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Nurses knowledge towards atrial fibrillation in cardiac care unit in babylon governorate

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***Abstract*---**Background: Atrial fibrillation is an irregular, often very rapid heartbeat that can lead to clots and increase the risk of stroke, heart failure and other heart-related complications. Nurses' knowledge of patient management is critical in the cardiac care wards. Therefore, the study aimed to assess nurses knowledge towards atrial fibrillation and determine the differences in knowledge with regards socio-demographic variables. Methods: A descriptive cross-sectional study was conducted with an purposive sample of 200 nurses was selected through the use a non-probability sampling approach. This sample was distributed throughout three cardiac care unit according to the Babel Health Directorate, including (Margan Teaching hospital, Shahid AL-Mihrab center and Imam AL-Sadiq Hospital). The reliability of the questionnaire was achieved through a pilot study and then presented to experts to prove its validity. The total number of items included in the questionnaire was 40-items. The data was collected by using the self-report method and analyzed by the application of descriptive and inferential statistical data analysis approach. Results: The results of the study indicated that (55%) of the nurses exhibited a poor level of knowledge about atrial fibrillation. There were significant relationship differences in knowledge with regards nurses gender (p=0.000), education level (p=0.000), years of experience (p=0.000) and number of training sessions (p=0.028). Conclusions: A male and bachelors nurses who have more than 5 years of experience and trained are qualified to work in cardiac care units. More years of experience and training the staff by the implementation of periodic education sessions which indeed helps to develop their knowledge. It is need to be educational program presented to nurses who order to improve their level knowledge toward atrial fibrillation and encourages them by testing periodically to retrieve their information.

***Keywords*---**knowledge, nurses, atrial fibrillation.

Introduction

Is an abnormal heart rhythm (arrhythmia) characterized by rapid and irregular beating of the atrial chambers of the heart [1]. It often begins as short periods of abnormal beating, which become longer or continuous over time [2]. It may also start as other forms of arrhythmia such as atrial flutter that then transform into AF [3]. Episodes can be asymptomatic [4] Symptomatic episodes may involve heart palpitations, fainting, lightheadedness, shortness of breath, or chest pain[5]. Atrial fibrillation is associated with an increased risk of heart failure, dementia, and stroke [3]. It is a type of supraventricular tachycardia [6]. Atrial fibrillation is the most common arrhythmia and affects more than 33 million people worldwide [7]. In Europe and North America, as of 2014, it affects about 2% to 3% of the population [8]. This is an increase from 0.4 to 1% of the population around 2005 [9]. In the developing world, rates are about 0.6% for males and 0.4% for females [9] The number of people diagnosed with AF has increased due to better detection of silent AF and increasing age and conditions that predispose to it [10]. Nurses working in CCU should be highly qualified and able to provide an effective care around -the -clock, with ratio of one nurse to one patient [11].Therefore, the study aimed to assess nurses knowledge towards atrial fibrillation and determine the differences in knowledge with regards socio-demographic variables.

Methodology

To investigate the knowledge among nurses toward atrial fibrillation. Throughout the non-probability sampling method, a purposive sample of (200) nurses who work in critical care unit in Babylon province/ Iraq. A constructed questionnaire includes (socio-demographic data and knowledge question composed 40-items about atrial fibrillation), data was collection through the use of a questionnaire and self report. Validity was given to a panel of 11 arbitrators were asked to offer their opinions and suggestions on each of the study questionnaire's components in terms of language appropriateness, association with the dimension of study variables to which it was assigned, and suitability for the study population. To assess the questionnaire's reliability, data were collected from nurses, and the test was administered to 20 subjects from the study population who were not part of the original sample. Cronbach's alpha was discovered to be 0.81. The SPSS version 20.0 software application was used to conduct statistical analysis (SPSS). The information was evenly distributed. One-way analysis of variance and independent sample *t test* were used to examine variations in variables based on socio-demographic characteristics. For continuous variables, descriptive data is reported as mean standard deviation, and for categorical variables, it is shown as number (percent). Statistical significance was defined as a p 0.05.

