Nurses, Knowledge Concerning an Implantation Pacemaker For Adult Patients with Cardiac Rhythm Disorder at Al-Nassirrhyia Heart Center

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معارف الممرضين المتعلقة بزراعة جهاز تنظيم ضربات القلب للمرضى البالغين المصابين باضطرابات الإيقاع القلبي في مركز الناصرية للقلب

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الخلاصة:

الهدف: تحديد معارف الممرضين المتعلقة بزراعة جهاز تنظيم ضربات القلب للمرضى البالغين المصابين باضطرابات الإيقاع القلبي،ولإيجاد العلاقة بين معارف الممرضين المتعلقة بزراعة جهاز تنظيم ضربات القلب للمرضى البالغين المصابين باضطرابات الإيقاع القلبي والخصائص الديموغرافية.

المنهجية: أجريت الدراسة خلال الفترة من الأول من تشرين الثاني 2014 إلى الأول من حزيران 2015.و شملت عينة البحث (100) ممرضمن العاملين في مركز الناصرية للقلب.وكانت العينة مأخوذة بطريقة العينة الملائمة(الغير إحتمالية). وتم جمع العينة من خلال تكوين استمارة استبيانية متكونة من جزئين (المعلومات الديموغرافية، معلومات الممرضين الخاصة بجهاز تنظيم ضربات القلب) وتم تحديد صدق الأداة من خلال عرضها على (13) خبيرا من ذوي الاختصاص ومن ثم تطبيق (الاختبار- وإعادة الاختبار) لتحديد ثبات الاستمارة من خلال حساب معامل الارتباط بيرسن (r= 0.82).وقد تم جمع العينة من 15 آذار الى 5 ايار.ان البيانات التي جمعت في البحث تم تفسيرها من خلال الاحصاء الوصفي(التكرارات ، النسبة ألمئوية،النسبة التراكمية والوسط الحسابي) والإحصاء ألاستنتاجي(معامل الارتباط بيرسون).

النتائج:بينت نتائج الدراسة أن الأغلبية (49٪) هم من الفئة العمرية (23-27) سنة، وكان معظم عينة الدراسة (60٪) منالإناث. وإن (52٪) كانت غالبيتهم من غير المتزوجين.وكانت (40%) إعدادية تمريض،وأشارت عينة الدراسة ان (46%) بين الدخل الشهري الكافي وغير الكافي،و(93٪) يعيشون في المناطق الحضرية، وغالبيتهم (21٪) يعمل في وحدة العناية التاجية و (11٪) منهم لديهم دورة تدريبية داخل العراق، (80٪) منهم لديه خدمة من (1-5) سنوات، (68٪) لديه خبرة في وحدات القلبية (1-3) سنوات ،وكان متوسط الدرجةأغلب العينة عالي.

الاستنتاج: وقد بينت نتائج الدراسة بأن معلومات الممرضين كانت جيدة وكافية، توجد علاقة بين معارف الممرضين والجنس وبيئة السكن وموقع العمل.

التوصيات:هناك حاجة لبرنامج توجيهي لجميع الممرضين الجدد، هناك حاجة لتحديث الأنشطة التعليمية. التدريب على المهارات لجميع الممرضينبخصوص جهاز تنظيم ضربات القلب ، ضرورة إجراء دراسة في ممارسات الممرضينبخصوص زراعة جهاز تنظيم ضربات القلب لأجل إثبات أكثر.

مفاتيح الكلمات: معارف الممرضين،جهاز تنظيم ضربات القلب ،المريض.

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Abstract

Objectives of the study: is to determine the knowledge of nurses concerning implantation pacemaker for adults patients with cardiac rhythm disorders, to find outthe relationship between nurses knowledge concerning implantation pacemaker for adult's patients with cardiac rhythm disorders and demographic characteristics.

