Effect of Designed Guidelines on Nurses' Performance for Acute Myocardial Infarction Patients Who Receiving Thrombolytic Therapy

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Abstract

Background: Acute myocardial infarction is multi-factorial, progressive, and complex disease, means that part of the heart muscle suddenly loses its blood supply, its major causes of morbidity and mortality worldwide. **Aim of study:** Was to evaluate the effect of designed guidelines on nurses' performance for acute myocardial infarction patients who receiving thrombolytic therapy. **Research design:** Quasi- Experimental research design was utilized to achieve the aim of the study. **Setting:** This study was conducted at Cardiac Care Unit (CCU) in Benha University Hospital. **Sample:** Convenient sample of (55) nurse from both sex who working at CCU their age ranged from 20 to 50 years old and willing to participate in the study. **Tools of data collection**: Two tools were used, **I:** Self-administered questionnaire which consisted of two parts to assess **A)** Nurses' demographic data. **B)** Nurses' knowledge questioners about acute myocardial infarction and thrombolytic therapy and **II:** Observational checklist for nurses' performance which consisted of three parts to assess pre, during and after infusion of thrombolytic therapy for acute myocardial infarction patients. **Results:** The study revealed that nurses' knowledge and regarding acute myocardial infarction patients who receiving thrombolytic therapy pre guidelines implementation was unsatisfactory level (80% and 60%) which improved immediately post guidelines implementation at satisfactory level (94%and 96%) and return to decline post one month of guidelines implementation at satisfactory level (86% and 88%) respectively. **Conclusion:** There was highly statistical significant relation between total performance at pre, immediate post and after one month of guidelines implementation. **Recommendation**: Ongoing educational and training guidelines for nurses are needed regarding acute myocardial infarction patients who receiving thrombolytic therapy and apply the guidelines on large sample selected from cardiac care unit at Benha University Hospital.

Key words: Acute Myocardial Infarction, Nursing Guidelines, Nurses' knowledge, performance, Thrombolytic Therapy.

Introduction

Myocardial Infarction (MI), commonly known as a heart attack is defined pathologically as the irreversible death of myocardial cells caused by ischemia. Clinically, MI is a syndrome that can be recognized by a set of symptoms, chest pain being the hallmark of these symptoms in most cases, supported by biochemical laboratory changes, electrocardiographic changes, or findings on imaging modalities that able to detect myocardial injury and necrosis **(Sambu et al., 2018).**

Thrombolytic therapy is one of the main components of solving a blood thrombus and is the most prevalent treatment utilized in protection from Acute Myocardial Infarction (AMI) ischemic harm by making efficient blood flow through dissolve of blood vessel clots. It is essential enzyme that's dissolves clots in the blood through stimulation of the transformation of

plasminogen into plasmin **(Wang et al., 2020).**

Thrombolytic therapy has become an established treatment for AMI. Most benefit from thrombolytic therapy is demonstrated in the patients receiving treatment within the first six hours, with about 30 lives saved per 1000 patients treated, and some 20 per 1000 in those treated within 7-12 hours of symptom onset. The best results of all are seen in the patients treated within the first hour of symptom onset. The American Heart Association has proposed that definitive treatment of AMI should be performed within 1 h of the onset of the disease **(Bianco et al., 2021).**

The role of nurses is great in the multidisciplinary team in the implementation of thrombolytic agents. Taking the patient medical history by nurses is vital in determining the patients whom treatment is contraindicated, so that lead to right intervention by noticing complications that may occur early (**Karaman et al., 2017).**

Significance of the study

Acute myocardial infarction may be a significant the event, leading to the premature death or the severe blood circulation degradation. The delivery of the thrombolytic therapy, for the patients who are undergoing AMI lowers the relative the death rating by 18% as well as the absolute a death rated about 2%. Untreated ST Elevation Myocardial Infarction (STEMI) patients have higher mortality and poor clinical outcomes compared to those who receive a reperfusion strategy **(Desta et al., 2018).** AMI causes many complications, of which heart failure is one of the most common. AMI combined with heart failure is frequently seen in the clinic. According to recent studies, there are about 8 million people who die of MI in the world every year, and 30% of them suffer from MI and heart failure **(Zhou et al, 2021)**.

