Effectiveness of Applying Simulation Based Learning on Nurses' Performance and Self-Efficacy Regarding Advanced Basic Life Support

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Abstract **Background:** An advanced technology and learning ways like simulation continue to evolve, it is vital for new as well as old nurse educators worldwide to have effectiveness in their teaching skills and abilities. Thus, Simulation is evidence based learning method and is highly used in nursing educational field widely. **Study aim:** to evaluate the effectiveness of applying simulation based learning on nurses' performance and self-efficacy regarding advanced basic life support. **Study design:** quasi-experimental research design was used. **Setting:** carried out in medical surgical nursing skill laboratories at Nursing faculty, Port Said University. **Study subject:** Convenience samples of 56 nurses were selected from some of governmental hospitals in Port-said city which included Cleopatra hospital, Algwhara hospital, Alnasr hospital that worked at medical, surgical, emergency, burn, orthopedics, dialysis, ICU and neonatal ICU units. **Data collection tools:** structured interview which included four parts related to sociodemographic characteristics, nurses' knowledge, nurses' practice, and self-efficacy assessment and the learning passed through 4 phases as preparatory phase, pretest, implementation and posttest phase. **Results.** Showed that there were marked increases in nurses' total knowledge, practice and self-efficacy post implementation of advanced basic life support compared to pretest with statistically significant differences. **Conclusions**: simulation based learning improved nurses' performance and self-efficacy related advanced basic life support and the study provides aline to enhance the simulation integration as active learning strategies to develop nurses' performance in applying clinical skills. **Recommendations:** Further studies to evaluate the simulation effect on nurses' learning outputs for more evidence that simulation would be beneficial for nurses' improvement.

Keywords: advanced basic life support, effectiveness, performance, self- efficacy and Simulationbased learning

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1. Introduction

The nurses are important individuals of the health care teams that play important role in the setting care of the clients, involving the ones who take emergency and intensive care. The clients at the emergency and intensive care wards are likely to develop a cardiac arrest that can occur even in a normal persons even not have a cardiac disease [1]. Basic Life Support (BLS) involves signs recognition of sudden cardiac arrest (SCA), heart attack, stroke and foreign-body airway obstruction (FBAO); cardiopulmonary resuscitation (CPR); and defibrillation of an automated external defibrillator (AED). It is very needed that every individual in the community have knowledge about basic life support to save lives and increase community health quality. Finally physicians, nursing and paramedical workers are expected to know about it, as they are increasable facing life threatening concerns and BLS knowledge will be helpful [2].

Modern technology and learning ways like simulation continue to evolve, it is necessary for new as well as old nurse educators widely to be perfect in teaching skills and abilities. Thus, Simulation is evidence based teaching and learning way and is highly used in nursing education widely [3]. BLS is the basis for care of CPR, and identifies the primary resuscitation sequence, involving early condition recognition, emergency response system activation, early CPR and rapid defibrillation. Through use of the ALS, interventions are based on basic support started to increase the return to spontaneous circulation, with medication therapy, advanced airways management, and physiological monitoring with equipment and devices. After spontaneous circulation returns, neurological survival and evolution can be increased with post CPR care [4].

Learning and training basic life support (BLS) as external chest compressions (ECC) within the BLS algorithm are vital resuscitation training for laypersons as well as for health care teams. The study aim was to evaluate the effect of learning styles on the performance

of BLS and to identify if all types of learners are effectively addressed by Peyton's four-step branch for BLS training [5].

In side of the technological, social, and political modification in the world recently, it is necessary that nurses are not only culturally effectively but widely informed and correlated. Reason Part of the for this is the globalization extent that now exists and the likelihood it will continue with the plurality of broads views in most healthcare areas [6].

Moreover, self-efficacy as defined by Bandura (1977) [7] is an persons perception of individuals capacity to perform at different levels. Self-efficacy in nursing education is present in part on the confidence of the faculty staff to select, use, and modify appropriate teaching strategies. Regarding to Britton, (2017) [8] increase in self-efficacy is achieved by understanding and experience which effects teaching behaviors and professional development forimproving self-efficacy [9].