Results

Finding show participants age, the mean age is 26, the age 20-29 years old were recorded the highest percentage (*n=162*; 81%), followed by those who are age 30-

39 years old (*n=26*; 13%), followed by those who are age 40-49 years and old (*n=8*; 4%), and followed by those who are age ≥ 50 years old (*n=4*; 2%). In regard with gender, the male nurses were constituted more than half (*n=104*; 52%), as compared with those who are female nurses (*n=96*; 48%). Respected to the education level, the diploma in nursing were recorded the highest percentage (*n=109*; 54.5%), followed by those who are bachelors nurses (*n=51*; 25.5%), followed by those who are secondary school nursing (*n=38*; 19%), and followed by those who are postgraduate (*n=2*; 1%). In terms of years of experience, nurses expressed less than five years of experience (*n=106*; 53%), followed by those who had 5-10 years (*n=76*; 38%) and followed by those who had more than 10 years (*n=18*; 9%). Years of experience in CCU, it is obvious from findings that the five years of experience were predominated (*n=160*; 80%), followed by those who had 5-10 years (*n=32*; 16%) and followed by those who had more than 10 years (*n=8*; 4%). Training sessions related findings, the most of nurses participated in one sessions (*n=89*; 44.5%), as compared with those who are more than 2 sessions (*n=59*; 29.2%).

Table 1
Sample Characteristics

Demographic Variables	Class	n=200	%
Age/years (M± SD= 26.98+5.797)	20-29years old	162	81.0
	30-39years old	26	13.0
	40-49years old	8	4.0
	≥50 years old	4	2.0
Gender	Male	104	52.0
	Female	96	48.0
Education Level	Secondary school nursing	38	19.0
	Diploma nursing	109	54.5
	Bachelors nursing	51	25.5
	Postgraduate nursing	2	1.0
Years of experience	<5 years	106	53.0
	5-10 years	76	38.0
	>10 years	18	9.0
Experience in CCU	<5 years	160	80.0
	5-10 years	32	16.0
	>10 years	8	4.0
Training related to AF	No trained	52	26.0
	One sessions	89	44.5
	Two and more sessions	59	29.5

The analysis in table (2) of knowledge atrial fibrillation disorder in cardiac care unit at *Mean ± SD=52.87 ± 11.900*; and according to the study criteria, the nurses expressed a poor level of knowledge (*n=110*; 55%).

Table 2
Nurses Knowledge

Weighted	Freq.	%	M ± SD
Poor (M=40-53)	110	55.0	52.87 ± 11.900
Fair (M=54-66)	54	27.0	
Good (M=67-80)	36	18.0	
Total	200	100.0	

M: Mean for total score, SD=Standard Deviation for total score

Findings in table (3) demonstrated that there is no-significant differences in nurses knowledge related to atrial fibrillation disorder with regard to age groups *(p>0.05*).

Table 3
Statistical Significant Differences between Nurses' Knowledge and their Age (n=200)

Age Variables	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Knowledge	Between Groups	.274	3	.091	1.033	.379
	Within Groups	17.341	196	.088		
	Total	17.615	199			

Findings in table (4) demonstrated that there highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to those who are male and female nurses (*p<0.01*).

Table 4
Statistical Significant Differences between Nurses' Knowledge and their Gender (n=200)

	Gender	Mean	SD	t-value	d.f	*p≤ 0.05*
Nurses Knowledge	Male	1.45	.273	7.381	198	*0.000*
	Female	1.17	.253			

Findings demonstrated that there is a highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to education level (p<0.01).