Methodology: The study was performed November 2014 toJune 2015. A convenience (non-probability) sampleof the study consists of (100) nurses choose purposively who are working in Al-Nassirrhyia Heart Center (The data were collected the use of a questionnaire which were consisted of two parts (demographic data, nurses knowledge about pacemaker). Content validity of the questionnaire was determine through a panel of (13) experts. Reliability and validity of questionnaire was determined through test re-test (r= 0.82) of pilot study. The data collection process was performed from 15th of March until the 5th of May 2015.the data was analyzed through the application of descriptive statistical analysis that include (frequency, Percentages [%] and cumulative percent, Mean of scores), and the application of inferential statistical analysis that included the person correlation coefficient.

Results: The result of study shows that the majority (49%) of the age group was (23-27) years old and most of the study sample (60%) was male. Most of them (52%) were single and (40%) was secondary school nursing and between parley sufficient and insufficient in monthly income their livings (93%) were urban, more of the study sample was working in coronary care unit (21%) and (11%) of them were have training course all of them inside of Iraq and most of the study sample have once course training and (80%) of them were employ from (1-5) years with (1-3) years of experience in cardiac unit (68%), mean of score are moderate on item (1) and high on the remaining items.

Conclusion: Nurse's knowledge was sufficient and good, There is a relationship between nurses knowledge and gender, residential area and work site.

Recommendation: There is a need for an orientation program for all new nurses. There is need for implementan active updated educational activities. Skills training to all the nurses concerning of pacemaker. Farther study is necessary in nurse's practices concerning implantation pacemaker in order to demonstrate more clearly.

INTRODUCTION:

One of the major cardiovascular problems is cardiac rhythm disorder. Cardiac rhythm disorder is curable by temporary or permanent pacemakers, slow or irregular beats are replaced by regular impulses [1].Heart rhythm disorder leads to bradycardia. Bradycardia can also result in reduced tissue perfusion and congestive heart failure and dyspnea[2].When an arrhythmia is serious, may need urgent treatment to restore a normal rhythm. This may include implanting a temporary pacemaker to interrupt the arrhythmia, Pacemakers provide an artificial SA node or purkinjie system[3].

Pacemakers are used as single-chamber and dual-chamber in the rhythm changes accompanied by cardiac arrest. If the heart rate less than 60 beats (30-40 beats) per minute and the heart does not fulfill the requirements of tissue oxygen, to compensate for tissue hypoxia and abnormal heart rhythm, a pacemaker will be placed inside the atrial or atrioventricular sinus node and the continuation of life will be possible for patients with this device[4].

The placement of pacemakers in general is safe. However, as with any procedure, complications can occur. These include: infection, excessive bleeding, perforation of the heart muscle, stroke or myocardial infarction (heart attack), punctured lung, formation of hematoma (blood clot) inside the skin pocket. Also there are long-term risks of; dislodging of the pacemaker electrodes, fracture of an electrode tip, broken insulation on a pacemaker lead, a loose connection between a pacemaker lead and the pulse generator, in appropriate firing of the pacemaker and erosion (Wearing a way of the skin) of the skin pocket [5].

Caring of these patients requires knowledge about the device and its complications and the related factors and also the patient's hemodynamic condition, nurses' information and knowledge can be crucial and constructive in patients' training and hence the reduction of complications during the life with device [6].Providing nursing care and proper nursing processes for these patients can prevent complications and defects in the device performance [7].

Objectives:

1. To determine nurses knowledge concerning an implantation pacemaker for adult patients with cardiac rhythm disorders.
2. To find out relationship between nurses knowledge concerning an implantation pacemaker for adult patients with cardiac rhythm disorders and demographic characteristics such as (age, gender, marital status, occupation resident, monthly income, level of education and training).

METHODOLOGY:

Setting of the study: The study was carried out in Al-Nassirhyia Heart Center; between (December 2014- June 2015).The study was established by data collected from nurses working in CCU (coronary care unit)(21nurses), ICU (intensive care unit) (17nurses), Medical Wards (19 nurses), surgical Wards(14 nurses), consulting department (10 nurses), cardiac catheterization(19 nurses).

Design of the study: A descriptive study was carried out to determine and verify from nurses' knowledge concerning implantation of pacemaker for adult patients with cardiac rhythm disorder to achieve objective of the present study.

