RESEARCH ARTICLE

AWARENESS OF NURSING STUDENTS AT AAUP TOWARDS USING INFECTION CONTROL STRATEGIES IN HOSPITALS

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ARTICLE INFO	ABSTRACT
  ***Corresponding author:* Anabtawi, R.N.**	Risk factors for infection include improper care for patients, and incorrect practice of infection control strategies, for that there is a need to increase the level of awareness toward infection control strategies, and to improve the practice techniques in using such strategies. In addition there is a great concern in improving the awareness of nursing students as they are trained in hospitals and they are in direct contact with patients. The purpose of this study is to assess the level of knowledge, attitude, and practice of nursing students' toward using infection control strategies in hospitals. Descriptive design was used to conduct this study, 95 nurses' students were randomly selected and included from different academic year at AAUP. The results of the study revealed that there were no significance relationship between nursing students knowledge towards infection control strategies used in hospital according to gender, academic year, and wards that have been trained in. Also there were no significance relationship between their awareness and attitude according to gender, educational level, and while in wards being trained in the result showed a significant relationship. In addition to a significance relationship between students awareness and practice according to gender, and there is no significance relationship between awareness and practice according to level of education and wards being trained in. In conclusion there must be more focus on infection control in the university lectures. In addition to initiate workshops to enhance knowledge, attitude and practice towards infection control among nursing students.

INTRODUCTION

Health-care associated infections are a major safety concern worldwide for both patients and health-care providers (Nejad, 2011). Infection-related diseases are the main cause of death in the world, according to World Health Organization statistics (WHO, 2010). The increase in infection-related diseases impacts the increase health financing (WHO, 2016). Nurses are on the front lines who can explain infection control procedures to the patients (Stone, 2013). Risk factors for infection-related diseases include lack of proper health care facilities such as isolation units, sinks, bed space; appropriate waste management, decontamination of equipment and hand hygiene facilities (Shahida *et al*., 2016). Education about hand hygiene is a primary healthy preventive measure and safe method against infectious diseases (WHO, 2016). Safe handling of sharps by using sharps box is also considered as a primary prevention (Salama, 2015) in addition to safe injection practice is a primary intervention for prevention of infection (WHO, 2016). Using the personal protective equipment and perform appropriate ventilation are good examples of secondary infection prevention as reported by the Institute for Work and Health (Institute for Work and Health, 2015), another example

of secondary infection prevention Practice is hand hygiene, and maintenance of an indwelling catheter (Parryford, 2015). All nurses, in all their roles can prevent and control infection by using their knowledge, experience and apply decisions towards starting appropriate interventions (Olin, 2012). The majority of nurses have good knowledge and practice about nosocomial infections control in hospitals (Najafi *et al*., 2017). Knowledge and awareness of infection control practices among nurses were good in a tertiary care hospital in Ludhiana, India (Kanwalpreet *et al*., 2013). A measure was used to assess the compliance of baccalaureate nursing students in a Saudi university for using the standard precautions; it was revealed that there was a high compliance rate in disposing of used acute tools and other acute objects into specified boxes, whereas using water for hand washing had the lowest rates of compliance (Coleta *et al*., 2017). Adequate level of knowledge associated infections among nursing students, regarding to the suitable hand Hygiene (HH) the knowledge was hardly adequate by the third year students, and the level of knowledge about healthcare associated infections (HAI) was not enough (Brosio *et al*., 2017). Knowledge, attitude, and awareness of infection prevention and control among medical students were not enough as showed in the results of a study (Ibrahim, 2016).

Awareness about infection prevention practices was not enough among medical students and there was a better understood of needle-stick injuries and the use of standard precautions (Kulkarni *et al.*, 2013). A study conducted in a tertiary care medical college and hospital in North India that found a positive impact of educational program in improving knowledge and skills towards prevention and control of hospital associated infections (Dogra *et al.*, 2015). The main purpose of the study is to assess the level of knowledge, attitude, and practice of nursing students' toward using infection control strategies in hospitals. In addition to increase the awareness of nursing students for the importance of using infection controls strategies in reducing spreading of infection in hospitals. The significant of this study came from the lack of prior local studies that discussed or assessed the level of nurses' student's knowledge, attitude, and practices towards using infection control protocols in hospitals.

