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The Effect of Simulation Training on Nurses and Intern Nursing Students' Skill, Confident and Satisfaction Regarding Neonatal Resuscitation

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Abstract
Background: *The use of simulation for teaching the knowledge, skills, and behaviors necessary for effective neonatal resuscitation has seen widespread growth and adoption across pediatric institutions.*
The aim of this study *was to assess the effect of simulation training on nurses and intern nursing students' skill, confident and satisfaction regarding neonatal resuscitation.*
Design: *The study utilized a quasi-experimental research design.*
Sitting: *The study was conducted at pediatric nursing skill laboratory at faculty of Nursing Benha University. The convenient sample were enrolled from 35 of nurses and 25 of intern nursing student worked at neonatal intensive care unit, Benha University.*
The tool of data collection*: Tool I: A structured interviewing questionnaire consisted from two parts: Part1: Personal characteristics of the studied sample. Part two: Standardized Checklist for Neonatal Resuscitation adopted from (American Heart Association, 2015): Tool II: The Satisfaction and Confidence Learning Scale (National League for Nursing, 2012).*
Results: *at baseline the nurses were higher in skill confident and satisfaction than intern nursing students. Meanwhile, post immediate the score improved in two groups. Thus there were correlation between confident skill and satisfaction of nurses than intern nursing students with their age. There was statistical significant difference in the nurses' post immediately.*
Conclusion: *simulation training increases the skill, confident and satisfaction of nurses and intern nursing student about neonatal resuscitation.*
Recommendation: *Training program for nurses and intern nursing student who are in close contact with neonates once in every 2 months with reevaluation and feedback after each update is very important.*
Keyword: *Simulation training, skill, confident and satisfaction, neonatal resuscitation.*

I. Introduction

Globally, about one quarter of all neonatal deaths are caused by birth asphyxia. Birth asphyxia is defined simply as the failure to initiate and sustain breathing at birth. Effective resuscitation at birth can prevent a large proportion of these deaths (WHO, 2012). Cardiac arrest is defined as sudden cessation of cardiac activity and associated with very high morbidity and mortality in high risk neonates. Nearly 40% of cardiac arrests occur in hospital of which only 27% are reported to survive. Providing high quality neonatal resuscitation is one of the most important factors documented to influence on survival rates of neonates that need resuscitation (Wyckoff, et al., 2015) & (Jhuma, et al., 2013). Pediatric health care providers require training opportunities to acquire the knowledge and skills to appropriately manage children with critical illness and cardiac arrest. Nurses are often the first to discover neonates of cardiopulmonary arrest at neonatal intensive care units. Therefore, it is important to say that their competency in cardiopulmonary resuscitation is a critical factor in determining successful outcomes in neonate (Cheng and Lin, 2015). Neonatal cardiopulmonary resuscitations a procedure to support and maintain breathing and circulation for neonates who has stopped breathing (respiratory arrest) and stopped heart (cardiac arrest)(Buckley& Gordon, 2011).

Effective and efficient resuscitation training of nursing staff is one of the essential elements in the translation of theoretical guidelines into clinical practice (Soar, et al, 2010). This training is crucial for high quality interventions in complex situations, such as cardiopulmonary arrests. It is important to remember that quality interventions are able to double or triple the neonatal chance of survival (Almeida, et al, 2011).Clinical simulation is defined as "an attempt to replicate some or nearly all of the essential aspects of a clinical situation so that the situation may be more readily understood and managed when it occurs for real in clinical practice" (Hall, 2013).

Recent studies indicated that simulation improves nursing knowledge, clinical practice, critical thinking, communication skills, improve self-confidence and satisfaction as well as clinical decision making. Simulation training is an effective method used to integrate realistic clinical situations in a safe environment, which allows nurses and intern students to develop knowledge and psychomotor skills related neonatal resuscitation (Waznonis, 2015).(Mundell, et al .,2013). (Parker & Myrick, 2009) and (Jeffries, and Paranhos., 2007)

Simulation as a teaching and learning strategy has been primarily used with small groups of learners in a laboratory setting. Laboratory-based clinical simulation offer experiential learning opportunities in which the objective is to link theory and practice. Most educators believe that clinical simulations foster and enhance critical thinking skills through the practice of psychomotor. Although still adhering to International Nursing Association for Clinical Simulation and Learning Standards of Best Practices, use of simulation in the classroom requires additional scaling considerations for planning and resources to accommodate learning (Carson and Harder., 2016)&(Akhu-Zaheya et al., 2013).