Table 5
Statistical Significant Differences between Nurses' Knowledge and their Education Level (n=200)

Education Variables	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Knowledge	Between Groups	8.249	3	2.750	57.542	.000

	Within Groups	9.366	196	.048		
	Total	17.615	199			

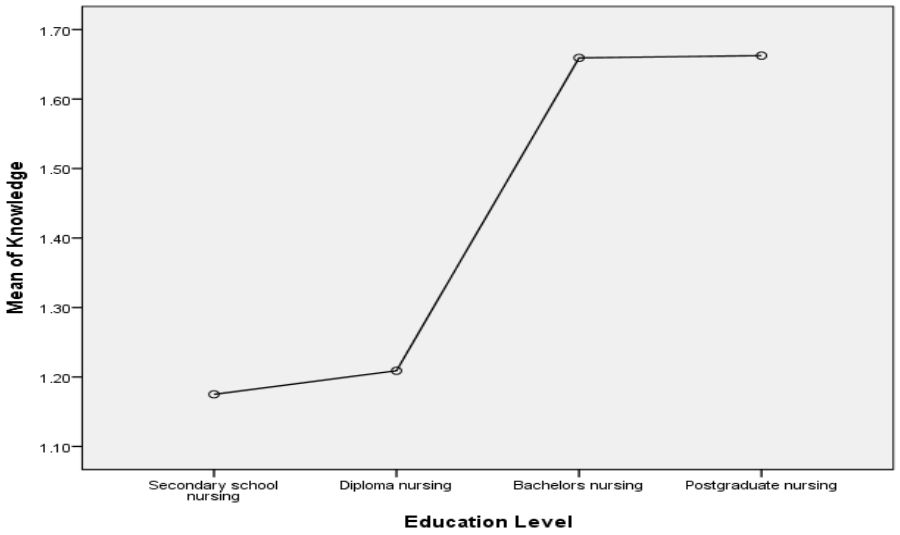

Figure 1. Distribution of Nurses Knowledge according to Education Level

Findings in table (6) demonstrated that there is a highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to years of experience ($p<0.01$).

Table 6
Statistical Significant Differences between Nurses' Knowledge and their Years of Experience (n=200)

Years Experiences	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Knowledge	Between Groups	5.637	2	2.818	46.353	.000
	Within Groups	11.978	197	.061		
	Total	17.615	199			

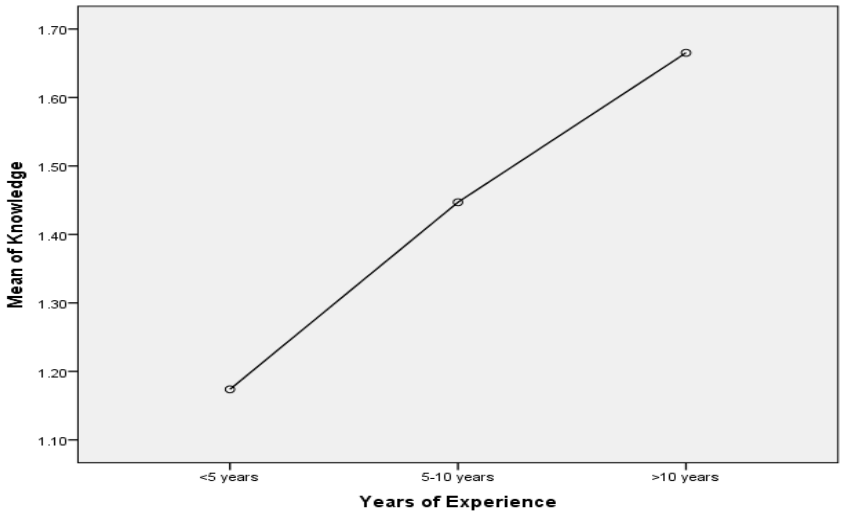

Figure 2. Distribution of Nurses Knowledge according to Years of Experience

Findings in table (7) demonstrated that there is a highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to years of experience in critical care unit ($p<0.01$).