World Health Organization (WHO) estimated 17.9 million people died from Cardiovascular Diseases (CVDs) in 2019, representing 32% of all global deaths. Of these deaths, 85% were due to heart attack and stroke. Over three quarters of CVDs deaths take place in low- and middle-income countries. Out of the 17 millions premature deaths (under the age of 70) due to non-communicable diseases in 2019, 38% were caused by CVDs. It is important to detect cardiovascular disease as early as possible so that management with counseling and medicines can begin **(WHO., 2021).**

Egypt is the most populous country in the Middle East and North Africa and has more than 15% of the cardiovascular deaths in the region. Women constituted 25% of the patients. Premature Cardiovascular diseases (ACS) was common, with 43% of men aged less than 55 years, and 67% of women under 65 years. Most men had STEMI (49%), while a larger percentage of women had unstable angina and non ST elevation myocardial infarction. Obesity and smoking are extremely prevalent in Egypt, contributing to an increased burden of premature ACS, which required tailored prevention strategies (**Reda, et al., 2019).**

Aim of the study:

The study aimed to evaluate the effect of designed guidelines on nurses' performance for acute myocardial infarction patients who receiving thrombolytic therapy.

Research hypothesis:

1- The nurse's knowledge for acute

myocardial infarction patients who receiving thrombolytic therapy would be improved post guidelines implementation.

2- The nurse's performance for acute myocardial infarction patients who receiving thrombolytic therapy would be improved post guidelines implementation.

Subject and Methods

Research design:

Quasi- Experimental research design was utilized to achieve the aim of the study.

Study setting:

This study was conducted in CCU at Benha University Hospital, where it consists of intensive coronary artery care unit department which consist of three compartments each one contains 6 beds and economist compartment contains 2 beds. The total number of bed at CCU unit is 20 beds.

Sample:

Convenient sample of (55) nurses from both sexes who working at CCU, their age ranged from 20 to 50 years old and willing to participate in the study.

Tools for data collection

Tool I - Self-administered questionnaire. It was developed by **(Sakr et al., 2019; Karaman et al., 2017; Mustafa & Elfaki, 2017 and Sherif et al., 2017)** and adapted by the investigator. It aimed to assess the nurses' knowledge and involved the following two parts:

Part I: Nurses' demographic data: Concerned with assessment of nurses' demographic characteristics related to age, gender, marital status, educational level, years of experience in the field of nursing, years of experience in the Cardiac care unit, attendance training courses on treatment with thrombolytic therapy in patients with acute myocardial infarction.

Part II: Nurses' knowledge questioners: Consisted of the following two sections:

Section I: Covered nurses' knowledge about acute myocardial infarction. It consists of 10 questions.

Section II: Covered nurses' knowledge about thrombolytic therapy. It consists of 23 questions.

Scoring system:

All knowledge variables were multiple choice questions& Put a tick true (√) on the correct answer; two scoring levels for questions were used. Each correct answer was scored (1), each incorrect answer was scored (zero). The total score for knowledge was (33) marks. The scores were converted into a percent and categorized as follows:

- Below 80% was considered as an unsatisfactory level of knowledge. (Less than 27 marks).

- 80% and above was considered as satisfactory level of knowledge. (27 marks or more).

Tool II: Observational Checklined assessed Nurses' Performance

It was developed by **(Eweas, 2016)** and adapted by the investigator and aimed to assess nurses' pre, immediate post and after one month guidelines implementation. It involved the following three parts to cover the following data:

-Pre infusion of thrombolytic therapy for acute myocardial infarction patients (include 22 steps).

-During the infusion of thrombolytic therapy for acute myocardial infarction patients (include 11 steps).

-After infusion of thrombolytic therapy for

acute myocardial infarction patients (include 15 steps).

Scoring system

The score distributed as: one mark for each step correctly done, and zero for incorrectly done or not done, the total score converted into percentage and graded as the following:-

- Below 85% graded as unsatisfactory level of performance.

