Nurses' Attitudes Toward Basic Life Support: A Descriptive Cross-Sectional Study from Palestine (West Bank)

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Abstract
Aim: To examine the attitudes of nurses in Palestine (West Bank) toward basic life support (BLS). Method: A descriptive cross-sectional design was used in this study, and self-administered questionnaires were distributed among nurses for the purpose of assessing their attitudes toward BLS. The attitude scale consisted of 3-point Likert scale with 15 items, and the answers were (1 = disagree, 2 = Neutral, and 3 = Agree). Results: Over half of the participants were male (54.6%, n = 59), and the majority had a bachelor's degree in nursing (75%, n = 85). The majority of participants' age group was 20-29 years old (76.9%, n = 83). More than half of nurses (67.6%, n = 73) had 1-5 years of experience in nursing. The results of this study revealed that participants mean score on attitudes toward BLS was (M = 2.55, SD =.256) out of 3. Most nurses had positive attitude (>75%) toward BLS with (62%, n= 67). However, the majority of participants said that prognosis of resuscitated patient is poor (M = 2.19, SD = .712), and they cannot perform CPR on their own (M = 2.32, SD = .795). The results showed no statistically significant difference between attitudes total score of nurses and their socio-demographics, except if they had previous exposure and deal with cardiac arrest (t = 2.071, p = .041) and if they had BLS guidelines in their units (t = 2.901, p = .005). Knowing that nurses who had previous exposure and deal with cardiac arrest and who reported the presence of guidelines in their units, have more mean positive attitudes. Conclusions: In general, attitudes toward BLS among nurses were positive. However, efforts to improve nursing attitudes regarding the perception of the poor prognosis of CPR and performing CPR on their own should be highlighted and it is crucial to booster their attitudes into more positive readings. This may will have a beneficial impact of their knowledge and practice of CPR that may eventually improve cardiac arrest victims' outcome. Future research to assess nurses' knowledge and practice of BLS, and the effect of positive attitudes on patients' outcomes is recommended.
Keywords: *"Attitude"*, "Basic life support", "nursing.

1. Introduction

Cardiovascular disease (CVD) is the leading cause of death worldwide with a prevalence of annual 17.3 million deaths (WHO, 2017). In the United States (US), around 209,000 in hospital cardiac arrest (IHCA) occurred in 2016 (American Heart Association (AHA), 2018). In China, there are more than 230 million people with cardiovascular disease, and 550,000 individuals experience cardiac arrest every year (Xu et al., 2017). In European countries, IHCA is a major cause of death, and causes a tremendous burden on their healthcare systems and resources (Nichols et al., 2014). In Australia, the incidence of out of hospital cardiac arrest (OHCA) was approximately 25 000 annually. The prevalence of IHCA has been estimated as 1–5/1000 hospital admissions in developed countries (Kolte et al., 2015).

In Mediterranean region, there are a high number of CVD and cardiac arrest (CA) cases as well. For instance, in Iran, 50% of all deaths each year and 79% of deaths related to chronic diseases are attributed to cardiovascular diseases (Sadeghi et al., 2017). In Jordan, a retrospective observational study conducted in one of the north hospitals between 2014 and 2015 revealed a total of 79 (OHCA) and 257 IHCA, the overall survival rate for OHCA was 2.97% and the survival rate increased to 4.3% if CPR performed before arriving the hospital. Only 22% of the OHCA cases had CPR performed mainly due to lack of knowledge and skills of bystanders. The survival rate for IHCA was 14.88%. (Raffee et al., 2017). The high numbers of CA cases require training programs such as Basic Life Support (BLS) to deal with such cases and increase survival rate (AHA, 2020).

The first line response to cardiac arrest (CA) is BLS and/or Advanced Life Support (ALS). Healthcare providers working in Emergency Departments (EDs), Intensive care units (ICU) and across healthcare facilities where in-hospital resuscitation, and out of hospital require to gain a highly qualified knowledge and skills to perform BLS in a way to decrease the death resulting from CA cases (AHA, 2020). However, nurses were found to have low level of practicing BLS guidelines (Toubasi et al., 2015).