MATERIALS AND METHODS

Research design: Cross sectional descriptive design used, and a questionnaire was build up based on previous studies. The studied sample was selected randomly from 95 nursing students at Arab American University in Palestine who are in their second, third, and fourth academic year. This research was conducted in two phases. The first phase involved which reviewing relevant literatures, research, journals, publications, official reports and related information. The second phase was the primary research and involved collection of primary data via survey research with structured questionnaires.

The instrument of the study consisted of two parts; Part one consisted of demographic data of the studied research sample, part two: consisted of three tables that assessing the knowledge, attitude, and practice of nursing students at AAUP towards using infection control strategies in hospital. The data was analyzed by using Statistical Package for Social Sciences (SPSS), and the results were tabulated and discussed.

Ethical considerations: For ethical considerations a permission to conduct the study in the hospitals were obtained from the authorized personnel, and consent form were signed from the nursing students who were included in the studied sample. Every participant in the study received an explanation about the purpose of the study, participation in the study was voluntary and all data and information's gathered was strictly confidential, moreover, the participant had the right to withdrew at any time if he or she can't complete the questionnaire.

RESULTS AND DISCUSSION

Statistical analysis: The total number of participants in the study was 95 nursing students from different academic level at Arab American University in Palestine, all of them answer the questionnaire completely. The included sample consisted 54.7% (n-52), while 45.3% (n=43) of them were female. 50.5% (n=48) of nursing students were in fourth academic year, 35.8% (n=34) were in third year, and 13.7% (n=13) of them were in their 2nd academic year. The results also revealed 26.3% (n=25) were trained in all wards in hospital, 20.2% (n=19) in paediatrics wards, 12.6% (n=12) in surgical wards, 11.6 %

Table 1. Description of the characteristics of the nurses students' participants (n=95).

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	52	54.7	54.7	54.7
	Female	43	45.3	45.3	100.0
	Total	95	100.0	100.0	
Educational Level	2 year	13	13.7	13.7	13.7
	3 year	34	35.8	35.8	49.5
	4 year	48	50.5	50.5	100.0
	Total	95	100.0	100.0	
Wards Trained In	Medical	11	11.6	11.6	11.6
	surgical	12	12.6	12.6	24.2
	gynecology	6	6.3	6.3	30.5
	pediatric	19	20.0	20.0	50.5
	emergency	10	10.5	10.5	61.1
	others	6	6.3	6.3	67.4
	all wards	25	26.3	26.3	93.7
	more than two	6	6.3	6.3	100.0
	Total	95	100.0	100.0	

Table 2. Description of the level of knowledge, attitude and practice of nurses students' participants (n=95)

		Frequency	Percent	Valid Percent	Cumulative Percent
Level of Knowledge	low level	35	36.8	36.8	36.8
	moderate level	54	56.8	56.8	93.7
	good level	6	6.3	6.3	100.0
	Total	95	100.0	100.0	
Attitude Level	low level	56	58.9	58.9	58.9
	moderate level	34	35.8	35.8	94.7
	good level	5	5.3	5.3	100.0
	Total	95	100.0	100.0	
Practice Level	low level	54	56.8	58.1	58.1
	moderate level	35	36.8	37.6	95.7
	good level	6	7.1	4.3	100.0
	Total	95	100.0		

Table 3. Description of t-test results that shows the significance between nursing students' knowledge towards infection control strategies used in hospital according to gender, educational level and wards trained in

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Gender	Equal variances assumed	.768	.383	.536	88
	Equal variances not assumed			.537	69.856
Educational Level	Equal variances assumed	.115	.735	1.540	88
	Equal variances not assumed			1.531	68.431
Wards trained in	Equal variances assumed	.042	.838	.102	88
	Equal variances not assumed			.103	70.909

Table 4. Description of t-test results that shows the significance between nursing students' attitudes towards infection control strategies used in hospital according to gender, educational level and wards trained in