- 85% and above graded as satisfactory level of performance.

Tools Validity

The tools were reviewed by a panel of five experts from Medical Surgical Nursing field at Faculty of Nursing Benha University to test the relevance, clarity of tools 'content, comprehension, understanding, applicability and necessary modification was done accordingly.

Reliability

The investigator used test – retest – methods to test the internal consistency of the tools, by administration of the same tools to the same subjects under similar condition on two different occasions, testing the reliability of the tools through Cronbach alpha. Tool reliability for self-administered questionnaire that used to assess nurses' knowledge = **0.78**, tool reliability for observational checklist that used to assess nurses' = **0.81.**

Ethical consideration

The aim of this study was explained to all nurses and they were reassured that all information was confidential and it was used only for their benefit and for research purpose. Nurses consent to participate in the study was obtained. Nurses were informed that they were allowed to choose to participate or not in the study and they had the right to withdraw from the study at any time.

Pilot study

A pilot study was done on 10% of the study sample (5 nurses) to examine the clarity and usefulness of data collection tools, as well as to establish the necessity for an applied research time tool. Because of minor changes made following the pilot research, nurses enrolled in the pilot study were excluded from the sample.

Fieldwork:

Data collection of the current study was carried out from July, 2021 to end of December, 2021. The process of data collection was achieved through: (pre-test): to have baseline assessment about nurses' level of knowledge and performance, (Post-test): immediately (knowledge& performance) and after one month from implementation of guidelines (knowledge& performance). The tools were filled three times; the first time pre guidelines implementation, the second time immediately post designed guidelines implementation (knowledge& performance), and the third time after one month guidelines implementation.

The study was conducted through four phases.

Assessment phase:

Data collected at morning and afternoon shifts (long day shift) three days/week. Assessment of the nurses' knowledge through self-administered questionnaire **(Tool I)** was filled by nurses. The completion of the questionnaire was ranged from 15-30 minutes.

The nurses' performance skills was observed by the researcher using **(Tool II)**

was done at time of nurse preparation for giving thrombolytic therapy of myocardial patient, during giving thrombolytic therapy of myocardial patient and monitoring myocardial patient after giving thrombolytic therapy. It was observed pre, during, post administration of thrombolytic therapy among acute myocardial infarction patients. The time was needed to complete the checklist ranged between 10-15 minutes as baseline assessment.

Planning phase:

The guidelines developed by the investigator according to nurses' needs and deficiencies in their. It was written in Arabic language and it was reviewed by the supervisors and the validity was done.

Teaching materials was prepared e.g. discussion, demonstration, video, picture and booklet that helped in covering theoretical and performance information.

Implementation phase:

- Total number of the studied nurses was 50 nurses; they were divided into 10 groups. Each group contained five nurses in every session.

- The investigator met every group for four sessions: Two sessions for theory and two sessions for performance. Each session ranged between 15-20 minutes, including the period of discussion.

Session one: (Introductory session) it included orientation and explanation of reasons and importance of educational guidelines and give an explanation about acute myocardial infarction

Session two: It included an explanation about thrombolytic therapy.

Session three: It concerned with criteria for administrating of thrombolytic therapy, optimal time, start to work, method of administration, dose of thrombolytic therapy and precautions during preparation phase.

Session four: It contains Precautions that the nurse should be performed during and after administrating of thrombolytic therapy.

Evaluation phase:

After implementation of guidelines the post test was administered to evaluate the effectiveness of guidelines through evaluation nurses' knowledge using self-administered questionnaire (Tool I) and performance through observational checklist (Tool II) was done immediately and after one month after giving the nursing guidelines to them by using the same tools of the pretest to determine the effect of implementation of the guidelines.

Comparison was done between the pretest and posttest at the end of the study to determine the effectiveness of designed guidelines on nurses' knowledge and performance for acute myocardial infarction patients who receiving thrombolytic therapy.

Statistical analysis

The collected data were organized, categorized, tabulated and analyzed using the number and percentage distribution. The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 25. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative

data. Qualitative variables were compared using chi square test (X^2). Different between the group during the two visits were assessed by paired t test and different between the group during the three visits were assessed by repeated measures ANCOVA. In addition, R- test were used to identify the correlation between the study variables.

