



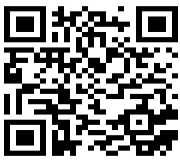
Original Research

Effectiveness of the instructional program on patients' self-care post Percutaneous Coronary intervention

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Abstract:

Objective: To determine the effectiveness of the educational intervention on patients' self-care post Percutaneous Coronary intervention.

Methodology: A quasi-experimental pretest-posttest design was used in the study. with the application of pre- and post-test approach for both groups (study and control). This study was applied at Al-Basra oil hospital from October 14th, 2021 to June 2nd, 2024. The questionnaire was used to collect the data includes socio demographic, clinical characteristics, self-care Questionnaire.

Results: Statistically significant differences were observed between both according to the results groups ($p < 0.001$). Improvement in self-care was common among the intervention group. It is essential to highlight that statistically significant differences in self-care practice scores were observed between the study groups. **Conclusions:** According to the findings of the study, a systematized and structured educational program, is effective in developing self-care skills inpatients after a Percutaneous Coronary intervention.

Recommendation: It is vital to encourage nurses to adopt the evidence-based practice when delivering care for post- PCI patients.

Keywords: Self-care skills instruction program, Percutaneous Coronary intervention

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1 Background:

Coronary heart disease (CHD) is the predominant form of heart disease, caused by the accumulation of plaque in the arteries that supply blood to the heart. CHD is another term for coronary artery disease (CAD) ⁽¹⁾. Coronary artery disease is the most prevalent form of heart disease in the United

States, affecting roughly 18.2 million American adults. ⁽²⁾.

Coronary artery disease impacts the larger coronary arteries that are on the surface of the heart. Coronary micro vascular disease, a different form of heart disease, impacts the small arteries in the heart muscle ⁽³⁾. This condition is more

prevalent in women after menopause and in men over the age of 55. ⁽⁴⁾.

Acute coronary syndrome is a prevalent global health issue and the primary reason for fatalities. It is a medical condition where there is a sudden onset of severe myocardial ischemia. The main diagnostic tests used to identify patients with ACS include performing an Electrocardiogram (ECG) while at rest and checking for markers indicating damage to the heart muscle. ⁽⁵⁾.

The American Heart Association, in collaboration with the National Institutes of Health, publishes yearly the latest statistics on heart disease, stroke, and cardiovascular risk factors. This includes an analysis of key health behaviors such as smoking, physical activity, diet, and weight, as well as health factors like cholesterol, blood pressure, and glucose control that impact cardiovascular well-being. ⁽⁶⁾.

Self-care plays a crucial role in therapy for managing cardiovascular risk factors and, as a result, enhances quality of life. The beneficial effects of self-care health practices on the quality of life of cardiac patients have been validated in numerous randomized controlled trials (RCTs) involving short-term (< 6 months) self-care interventions, with 71.0% of RCT findings demonstrating improvements in quality of life within the intervention group. Earlier studies have provided evidence indicating that self-care management significantly contributes to enhancing self-care practices and reducing modifiable risk factors such as cholesterol levels and body mass index (BMI). ^(7,8).

As such, it is imperative to closely consider the determinants that impact the quality of life of patients within this demographic. It is evident that sustaining a high quality of life significantly contributes to the prompt recovery of patients to a state of normalcy, while also lessening the likelihood of complications and the recurrence of heart conditions. Insufficient attention has been given to the impact of modifiable risk factors on the connection between self-care health behaviors and quality of life. If patients are able to attain immediate results, such as decreasing risk ⁽⁹⁾.