The Sample of the study: A non-probability (convenience) sample of (100) nurses. All the nurses who work in the AL Nasiriyah Heart Center CCU (coronary care unit), ICU (intensive care unit), and Medical Wards, surgical Wards, consulting department, cardiac catheterization. The total of the sample 40 males and 60 females and aged was 18 years and more.

Tool of the study: In order to assess of nurses' knowledge, a special questionnaire was prepared by the investigator. Knowledge assessment questionnaire consists of: 1-General information about pacemaker implantation (10 items). 2- Information concerning on nursing care for the implantation of pacemakerpre operative (5 items). 3- Information concerning on nursing care for the implantation of pacemaker if patient in the hospital (19 items). 4- Information concerning health education of the patient in the state of the patient out of the hospital (13 items). 5-Information concerning tips and advice provided to the patient and his relatives.

Data collection: The data were collected the use of a questionnaire. The data collection process was performed from 15th of March until the 5th of May 2015.

Statistical analysis: The following statistical data analysis approach by using (SPSS-ver.20) were used in order to analyze and assess the data of the study:The frequency and percentage and cumulative percentage to present the distribution of demographic characteristics. The frequency and percentage and mean of score to present the distribution level of the knowledge about pacemaker implantation. Person's Correlation Coefficients it was used to measure of how much linear relationship between the nurse's knowledge and their demographic characteristics.

RESULTS:

Table (1) Distribution of the sample (100) nurses according to personal information

Variables		F	(%)	Cumulative percentage
age	18-22 years	24	24.0	24.0
	23-27 years	49	49.0	73.0
	28-32 years	19	19.0	92.0
	33-37 years	4	4.0	96.0
	38-42 years	2	2.0	98.0
	43 years and more	2	2.0	100.0
Gender	Male	40	40.0	40.0
	Female	60	60.0	100.0
Marital status	Married	41	41.0	41.0
	Single	52	52.0	93.0
	Divorced	4	4.0	97.0
	Widowed	3	3.0	100.0
Level of Education	Nursingsecondary school	40	40.0	40.0
	Nursing Institute	35	35.0	75.0
	College of nursing	25	25.0	100.0
Monthly income	Sufficient	5	5.0	5.0
	Parley sufficient	46	46.0	51.0
	Insufficient	49	49.0	100.0
Residential area	Rural	7	7.0	7.0
	Urban	93	93.0	100.0

F: frequency, %: percentage

Table 1 shows that the majority (49%) of the age group was (23-27) years old and most of the study sample (60%) were male. Most of them (52%) were single and (40%) was secondary school nursing and between parley sufficient and insufficient in monthly income their livings (93%) were urban.

Table (2) Distribution of the sample (100) nurses in relation to workplace Information

Variables		F	(%)	Cumulative Percent
Workplace	Intensive care unit	17	17.0	17.0
	Coronary care unit	21	21.0	38.0
	Cardiac catheterization	19	19.0	57.0
	Consulting department	10	10.0	67.0
	Medical cardiac wards	19	19.0	86.0
	Surgical cardiac wards	14	14.0	100.0
Training courses	Yes	11	11.0	11.0
	No	89	89.0	100.0
Number of courses	No training	89	89.0	89.0
	Once course	8	8.0	97.0
	Twice course	2	2.0	99.0
	Third course	1	1.0	100.0
Inside or outside Iraq	Inside Iraq	10	10.0	100.0
Years of employment	1-5 Years	80	80.0	80.0
	6-10 Years	16	16.0	96.0
	11-15 Years	2	2.0	98.0
	16-20Years	1	1.0	99.0
	21 Years and more	1	1.0	100.0
Years of experience	1-3 years	68	68.0	68.0
	4-6 years	23	23.0	91.0
	7 year and more	9	9.0	100.0

F: frequency, %: percentage

Table 2 shows that the more of the study sample was working in coronary care unit (21%) and (11%) of them were have training course all of them inside of Iraq and most of the study sample have once course training and (80%) of them were employ from (1-5) years with (1-3) years of experience in cardiac unit (68%).