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Gender	Equal variances assumed	.656	.420	1.249	87
	Equal variances not assumed			1.244	71.753
Educational Level	Equal variances assumed	.045	.832	-.885-	87
	Equal variances not assumed			-.876-	70.304
Wards trained in	Equal variances assumed	13.129	.000	1.775	87
	Equal variances not assumed			1.626	52.714

Table 5. Description of t-test results that shows the significance between nursing students' practice towards infection control strategies used in hospital according to gender, educational level and wards trained in

T-Test for Assessing Practice

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
Gender	Equal variances assumed	6.819	.011	4.195	87
	Equal variances not assumed			4.307	78.957
Educational level	Equal variances assumed	4.087	.046	1.482	87
	Equal variances not assumed			1.556	83.306
Wards trained in	Equal variances assumed	.427	.515	-.328-	87
	Equal variances not assumed			-.321-	67.560

(n=11) in medical wards, 10.5% (n=10) in emergency wards, 6.3% (n=6) in gynecology wards, 6.3% (n=6) in different wards, and 6.3% (n=6) trained in more than two wards, as seen in Table 1. Table 2 shows 56.8% (n=54) of nursing students have moderate level of knowledge towards infection control strategies in hospital, 36.8% (n=35) of them have low level of knowledge, and only 6.3% (n=6) have good level of knowledge. 58.9% (n=56) have low attitude level towards infection control strategies used in hospital, 35.8% (n=34) have moderate attitude level, and 5.3%. (n=5) have good attitude level. According to practicing infection control strategies, 56.8% (n=54) of participants reported that they have low level of practice, 36.8% (n=35) them have moderate level of practice, and 7.1% (n=6) only have good level of practice towards infection control strategies used in hospital.

T-Test results: The t-test results showed in Table 3 that there is no significance relationship between nursing students knowledge towards infection control strategies used in hospital.

According to gender 0.383, according to level of education 0.735, and according to wards trained in 0.838. Being male and taking training associated significantly with knowledge of prevention the infection (Teshager, 2015). The same study showed that being female and being of diploma level were factors which were significantly associated with good practice of infection, this result was not consistence with the results of this study. It was found that well educated nurses were scored high levels of awareness of infection more than nurses with low awareness (Hammoud *et al*., 2017). As showed in Table 4, there were no significance relationship between awareness of nursing students towards infection strategies in hospital and attitude according to gender, educational level, as the result of T-test were 0.420, 0.832 retrospective, while in wards being trained in the result showed a significant relationship with p=0.000. This result is not consistent with study which concluded that nurses with high levels of awareness of infection were well educated (Bergstrom, 2014). The t-test results revealed a significance relationship between nursing students practices towards infection strategies used in hospital

according gender 0.011 as showed Table 5, and there is no significant 0.046 in level of education also according to wards trained in 0.515. The result is not consistent with a previous study that concluded the education is an effective factor in practice of infection control (Hammoud *et al.*, 2017). Regarding nursing students practice and its relation to the wards being trained in, the results is not stand by previous studies that showed a significant relationship with the unit of training (Nejad *et al.*, 2011; Shahida *et al.*, 2016), a result of a study revealed a significant relationship between nursing students practice and wards being trained in (Bergstrom, 2014).

Conclusion

In conclusion the study showed that there were no significance relationship between awareness of nursing students towards infection strategies used in hospital according to gender, educational level, and wards being trained in. In addition to no significance relationship between awareness of nursing students towards infection strategies used in hospital and attitude according to gender, educational level, and while in wards being trained in the result showed a significant relationship. The study results revealed that there is a significance relationship between practice of nursing students towards infection strategies in hospital according to gender, no significance relationship between practice of nursing students towards infection strategies in hospital according to level of education and wards trained in. According to the results there must be more focus on infection control in the university lectures, and develop training workshops for nursing students to enhance knowledge, attitude and practice towards infection control. Increase the efforts towards knowledge updating for nursing students regarding infection prevention activities.

Acknowledgements

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