Moreover with the advancement of health care facilities, there are a number of lifesaving modalities which can help in reducing mortality and preventing morbidity. So Basic Life Support (BLS) skills still one of the most effective tools with potential to save millions of lives worldwide. Maintenance of airway while supporting breathing and circulation is what constitutes as the Basic life support (BLS) [10].

1.1. Significance of the Study

Cardiac arrest is a life threatening concern that accounts for 15% of the world mortality and is more present in persons with a pervious cardiovascular disease. It is estimated that hypertension and coronary heart situation affect 25% and 8.5% of the population in Egypt, respectively , improving the liability to sudden cardiac arrest. The emergency care of cardiac arrest includes a series of simple maneuvers, called basic life support (BLS). These methods involves signs of sudden cardiac arrest recognizing, heart attack, stroke and foreign body airway obstruction, cardiopulmonary resuscitation (CPR), and an automated external defibrillator (AED) defibrillation. In addition to, different researches have assessed BLS awareness levels among medical students in various countries. However, similar data [11]. Therefore, study was carried out to examine the effectiveness of applying simulation based learning on nurses' performance and self-efficacy regarding advanced basic life support.

1.2. Aim of the Study

To examine the effectiveness of applying simulation based learning on nurses' performance and self-efficacy regarding advanced basic life support (ABLS) through:
1. Assess nurses' knowledge regarding advanced basic life support (ABLS)
2. Assess nurses' practice regarding advanced basic life support (ABLS)
3. Develop and implement simulation based learning program for nurses regarding advanced basic life support (ABLS)
4. Evaluate the effect of implementing a simulation based learning program regarding advanced basic

life support (ABLS)on nurses' performance and self-efficacy.

1.3. Research Hypotheses

The post-implementation of advanced BLS applications on nurses' performance scores will be highly compared to pre implementation.

The post-implementation of advanced BLS applications on nurses' self-efficacy scores will be highly compared to pre implementation.

1.4. Conceptual Framework

Provide a ways to view nursing in relation with external factors, thereby assigning practice meaning. Nursing education graduate level in the preparation of Nurse Practitioners (NPs) specifically and Advanced Practice Nurses (APNs) in general, is vitally compromised by the ability to conceptualize these complex programs learning as primarily related to skills based tasks and competencies lonely. As related to Baumann, advanced nursing education must depend on the uniqueness of the NP position, in contrast to other health care staffs. To do this, Baumann states using a conceptual nursing model and nursing theory like opposed to a strictly biomedical model. This helps NPs to interpret data in a way that differs from the model, providing opportunities for the NPs to be truly present in the lives of their clients [12].

2. Subjects and Methods

A quasi experimental design was used and the study was carriedout under the 4 main designs as followed:
1- Technical design.
2- Operational design.
3- Administrative design.
4- Statistical design.

2.1. Research Design

A quasi-experimental design was utilized
(1) Technical Design:
Included study setting, sample, tools and means of data collection.
Study Setting:
Conducted in medical surgical nursing laboratories at Nursing collage, Port Said University.
Study Sample:.
Convenience samples of 56 nurses (male and femels) were selected from some of health insurance and govermental hospitals in Port-said city which included Cleopatra Hospital, Algwhara hospital, Alnaser hospital that worked at medical, surgical, emergency, burn, orthopedics, dialysis, ICU and neonatal ICU units .
Tools for Data Collection
Tool I: Structured Interview
This tool contained 4 areas designed by the researcher depend on recent literature review (Parajulee&Selvaraj, 2011 [1], Birkeland, 2014 [13], Ghauri, Khan, Bangash, Mustafa & Khan, 2018 [10], Gonzi, Sestigiani, D'errico, Vezzani, Bonfanti, Noto & Artioli, 2015 [14] and Allah,

Abd-Allah, Abd El Sapour, Mohammed, 2017 [15] to examine the effect of applying simulation depend learning on nurses' performance and self-efficacy regarding advanced basic life support (ABLS) as followed:

Part 1- Sociodemographicinformation

Involveddata related to demographic status as their age, educational level, working and units, training courses regarding ABLS

Part 2: Nurses' knowledge regarding advanced basic life support

It included 33 questions to assess the nurses' practical knowledge related to advanced basic life support, 12 items regarding specific human anatomy and physiology of circulatory and respiratory system, general concept of cardio pulmonary resuscitation (CPR), indication of CPR, meaning and definition of CPR , steps and technique of CPR, definition of cardiac arrest, post resuscitation care of CPR

Part 3: Nurses' practice observational check lists regarding advanced basic life support

It includes 22 items to assess nurses' practice regarding advanced basic life support through using standardized observational checklist from (Kleinman, Goldberger, Rea, Swor, Bobrow, Brennan, & 2018) [16] which included preparation of patient and equipment, initiation of CPR procedure, post life support procedure intervention.