Simulation has been used in nursing education for teaching psychomotor skills, practicing critical thinking skills, evaluating nursing competencies, remediating clinical performance deficiencies, developing clinical judgment and practicing with infrequent, high risk patient situations that cannot be scheduled in clinical setting (Martins, et al, 2012) World Health Organization (WHO) has provided standards for nursing education and recommended the use of simulation (WHO, 2009).Pediatric nursing and intern students require training via simulation provides an ideal learning environment required in neonatal resuscitation. Simulation has been shown to be an excellent educational intervention to enhance nurses and intern students' satisfaction with the learning experience, increase self-confidence, and enhance skill performance (Gary, et al., 2015).Patient safety issues, as simulation allow health care practitioners to acquire the skills and experience required to protect patient safety (Rakshasbhuvankar & Patole, 2011) Educational mandates require the use of clinical simulation to ensure that learners have adequate degree of clinical background and ease the transition from student to professional practitioner (Weller, 2014).

According to study of Sanford, (2010) The Qualitative Report endorsed the use of simulations in order to prepare students in critical thinking and self reflection as well as preparing them for the complex clinical environment. (Hovancsek, et al., 2009) The study found the demand for higher quality healthcare both nationally and internationally has increased and the use of simulation will improve health care. This technology offers new avenues for teaching student nurses scenarios as well as critical thinking and reflection on lived experience and practice. The term 'high fidelity' is used to describe manikins that provide direct feedback to the trainee. Many neonatal units are beginning to incorporate simulation training into their educational program. Within the East Midlands we have begun to expand neonatal high fidelity simulation training across all of our network hospitals. There is a need for more trained facilitators and simulation leaders are working towards benchmarking the educational quality of simulation sessions (Fawke & Cusack, 2011). Simulated experiences with high fidelity simulation provide students the opportunity to engage in critical thinking activities, practice assessment skills and interventions, and receive immediate feedback (Hall, 2013)

Multiple studies supported the connection between simulation and the development of self-confidence (Bambini, et al., 2009)&(Jeffries & Rizzoli, 2006). In another study, increased confidence and satisfaction with the learning experience was discovered as positive outcomes of simulation among nursing students. The American Association of Colleges of Nursing (AACN) report included the increase of self-confidence in communication, psychomotor skills, and professional role development as a result of participation in reality-based simulation (Smith & Roehrs, 2009).

Significance of the study:

About 6% of neonates require resuscitation at delivery, the incidence increases significantly if birth weight is < 1500 g. The neonatal mortality rate was 14 deaths per 1,000 births. A comparison of these rates with the overall level of under-five mortality (27 deaths per 1,000 births) indicates that almost 80 percent of early childhood deaths in Egypt take place before a child's first birthday, with half occurring during the first month of life (Elzanaty, 2014). 5-8 million newborn infants need resuscitation 5% moderate and1% (1, 3 million) extensive resuscitation globally. Optimal resuscitation methods may substantially reduce mortality (Ropert, 2016) & (Saugstad, 2011): Intern student are required to successfully complete neonatal resuscitation course prior to starting their clinical experience. Nurses are frequently the first people to discover and respond to cardiac arrest. Thus, successful completion of a neonatal resuscitation course is required by most clinical agencies prior to intern student beginning clinical experiences. However research repeatedly demonstrate that neonatal resuscitation are poorly retained by all health care providers, including intern nursing student (Edgren and Adamson., 2009).The National College of state (Boards of nursing, 2008) highly supports the use of simulation because it provides opportunities for repetitive practice and feedback.

Aim Of The Study

1. Evaluate the effect of simulation training on nurses and intern nursing student's skills, confident and satisfaction regarding neonatal resuscitation.
2. -Investigate the correlation between skills, confidence, and satisfaction with personal characteristics of participant.

Research Hypothesis

-Providing simulated training will increase nurses and intern nursing student's skills, confident and satisfaction regarding neonatal resuscitation.

Subjects And Methods

Design: A quasi- experimental design was used.

Setting: The study was conducted in pediatric nursing skill laboratory at Faculty of Nursing Benha University.

Sample: Convenient sample consisted of all nurses' staff (35) worked at Neonatal Intensive Care Unit (NICU) in Pediatric Department, Benha University Hospital. Intern student was selected during internship year training in one month's of NICU area, in Pediatric Department, Benha University Hospital, the number was 25 intern nursing student.

Data of tool Collection:

Tool I: A structured interviewing questionnaire consist from two parts

Part I: Personal characteristics of nurses and intern nursing student include data about age, qualification and years of experience, previous simulation training and previous participation in neonatal resuscitation.

Part II: Standardized Checklist for Neonatal Resuscitation:(American Heart Association, 2015):to assess the nurses and intern nursing students' skills regarding neonatal resuscitation baseline and immediate post simulation training which updated after reviewing related literature.