Table (3) The mean of score of the sample (100) nurses according to nurses, knowledge concerning the work of the pacemaker

No.	Items	I know	I do not sure	I do not know	M.S	Severity
1	Pacemaker is a device made from plastic and acetylcholine.	53	31	16	2.37	M
2	Pacemaker composed of three main parts are generator, wires and electrodes.	73	20	7	2.66	H
3	The temporary pacemaker works for hours or days period of time.	80	16	4	2.76	H
4	The permanent pacemaker works for years period of time	96	3	1	2.95	H
5	Permanent pacemaker implant under the skin in the upper area under the collarbone or elsewhere	93	6	1	2.92	H
6	Pacemaker placed in operation under local anesthesia or general anesthesia.	93	4	3	2.90	H
7	Patient needs for pacemaker when a defect in the electrical conductivity of the heart.	93	3	4	2.89	H

8	Temporary pacemaker used as a temporary and fast emergency treatment or until the implant permanent pacemaker device.	96	2	2	2.94	H
9	Temporary pacemaker needs nursing care more than permanent pacemaker	88	8	4	2.84	H
10	Surgical operation for permanent pacemaker done on the left side for most people and possible to be on the right side.	79	17	4	2.75	H

No.: number, M.S: mean of score

This table shows that the mean of score are moderate on item (1) and high on the remaining items.

Table (4) Correlation coefficient between (age, gender, marital status, educational level, monthly income, residence, location of employ, and training course) with nurses knowledge.

Correlation	Age	Gender	Marital	Education	Income	Residence	Location	Training
Age	1	-0.435[**]	-.095	0.068	-0.041	-0.107	0.080	-0.314[**]
Gender	-0.435[**]	1	0.363[**]	-0.004	0.140	0.010	0.232[*]	0.094
Marital	-0.095	0.363[**]	1	-0.030	0.016	-0.180	-0.035	0.078
Education	0.068	-0.004	-0.030	1	-0.051	-0.151	-0.176	-0.067
Income	-0.041	-0.041	0.016	-0.051	1	0.005	0.036	0.103
Residence	-0.107	-0.107	-0.180	-0.151	0.005	1	-0.059	0.153
Location	0.080	0.232[*]	-0.035	-0.176	0.036	-0.059	1	-0.193
Training	-0.314[**]	0.094	0.078	-0.067	0.103	0.153	-0.193	1
Knowledge	-0.022	0.260[**]	0.109	-0.064	0.039	0.214[*]	0.209[*]	-0.103

**correlation is significant at the 0.01 level (2-tailed).

*correlation is significant at the 0.05 level (2-tailed).

Table 4 shows that there is moderate positive relationship between nurses' knowledge with (gender, residence and location of employ) and no relationship between the remaining variables.

DISCUSSION

Throughout the course of the data analysis of the present study the finding showed that the majority, (49%) were (23-27) years old and lowest percentage (2%) were (43 years and more) years old. may be explained by the fact that younger nurses were freshly, more interested and motivated and mach active than the older. This result supported by many studies, their findings indicate that more of the studied nurses were between (20-30) years old [8,9,10]. Regarding the gender, highest percentage (60%) of the study sample were female and remaining (40%) were male. These results disagreed with the finding of many studies, which indicated that the majority of study nurses were male [8,9,10] And agreed with the finding of many studies, showed in their studies most nurses were female gender[11,12].

The nurses in Al-Nasiriyah Heart Center About (60%) were female and (40%) nurses were male according to my interview with the Associate Director for Nursing, and this related to Thi-qar Health Directorate policy in the distribution of nurses according to need of work and according to plan of it. Regarding the marital status, highest percentage (52%) were single, this supported by age group, the majority, (49%) were (23-27) years old, and years of employment (80%) of them were employ from (1-5) years, most of nurses were new employment and most of them younger, therefore ineligible for marriage according to opinion of the researcher. Regarding the level of education, highest percentage (40%) were secondary school nursing, this result supported by study, showed in this study a high percentage of nurses (47.4%) were secondary school nursing[9].In Al Nasiriyah Heart Center about (101) nurses from (242) were nursingsecondary school according to interview with the Associate Director for Nursing and