2. Methods:

2.1 Study Design

Quasi-experimental design has been utilized for the present study to assess Effect of educational intervention on Patients' Self-care behaviors Post Percutaneous Coronary Intervention. concerning healthy lifestyle, starting from of February 22, 2023 and March 16, 2024, The study was conducted in centers in which percutaneous coronary intervention is performed continuously; which Al-Basra oil hospital. to study Effect of educational intervention on Patients' Self-care behaviors Post Percutaneous Coronary Intervention. A non- probability (purposive) sample of Sixty patients had actually participated (30 patients) in the study and (30 patients) in the control groups. Data about cardiovascular risk factors, were collected. Likert scale The response options had been scaled and scored as the following; "3" for always, "2" for sometimes, and "1" for never). The instrument was reviewed by a panel of (15) experts. The experts revealed that all the items of the questionnaire were clear and adequate for the measurement in the study with some modification that should be done.

Statistical analysis

Measurement data with a normal distribution were expressed as mean $\pm$ standard deviation, and categorical variables were expressed as percentages. The independent sample t-test was used for comparison between two groups, while one-way ANOVA was used for the comparison of three or more groups. Variables with significant differences in the univariable analyses were selected to be included in a multivariable linear regression using the enter method.

Ethical considerations

The Institutional Review Board (IRB) in college of nursing /university of Baghdad reviewed contents of program and questionnaire before conducting a study. Informed consent was taken orally before participating in the study. After that information regarding study title and objectives had been given. Two official requests were submitted through the College of Nursing / University of Baghdad to

Basra oil hospital / Ministry of Health (MOH) to take approval for data collection , In addition, agreement has been secured from the patients to

participate in the study. participate in the study and assigned a consent form.

Results:

Table 1. Comparison the Self-Care Practices in Patients Following Percutaneous Coronary Intervention: Study vs. Control Groups

Periods	Groups	Mean± SD	t-value	d.f	η ²	Sig
Pre-test Self-care	Study	1.59±0.297	0.348	58	0.00	0.729
Post-test Self-care	Study	2.43±0.307	9.204	58	0.59	0.000

SD: Standard deviation, t: independent t-test, d.f: Degree of freedom, η²= Eta squared; Sig: Significance level at 0.05

The table presents data regarding the impact of an instructional program on patients' self-care practices following percutaneous coronary intervention (PCI). In the pre-test period, the study group (1.59±0.297) However, in the post-test

period, significant differences emerged between the study group (2.43±0.307) indicating the effectiveness of the instructional program (t=9.204; p=0.000). The effect size of the instructional program was large (η²=0.59).

Table 2. Comparison Self-Care Practices in Patients Following Percutaneous Coronary Intervention: A Pre-Post Test Study Group Analysis

Self-care	Pre-test			Post-test		
	N	%	Mean ± SD	n	%	Mean ± SD
Poor	22	73.3	43.01 ± 8.04	1	3.3	65.89 ± 8.29
Fair	8	26.7		11	36.7	
Good	0	0.0		18	60.0	
Total	30	100.0		30	100.0	

n= Number; %= Percentage; Mean: Mean of total Scores, SD: Standard Deviation for total scores **Level of Evaluation [Poor=27-45; Fair = 45.1-63, Good=63.1-81]**

The study's results revealed an initial deficiency in self-care practices among a substantial proportion of patients (73.3%) after undergoing percutaneous coronary intervention, as reflected by their relatively low average scores (43.01 ± 8.04) in the pre-test. However, after the implementation of the

instructional program, a remarkable enhancement was evident, with 60% of the patients now demonstrating commendable self-care practices in the post-test. This was evident in their significantly higher average score (65.89 ± 8.29).

Table 3. Comparison Overall Self-Care Practices in Patients Following Percutaneous Coronary Intervention: A Pre-Post Test Study Group Analysis

Self-care Study Group	Periods	M± SD	Paired t- test	d.f	η^2	Sig.
	Pre-test	1.59± 0.297	10.419	29	0.78	0.000
	Post-test	2.43± 0.307				

M: Mean, SD: Standard deviation, t: t-test, d.f: Degree of freedom, η^2 = Eta squared; Sig: Significance level at 0.05.

