. Conversely, the study group displays significantly lower mean scores consistently compared to the control group: 31.90 at Baseline, 14.12 at Immediate-post, and 9.72 at 3 months after. Significantly, the interval widths also decrease in the study group from 0.65 to 0.98 and then to 0.38 across these intervals.

Table (1): Percentage distribution of the study and control group regarding demographic data.

Variables	Study G. (n= 50)		Control G. (n=50)		Test	P value
	N	%	N	%		
Age (years)						
30-	6	12.0	12	24.0		
40-	6	12.0	3	6.0	X^2 3.82	.282
50-	20	40.0	15	30.0		
60-	18	36.0	20	40.0		
Mean \pmSD	53.26 \pm 12.28		54.78 \pm 10.64		.661 [#]	.510
Gender						
Male	37	74.0	32	64.0	X^2 1.17	.280
Female	13	26.0	18	36.0		
Residence						
Urban	36	72.0	33	66.0	.421	.517
Rural	14	28.0	17	34.0		
Education						
Illiterate	20	40.0	21	42.0	X^2 .520	.977
Read and write	12	24.0	11	22.0		
Primary	7	14.0	9	18.0		
Secondary	6	12.0	5	10.0		
High	5	10.0	4	8.0		
Marital status						
Single	5	10.0	5	10.0	X^2 .413	.558
Married	25	50.0	28	56.0		
Divorced	7	14.0	6	12.0		
widowed	13	26.0	11	22.0		
Job						
Not work	10	20.0	10	20.0	X^2 .506	.973
Farmer	13	26.0	14	28.0		
Machine operated	20	40.0	21	42.0		
Job seeker	2	4.0	1	2.0		
Office work	5	10.0	4	8.0		

X^2 is Pearson chi-square test & #= independent t-test, P value is significant < .05

Table (2): Percentage distribution of the study and control group regarding history data.

Variables	Control G. n= 50		Study G. n=50		Test	P value
	N	%	N	%		
Associated diseases						
None	0	0	0	0	X^2 .482	.973 ^{mc}
Hypertension	15	30.0	13	26.0		
Lung disorder	5	10.0	6	12.0		
Renal disorder	2	4.0	2	4.0		
Diabetes mellitus	8	16.0	10	20.0		
Ischemic heart disease	20	40.0	19	38.0		
Smoking						
Yes	44	88.0	46	92.0	X^2 .440	.505
No	6	12.0	4	8.0		
Exercise						
Yes	3	6.0	4	8.0	X^2 .154	.695
No	47	94.0	46	92.0		

X^2 is Pearson chi-square test; ^{mc} is Monte Carlo chi-square test; [#] is independent t test, P value is significant < .05

Table (3): Comparison of study and control group by mean scores of patients regarding angina symptoms (pre-post (immediate) -follow up (3 months) intervention nursing guidelines (n=50).