Scoring system

The Standardized Checklist for Neonatal Resuscitation consisted of 24 steps. These steps were positively marked with zero mark for not done, one mark for each incompletely done step and 2 marks for each completely done step. The maximum performance score 48, The level of skill is divided into: competent (85 % and more) and incompetent(less than 85 % and more).Tool II:Confidence and Satisfaction in Learning Scale (NLN, 2012) to assess participant satisfaction with simulation as an educational strategy and how confident students felt about applying skills learned in the lab to the clinical setting. The tool is a self-report survey using the 3-point Likert scale (1=disagree, 2=undecided, 3=agree). Scoring system categorize confidence level into: very confident(75% and more),moderately confident(50% to less than 75%) and non-confident (less than 50%). Scoring system categorize satisfaction level into lower satisfaction less than 75%, higher satisfaction more than 75%.

Validity And Reliability

Data collection tools were submitted to two experts of pediatric nursing to test the content validity. Modifications of the tools were done according to the expert's judgment on clarity of sentences, appropriateness of content and sequence of items. The experts' agreed on the content, according to their review few modifications were carried out in the content. The suggested changes were made. Regarding reliability, the reliability coefficients' alpha between questions was 0.72.

Pilot Study

A pilot study was conducted on 10% (4 nurses and 3 intern nursing students) to test the clarity and applicability of the tool and excluded from the studied sample.

Ethical considerations

All nurses and intern student received written and verbal explanations about the nature of the study; voluntary participation; what study involvement would entail; anonymity and confidentiality issues; and, the right to withdraw from the study at any time without repercussions for research ethical consideration and based on the basic ethical principle of beneficence, upon the completion of the study.

Field work

To fulfill the aim of the current study, the following phases were adopted; assessment phase, planning phase, implementation phase, and evaluation phase. The actual field work was carried out from the beginning of July, 2015 until the end of August, 2015 in the previously mentioned settings covering two months. An official

permission was obtained from the dean of the faculty of nursing Benha University after clarifying the purpose of the study and the time for beginning the study. All participants were entirely voluntary and had the freedom to withdraw from the study at any time, confidentiality and autonomy were assured. The researchers visited the previously mentioned settings two days/week (Monday and Thursday) from 1.00 Pm to 2.00 Pm until the predetermined sample size completed. The average time consumed to fill in the tools was 45 minutes.

Assessment phase: This phase encompassed interviewing the participant to collect baseline data, at the beginning of the interview the researchers greeted the participation, introduced themselves to each participant included in the study, explained all information about the study purpose, duration, and activities and taken oral consent. The average time for the completion of each participant interview was around (30-45 minutes), divided as (30 minutes) for the first tool, and (10-15 minutes) for the second tool, average number collected was 3-5participant / day. The total sample was divided into two groups then 11 subgroups include 5participant for each session. The intern student training taken 3 weeks then nurses training taken 5 weeks.

Planning phase: Based on the needs identified in the assessment phase and relevant review of literature, the researchers prepared skill section consisted of demonstration of neonatal resuscitation procedure in pediatric nursing laboratory using Simbaby. The Simbaby is attached with monitor that provides feedback about heart rate and O2 saturation after each intervention.

Implementation phase: The simulation training was implemented over two months. The procedure classified into assessment, preparation, implementation, post care, and documentation, through exposing nurses and intern students to a variety of neonatal cardiopulmonary resuscitation scenarios that emphasized assessment and intervention that developed by the researchers such as:

- Neonate immediately after birth is not able to initiate breathing with heart rate less than 100 b/m and cyanosed.
- The initial steps help the neonate to start spontaneous breathing but still having apnea with heart rate less than 100 and cyanosed.
- After 30 second of effective bag and mask ventilation with 100% oxygen and heart rate is below 60 b/m.
- Each scenario take approximately 5 to 15 minutes, during this time the participant were able to perform initial steps for resuscitation including measures to prevent heat loss, opining air way, dry, tactile stimulation, reposition and evaluating respiration, heart rate and color. Provide interventions, including starting the positive pressure ventilation, chest compression and give the medication.
-An open channel communication was achieved between researcher and participant to ensure understanding, answer any question and to verify information given.

Evaluation Phase: The participant performance in the previous scenarios was evaluated by using the neonatal resuscitation checklist.

Statistical Analysis

The collected data were categorized, tabulated, and analyzed using the BMI computer program. Numerical data were expressed as mean and standard deviation. Qualitative data were expressed as frequency and percentage. Chi-square test ($\chi 2$) for comparison between baseline and immediately training. Correlation between variables was evaluated using Pearson's correlation coefficient (r). Significance was adopted at $p<0.05$.