Degrees of significance of results were considered as follows:

- P-value > 0.05 Not significant (NS)

- P-value ≤ 0.05 Significant (S)

- P-value ≤ 0.01 Highly Significant (HS).

Results:

Table (1): Reveals that more than half (64%) nurses were female; (70%)of studied nurses' aged 20-<30years old with mean age of 28.4±6.16years, it was found that 72% of them were married, more than three quarters of them(78 %) were Diploma / Technical Institute. Also, (62%) of nurses their number of years of experience in the field of nursing were 1-<5 years with mean years 7.74±5.2 years; while nurses whose their number of years of experience in the Cardiac care unit (CCU) were1-<5 years (44%) with mean years 6.04±4.8 years and more than half of them (72%) didn't attend training courses on treatment with thrombolytic therapy in patients with myocardial infarction..

Table (2): Illustrates that there were highly statistically significance difference regarding the overall knowledge about acute myocardial infarction patients receiving thrombolytic therapy at pre, immediate post and in one month post guidelines implementation at p ≤ 0.01.while There were no statistically significant differences regarding knowledge between immediate post and after one-month guidelines implementation at p >0.05.

Table (3): Shows that there were high statistically significance regarding the total towards administration of thrombolytic therapy at pre, immediate post and after one month of guidelines implementation at p ≤ 0.01.

Figure (1): Illustrates that, 80% of the studied nurses were at unsatisfactory level regarding knowledge about acute myocardial infarction patients receiving thrombolytic therapy at pre guidelines, while (94%)of them were at satisfactory level of knowledge at immediate post guidelines. Post one month of guidelines implementation, the level of total knowledge of studied nurse's return to decline to (86%) respectively.

Figure (2): Illustrates that(60%) of the studied nurses were at unsatisfactory level of regarding towards administration of thrombolytic therapy at pre guidelines, while (94%)of them were at satisfactory level of regarding administration of thrombolytic therapy immediate post guidelines implementation, while (88%) of them were at satisfactory level of regarding administration of thrombolytic therapy Post one month of implementation guidelines.

Table (4): Illustrates that there was highly statistical significant relation between total knowledge and total at pre, immediate post and after one month of guidelines implementation at p ‹ 0.

Table (1): Distribution of the studied nurses according to their demographic data (n=50).

Demographic data	Sample Size(n=50)	
	N	%
Gender		
Male	18	36
Female	32	64
Age (years)		
20-<30	35	70
30-<40	11	22
40-<50	4	8
≥ 50	0	0.0
Mean ±SD	**28.4±6.16**	
Social status		
Single	12	24
Married	36	72
Widower	2	4
Divorced	0	0.0
Educational level		
Diploma / Technical Institute	39	78
Bachelor of Nursing	9	18
Postgraduate	2	4
Years of experience in the field of nursing		
<1	5	10
1-<5	31	62
5-<10	2	4
≥ 10	12	24
Mean ±SD	**7.74±5.2**	
Years of experience in the Cardiac Care Department (CCU)		
<1	10	20
1-<5	22	44
5-<10	10	20
≥ 10	8	16
Mean ±SD	**6.04±4.8**	
Attendance training about thrombolytic therapy.		
Yes	14	28
No	36	72

Table (2): Comparison between the studied nurses according to their total knowledge on acute myocardial infarction patients receiving thrombolytic therapy (n=50).

Total nurses' knowledge about thrombolytic therapy.	Pre guidelines				Post guidelines								Test of Sig. (p_1)	Test of Sig. (p_2)	Test of Sig. (p_3)	Test of Sig. (p_4)
					immediate				After 1st month							
	Satisfactory		Unsatisfactory		Satisfactory		Unsatisfactory		Satisfactory		Unsatisfactory					
	N	%	N	%	N	%	N	%	N	%	N	%				
Acute myocardial infarction	12	24	38	76	48	96	2	4	46	92	4	8	X2=17.23 P=.000**	X2=16.95 P=.000**	X2=1.657 P=.124	F=37.27 P=.000**
Thrombolytic therapy	8	16	42	84	45	90	5	10	41	82	9	18	X2=16.00 P=.000**	X2=15.05 P=.000**	X2=1.257 P=.217	F=39.50 P=.000**
Total knowledge	10	20	40	80	47	94	3	6	43	86	7	14	X2=19.50 P=.000**	X2=18.00 P=.000**	X2=1.112 P=.214	F=46.97 P=.000**

X^2: Chi-square **f= Friedman test** **p= p-value** ******: Highly statistically significant at $p \leq 0.01$.

