

Assessment of Nurses knowledge toward prevention of Complications related Valvular Replacement Surgery at Surgical Department in AL-Nasiriyah Heart Center

تقييم معارف الممرضين تجاه الوقاية من مضاعفات جراحة أستبدال الصمامات في قسم الجراحة
في مركز الناصرية للقلب

Douaa Rasool Abbas, MScN *

Aqeel Habeeb Jasim , PhD**

*Academic Nurse, Ministry of Health , E:mail: doaa85856@gmail.com

** Fundamental Nursing Department, College of Nursing /University of Baghdad/ Iraq.

E:mail: jasmqeel@yahoo.com

المستخلص:

الهدف: تهدف الدراسة إلى تقييم معارف الممرضين في كيفية الوقاية من مضاعفات جراحة استبدال الصمامات وإيجاد العلاقة بين معارف الممرضين وخصائصهم الديموغرافية والمهنية وهي (العمر ، الجنس ، مستوى التعليم ، سنوات الخبرة في قسم الجراحة ، و الدورات التدريبية)

المنهجية: دراسة وصفية (غرضية) كانون الأول ٢٠١٧ إلى ايار ٢٠١٨ وذلك لتقييم معارف الممرضين في الوقاية من مضاعفات جراحة استبدال الصمامات في قسم الجراحة في مركز الناصرية للقلب في عينة قصدية (غير احتمالية) تكونت عينة الدراسة من ٧٠ ممرض وممرضة من الدوام الصباحي والمسائي . تم جمع البيانات باستخدام استبانة التقرير الذاتي للمبحوثين التي صممت من قبل الباحثين من خلال مراجعة الدراسات السابقة ذات الصلة وتتكون من جزأين: "الخصائص الاجتماعية الديموغرافية للممرضين، والمحور الثاني: فقرات تتعلق بمعارف الممرضين المتعلقة بالتشريح ، صمام القلب الفسيولوجي واستبدال صمام قلب مضاعفات. والرعاية التمريضية. تم تحديد مصداقية الاستبانة الاستبانين من خلال عرضها على ١٣ خبير متخصص. تم تحقيق موثوقية الاستبانة من خلال تطبيق معامل ارتباط الفا (r = 0.85) والذي كان مقبولاً إحصائياً. تم تحليل البيانات من خلال تطبيق الاحصاء الوصفي والاستدلالي.

النتائج: أظهرت النتائج أن معظم المشاركين ضمن الفئة العمرية (٢٠-٢٩) سنة ، وكشفت الدراسة أن الممرضات لديهم معارف متوسطة نحو الوقاية من مضاعفات جراحة استبدال الصمام بين جميع عناصر من المقياس. وخلصت الدراسة إلى أن معظم الممرضين لم يكن لديهم خبرة كافية في العمل في قسم الجراحة ومعظمهم لم يتدربوا جيداً.

التوصيات: أوصت الدراسة بنشر الوعي بين الممرضات فيما يتعلق بالوقاية من مضاعفات جراحة استبدال الصمامات من خلال جلسات تعليمية ومحاضرات تثقيفية مستمرة لزيادة الوعي الممرض بطرق الوقاية من مضاعفات استبدال صمام القلب

الكلمات المفتاحية: جراحة تبديل الصمامات ، قسم الجراحة

Abstract

Objectives: The study aims to assess the nurses knowledge toward prevention of complications related to valvular replacement surgery and to find out the relationship between nurses knowledge and their demographic and occupational characteristic's Which as (Age, gender, level of education ,years of experience in Surgical Department , and training sessions)

Methodology: A descriptive design (a cross-sectional study) was carried out from December 2017 to May 2018 in order to assess nurses' knowledge of preventing complications Valvular Replacement Surgery at Surgical Department in Nasiriyah Heart Center on a purposive (non-probability) sample was used in this study that composed of (70) nurses of the morning and night shifts. Data were collected by using the technique of self-report questionnaire which designed and constructed by the researchers from previous related studies and consisted of two Part one included ' socio-demographic characteristics for the nurses, Part two : knowledge items related to anatomy , physiology heart valve , heart valve replacement and complication heart valve replacement. and nursing care . The validity of the questionnaire was determined by presenting the questionnaire to (13) specialized experts. The reliability of the internal consistency was achieved by applying the alpha correlation Coefficient (r=0.85) which was statistically acceptable. The data were analyzed by applying descriptive and inferential statistics .