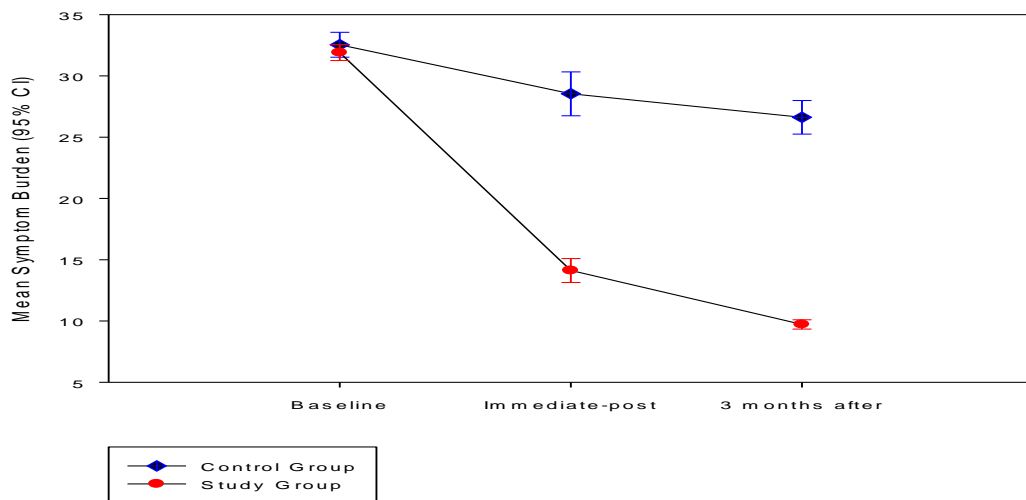
Symptom	Study	Control	Sig. ^b &d
	Mean (SD), Mean(SD)		
In the past four weeks			
1. The occurrence of chest pain or discomfort.			
Baseline	3.62(.60)	3.58(.57)	.735(.07)
Post intervention	1.56(.58)	3.12(.85)	<.001(1.8)
Follow up	1.08(.52)	2.88(.72)	<.001(2.5)
F, df (Pvalue) (η^2)	67.54,1.85 (<.001), η^2 (.41)		
2. Chest pain or discomfort manifests during physical exertion.			
Baseline	3.56(.61)	3.60(.64)	.750(.06)
Post intervention	1.60(.60)	3.08(.90)	<.001(1.6)
Follow up	1.06(.51)	2.86(.67)	<.001(2.7)
F, df (Pvalue) (η^2)	59.40,2 (<.001), η^2 (.38)		
3. Instances of chest pain or discomfort occur during periods of rest			
Baseline	3.60(.57)	3.62(.60)	.865(.03)
Post intervention	1.50(.54)	3.12(.77)	<.001(2.1)
Follow up	1.14(.49)	3.00(.61)	<.001(3.04)
F, df (Pvalue) (η^2)	77.41,2 (<.001), η^2 (.44)		
4. The average severity of chest pain or discomfort is assessed			
Baseline	3.46(.65)	3.61(.57)	.191(.3)
Post intervention	1.64(.56)	3.16(.79)	<.001(1.9)
Follow up	1.02(.32)	3.01(.67)	<.001(3)
F, df (Pvalue) (η^2)	65.05,2 (<.001), η^2 (.40)		
5. The impact on regular activities due to chest pain or discomfort is evaluated			
Baseline	3.44(.64)	3.64(.56)	.101(.4)
Post intervention	1.60(.49)	3.24(.82)	<.001(2)
Follow up	1.08(.34)	3.02(.65)	<.001(3)
F, df (Pvalue) (η^2)	70.24,2 (<.001), η^2 (.42)		
6. Shortness of breath or difficulty breathing is experienced			
Baseline	3.58(.67)	3.62(.57)	.749(.07)
Post intervention	1.54(.50)	3.18(.8)	<.001(2)
Follow up	1.10(.36)	2.98(.68)	<.001(2.8)
F, df (Pvalue) (η^2)	16.38,2.003 (<.001), η^2 (.078)		
7. The average severity of shortness of breath or difficulty breathing is evaluated			
Baseline	3.66(.56)	3.58(.57)	.481(.14)
Post intervention	1.60(.53)	3.22(.79)	<.001(2)
Follow up	1.12(.39)	2.98(.59)	<.001(3.2)
F, df (Pvalue) (η^2)	75.27,2 (<.001), η^2 (.43)		
8. The impact on regular activities due to shortness of breath or difficulty breathing is assessed			
Baseline	3.64(.55)	3.52(.58)	.296(.2)
Post intervention	1.50(.51)	3.12(.85)	<.001(1.9)
Follow up	1.08(.34)	2.96(.64)	<.001(2.9)
F, df (Pvalue) (η^2)	75.57,2 (<.001), η^2 (.44)		
9. Activities are interrupted or slowed down due to chest pain or shortness of breath			
Baseline	3.54(.61)	3.56(.61)	.871 (.03)
Post intervention	1.58(.57)	3.30(.79)	<.001 (2.2)
Follow up	1.04(.28)	2.94(.77)	<.001(2.5)
F, df (Pvalue) (η^2)	76.88,2 (<.001), η^2 (.44)		

F test is repeated measures ANOVA, η^2 is Partial Eta Squared, b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments); d is Cohen's d effect size; P value is significant <.05

Table (4): Comparison of study and control group by total symptoms burden (pre-post (immediate) -follow up (3 months) intervention nursing guidelines (n=50).