In Palestine, few studies were conducted regarding BLS. Up to the researcher's knowledge, only two studies found after search, which studied the BLS training program. A descriptive cross-sectional study compared the level of BLS knowledge between 150 professional nurses and 150 nursing students; the study revealed that nurses have higher level of knowledge than nursing students (Salameh et al., 2018). The other

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study assessed school teachers' knowledge and attitude regarding BLS and more than half of the participants stated the low level of knowledge but good attitude toward BLS (Ghrayeb et al., 2017). They recommended to integrate BLS training in the curriculum for both schoolteachers and students.

The positive attitudes of healthcare providers including nurses toward BLS may have an influence on their BLS knowledge and practice, which ultimately affect cardiac arrest victims. Up to the researchers' knowledge, no study in Palestine assessed attitudes toward BLS among nurses. Therefore, the purpose of this study was to assess nurses' attitudes toward BLS in Palestine (West Bank).

2. Methods

Quantitative descriptive cross-sectional design was used for the purpose of this study. Regarding the settings, in Palestine, there are five main international-AHA training centers: Arab American University Palestine (AAUP) Heart Center in Jenin city, An-najah National University Heart Center in Nablus city, The Modern University College Heart Center and Juzoor heart Center, both in Ramallah city, and The Bethlehem University Heart Center in Bethlehem city. The researcher targeted all mentioned and available AHA training centers in Palestine in attempt to represent the sample. Two of the AHA training centers refused to give ethical approval, and one of them is newly developed, therefore, two AHA centers gave the permission for data collection and included in this study. The researchers get the data of all nurses who obtained BLS in the year of 2020 who were 160 nurses, 108 of them answered the questionnaires after giving their ethical approval. The researcher included all population thus it is considered a census sample type. The reason to choose this year due to the last BLS updated materials from AHA. Regarding the scale, a self-administered questionnaires were distributed among nurses for the purpose of assessing their attitudes toward BLS. The attitude scale consisted of 3-point Likert scale with 15 items, and the answers were (1 = disagree, 2 = Neutral, and 3 = Agree). The lowest and the highest scores obtained were, 15 and 45, respectively. According to the scoring system, a score of 75% is considered as a cut-off point to determine positive attitude [Positive (>75%), Negative/neutral (≤75%)] (Abolfotouh et al., 2017). This tool was used in previous studies by Kandray et al. (2007) and Niemi-Murola et al. (2007). Cronbach's alpha for was calculated (0.70) which gives an acceptable reliability for the utilized scale.

3. Results

Nurses' Socio-Demographic Variables

Out of 160 distributed questionnaires, 108 were completed by nurses giving a response rate of 68%. The sample characteristics were analyzed by descriptive statistics (Table 1). Over half of the participants were male (54.6%, n = 59), and the majority had a bachelor's degree in nursing (75%, n = 85). The majority of participants' age group was 20-29 years old (76.9%, n = 83). More than half of nurses (67.6%, n = 73) had 1-5 years of experience in nursing. The most area of practice for the participants was specialized units (38%, n = 41). The majority of nurses exposed to cardiac arrest case and claimed they have guidelines in the area of practice to deal with cardiac arrest (75%, n = 81, 84.3%, n = 91, 77.8%, n= 84), respectively.

Nurses' Attitudes toward Basic Life Support

Table 1: Socio-demographic characteristics of the nurses (N= 108)

Variables	n	%
Sex		
Male	59	54.6
Female	49	45.4
Age groups		
20-29	83	76.9
30 and above	25	23.1
Level of education		
Diploma	8	7.4
Bachelor's degree	81	75.0
Higher education	19	17.6
Years of experience in nursing		
less than 1 year	5	4.6
1-5 years	73	67.6
6 years and above	30	27.8
Average of care for patients with cardiac arrest		
Never	15	13.9
Once a year	35	32.4
Once a month	28	25.9
Once a week	22	20.4
Every day	8	7.4
Area of practice		
Intensive Care	31	28.7
Emergency	12	11.1
Medical Surgical	24	22.2
(Others)	41	38.0
Previous exposure and deal with cardiac arrest		
Yes	91	84.3
No	17	15.7
Have specific guideline in the unit to deal with cardiac arrest.		
Yes	84	77.8
No	24	22.2
Month of basic life support certificate in 2020		
January – April	42	38.9
May-August	36	33.3
September-December	30	27.8