Limitation Of The Study

It was difficult to ambulate the Sim-baby to place it under radiant warmer due to the present of its connected line. Difficulty in conducting the sessions during the working hours of staff nurse and intern student.

II. Results

Table 1: *Personal characteristics of nurses and intern nursing student*

Items	***No***	***%***
Profile		
Nurses	35	100
Intern nursing students	25	100
Qualification of nurses		
Diploma Nursing	8	22.9
Baccalaureate degree in nursing	27	77.1
Mean and SD of age/ year		
Nurses	28±2.3	
Intern nursing students	20±1.6	
Years of experience (nurses)		
< 1year	6	17.1

1-3 years	9	25.7
>3years	20	57.2
Mean and SD	4.32±1.01	

Table 1: revealed that more than three quarters of nurses were had Baccalaureate degree in nursing, their mean of age was 28±2.3 years and 57.2% of them had more than three years of experience in neonatal care. On the other hand the mean age of intern nursing students was 20±1.6 years.

Table 2: Distribution of nurses and intern nursing student related to previous participation in neonatal resuscitation and training

	Nurses N=35		***Intern nursing student N=25***	
Items	***No***	***%***	***No***	***%***
Previous participation in neonatal resuscitation				
Air way	15	42.9	3	12
Chest compression	20	57.2	2	8
Medications	14	40	2	8
Defibrillation	3	8.6	0	0
Previous training	4	11.4	1	4

Table 2: reflected that more than half of nurses participate in chest compression, while less than one quarter of intern nursing student participate in air way. Less than one quarter of nurses and 4% only from intern nursing student attending previous training.

Table 3: Nurses and intern student confident about neonatal resuscitation baseline and immediately post simulation training

Items	**Nurses N=35**												**Intern nursing student N=25**											
	Disagree				**Undecided**				**Agree**				**Disagree**				**Undecided**				**Agree**			
	Base line		**post**		**Base line**		**post**		**Base line**		**post**		**Base line**		**post**		**Base line**		**Post**		**Base line**		**post**	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
I feel more confident about my skills	19	54.2	2	5.7	10	28.6	3	8.6	6	17.2	30	85.7	18	72	2	8	2	8	3	12	5	20	20	80
I am better able to assess neonates	20	57.1	2	5.7	10	28.6	8	22.9	5	14.3	25	71.4	19	76	3	12	3	12	2	8	3	12	20	80
The training helped me to think critically	16	45.7	4	11.4	16	45.7	11	31.4	3	8.6	20	57.2	17	68	1	4	6	24	8	32	2	8	16	64
I feel better prepared to care for real situation	12	34.3	3	8.6	20	57.1	2	5.7	3	8.6	30	85.7	17	68	4	16	3	12	4	16	5	20	17	68
I feel more confident in my decision making skills	11	31.4	3	8.6	22	62.9	10	28.6	2	5.7	22	62.8	14	56	7	28	6	24	8	32	5	20	10	40
I am more confident in determining what to tell the healthcare provider.	23	65.7	7	20	7	20	7	20	5	14.3	21	60	13	52	9	36	8	32	12	48	4	16	4	16
I feel more confident to recognize changes in my real neonate's condition.	12	34.3	7	20	11	31.4	8	22.9	12	34.3	20	57.1	17	68	1	4	3	12	3	12	5	20	21	84
Total	**X^2=12.5 P>0.01**												**X^2: 7.84 P>0.05**											

Table 3: revealed that there was statistical significant difference between nurses and intern nursing student confident base line and immediate post simulation training about neonatal resuscitation (p>0.01, P>0.05) respectively.

Table 4: Nurses and intern nursing student satisfaction about neonatal resuscitation baseline and immediately post simulation training

Items	Nurses N=35												Intern nursing student N=25											
	Disagree				Undecided				Agree				Disagree				Undecided				Agree			
	Base line		post		Base line		post		Base line		post		Base line		post		Base line		Post		Base line		post	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
The teaching methods used in this simulation were helpful and effective.	5	14.3	4	11.4	25	71.4	3	8.6	5	14.3	28	80	16	64	2	8	6	24	3	12	3	12	20	80
The simulation provided me with a variety of learning materials	15	42.9	2	5.7	16	45.7	5	14.3	4	11.4	28	80	18	72	3	12	2	8	5	20	5	20	17	68
I enjoyed how my instructor taught the simulation.	18	51.4	1	2.9	13	37.1	11	31.4	4	11.4	23	65.7	10	40	4	16	10	40	6	24	5	20	15	60
The teaching materials used in this simulation were motivating and helped me to learn.	12	34.3	3	8.6	11	31.4	2	5.7	2	5.7	30	85.7	14	56	1	4	4	16	3	12	7	28	21	84
Total	X^2=13.2 P=0.01												X^2=5.03 P=0.05											

Table 4: illustrated that there was statistical significant difference between nurses and intern nursing student satisfaction base line and immediate post simulation training about neonatal resuscitation (p>0.01, P>0.05) respectively.