Part 4: Self-efficacy assessment sheet:

The modifiedself-efficacy tool from (Gonzi, Sestigiani, D'errico, Vezzani, Bonfanti, Noto&Artioli,2015) [14] to assess correlation between items regarding CPR practice retention on self-efficacy and examine the confidence level of nurse's on performing CPR skills.

Scoring system:

The scoring systems of nurses' knowledge (part 2) were ranged from 0-1 score thato score (I 'don't know and no) and 1 (yes). Also scores done post correct all sheets with model which write answer is called as (satisfactory knowledge Level) and false answers namely as (Unsatisfactory knowledge Level) then arranged as knowledge total scores. For nurses' practice regarding ABLS, it was included 6 items ranged from 0 to 2 scores as zero for not performed, 1 for performed incorrect, and 2 for correct answer then arranged as total scores of practice ≥ 70 % considered satisfactory level of practice, and < 70 % considered unsatisfactory level of practice. For self-efficacy correlation between items regarding CPR practice retention on self-efficacy ranged from 1 to 2 scores as high confidence, and low self confidence in performing CPR procedure.

An advanced based life support applications:

The researcher designed the instructional scheme based on review of literatures as guides and the findings of the baseline assessment of knowledge based on An Update to the American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, 2017 [17]. It validated through the expert's opinions. The simulation aim based learning was to increase nurses' knowledge and practice of advanced basic life support. The program contents and the choice of teaching methods will be based on nurses' level of education and needs whether individually or in groups. Demonstration and redomenstration using simulation for practical knowledge and practice skills retention was applied. An instructional booklet was prepared by the researcher to present information for nurses in a simple way using simple language and illustrative pictures. It was distributed to all nurses in proper time.

Ethical Consideration:

An approval was taken from faculty Dean, Port Said university, hospital director and after brief and comprehensive data of the study, objectives and useful of applying the study and assured that the obtained data will be confidential and used only the aim of the study.

(2)-Operational Design:

Includes preparatory phase, content validity, reliability, pilot study and fieldwork.

A--Preparatory Phase:

It involved literature review, various researches and theoretical knowledge of different parts of the basic life support using books, articles, periodicals and magazines.

B--Content Validity:

Tools were reviewed with five professors of medical – surgical nursing and critical care field.

C-Content Reliability:

Was carried out through using Cronbach alpha test = 0.089.

3) Field of the study:

This research was conducted from April, 2018 to September, 2018, (6 months). Saturday every week. Each nurse was informed about the study aim. The information were gathered throughout three assessment phases. Pre-test phase was done before conducting the program. The implementation phase that involve the simulation application based learning after classified the sample into groups includes (10-14) nurse through 8 sessions for 8 weeks as 1 session weekly that lasted from 30-45 m. Illustrative pictures, real videos, simulation redomenstration and handouts that designed in a suitable way for highly and diploma level of nurse's education for every nurse as a source. Post-test phase was done one month post implementing simulation based learning.

(4) Statistical Design:.

Gathered data was managed, entered then tabulated and analyzed regarding the data type to achieve the study objectives.

2.2. Statistical Analysis

Data was gathered and entered into a database file using the SPSS 19. Chi-2 was used to test the relation between two qualitative variables and Paired t-test were used to differ between two or more parte. Significance was considered at $P<0.05$ and highly significance at $P<0.00$.

2.3. Study Limitation

It was difficult to connect the Sim-man because of the present of its connected line. Difficulties in carried out the sessions during staff nurse working hours

3. Results.

Table 1 shows that 46.5% of the studied nurses were age group ranged from 30 years old to less than 40 years old, 96.4% of them were female, 50% of them had experience 5 years, 50% of them were diploma nurses,

92.9% of them had no training courses and 25% of nurses were worked in ICU.