Items	Study Group (n= 50)	Control Group (n=50)	Sig. ^b (d)
	Mean±SD	Mean±SD	
Baseline	31.90±2.28	32.54±3.60	.372 (.2)
Post intervention	14.12±3.46	28.54±6.30	<.001*(2.8)
Follow up	9.72±1.33	26.62±4.81	<.001*(4.8)
F, df (P value) (η²)	165.91,1.51(<.001), η²(.63)		

F test is repeated measures ANOVA, η² is Partial Eta Squared, b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments); d is Cohen's d effect size; P value is significant <.05

**Figure (1): Mean (SE) symptom burden from baseline to 3 months for the study and control group.**

Discussion

Coronary heart disease (CHD) is responsible for a greater amount of illness and death in the United States and other developed countries than any other disease. One out of every seven fatalities in the United States can be attributed to CHD. Angina pectoris (AP), which refers to chest pain or discomfort caused by myocardial ischemia, is the primary symptom of CHD. The ability to identify the transition of AP symptoms from a stable chronic state to an unstable acute state is the most reliable way for patients to monitor their own elevated risk of cardiac events (Kimble, 2018 & Pelaj and Autor, 2023)

Proficient management of angina pain (AP), the procedure by which patients assess and determine the course of action for both chronic and acute AP symptoms, is an essential proficiency because the majority of AP episodes

take place outside the official healthcare system and are handled by the patient. Nurses who work with cardiac patients after they have been hospitalized for cardiac diagnostic procedures and therapeutic interventions have important responsibilities in educating patients about the necessary knowledge and skills for effective management of angina symptoms. Additionally, nurses may need to provide exercise counseling to ensure patients can engage in daily physical activities and prevent physical deconditioning (Balla et al., 2018). Nurses caring for cardiac patients should recognize the distinct physical and psychological health issues that women may have about symptom monitoring and management of acute myocardial infarction. They should offer precise information and assistance to address these specific concerns. Typically, symptoms are commonly seen during heightened physical effort. A targeted intervention for angina, which emphasized the recognition, differentiation, monitoring, and

management of angina symptoms, had a distinct effect on physical function.

Regarding personnel characteristics and history data, the results of the present study showed that there were no statistically significant differences in age groups, gender, education levels, marital status, and occupation between the study and control groups. The current investigation also revealed that there was no statistically significant difference in the history data between the study and control group in terms of concomitant disorders, smoking, or exercise. These findings corroborated those of a study conducted by **Abbasi, et al. (2018)**, which found that there were no statistically significant differences between the groups in terms of their demographic and clinical traits, indicating that they were homogeneous. These findings may be explained by the homogeneity of the study sample between the two groups (the study and the control) and as well as the prerequisite for the study sample to have identical characteristics or contain consistent attributes.

The current study demonstrated a significant reduction in angina symptom burden in the study group following the implementation of nurse intervention recommendations, both during post-implementation and follow-up evaluation periods, when compared to the control group. Reduced frequency, intensity, dyspnea, and interruption of daily activities are indicative of a considerable reduction in the burden of angina symptoms. This may be due to the effectiveness of nursing intervention guidelines. These guidelines combined several actions that promoted learning skills, such as practicing, teaching, and providing a review handbook. Furthermore, the guidelines' actions were implemented step-by-step using instructions on the fundamentals of managing angina, changing one's lifestyle, managing medications, and managing symptoms.

These results were consistent with those of **Abbas & Hassan (2023)**, who showed that there were significant differences in the angina pain severity between the study group and control group. The study group's patients experienced less severe pain than the control group, and their dyspnea was also lower. In the same context, **Li, et al., (2023)** found that following nursing intervention guidelines, there

was a significant decrease in the symptoms of angina pectoris, such as fatigue, nausea, dizziness, and dyspnea. It demonstrates that following nursing intervention guidelines, patients with angina pectoris recover from problems the best.