Results: The results showed that most of the participants in the research of nurses at age group (20-29) years, and the study revealed that the nurses have a moderate knowledge towards the prevention of complications of valve replacement surgery by significant level among all items of the scale. The study concluded that most nurses did not have sufficient experience in work in the surgical department and most of them did not train well .

Recommendations: The study recommended spreading awareness among nurses regarding the prevention of complications of valves replacement surgery through instructional sessions and continuing education lectures to increase awareness of nurse's in ways of preventing complications of heart valve replacement.

Keywords : Valvular Replacement Surgery, Surgical Department.

Introduction

While heart valves themselves were documented by Leonardo da Vinci in some of his early sketches over 500 years ago, they have only been available for implantation since the 1950s. With the average heart beating 2.5 billion times in a human lifetime, the four valves of the heart must maintain unidirectional blood flow to maximize efficiency of the heart and provide oxygenated blood to the entire body.⁽¹⁾ While valvular disease is usually associated with advanced age, congenital defects can also affect the valves since birth. Valves may lose functionality if they cannot maintain a proper seal or open completely ⁽²⁾.

Heart valve surgery is a procedure for the treatment of heart valve disease. In the case of heart valve disease, at least four heart valve valves, which keep the blood flow in the right direction through the heart, do not work properly ⁽³⁾.

These valves include mitral valve, pulmonary valve, tricuspid valve and aortic valve. Each valve contains flaps called leaflets, for the mitral and tricuspid, and cusps, for aortic and pulmonary valves. These flaps open and close once during each heartbeat. Sometimes the valves do not open or close correctly, thus disrupting blood flow from the heart to the body ⁽⁴⁾.

Treatment depends on several factors, including age, health, the condition of the affected heart valve, and the severity of the condition⁽⁵⁾ Valve replacement is generally safe. However, as with any surgery or procedure, complications can occur⁽⁶⁾ Potential risks associated with treatment include: Bleeding during or after treatment or damage to blood vessels. Blood clots can cause a heart attack, lung problems or stroke. Infection at the site of incision. Infection in the new valve (endocarditis), is more common with valve replacement ⁽⁷⁾. Pneumonia. Breathing problems. Arrhythmia (irregular heartbeat) or the need for a permanent pacemaker. Valve failure, more common also with replacement. Bad reaction to anesthesia⁽⁸⁾

Objectives of the study

The study aims to: (1) To assess the nurses' knowledge toward prevention of Complications Related to Valvular Replacement Surgery. (2) To find out the relationship between nurses' knowledge and their demographic and occupational characteristics, which are (Age, gender, level of education, years of experience in Surgical Department, and training sessions)

Methodology

A descriptive design (a cross-sectional study was used for the present study) was carried out from December 2017 to May 2018 in order to assess nurses' knowledge of preventing complications Valvular Replacement Surgery at Surgical Department as a main objective in this study. A purposive (non-probability) sample was used in this study that composed of (70) nurses of the morning and night shifts from AL-Nasiriyah Heart Center was involved in the present study.

Data were collected by using the technique of self-administrative report. A questionnaire was designed by the researcher through adoption and modification of the scales that contribute in achieving the objectives of this study. The questionnaire of the study is composed of four parts: the first part, includes the socio-demographic characteristics for the nurses included in this study; the second part, anatomy and physiology of the heart valve; the third part, heart valve replacement; and the fourth part, complication of heart valve replacement and nursing care.

Scale of the questionnaire is (multiple choice) the correct answer code was (2) and the wrong answer code was (1) A questionnaire was designed and constructed by the researcher to measure the variables underlying the present study which consisted of (5) parts.