P_1: p value for comparing between **pre and post** guidelines

P_2: p value for comparing between **pre and after one-month** guidelines

p_3: p value for comparing between the in **post and after one-month** guidelines

p_4: p value for comparing between the **three sessions**.

Table (3): Comparison between the studied nurses' according to their total performance towards administration of thrombolytic therapy among acute myocardial infarction patients at pre, immediate post and after one month of guidelines implementation (n=50).

Total nurses' performance towards administration of thrombolytic therapy.	Pre guidelines				Post guidelines								Test of Sig. (p_1)	Test of Sig. (p_2)	Test of Sig. (p_3)	Test of Sig. (p_4)
					immediate				After 1st month							
	Satisfactory		Unsatisfactory		Satisfactory		Unsatisfactory		Satisfactory		Unsatisfactory					
	N	%	N	%	N	%	N	%	N	%	N	%				
regarding pre infusion of thrombolytic therapy	35	70	15	30	49	98	1	2	46	92	4	8	**X2=20.96 P=.000****	**X2=18.62 P=.000****	**X2=0.958 P=2.001**	**F=40.25 P=.000****
during infusion of thrombolytic therapy	22	44	28	56	48	96	2	4	42	84	8	16	**X2=23.21 P=.000****	**X2=19.87 P=.000****	**X2=0.847 P=2.254**	**X2=38.52 P=.000****
after infusion of thrombolytic therapy	17	34	33	66	47	94	3	6	40	80	10	20	**X2=25.20 P=.000****	**X2=17.62 P=.000****	**X2=0.922 P=2.054**	**F=37.14 P=.000****
Total	**20**	**40**	**30**	**60**	**48**	**96**	**2**	**4**	**44**	**88**	**6**	**12**	**X2=36.85 P=.000****	**X2=32.64 P=.000****	**X2=.524 P=3.331**	**F=52.01 P=.000****

X^2: Chi-square **f= Friedman test** **p= p-value** ******: Highly statistically significant at $p \leq 0.01$.

P_1: p value for comparing between **pre and post** guidelines

P_2: p value for comparing between **pre and after one-month** guidelines

p_3: p value for comparing between the in **post and after one-month** guidelines

p_4: p value for comparing between the **three sessions**.