Similarly, **Khalili et al., (2023)** imply that nurse interventions might effectively reduce discomfort in individuals suffering from unstable angina. A pain management program must be created to alleviate patients' discomfort while using fewer sedatives, shortening their hospital stay, and saving money on care. Assessing and managing pain is one of a nurse's most crucial responsibilities. Appropriate and efficient pain treatment lowers morbidity, promotes healing, reduces hospital stay, and enhances quality of life.

Additionally, **Kimble, (2018)** pointed out that patients with angina pectoris said that the nursing intervention was very successful in lessening or relieving the intensity of their discomfort. The results of the study indicate that the angina symptom intervention improved physical function. The results of this study confirm the significance of angina self-management for individuals with congestive heart failure (CHD) and the vital role that nurses play in educating and supporting patients regarding the treatment of cardiac symptoms. According to a study by **Premkumar et al., (2022)**, patients with coronary artery disease who received personalized, nurse-led cardiac rehabilitation with nursing intervention guidelines significantly reduced their burden of symptoms, including dyspnea, activity intolerance, and chest pain.

Concerning the total symptom burden of the study and control groups at different points of the assessment, the current study findings revealed a statistically significant reduction in total symptom burden after the implementation of intervention guidelines in the study group compared with the control group in post and follow up intervention. The burden of angina symptoms among patients has been decreased after nursing guidelines were adopted. These recommendations have had a significant influence on managing angina. Nurses are enabled to deliver interventions that successfully address symptoms and enhance overall patient

outcomes by offering a defined framework for care. The methodical use of these criteria ensures a comprehensive approach, resulting in a significant reduction in the burden of angina symptoms. The positive influence on patient well-being has been established, as long as healthcare workers adhere to these standards in their daily practice, confirming the critical role that the application of nursing guidelines help improve the standard of care for patients with angina.

These findings were consistent with those of **Wu et al., (2020)**, who concluded that implementing an intervention resulted in reduced symptom burden, improved physical capacity, and less cardiac anxiety, leading to increased physical activity and improved life satisfaction for patients with angina pectoris. The study found that nursing involvement led to improved clinical symptoms and reduced attacks of angina pectoris. These findings were consistent with the work of **Zhu & Duan, (2021)**. This implies that implementing nursing guidelines improves patients' treatment outcomes.

The study's findings revealed that the intervention group experienced significantly greater relief in symptoms of angina pectoris. In line with the study of **TUO YA et al., (2023)**, who revealed that the implementation of nursing care can provide positive results in terms of reducing or eliminating angina pain, the client appearing calm, decreased pain complaints, increased ability to recognize pain onset, increased ability to recognize causes of pain, and ability to use non-pharmacological techniques. Also, these were consistent with the findings of **El Haque et al., (2021) & Zare et al., (2023)**, who concluded that cardiac rehabilitation, which includes physical activity, education about healthy living, including how to eat healthy, taking medications as prescribed, and quit smoking, and counseling to find ways to relieve pain, stress, and improve mental health, is at least as effective in reducing angina complaints as an invasive approach in patients with stable angina pectoris.

Finally, the study found a significant reduction in angina pectoris symptoms burden, highlighting the benefits of nursing intervention guidelines, and indicating that nursing

interventions demonstrate a significant impact on reducing angina pain and minimizing associated complaints. Moreover, these interventions enhance the recognition of pain onset and causes, contributing to an overall improvement in patient experience and care outcomes. The consistency of these findings across research emphasizes the critical role that nursing intervention guidelines play in supporting successful symptom management for people suffering from angina shedding light on the significance of implementing nursing guidelines to improve overall well-being and quality of care for patients having angina-related symptoms.

Conclusion:

There was a statistically significant difference between the study and control group regarding total symptom burden after implementation of intervention guidelines. Also, there was a statistically significant difference between the study and control group regarding the reduction of angina symptoms burden including chest pain, shortness of breath, and limited activity.

Recommendations:

- Intervention guidelines should be conducted for angina patients as they are the key to reducing symptom burden.
- Monitoring the angina patient symptoms regularly as a standard of care
- Offering booklets regarding the management of symptom burden clusters among patients with angina.
- Replicate the same study on other cardiovascular diseases.

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