1) Socio-Demographic Characteristics Questionnaire: It consists of (5) items related to the socio-demographic characteristics of

the sample which include nurses'(Age, gender, level of education ,years of experience in Surgical Units, and training sessions)

2) Nurse's Knowledge Concerning Heart Valve Anatomy :This part includes (7) items.

3) Nurse's Knowledge Concerning Heart Valves Disease: It consists totally (5) items.

4) Nurse's Knowledge related to Complication Heart Valve Replacement : It consists totally (16)items

5) Nurse's Knowledge related to Nursing Care: It consists totally (7) items.

The validity of the questionnaire was determined through a panel experts (13 experts) . These experts were (8) faculty members from the College of Nursing / University of Baghdad , (5) specialist physicians in cardiac surgery / AL Nasiriyah Heart Center .

The internal consistency of the instrument was determined through the computation of Alpha Correlation Coefficient (Cronbach's Alpha). The result of the reliability was ($r = 0.85$). The data were collected for the present study through the utilization of the self-

administrative questionnaire, by using the Arabic version of the questionnaire for all subjects who were included in the study sample The researcher distributed the questionnaire for nurses after taking their willing to participate in this study, the interview was conducted with volunteer nurses It took about 20 to 40 minutes for interviewing and after that the questionnaire was collected. Statistical analyses were conducted by using statistical package for social science (SPSS) version (20) Data analysis was employed through the application of descriptive and inferential statistical approaches which were performed through the computation of the following: frequencies, percentage, standard deviation, alpha correlation coefficient and Chi-squar

Ethical Considerations

The Institutional Review Board (IRB) at the University of Baghdad, College of Nursing approved the study to be conducted. The study protocol meets both the global & the Committee on Publication Ethics(COPE) standards of respecting humans subjects' rights.

Results:

Table (1): Distribution of the Nurses according to their Socio-demographic Characteristics

Characteristics	Frequency (F)	Percent (%)
Gender		
Male	22	31.4
Female	48	68.6
Total	70	100.0
Age		
20-29 Years	50	71.4
30-39 Years	18	25.7
40-49 Years	2	2.9
Total	70	100.0
Educational status		
Nursing School	15	21.4
Nursing institute	23	32.9
Nursing College	31	44.3
Master and doctorate	1	1.4
Total	70	100.0

The analysis of this table shows that two third of nurses who are working at Al-Nasiriya Heart Center are young females with age group (20-29) years old. Regarding nursing qualification, the highest percentage reveals nursing college graduate.

Table (2): Distribution of the Nurses According to their clinical characteristics

Clinical characteristics	Frequency	Percent
Training courses		
No session	39	55.7
1-3 session	18	25.7
4-6 session	13	18.6
Total	70	100.0
Years of exp.in icu work		
1-5 years	49	70.0
6-10 years	18	25.7
11-15 years	3	4.3
Total	70	100.0

The analysis of this table shows (55.7 %) of the study sample were not trained and (70%) of them have (1-5) years of experiences .

Table (3): Distribution of the Nurses According to their Knowledge Domains

No	Knowledge Domains	Items Count	Knowledge Assessment of Study Sample (N=70)							
			Good Knowledge		Poor Knowledge		M.S	SD	R.S	Assess
1	Domains	N.	F	%	F	%				
A	Heart Valve Anatomy	7	26	37.1	44	62.9	1.3714	0.48	68.57	Low
B	Heart Valves Disease	5	21	30	49	70	1.3000	0.46	65	Low
C	Complication of Heart Valve Replacement	16	12	17.1	58	82.9	1.1714	0.37	58.57	Low
D	Nursing Care	7	25	35.7	45	64.3	1.3571	0.48	67.85	Low
2	Total knowledge	35	20	28.6	50	71.4	1.2857	0.45	64.28	Low

N: Number, F: Frequency, %: Percentage, M: Mean, S.D: Standard deviation, Assess: Assessment, R.S: Relative sufficiency

The analysis of this table reveals that the highest percentage of the study sample were poor knowledge of all domain. the domain (**Heart Valve Anatomy**) shows that(**62.9%**)poor knowledge while(**37.1%**)good knowledge (**M=1.3714**), the domain (**Heart Valves Disease**) shows that (70%) poor knowledge while(30%) good knowledge(**M=1.3000**), the domain(**Complication Heart Valve Replacement**) show that highest percentage of anther domain (**82.9%**) poor nursing knowledge about Complication Heart Valve Replacement while(**17.1%**) good knowledge(**M=1.1714**) and the domain(C) show that (**64.3%**) poor knowledge while(**35.7%**) good knowledge(**M=1.3571**).