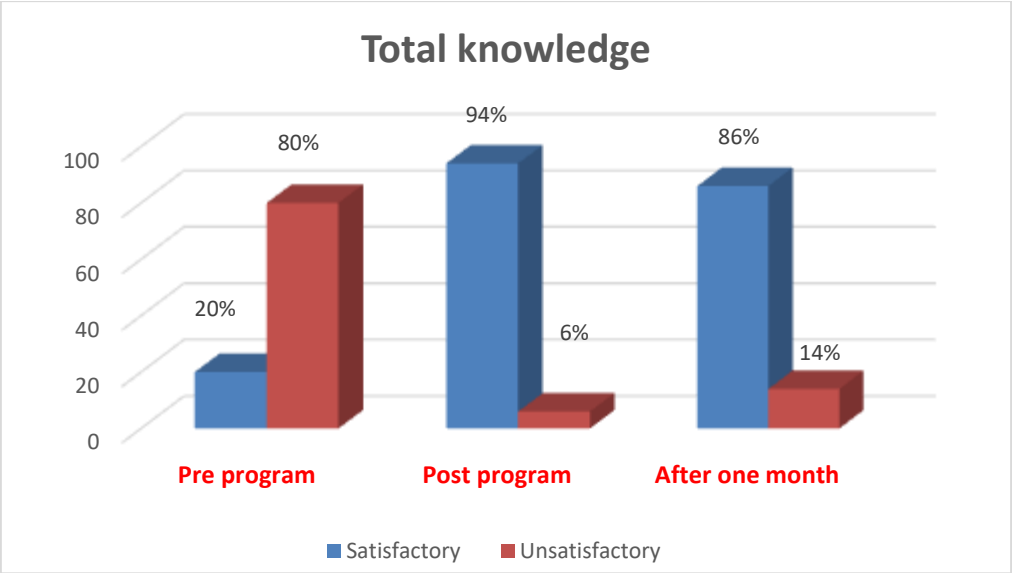

Figure (1): Distribution of the studied nurses according to total knowledge at pre, immediately post and after one month of guidelines implementation (n=50).

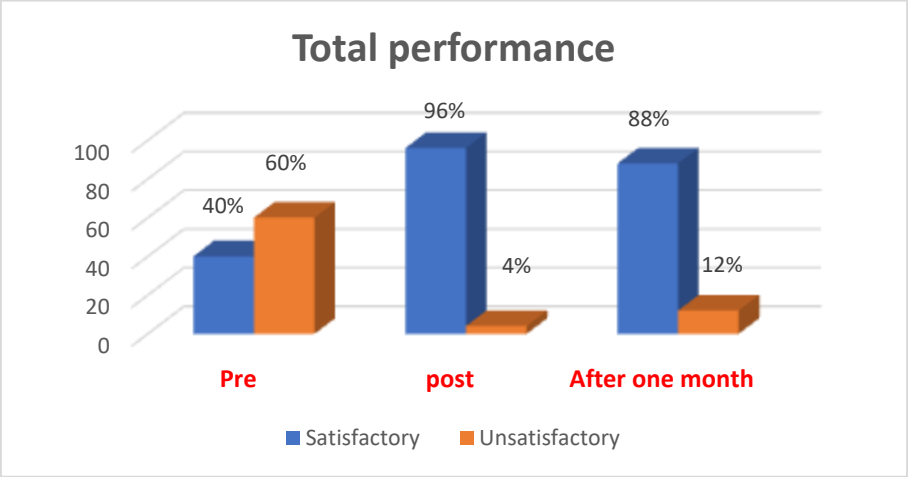

Figure (2): Percentage distribution of the studied nurses' according to their total performance towards administration of thrombolytic therapy at pre, immediate post and after one month of guidelines implementation (n=50).

Table (4): Correlation between total knowledge and total performance among the studied nurses at pre, immediate post and after one month of guidelines implementation (n=50).

Scale	Total performance					
	Pre guidelines		immediate post		After one month	
Total knowledge	R	p-value	R	p-value	R	p-value
	.367	.005**	.710	.000**	.517	.000**

Discussion:

Regarding gender, the present study revealed that more half of studied nurses were females. This, of course, is due to the fact that the profession of nursing in Egypt has a long history of association with females. This result agreed with **Mustafa & Elfaki (2017)** who studied" Determination nurses' knowledge about initial drugs used during emergency management of acute myocardial infarction" and found that most of studied nurses were female. While disagree with **Al-Ftlawy (2014)** who studied" Determination of nurses' knowledge toward care provided to patients with acute myocardial infarction in Al-Najaf City" and reported that the majority of nurses of nurses were males.

Regarding age, This result agreed with **Samba et al. (2018)** who studied" Effect of a Training Program on Nurse's, knowledge, Attitudes and Performance regarding Nursing Care of Acute Myocardial Infarction in Medani Heart Center and Wad Medani Emergency Hospital, Gezira State, Sudan "found that about two third of the study nurses aged from 20-29 years. This result contradict with study by **Bårdsgjerde, et al., (2020)** who studied "Nurses' perceptions of patient participation in the myocardial infarction pathway" and found that majority age group of nurses 42–50 years worked in cardiac care.

Regarding Number of years of experience in CCU 1-<5 was less than half. The investigator thought that lack years of experience in the Cardiac care unit have role in Inefficiency of the service provided to the CCU patient. This disagreed with **Skal & Ahmed (2021)** that indicated that the majority of nurses have (1-5) years of experience in CCU.