Table 7
Statistical Significant Differences between Nurses' Knowledge and their Years of Experience in CCU (n=200)

Experiences in CCU	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Knowledge	Between Groups	4.265	2	2.132	31.468	.000
	Within Groups	13.350	197	.068		
	Total	17.615	199			

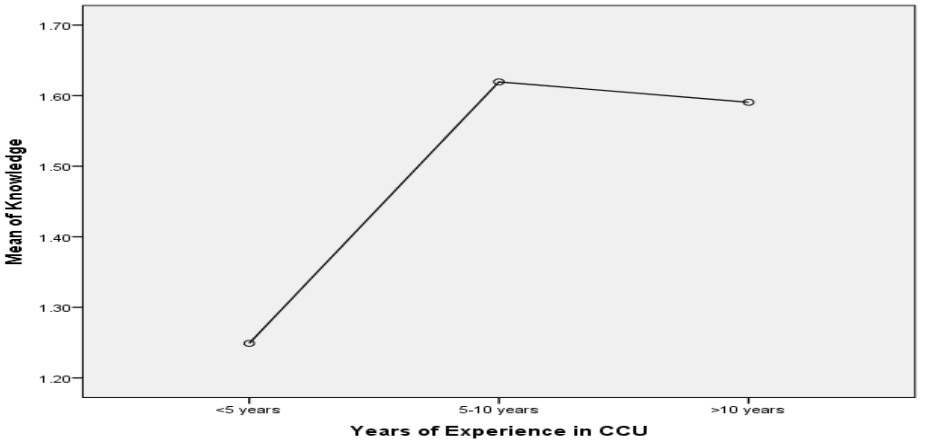

Figure 3. Distribution of Nurses Knowledge according to Years of Experience in CCU

Findings in table (8) demonstrated that there is a significant differences in nurses knowledge related to atrial fibrillation disorder with regard to number of training sessions ($p<0.05$).

Table 8
Statistical Significant Differences between Nurses' Knowledge and their Training Sessions (n=200)

Training Sessions	Source of variance	Sum of Squares	d.f	Mean Square	F	*p≤ 0.05*
Nurses Knowledge	Between Groups	.626	2	.313	3.629	.028
	Within Groups	16.989	197	.086		
	Total	17.615	199			

Figure 4. Distribution of Nurses Knowledge according to Number of Training Sessions

Discussion

Atrial fibrillation is the third commonest cause of cardiovascular death after coronary artery disease and stroke. Treatment and management of such patients is a major nursing role. Therefore, the best management of atrial fibrillation is through prevention of risk factors and need to be best qualified staff. A total of 40 multiple choice questions were used to measure the knowledge of respondents regarding atrial fibrillation and the mean score was 67-80 as a greater level, 54-66 as moderate level and 40-53 as a lower level. In current study findings, the *M ± SD=52.87 ± 11.900*; and according to the study criteria, the nurses expressed a poor level of knowledge with regards atrial fibrillation disorder. From current findings, nurses work in cardiac care unit need to be intensive and continuous training courses because knowledge affects their practices and management of the patient. This findings com consisting with Ferguson et al. (2019), stated that

the nurses in different qualification need education program to improve their knowledge and management of patients who admitted in cardiac care unit [12].

Also, findings matched Mahramus et al.,(2014), in their study "assessment of an educational intervention on nurses' knowledge and retention of heart failure self-care principles and the teach back method" they concluded their results by emphasizing that there is a deficit knowledge of nurses' about self-management for heart failure prior to participation in the educational intervention [13]. The a novel mHealth, smartphone-based, spaced-learning intervention on nurses' knowledge of atrial fibrillation and anticoagulation (EVICOAG) confirmed intervention improved nurses' knowledge of atrial fibrillation and anticoagulation, and influenced their uptake and use of stroke and bleeding risk assessment tools in clinical practice. The low knowledge regarding atrial fibrillation resulting of many reasons include the degree of education, the better knowledge score among academic nurses than the diploma nurses, the less of employment years and dimensioned of training sessions, in addition the availability of health resources not related to standard global and missing lack of monitoring by health authorities and failure to conduct periodic assessment and examinations related to work duties, all that's lead to decreased level of knowledge.