Table 1. Socio-demographic characteristics of studied nurses (N=56)

Parameter	N=56	%
Age:		
25-	17	30.4
30-	26	46.5
40-	11	19.6
More than 50	2	3.5
Gender		
Male	2	3.6
female	54	96.4
Experience		
1-5	28	50.0
5-10	17	30.4
10-15	8	14.3
15-20	3	5.4
Education		
diploma	28	50
Associate nurse	17	30.4
Baccalaureate	11	19.6
Training courses		
Not training	52	92.9
Training	4	7.1
Departments		
surgery	10	17.9
Medicine	8	14.3
Burn	3	5.4
orthopedics	4	7.1
Emergency	8	14.3
Dialysis	5	9
ICU	14	25
Neonatal ICU	4	7

Table 2A illustrates that there were highly statistically significant differences post simulation based learning implementation comparing to pre simulation based implementation and statistically significant related what is meant by AED? Whereas there were no statistically significant related signs of return circulation.

Table 2B clarifies that there were highly statistically significant difference in post implementation of simulation based learning comparing to pre simulation based in all items of nurses' knowledge except there was statistically

significant difference related to depth of chest compression and elements of ABC related to. Whereas there were no statistically significant difference related to equipment needed for adult cardiac massage and how to open the airway during CPR

Figure 1 reveals that there were improvement in mean and SD post implementation of advanced basic life support compared to pre implementation.

Table 3 clarifies that there were highly statistically significant difference in post implementation of simulation based learning comparing to pre implementation in all items of nurses' practice except there were statistically significant difference related to ensure a clear air way, giving 30 chest compressions giving 30 chest compressions, assessing the patient's condition (airway, breathing, circulation, blood pressure and urine output), and hand washing after finishing procedure. Whereas, there were no statistically significant difference related to monitor patient's cardiac rhythm and recording 12- lead of ECG.

Figure 2 represents that there were improvement in mean and SD post implementation of advanced basic life support compared to pretest

Table 4 shows that there were highly statistically significance difference pre and post implementation of simulation based learning in all items of ABLS Self-Efficacy.

Table 5 shows that there were highly statistically positive correlations were found between nurses' work department, total nurses' knowledge and total nurses' practice pre and post implementation. There were highly statistically positive correlations were found between nurses' age, total nurses' knowledge and total nurses' practice post implementation compared with pre implementation. Also, there were highly statistically positive correlations were found between nurses' education, total nurses' knowledge and total nurses' practice pre implementation compared with statistically positive correlations for nurses' knowledge and highly statistically positive correlations for nurses' practice post implementation. Otherwise, there were statistically positive correlations were found between nurses' experience and total nurses' practice post implementation compared with pre implementation. Finally, there were highly statistically positive correlations were found between nurses' training and total nurses' self-efficacy pre implementation compared with post implementation.

Table 2 A. Nurses' knowledge regardingadvanced basic life support pre and post implementation of simulation based learning (n=56)

Items	Pre-test		posttest		X^2	P value
	Correct answer	%	Correct answer	%		
Anatomy and physiology of heart	20	35.7	44	78.6	21.000	0.000
Time of brain death occur after stoppage of heart beat	35	62.5	51	91.1	12.823	0.000
The responsible person for confirm Cardiac arrest	34	60.7	53	94.6	18.589	0.000
Definition of cardiac Arrest	24	42.9	56	100.0	44.800	0.000
Definition of CPR	30	53.6	56	100.0	33.860	0.000
Definition of Automatic External Defibrillator (AED)	26	46.4	54	96.4	34.300	0.000
characteristics of AED	20	35.7	48	85.7	29.348	0.000
Complications of AED	24	42.9	53	94.6	34.951	0.000
Contraindications of AED	30	53.6	50	89.3	17.500	0.000
What is meant by AED?	32	57.1	44	78.6	5.895	0.015
signs of return circulation	41	73.2	45	80.4	0.801	0.371
Signs of Shock	30	53.6	54	96.4	27.429	0.000

*Significant P< 0.05 **Highly Significant P< 0.001.