Figure 1: Total skill performance of nurses and intern nursing student baseline and immediate post simulation training about neonatal resuscitation

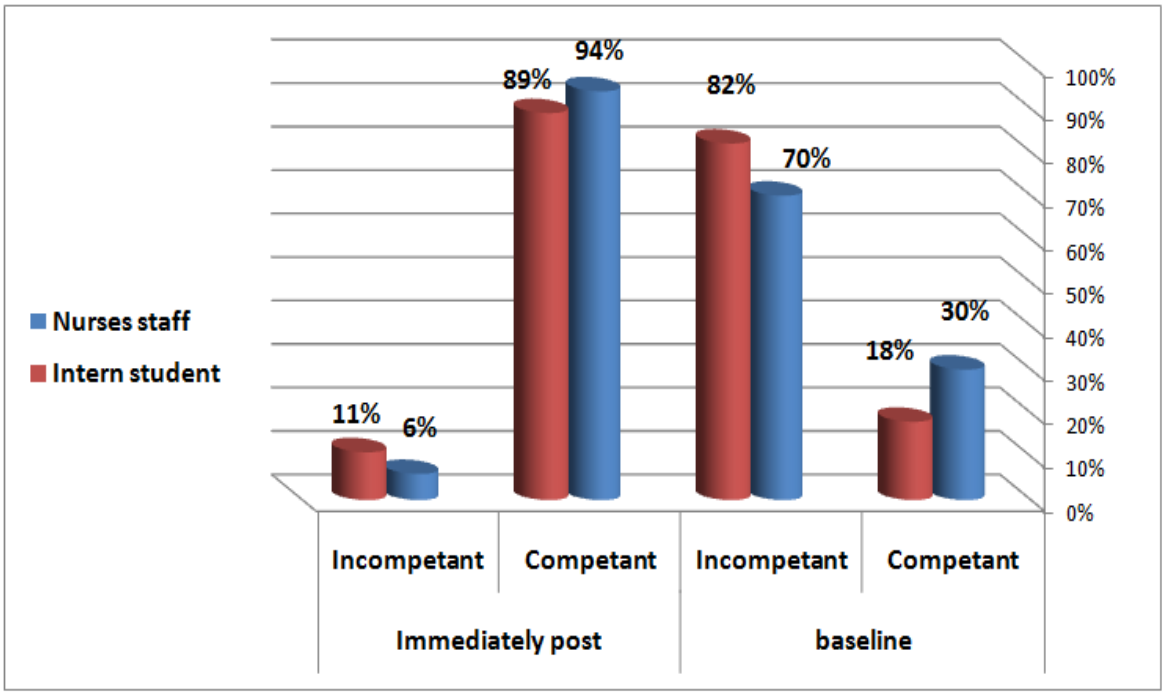

Figure 1: revealed to total level of skills related neonatal resuscitation base line and immediately post simulation training, the nurses at baseline the competent skills was one third, while immediately post more than two third. Meanwhile intern nursing student competent skills was less than one quarter base line, while immediately post was more than three quarter.

Figure 2: Confident of nurses and intern nursing student base line and immediately post simulation training about neonatal resuscitation