Concerning Nurses' total knowledge on acute myocardial infarction, The present study reported that more than three quadrants of nurses' knowledge pre guidelines were unsatisfactory level ,This finding is consistent with **Al-Ftlawy (2014**) who studied" Determination of nurses' knowledge toward care provided to patients with acute myocardial infarction in Al-Najaf City" who reported that more than half of studied nurses have moderate& poor level of nurse's knowledge and education concerning acute myocardial infarction. While This finding disagree with **Ali & yousif (2016)** titled " Nurses` Knowledge Regarding Streptokinase Management for Patients with Acute Myocardial Infarction at Elshaab Teaching Hospital" who revealed that Nurses' have satisfactory level of knowledge regarding the acute myocardial infarction. On the other hand, the finding of the study disagree with **Karadkar et al., (2018)** titled "Nurses' Knowledge Regarding Acute Coronary Syndrome " who revealed that overall level of knowledge of the nurses regarding acute coronary syndrome more than half of the nurses had good knowledge and about one third had very good level of knowledge.

As regard to nurses' total knowledge about thrombolytic therapy this study revealed that Total nurses' knowledge about thrombolytic therapy were at unsatisfactory level of their knowledge pre guidelines implementation. This finding supported by **Skal & Ahmed (2021)** who studied" Assessment of Nurse's Knowledge Concerning nursing care of the patients receiving thrombolytic therapy with Acute Myocardial Infraction at Coronary Care Unit

in Al-Diwaniya Teaching Hospital" who revealed that the nurses had low level of knowledge regarding main studied domains (acute MI medications, thrombolytic therapy, and risk factors for bleeding in patients with acute MI receiving thrombolytic therapy).

Also, this result is in the same line with **(Khalil et al., 2018)** who titled "Thrombolytic therapy in acute MI: coronary care nurses' knowledge and performance" who revealed that level of total knowledge among CCU nurses about thrombolytic therapy were unsatisfactory level.

Additionally, This result agreed with **Mustafa & Elfaki (2017)** who studied" Determination nurses' knowledge about initial drugs used during emergency management of acute myocardial infarction" who revealed that most of nurses had poor level of knowledge about thrombolytic agents which use to dissolve the clot inside the coronary artery, especially streptokinase's indications, contraindications and complications.

As regard to nurses' total performance about thrombolytic therapy, The present study reported that more than half of nurses' performance were at unsatisfactory level regarding performance towards administration of thrombolytic therapy at pre guidelines ,This finding is consistent with **Eweas, et al., (2016)** who studied "coronary care nurses' knowledge and performance regarding management of thrombolytic therapy among acute myocardial infarction patients "who found more than three quadrants (90%)of the coronary care nurses demonstrated unsatisfactory performance level regarding management of acute MI patients receiving thrombolytic therapy pre guidelines .

Also ,the finding of the study revealed that total nurse's performance level improved after one month guidelines implementation .this indicator to the positive effect of the designed guidelines provided to the nurses additionally this finding show that more than half of the studied nurses were at unsatisfactory level of performance regarding performance towards administration of thrombolytic therapy at pre guidelines, while the majority of them were at satisfactory level of performance regarding administration of thrombolytic therapy immediate post & after one month of implementation of guidelines. This in congruent with **Malk et al., (2018)** who studied" Effect of an Educational Program on Nurses Regarding Electrocardiography "who illustrated that the majority of the studied nurses had unsatisfactory performance preprogram implementation which improved significally immediately post program then this improvement lowered slightly post 3 months at follow up.

According to finding of this study there were high statistically significance regarding the total towards administration of thrombolytic therapy at pre, immediate post and after one month of guidelines implementation. This result was supported by **Fares et al.,(2019)** tilted "Effect of an Educational Program on Nurses' knowledge &Performances Regarding Assessment of Acute Coronary Syndrome "who reported that the statistical significant difference between nurses 'performance indicating good performance after educational program , compared with poor performance before educational program regarding assessment of Acute Coronary Syndrome.