Table 2 B. Nurses' knowledge regarding advanced basic life support pre and post implementation simulation based learning (n=56)

Items	Pre-test		posttest		X²	P value
	correct Answer	%	correct Answer	%		
Rescue breaths contain how much oxygen percentage	29	51.8	55	98.2	32.190	0.000
Definition of cardiac arrest	24	42.9	56	100.0	44.800	0.000
Definition of CPR	30	53.6	56	100.0	33.860	0.000
CPR ratio for an adult	38	67.9	56	100.0	21.447	0.000
CPR ratio for an infant	41	73.2	55	98.2	14.292	0.000
Depth of chest compression	43	76.8	52	92.9	5.617	0.018
Numbers of compression applied during CPR	25	44.6	50	89.3	25.225	0.000
The most common complication of CPR	38	67.9	54	96.4	15.583	0.000
Equipment needed for adult cardiac massage	46	82.1	51	91.1	1.392	0.238
signs and symptoms of cardiac arrest	41	73.2	55	98.2	14.292	0.000
the ways to open the air way	24	42.9	52	92.9	32.094	0.000
How to open the airway during CPR	46	82.1	48	85.7	0.563	0.453
Principles of cardiac resuscitation	33	58.9	49	87.5	13.080	0.000
Indications of cardiac resuscitation	29	51.8	56	100.0	35.57	0.000
The elements of ABC	49	87.5	55	98.2	4.846	0.028
the way to check thebreathing, depth of chest compression	30	53.6	54	96.4	27.429	0.000
the ways to open the air way	28	50.0	52	92.9	25.20	0.000
Indications of cardiac resuscitation	24	42.9	56	100.0	44.800	0.000

*Significant P< 0.05 **Highly Significant P< 0.001.
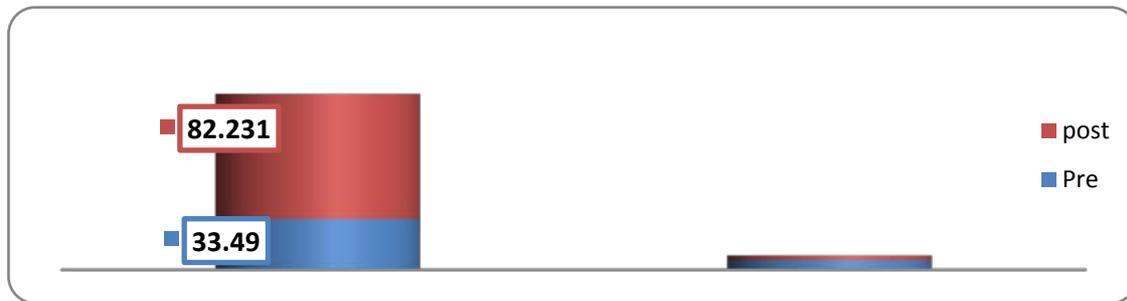
Figure 1. Nurses' total knowledge of ABLS mean difference pre and post implementation of simulation based learning

Table 3. Nurses' practice regarding advanced basic life support pre and post implementation of simulation based learning (N=56)

steps	Pre-test		posttest		X²	P value
	Correct Done	%	Correc t Done	%		
hand washing	14	25.0	40	71.4	24.174	0.000
Wearing gloves	25	44.6	51	91.1	27.673	0.000
Preparing equipment	30	53.6	50	89.3	17.500	0.000
Keeping privacy	20	35.7	51	91.1	19.670	0.000
Assess the patient condition	24	42.9	50	89.3	26.925	0.000
Time of arrest	30	53.6	52	92.9	22.036	0.000
Assessing patient's consciousness by taping him on the shoulder and shout" are you alright"	26	46.4	52	92.9	27.429	0.000
Checking for responsiveness	20	35.7	54	96.4	46.043	0.000
Assess air way, breathing and circulation to see if the patient is apnea or gasping, immediately calling out for help	24	42.9	54	96.4	38.009	0.000
Palpating the carotid artery during 10 seconds after arrest, placing the patient supine on a firm surface, while rolling his head and torso as a unit	30	53.6	54	96.4	27.429	0.000
Removing bed head if patient is in bed and ensuring adequate space between back of bed and wall	38	67.9	56	100.0	30.834	0.000
Ensuring a clear air way	46	82.1	55	98.2	8.166	0.004
Giving 30 chest compressions	43	76.8	52	92.9	5.617	0.018
Opening the airway	25	44.6	54	96.4	36.130	0.000
Delivering breathing, maintaining intubation and establishing intravenous access	38	67.9	54	96.4	15.583	0.000
Assessing the patient's condition (airway, breathing, circulation, blood pressure and urine output)	41	73.2	51	91.1	6.087	0.014
Checking arterial blood gases	41	73.2	55	98.2	14.292	0.000
Checking full blood count and biochemistry	24	42.9	52	92.9	32.094	0.000
Monitoring patient's cardiac rhythm and recording ECG	46	82.1	48	85.7	0.563	0.453
Assessing patient's level of consciousness.	33	58.9	49	87.5	13.080	0.000
Hand washing	43	76.8	52	92.9	5.617	0.018
Documentation	25	44.6	54	96.4	36.130	0.000