Table 2 shows participants mean score on attitudes toward BLS which was (*M* = 2.55, *SD* = .256) out of 3. Most nurses had positive attitude (>75%) toward BLS with (62%, n = 67). The highest positive attitude items toward BLS were items 12, 13 and 15 where nurses have positive attitude toward BLS who agreed that all

clinics should be equipped with an Automated External Defibrillator (AED) (*M* = 2.87, *SD* = .412) (n = 97 (89.8%), they would support/participate in community CPR/AED project (*M* = 2.85, *SD* = .470) (n = 97 (89.8%), and they think AED should be mandated in the clinic and office settings (*M* = 2.84, *SD* = .457) (n= 95 (88%). However, the lowest attitude score toward BLS were items 14, 4 and 3, where nurses have less positive attitude toward BLS who would not perform mouth-to-mouth ventilation during CPR (*M* = 1.69, *SD* = .837), who said that prognosis of resuscitated patient is poor (*M* = 2.19, *SD* = .712), and they cannot perform CPR on their own (*M* = 2.32, *SD* = .795).

Table (2): Attitude Towards Basic Life Support Among Palestinian Nurses in Each Item (N = 108)

	Item	Disagree n (%)	Neutral n (%)	Agree n (%)	M (SD)
	I think CPR & use of AED should be rehearsed at least once per year	7 (6.5)	23 (21.3)	78 (72.2)	2.66 (.598)
	I am able to work as a member of a resuscitation team	6 (5.6)	9 (8.3)	93 (86.1)	2.81 (.520)
	I can perform CPR on my own	22 (20.4)	29 (26.9)	57 (52.8)	2.32 (.795)
	Prognosis of resuscitated patient is poor	39 (36.1)	50 (46.3)	19 (17.6)	2.19 (.712)
	Only doctors should defibrillate	71 (65.7)	26 (24.1)	11 (10.2)	2.56 (.674)
	I know how to defibrillate	9 (8.3)	17 (15.7)	82 (75.9)	2.68 (.624)
	I think defibrillation damages a patient's heart	80 (74.1)	22 (20.4)	6 (5.6)	2.69 (.574)
	Defibrillation should be performed by any healthcare professional on the scene	23 (21.3)	18 (16.7)	67 (62.0)	2.41 (.821)
	I hesitate to use an AED because I fear damaging the patient	80 (74.1)	18 (16.7)	10 (9.3)	2.65 (.646)
	If an AED is available, I would use it to attend a cardiac arrest patient	12 (11.1)	20 (18.5)	76 (70.4)	2.59 (.684)
	I am willing to attend an AED training course at my own expense	13 (12.0)	30 (27.8)	65 (60.2)	2.48 (.704)
	I agree that all clinics should be equipped with an AED	3 (2.8)	8 (7.4)	97 (89.8)	2.87 (.412)
	I would support/participate in community CPR/AED project	5 (4.6)	6 (5.6)	97 (89.8)	2.85 (.470)
	I would perform mouth-to-mouth ventilation during CPR	59 (54.6)	23 (21.3)	26 (24.1)	1.69 (.837)
	I think AED should be mandated in the clinic and office settings	4 (3.7)	9 (8.3)	95 (88)	2.84 (.457)
	Mean Score of Total Score				2.55 ± .256
Attitude Score		n (%)			
Positive (>75%)		67 (62.0)			
Negative/neutral (≤75%)		41 (38.0)			