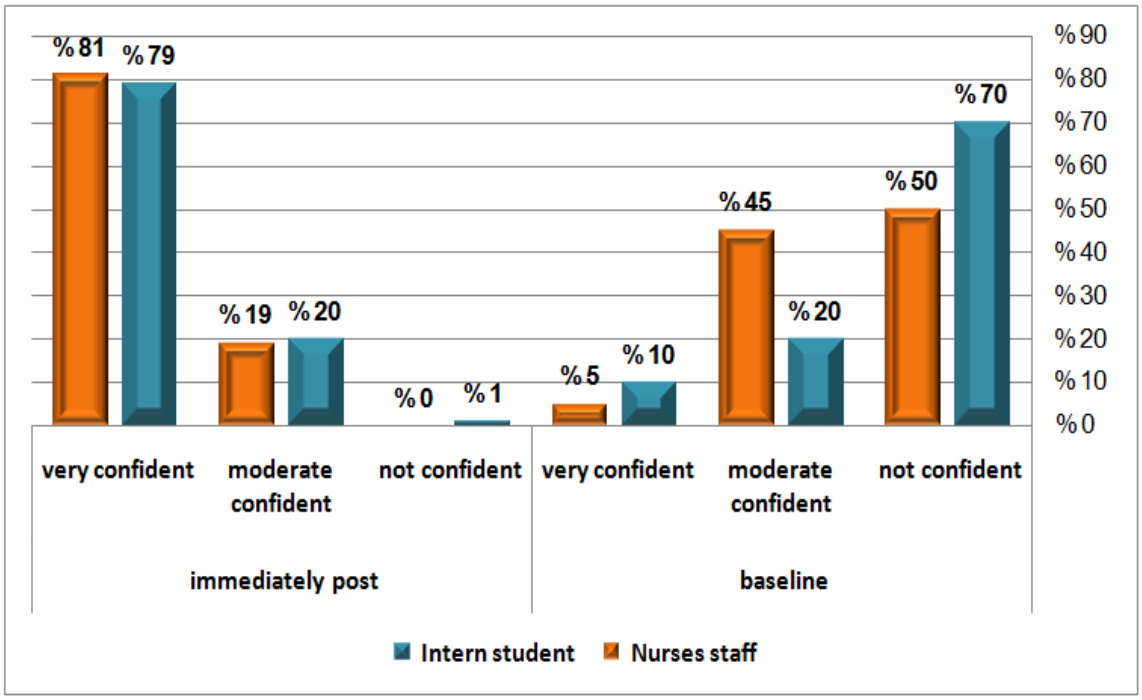

Figure (2): represented that low percentage of nurses and intern nursing student were very confident baseline less than one quarter and this percent increased immediately post to more than three quarter.

Figure 3: Satisfaction of nurses and intern nursing student base line and immediately post simulation training about neonatal resuscitation

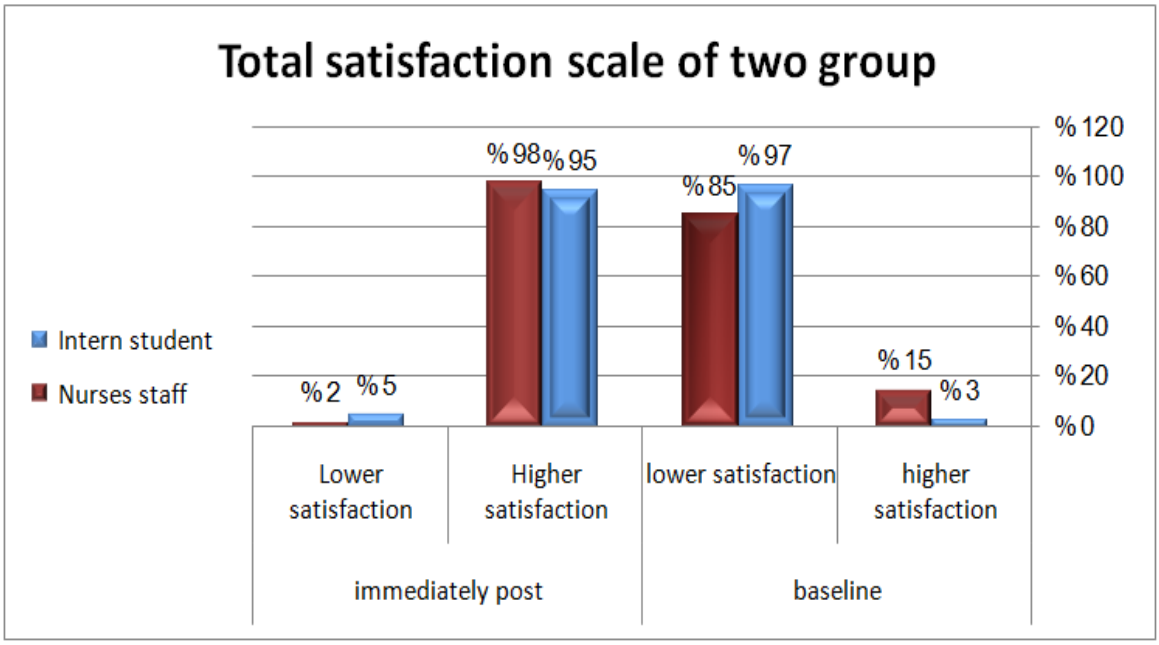

Figure (3): represented that low percentage of nurses and intern nursing student were higher satisfaction baseline less than one quarter and this percent increased immediately post to more than three quarter.