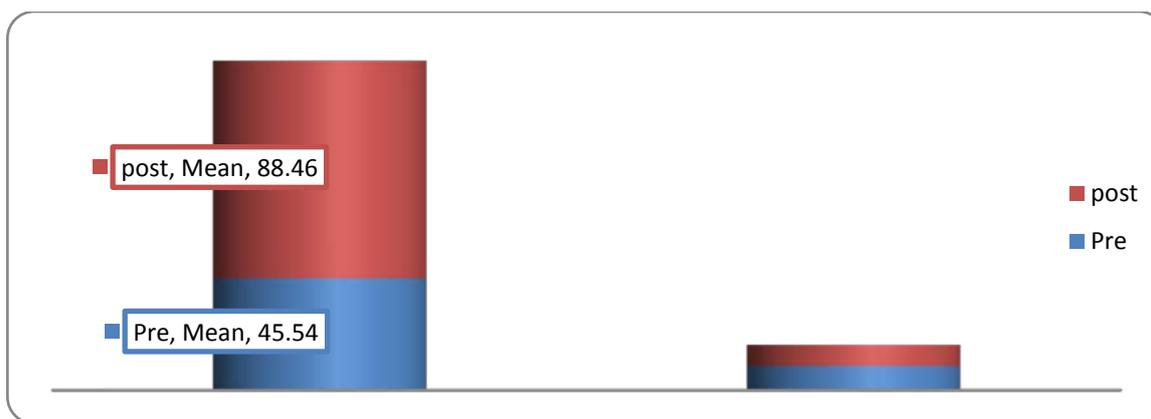*Significant P< 0.05 **Highly Significant P< 0.001.

Figure 2. Nurses' total practice of ABLS mean difference pre and post implementation simulation based learning

Table 4. Means and SD difference regardingABLS Self-Efficacy

Items	Pre-test		posttest		Paired T test	P value
	Mean	SD	Mean	SD		
Recognize that a person isunresponsive	2.55	0.989	4.88	0.384	-18.181	0.000
Recognize that a person is notbreathing or not breathingnormally	2.43	0.912	4.86	0.401	-21.387	0.000
Provide ventilations that makethe chest rise	1.86	0.645	4.77	0.539	-29.224	0.000
Provide chest compressionsthat are at least 2 inches deep	1.59	0.682	4.61	0.652	-26.162	0.000
Place the AED pads in thecorrect location	1.21	0.494	4.29	0.803	-25.781	0.000
Know how to operate the AED	1.20	0.444	4.16	0.869	-26.035	0.000

*Significant P< 0.05 **Highly Significant P< 0.001.

Table 5. Correlation between nurses' socio demographic characteristics, Self-Efficacy, Knowledge and practice pre and post implementation of simulation based learning regarding ABLS (N=56)

		Pre implementation			Post implementation		
		Total self-efficacy	Total Knowledge	Total practice	Total self-efficacy	Total Knowledge	Total practice
Gender	R	-0.076	-0.165	-0.119	-.004	0.181	0.172
	P value	0.575	0.224	0.381	0.979	0.181	0.206
Work Department	R	-0.043	0.512	0.529	0.140	0.598	0.631
	P value	0.756	.000**	.000**	.302	.000**	.000**
Age	R	-0.017	0.078	0.050	0.162	0.562	0.541
	P value	0.901	0.568	0.712	0.233	0.000**	0.000**
Education	R	0.299*	0.688	0.687	0.380	0.390	0.451
	P value	0.025	0.000**	0.000**	0.004*	0.003*	0.000**
Experience	R	-.187	.101	.041	-.073	-.098	.002*
	P value	.168	.459	.766	.592	.473	.985
Training	R	.514	.090	.249	.143	.222	.211
	P value	.000**	.510	.065	.294	.101	.118

*Significant P< 0.05 **Highly Significant P< 0.001.