Abbreviations: AED, Automated External Defibrillator and CPR Cardiopulmonary resuscitation.
Note: Items; 4,5,7 and 9 are negative statements and reverse code considered in analysis

Table (3): Differences among socio-demographic characteristics in terms of the of basic life support attitude mean score among Palestinian nurses in 2022 (N=108)

Variables	n	Mean	SD	Statistical value	P-value
Sex					
Male	59	2.55	.28	t = .180	.857
Female	49	2.54	.22	df = 106	
Age groups					
20-29	83	2.53	.25	t = -1.493	.138
30 and above	25	2.62	.26	df = 106	
Level of education					
Diploma	8	2.49	.23	F = 1.667	.194
Bachelor's degree	81	2.54	.26	df = 2	
Higher education	19	2.64	.23		
Years of experience in nursing					
less than 1 year	5	2.54	.087	F = .667	.515
1-5 years	73	2.53	.245	df = 2	
6 years and above	30	2.59	.297		
Average of care for patients with cardiac arrest					
Never	15	2.49	.20	F= .689	.601
Once a year	35	2.52	.27	df = 4	
Once a month	28	2.54	.26		
Once a week	22	2.61	.25		
Every day	8	2.60	.22		
Area of practice					
Intensive Care	31	2.47	.28	F= 1.183	.320
Emergency	12	2.60	.24	df = 3	
Medical Surgical	24	2.57	.24		
(Others)	41	2.57	.23		
Previous exposure and deal with cardiac arrest					
Yes	91	2.57	.26	t= 2.071	.041*
No	17	2.43	.18	df= 106	
Have specific guideline in the unit to deal with cardiac arrest.					
Yes	84	2.58	.24	t =2.901	.005*
No	24	2.42	.24	df = 106	
Month of basic life support certificate in 2020					
January – April	42	2.54	.21	F= .090	.914
May-August	36	2.56	.25	df= 2	
September-December	30	2.54	.31		

*Significant at p =≤ 0.05, Independent t test and One Way ANOVA

Differences of BLS Attitudes Based on Demographics

Table 3 shows the differences of the BLS attitudes total score of nurses in 2022 based on their socio-demographic characteristics. The Independent t-test and One Way ANOVA were used to assess the

differences among variables. The results showed no statistically significant difference between attitudes total score of nurses and their socio-demographics, except if they had previous exposure and deal with cardiac arrest and if they had BLS guidelines in their units.

A statistically significant difference was found between who had previous exposure and deal with cardiac arrest and who not dealt with cardiac arrest (t = 2.071, p = .041). Knowing that nurses who had previous exposure and deal with cardiac arrest have more mean score of attitudes (M =2.57, SD = .26), compared to the participants who had no previous exposure and deal with cardiac arrest (M = 2.43, SD = .18). In addition, a statistically significant difference was found between nurses who had BLS guidelines in units compared to whom do not have (t =2.901, p = .005), where the mean score of attitudes was higher in the nursing group who had guidelines about BLS (M = 2.58, SD = .24), compared to the nurses who reported absence of BLS guidelines (M = 2.42, SD = .24).

4. Discussion

Nurses' Attitudes toward BLS

The results of this study revealed that participants mean score on attitudes toward BLS which was 2.55 out of 3. Most participants had positive attitude (>75%) toward BLS with (62%, n= 67). The highest positive attitude items toward BLS were that participants agreed that all clinics should be equipped with an Automated External Defibrillator (AED), they would support/participate in community CPR/AED project, and they think AED should be mandated in the clinic and office settings. The results of this study is consistent with Abolfotouh et al (2017) who stated in their study that 78.8% of participants had positive attitude towards BLS. In addition, the majority of participants in Abolfotouh et al. (2017) study agreed that all clinics should be equipped with an AED, they would support/participate in community CPR/AED project, and they think AED should be mandated in the clinic and office settings. On the other hand, Abolfotouh et al., (2017) pointed out that a small number of participants said they believed only physicians should do defibrillations, that defibrillation harms the heart, and that the prognosis for individuals who have been revived is poor.