The results reveal a significant difference in self-care practices among patients undergoing percutaneous coronary intervention during the two measurement periods, the pre-test (1.59± 0.297) and the post-test (2.43± 0.307). This difference is

underscored by a large effect size observed in the instructional program's impact between the pre-test and post-test ($\eta^2 = 0.78$), providing clear evidence of noteworthy differences ($t = 10.419$; $p = .000$).

Table 4 Statistical Differences in Patients Self-care based on their differences in Gender and Residents in Pre Test

Periods	Groups	M		t-value	d.f	Sig
Gender	Male	1.60	.313	0.202	28	0.841
	Female	1.57	.284			
Residents	Urban	1.60	.322	0.515	28	0.610
	Rural	1.53	.181			

The findings indicate that there was no statistically significant differences in patients self-care practices following percutaneous coronary

The finding of the present study the pre-test period, the study group (1.59±0.297) However, in the post-test period, significant differences emerged between the study group (2.43±0.307) indicating the effectiveness of the instructional program ($t=9.204$; $p=0.000$).there is a study that supported the results of this study significantly higher than in control group (11.5% vs. 2.5%, $P=0.03$).⁽¹⁰⁾ Another study that supported the results studies Yildiz & Kaşıkçı. This result relates to the fact improved self-care agency and cardiac-disease-

intervention in pre test scores with regards their gender and residents ($p > 0.05$).

Discussion:

specific quality of life can be achieved by effectively promoting lifestyle changes. improve self-care skills in the intervention⁽¹¹⁾.

The study's results revealed an initial deficiency in self-care practices among a substantial proportion of patients (73.3%) after undergoing percutaneous coronary intervention, as reflected by their relatively low average scores (43.01 ± 8.04) in the pre-test. However, after the implementation of the instructional program, a remarkable enhancement was evident, with 60% of the patients now

demonstrating commendable self-care practices in the post-test. This was evident in their significantly higher average score (65.89 ± 8.29). Study conducted by Tawalbeh &, Ahmad applying educational intervention for Jordanian adults. They demonstrated that there is increase in positive attitudes in the intervention group. Thus, they concluded that the positive attitudes increase led to more practice of healthy lifestyle behaviors indicated by high HLBs scores post-intervention at significant p value ⁽¹²⁾. Another findings agree with Heiskanen, et al. The intervention was effective in improving self-care agency by increasing awareness of, ability to utilize, and ability to further enhance their self-care agency. pre-test (93.09 ± 18.30) and the post-test (119.96 ± 12.27). $p < .001$ ⁽¹³⁾.

The finding of the present study shows a significant differences in self-care practices among patients undergoing percutaneous coronary intervention during the two measurement periods, the pre-test (1.59 ± 0.297) and the post-test (2.43 ± 0.307). This differences is underscored by a large effect size observed in the instructional program's impact between the pre-test and post-test ($\eta^2 = 0.78$), providing clear evidence of noteworthy differences ($t = 10.419$; $p = .000$). support by Farooq., et al., differences between the study group four weeks post pci surgery regarding functional abilities. It was clear that there were highly significant

differences between study group ($P = 0.011^*$, $P = 0.003^*$, $P = 0.039^*$, $P = 0.007^*$) respectively ⁽¹⁴⁾. Another Sevinç & Akyol, the average posttest scores on MacNew for the intervention group were significantly higher assess quality of life in patients with cardiac disease, $p < .001$ good results have been reported ⁽¹⁵⁾.

The findings indicate that there was no statistically significant differences in patients self-care practices following percutaneous coronary intervention in pre test scores with regards their gender and residents ($p > 0.05$). Saeidzadeh et al., was no statistically significant differences in patients self-care Factors Associated with Self-care Agency in Patients after Percutaneous Coronary Intervention (PCI) ⁽¹⁶⁾

Conclusion:

the instructional program was effective in improving the patients about self-care for post-PCI patients. And this conclusion is proved through the statistical approaches that show that there is a remarkable improvement in the study group knowledge

Recommendation:

The researchers recommend There is a need to prepare continuous nursing education programs that aim to improve the knowledge of patients about self-care for-post-PCI.

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