Table 5: Correlation between skills, confident and satisfaction among nurses and intern nursing student with age base line and immediately post simulation training about neonatal resuscitation

Variables	Age							
	Nurses				Intern nursing student			
	Base line		Immediately post		Base line		Immediately post	
	r	p	r	p	r	P	r	p
Skills	2.45	0.04	2.02	<0.05	2.2	0.06	2.31	0.03
Confident and satisfaction	2.6	0.02	1.2	<0.05	4.3	0.03	2.78	0.02

Table 5: show positive correlation between skill, confident and satisfaction of nurses than intern nursing students with their age. It is clear that there was statistical significant difference in the nurse's post immediately, p< 0.05.

Table 6: Correlation between skills, confident and satisfaction of nurses with their qualification base line and immediately post simulation training about neonatal resuscitation

Variables	Diploma				Baccalaureate			
	Base line		Immediately post		Base line		Immediately post	
	r	p	r	p	r	p	r	p
Skills	4.06	0.04	4.02	0.03	3.45	<0.05	2.01	<0.01
Confident and satisfaction	6.23	0.03	5.45	0.02	2.78	<0.05	1.02	<0.01

Table 6: show positive correlation between skill, confident and satisfaction of nurses with baccalaureate degree than diploma. It is clear that there was statistical significant difference in the nurse's baccalaureate base line and post immediately, p< 0.05-0.01 respectively.

Table 7: Correlation between skills, confident and satisfaction of nurses with their years of experience base line and immediately post simulation training about neonatal resuscitation

Variables	Skills				Confident and satisfaction			
	Base line		Immediately post		Base line		Immediately post	
	r	p	r	p	r	p	r	p
< 1year	2.02	0.04	2.01	0.04	3.07	0.02	3.01	0.02
1-3 years	4.39	0.03	3.27	0.02	2.35	0.04	2.34	0.03
>3years	3.89	0.02	1.08	<0.05	2.87	0.05	1.09	0.01

Table 7: show positive correlation between skill, confident and satisfaction of nurses with >3years experience than <1years and 1-3 years. It is observed that there was statistical significant difference in the nurse's with >3years base line and post immediately, p< 0.05-P<0.01 respectively.

III. Discussion

The use of simulation as an educational tool provides a risk-free environment for both neonates and pediatric trainees to address pertinent issues related to resuscitation training.The aim of this study was to evaluate the effect of simulation training on nurses and intern nursing student's skills, confident and satisfaction regarding neonatal resuscitation. In relation to personal characteristics of nurses and intern nursing student (Table 1) the current study revealed that more than three quarters of nurses were had Baccalaureate degree in nursing, their mean of age was 28±2.3 years and 57.2% of them had more than three years of experience in neonatal care. On the other hand the mean age of intern nursing students was 20±1.6 years. This finding was agreement with (Lambton, et al., 2008) who found the average age of pediatric nursing student was 20-25 years, 65% of them worked part time to support their education. Also in a study carried out by (Jhuma, et al., 2013) was found that the mean age of nurses studied was 30 years represent 7% and 62% of them <1 years of experience.

As regard previous participation in neonatal resuscitation and training (Table 2) reflected that more than half of nurses participate in chest compression, while less than one quarter of intern nursing student participate in air way. Less than one quarter of nurses and 4% only from intern nursing student attending previous training. This is in a contrast with a study carried out by (Jhuma, et al., 2013) who found that the nurses prior experience in steps of resuscitation 57% of nurse participate in drug administration and 42.8% participate in air way and chest compression. Also 20% of nurses attending prior previous training in CPR. In relation to total skill performance of nurses and intern nursing student baseline and immediate post simulation training about neonatal resuscitation (Figure 1), revealed that the nurses at baseline the competent skills was one third, while immediately post more than

two third. Meanwhile intern nursing student competent skills was less than one quarter base line, while immediately post was more than three quarter. This in the same line with (Jhuma, et al., 2013) which found that skills scores immediately post-training improved in in-service nurses improved from 6.6 to 11.5, while of the pre service group improved from 5.8 to 11.3; the difference being statistically significant for both groups. In addition (Maurya, 2015) indicate that study group (simulation teaching) increased the post test psychomotor score of nursing student on neonatal resuscitation the simulation teaching was more effective for nursing students. Also (Jhuma, et al., 2011) found that improve in skill score of the study participants being more than 84% .