viewed of the nursing records.Regarding monthly income according to the opinion of the nurse, highest percentage (46%) wereparley sufficient and insufficient, difficulty of economic status and low Ministry of Health, salary compared to others ministries salaries such as Ministry of Oil,salary and Ministry of Electricity salary, therefore some of the nurses see that the salary is not enough for them according to opinion of the researcher. Regarding residential area, highest percentage (93%) were urban, the geographical location of the Al- Nasiriyah Heart Center in Al - Nasiriyah city provided an opportunity for the city's urban population of employment in this Center.

Regarding workplace, highest percentage (21%) were working in coronary care unit, this result of this study may be related to center policy in the distribution of nurses and according to the intensity of work. Regardingtraining courses, highest percentage (11%) were have training course all of them inside of Iraq and most of the study sample have once course training. These results agreed with the finding of many studies which were done in Iraq, their finding that higher percentage was for nurses who did not participate in have training course[8,10,13]. In the fact there is no any concern from Ministry of Iraqi Health in the training course inside or outside of Iraq. Regarding years of services, highest percentage (80%) of them were employ from (1-5) years, this results supported by study done by researcher, who finding indicate that most years of service were (1-5) years[13].Regardingyears of experience, highest percentage (68%) were with (1-3) years of experience in cardiac units, these results supported by results of many studies, their finding indicate that more nurses work experience less than 5 years[8,10,13].

The findings of the study sample show that the nurses,knowledge concerning the work of the pacemaker were high of mean score in the most of the items. (Table 3).This results supported by study, shows in their study that most of the participants gave correct answers to questions related to general CIED (cardiovascular implantable electronic device) (68%)[11],Implantation of a permanent pacemaker (PM) has been widely accepted and implemented worldwide as the treatment of choice for bradyarrhythmias[14].Pacemakers are being used with greater frequency for both conduction and arrhythmia problems in such patients [15].Permanent pacemakers are implanted during a short surgical procedure. The pulse generator is placed in a subcutaneous pocket created in the chest wall usually on the upper left part of the chest below the clavicle [16].The main parts of a pacemaker are the pulse generator, which contains the power source (typically a lithium iodide battery and a small electronic circuit), leads, and electrodes at the terminal ends of the leads [17].

The findings of the study sample show that there is moderate positive relationship between nurses' knowledge with (gender, residence and location of employ) and no relationship between the remaining variables (Table 4).

Concerning relationship between nurses' knowledge with gender, most studies which were done in Iraq concerning nurses knowledge in cardiology department, which indicated that the majority of study sample nurses were male and non-significant relationship between the gender and level of knowledge and nurses, knowledge was low[8,9], in this study most of study sample were female, and nurses knowledge was high, this mean female have knowledge more male especially single female according to researcher opinion.Concerning relationship between nurses' knowledge with residential area, the geographical location, most of nurses (93%) were urban and Heart Center in the Al Nasiriyah city, this means the geographical area has a great effect on the nurses level of knowledge. In relation to correlation between location of employ and nurses, knowledge, this study finding revealed that there was a significant statistical correlation. This finding is supported by many studies, showed in their study there was an association between the knowledge scores and the 'worksites' of the nurses[9,11,12].this result means that the location of employ has a great effect on the nurses level of knowledge and the nurses can be develop their knowledge through the location of employ.

CONCLUSIONS:

There is good and adequate nurses' knowledge, nurses get more information about pacemaker through practices and daily lectures in continuing education hall. There is a relationship between nurse's knowledge and gender, residential area and work site.

RECOMMENDATIONS:

According to the results of the study, the researcher puts the following recommendations:

1. There is a need for an orientation program for all new nurses.
2. There is need for implementan active updated educational activities.
3. Skills training to all the nurses concerning of pacemaker.
4. Farther study is necessary in nurse's practices concerning implantation pacemaker in order to demonstrate more clearly.
5. Facility for nurses to complete their studies through coordination between ministries and missions of interest.

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