Nurses Knowledge and their Age

Findings demonstrated that there is no-significant differences in nurses knowledge related to atrial fibrillation disorder with regard to age groups (p=379). The age of nurses ranged from 21 years to more than 50 years. The absence of a significant difference in the knowledge of nurses in relation to their ages, this means that knowledge is not affected by different ages, as the younger one carries the same knowledge as the older one. So the age variable is not important in terms of improving the knowledge of nurses who work in cardiac care units. In these regards, Hendriks et al. (2013), nurses knowledge scale about atrial fibrillation were not influenced by nurses age groups due to the nurses' responses were close to the same degree of knowledge [14].

Nurses Knowledge and their Gender

Findings demonstrated that there highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to those who are male and female (p=0.000). These findings imply that gender plays a role in the knowledge of nurses in the cardiac care wards. Where the significant differences were in favor of male nurses (M ± SD= 1.45±0.273) more than female nurses (M ± SD= 1.17±0.253), meaning that reliance on male nurses in those wards or that consideration should be taken in training of female nurses. Ferguson et al. (2016), depicted in their findings there were significant differences in knowledge scores between male nurses and female nurses with regards atrial fibrillation. The differences were in favor of male nurses and it is important to take into account the training of female nurses more than male [15].

Nurses Knowledge and their Education Level

Findings demonstrated that there is a highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to education level ($p<0.01$). Nurses knowledge significantly increased with high level of education, the Postgraduate and Bachelors graduated were records the increased mean knowledge. On the contrary, the graduates of the diploma and the nursing school recorded a lower level of knowledge. These differences in educational levels confirm that relying on nurses who are graduates of nursing colleges (bachelor's) improves the results of knowledge about atrial fibrillation. The Department of Health and decision makers must adopt this. Page et al. (2016), confirmed that the depending on academic nurses in critical care which improve patients care and management [16]. As confirmed by Whelton et al. (2018), critical wards, such as those that receive cardiac and respiratory patients, need qualified nurses [17]. With standard of American Heart Association, and the American, critical care nurses were maturation in academic curriculum [18].

Nurses Knowledge and their Experience

Findings demonstrated that there is a highly significant differences in nurses knowledge related to atrial fibrillation disorder with regard to years of experience ($p=0.000$). Years of experience is a very important factor in addition to the educational level. Through the results, it confirms that the more years of experience, the higher the average knowledge. The significant differences in years of experience were in favor of the nurses who had more than 10 years of experience, and the nurses who had 5 to 10 years of experience had better knowledge than those who had less than 5 years. Ullah et al. (2021), the poor knowledge were significantly associated with less years of experience [19]. Ali et al. (2015), more years of experience of critical nurses were improve their knowledge and performance [20]. The nurses' knowledge with regards atrial fibrillation was poor (55%) because of their less experience (53%) had less than 5 years of experience and (80%) of them had less than 5 years in cardiac care unit. Galvin (2018) confirmed that the years of experience play an important role in the knowledge and practice of critical care wards [21]. Reliance on experienced nurses is important in critical wards such as cardiac care, and testing them periodically is critical [22].

Nurses Knowledge and their Number of Training Sessions

Findings demonstrated that there is a significant differences in nurses knowledge related to atrial fibrillation disorder with regard to number of training sessions ($p<0.05$). A forty-four percentage of nurses were attended one sessions of training related to atrial fibrillation. According to the current results, the more training sessions, the more knowledge. The significant differences were in favor of those who had more than two training sessions. Clarkesmith et al. (2017), there were significant difference in nurses knowledge with training [23]. The poor of knowledge were associated with no participating in training [24]. Nurses exhibit a poor level of knowledge, and after of application of education training expressed a good level of knowledge [25]. Nurses were knowledgeable in cardiac care unit due to (100%) of them were trained [26].

Conclusion

A male and bachelors nurses who have more than 5 years of experience and trained are qualified to work in cardiac care units. More years of experience and training the staff by the implementation of periodic education sessions which indeed helps to develop their knowledge. It is need to be educational program presented to nurses who order to improve their level knowledge toward atrial fibrillation and encourages them by testing periodically to retrieve their information.

Ethical Clearance

"All experimental protocols were approved under the Babylon Health Directorate, Iraq and all experiments were carried out in accordance with approved guidelines".

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