Table (4): Association Between the Nurses knowledge And their Demographic Characteristics

Demographic Characteristics	Nurses knowledge				Total		Chi-Square Test			Sperman Correlation
	Good		Poor				Value	p-value	C.S	
	F	%	F	%	F	%				
Age										
20-29 Years	12	24.0	38	76.0	50	100.0	1.90	.387	(NS)	.163
30-39 Years	7	38.9	11	61.1	18	100.0				
40-49 Years	1	50.0	1	50.0	2	100.0				
Total	20	28.6	50	71.4	70	100.0				
Gender										
Male	11	50.0	11	50.0	22	100.0	7.21	.007	(HS)	-.321
Female	9	18.8	39	81.2	48	100.0				
Total	20	28.6	50	71.4	70	100.0				
Educational status										
Nursing School	0	0.0	15	100.0	15	100.0	13.20	.004	(HS)	.426
Nursing institute	5	21.7	18	78.3	23	100.0				
Nursing College	14	45.2	17	54.8	31	100.0				
Master & doctorate	1	100.0	0	0.0	1	100.0				
Total	20	28.6	50	71.4	70	100.0				
Training courses										
No session	4	10.3	35	89.7	39	100.0	21.50	.0001	(HS)	.546
1-3 session	6	33.3	12	66.7	18	100.0				
4-6 session	10	76.9	3	23.1	13	100.0				
Total	20	28.6	50	71.4	70	100.0				
Years of exp.in icu work										
1-5 years	12	24.5	37	75.5	49	100.0	2.73	.255	(NS)	.178
6-10 years	6	33.3	12	66.7	18	100.0				
11-15 years	2	66.7	1	33.3	3	100.0				
Total	20	28.6	50	71.4	70	100.0				

F: Frequency, %: Percentage , C. S : Comparison significant , H.S: High significant, S : Significant ,N.S: Non significant.

Table (4) demonstrate that there were no significant association between nurses knowledge and their age and years of experience in ICU work at p-value ≤ 0.05 .While there were significant association between education level, and there were correlate between nurses knowledge and their training courses in nursing at $P \leq 0.05$.

Discussion

The demographic characteristics of the present study revealed that the majority of nurses were females, The researcher believe that the reasons of that because the graduate of nursing secondary school were females and they are employee in Al Nasiriya city in recent years, This finding were supported by other study who reported that female nurses were more than half of research sample ⁽⁹⁾. Regarding age group this study reported that more than half of research sample were (20 to 29) years female, this finding is agreement with other study who reported similar result ⁽¹⁰⁾.

Regarding nursing education, the highest percentage of the respondents were graduate from high academic levels, this may because increased academic nursing level in the Al-Nasiriyah hospitals, this finding similar for other study ⁽¹¹⁾. The present study revealed the majority of respondents have less than six year experience, which acceptance with other study finding who reported data close to this result ⁽¹¹⁾.

The study reported there were indicator about nurses knowledge were moderately level related to valvular replacement complication prevention, and evidence in the study regarding domain (Complication Heart Valve Replacement), while indicated that more than half of nurses

Recommendations:

1. Improve the nurses knowledge toward prevention of complications of valves replacement surgery through instructional sessions and continuing education lectures to increase awareness of nurse's in ways of preventing complications of heart valve replacement.
2. A brochures and posters about preventions heart valve replacement surgery have to be conducted by the Ministry of Health to increase the nurses' awareness about the type of prevention for those nurses who are working within their hospitals.

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