The current study also showed that there were **positive and highly statistical**

significant correlation between total knowledge and total performance scores pre, immediate post and after one month of guidelines implementation therefore the two stated research hypothesis were supported. **From the investigator view of point**, when the knowledge increased, the competent nursing performance increased, This finding was consistent with **Khaliel et al., (2022)** who conducted a study entitled "Evaluate Nurses' regarding Safety Measures in Cardiac Catheterization Unit at Benha University Hospital and Suggested Guidelines" who showed there were highly significant positive correlation between nurses' knowledge and their total performance.

On the other hand, this result disagree with **Fares et al.,(2019)** tilted "Effect of an Educational Program on Nurses" knowledge &Performances Regarding Assessment of Acute Coronary Syndrome" who reported that there non-significant statistical relation between nurses ' knowledge score and nurses' performance before and after implementation the educational program.

Conclusion

The majority of nurses had unsatisfactory level of knowledge and regarding acute myocardial infarction patients who receiving thrombolytic therapy at pre guidelines implementation. Also, it revealed that their knowledge and regarding acute myocardial infarction patients who receiving thrombolytic therapy increased immediately post guidelines implementation and return to decline after one month post guidelines implementation which may attribute to the nurses need more frequent follow up. Additionally, it was noticed that there was highly statistical significant relation between total knowledge and total at pre, immediate post and after one month of guidelines implementation.

Recommendations

1-Designed guidelines for acute myocardial infarction patients who receiving thrombolytic therapy should be revised ,updated and available in coronary care unit in both Arabic and English language.

2-Continuous evaluation of nurses' knowledge and is essential to identify their needs in coronary units about thrombolytic therapy for acute myocardial Infarction Patients.

3-Provision of adequate supervision of nurses during their performance and providing teaching on spot with motivation and feedback

4-Further study is needed to apply the guidelines with larger sample size including structure and outcome guidelines in addition to process guidelines &evaluate its impact on nurses' regarding thrombolytic therapy and patients' outcomes.

5- Further researches are needed for nurses about further complications following administer thrombolytic therapy for acute myocardial infarction patients and how to prevent it.

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تأثير الإرشادات المصممة على معرفة واداء الممرضات لمرضي احتشاء عضله القلب الحاد اللذين يتلقون علاج مذيب للتجلط

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تعد أمراض القلب والأوعية الدموية هي السبب الرئيسي للوفاة في جميع أنحاء العالم ، ويمثل احتشاء عضلة القلب السبب الرئيسي في هذه الوفيات. سنويًا ، أكثر من ثلاثة ملايين شخص يعانون وقد يموتون من احتشاء عضلة القلب الحاد في جميع أنحاء العالم و يعد للممرضات دورا كبيرا في رعاية المرضى الذين يعانون من احتشاء عضلة القلب ، بما في ذلك العلاج المذيب للتجلط، لذلك هدفت هذه الدراسه الي تقييم تأثير الإرشادات المصممة على معرفة واداء الممرضات لمرضي احتشاء عضله القلب الحاد اللذين يتلقون علاج مذيب للتجلط ،وقد أجريت الدراسة في وحده رعايه القلب في مستشفى بنها الجامعى ، بنها، مصر علي (٥٠)ممرضة من كلا الجنسين تعمل في وحدة قسطرة القلب تراوحت أعمارهم بين (٢٠ إلى ٥٠)سنة، حيث كشفت النتائج عن تطبيق الإرشادات المصممة له تاثيرايجابي علي معرفه واداء الممرضات لمرضي احتشاء عضله القلب الحاد اللذين يتلقون علاج مذيب للتجلط، كما اوصت الدراسه بمراجعة وتحديث الدلائل الإرشادية المصممة لمرضى احتشاء عضلة القلب الحاد الذين يتلقون علاج التخثر في وحدة العناية التاجية باللغتين العربية والإنجليزية.وكذلك التقييم المستمر لمعرفة وأداء الممرضات ضروري لتحديد احتياجاتهم في وحدات رعايه القلب حول العلاج المذيب للتجلط لمرضى احتشاء عضلة القلب الحاد.

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