4. Discussion

There was delivered nursing training standards and suggested simulation usage (WHO, 2009) [18]. Latest researches showed that simulation progresses nursing knowledge, practice, perilous thinking, communication practices ,increase self-efficacy as well as making clinical decision. Simulation teaching is an active process used to correlate real clinical situations in a safe area that helps nurses to develop knowledge and psychomotor skills resuscitation (Waznonis, 2015) [19].

The current study aim is to examine the effectiveness of applying simulation based learning on nurses' performance and self efficacy regarding advanced basic life support (ABLS). Regarding socio-demographic characteristics of studied nurses, the present study showed that more than

two fifths of subjects were at age group thirty to less than forty years old, the majority of them were female, half of them were diploma nurse, and one quarter of them was worked in intensive care units (ICU).

Toward nurses' knowledge regarding advanced basic life support pre and post implementation of simulation based learning (Table 2 A & B), the study showed that the majority of nurses' knowledge were improved post test after implemented simulation based learning compared to pre test with increase in mean an SD. This result may be due to that simulations raise and enrich critical thinking talents, enhance nurses learning experience, and skill performance.

Moreover, less than half of nurses were adult that had a more intrinsic necessity to know reason to learn, they had more life experiences that consider as potential learning

sources, they become ready to learn when real life concerns need new knowledge and skills, they are self-directed, and they are highly responsive to internal factors as learning motivators. This result with agreement with Partiprajak &Thongpo(2016) [20] who revealed that CPR training has a important direct knowledge effect. In the other side, the result was disagreement with the result done by Srinivas, Kotekar&Rao (2014) [21] which stated that the knowledge of nursing students about basic live support is still low.

Concerning nurses' practice regarding advanced basic life support pre and post implementation of simulation based learning (Table 2 A & B), the study illustrated that the majority of nurses' practice were improved posttest after implemented simulation based learning compared to pretest with increase in mean an SD. From the point view of the researcher, simulation' value in improving nurses practice and simulation tend to be a brilliant educational intervention to increase nurses satisfaction with learning experience, and improve skill performance.

The result of the present study was in the same line with (Jhuma, Vijayakanthi, Sankar, and Dubey, 2013) [22] who found that skills scores immediately post-training improved and with (Maurya, 2015) [23] who indicated that simulation teaching groupimproved in the post test score. Also (Jhuma, Vijayakanthi, and, Sankar, 2011) [24] find increase in skill score of the study subjects more than 84%.

The result of the present study proved that there were highly statistically significance difference pre and post implementation of simulation based learning in all items of ABLS Self-Efficacy with increased in mean. This may be due to nurses trained with simulation achieved more self-efficacy perception which showed the value of simulation in increasing knowledge and self-efficacy of nurses.

The result of the study in accordance with the study by Birkeland (2014) [13] who investigated knowledge and skill retention and increased self-efficacy for rural health care providers found that there was improvement in self-efficacy of nurses' posttest with highly statistically differences. Also, Akhu-Zaheya, Gharaibeh, & Alostaz (2012) [25] stated that there was a significantly difference in self-efficacy between HFS vs. traditional training method).

Regarding correlation between nurse's socio demographic characteristics, self-efficacy, knowledge and practice pre implementation of simulation based learning regarding ABLS, there were highly positive correlation between nurse's ' work, total knowledge and practice and highly positive correlation between nurse' educations, total self-efficacy, total knowledge and practice.

5. Conclusions

The present study concluded that simulation based learning improved nurses' performance and self efficacy related advanced basic life support. Moreover, it provides support the mixing of simulation as an active policy to develop nurses' performance in applying clinical skills. Moreover, the study increase the value of adding simulation into the traditional mean in nursing education.

6. Recommendations

Depend on the study findings, it is recommended that:

1. Further studies to evaluate simulation effect on nurses' learning output for more studies that simulation would be valuable for nurses' enhancement

2. Enhancement for psychomotor skill on simulation bases in other procedure clinical area

Acknowledgments

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