The results of this study indicated that minority of participants agreed that prognosis of cardiac arrest is poor, would perform mouth -to-mouth ventilation, and perform CPR by their own. Hendy et al (2023) indicated that 63.1% of participants' nurses had negative attitudes toward CPR. In addition, 56.3% of the participants had negative attitude towards CPR (Ihunanya et al., 2020). Likewise, regarding CPR, graduate health professionals' attitudes and proficiency were lacking including nurses (Gebreegziabher Gebremedhn et al., 2017). Concerning specific attitude items, Hendy et al (2023) stated that previous exposure to CPR associated with more positive attitudes towards BLS, and the result in this study goes in line with their results. According to Abuejheisheh et al (2020) who examined the predictors of ICU nurses' practice of evidence-based practice guidelines, the attitudes and knowledge were the only significant predictors for practice of EBP. Similar studies found the same effect of nurses' knowledge and attitudes on nurses' practices regrading infection control (Darawad et al., 2012; Darawad & Alhussami, 2012) and pain management (Alnajar et al., 2015; Darawad et al., 2015; El-aqoul et al., 2017). This suggests that attitudes of BLS is pivotal factor in practicing BLS, which could have positive effect on cardiac arrest victims.

Recommendations and Limitations

The ITCs and their AHA BLS instructors should consider different methods of teaching BLS courses rather than the traditional face to face one which may positively influence their attitude that consequently improve knowledge and practice of BLS. Blended learning (BL) BLS courses is one of the suggested modules that is well established in literature and proved the efficacy and effectiveness. Regarding the educational field, schools of nursing could adopt a strategy to train their senior students and teach them how positive attitude could be helpful for their retention of knowledge and skills, thus improving quality of the provided care for cardiac arrest victims. In addition, it is the responsibility of both nursing faculties and nursing students to cultivate their attitude positively toward engagement in any in-service education that could enhance their attitude, practice, and knowledge of BLS.

Another future studies with different designs such as observational and interventional studies are needed to explore this issue, and to increase the broad of ITCs in Palestine as well as the sample size to increase the representativeness and generalizability of results. Also, nurses' knowledge and practice regarding BLS should be studied to assure its impact on patients' outcome. Nurses were found to benefit from workshops that would promote their attitudes toward various issues of nursing care (Yacoub et al., 2014; Yacoub et al., 2015). Due to the challenge of obtaining ethical approval to conduct such a study, and due to refusing of some ITCs to let the researcher to collect data from nurses who get their BLS certificates, it is recommended for ITCs to obtain the permission from BLS candidates at the beginning of the course to facilitate future researchers to conduct further studies with larger sample size. Hence, if the ITCs get the BLS candidates their consents at the beginning of training regarding the possibility to be part of future researcher, the response rate of candidates and approvals from ICTs could be sufficient to increase the sample size.

Few limitations affected the results of this study. First, the major aim of this study was limited to the

attitudes of nurses towards BLS, but focusing on BLS practice and knowledge may give a clearer picture of the BLS training and its impact of patients' outcome. The third limitation is the rejecting of some AHA center in Palestine to conduct this study which were two International Training Centers (ITC). This may have affected the results as not all nurses included between year of 2020 and 2022. Furthermore, the sample of this study are limited to nurses, and although including other professions such as physicians may give more details, nevertheless nurses are the first direct contact health care providers with patients at 24 hours and seven days a week, and the early responders in hospitals, which give strength to our results. Finally, the research design of cross-sectional, the convenience sample, and the sample size of 108 nurses, may influence the generalizability of results.

5. Conclusion

In general, attitudes toward BLS among nurses were positive. However, efforts to improve nursing attitudes regarding the perception of the poor prognosis of CPR and performing CPR on their own should be highlighted and it is crucial to booster their attitudes into more positive readings. This may will have a beneficial impact of their knowledge and practice of CPR that may eventually improve cardiac arrest victims' outcome. Future research to assess nurses' knowledge and practice of BLS, and the effect of positive attitudes on patients' outcomes is recommended.

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