Concerning, confident of nurses and intern nursing student base line and immediately post simulation training about neonatal resuscitation (Figure 2), represented that low percentage of nurses and intern nursing student were very confident baseline less than one quarter and this percent increased immediately post to more than three quarter. These result were consistent with (Weaver, 2011) which notes that participating student's reports high self-confidence in simulation which reflect the safety of the simulation environment. In addition (Lambton, et al., 2008) who found that improvement in student confidence during simulation course remain high. Also (Elsayed and soliman ,2015) represents that none of nurses in both groups were very confident before the intervention (0.0% for both groups) and this percent increased immediately after the intervention to 54% for the traditional group and 94% for simulated group and changed to36% and 94% respectively after 3 months of the intervention in both group. Also (Maurya, 2015) reported that feedback about simulation teaching 86% nursing students was strongly agree with simulation teaching developed self confidence.

Regarding satisfaction of nurses and intern nursing student base line and immediately post simulation training about neonatal resuscitation (Figure 3), represented that low percentage of nurses and intern nursing student were higher satisfaction baseline less than one quarter and this percent increased immediately post to more than three quarter. These findings were in line with studies of (Agha, et al., 2015) which found that the students were high learner satisfaction with learning by the clinical simulation and that learner's confidence in their skills. Also (Roh, et al., 2013) documented that the simulation group had significant higher satisfaction ratings in 'Setting priorities for nursing intervention and implementing nursing skills as protocol' compared to the mannequin-based simulation group.

As regard correlation between skills, confident and satisfaction among nurses and intern nursing student with age base line and immediately post simulation training about neonatal resuscitation (Table 5), show positive correlation between skill, confident and satisfaction of nurses than intern nursing students with their age. It is clear that there was statistical significant difference in the nurse's post immediately, $p< 0.05$. This finding was in an agreement with study conducted by (Paker, et al., 2015) who compare student confidence and satisfaction in clinical learning in the simulated and traditional clinical experience, there were no significant difference with student self confidence between two group. These finding in the same line with (Amin, et al., 2013) concluded that simulation training increased participants' perceptions of their knowledge, skills, and confidence to train others in neonatal resuscitation. In addition the study carry by (Malekzadeh, 2015) found that students' self-confidence was lower than half of the optimal score, and their satisfaction with OSCE was high. As competence in this area is of high significance for the improvement of neonatal outcomes, holding training workshops through applying novel training methods is recommended. Also these result in agreement with study of (Omer, 2016) found that self-confidence did not have statistical significant correlation with demographic characteristics as age. On the other hand this results are congruent with (Jefferies, 2007) which suggests that the outcomes of satisfaction and self-confidence are due to combination of factors related to demographic characteristics. Also the study carry by (Carter, et al., 2015) reported that there was statistical significantly between baseline and post workshop (35.7%→53.4%, $p<0.001$), as did students' confidence (55.7%→60.5%, $p<0.001$), and their workshop satisfaction was high (71.0%). Satisfaction and post workshop confidence measures were moderately correlated ($r=0.377$, $p=0.001$). However, competence improvements were not significantly correlated with either satisfaction ($r=-0.107$ $p=0.344$) or change in confidence ($r=-0.187$ $p=0.102$).

In relation to correlation between skills, confident and satisfaction of nurses with their qualification base line and immediately post simulation training about neonatal resuscitation (Table 6), show positive correlation between skill, confident and satisfaction of nurses with baccalaureate degree than diploma. There was statistical significant difference in the nurse's baccalaureate base line and post immediately, $p< 0.05$-$p<0.01$ respectively. In the same line with the result of (Mosalanejad, et al., 2012) there was a significant correlation between confidence and practical scores. In addition the results of (Tawalbeh and Tubaishat 2013) indicated that the skill and confidence of students in the experimental group improved significantly in the first posttest, compared with the control group.

As regard correlation between skills, confident and satisfaction of nurses with their years of experience base line and immediately post simulation training about neonatal resuscitation (Table 7), show positive correlation between skill,

confident and satisfaction of nurses with >3years experience than <1years and 1-3 years. It is observed that there was statistical significant difference in the nurse's with >3years base line and post immediately, $p< 0.05$-$P<0.01$ respectively. This is in a contrast with a study carried out by (Paker, et al., 2015) who reported that there were no significant differences in content knowledge, satisfaction, years of experience, and self- confidence did not predict resuscitation skill.

IV. Conclusion

The present study concluded that simulation promote skill performance, self-confidence and satisfaction of nurses and intern student about neonatal resuscitation. The study provide evidence to support the integration of simulation as an effective teaching strategy help to improve nurses and intern nursing students' confidence and satisfaction in applying clinical skills. Simulation provides nurse educators with the opportunity to provide intern nursing students with realistic learning experiences in a safe environment.

V. Recommendations

Based on the results of the study, it is recommended that:

1. Training program for intern nursing student who are in close contact with neonates once in every 2 months with reevaluation and feedback after each update is very important.
2. Further researches to examine the effect of simulation on learning outcomes to provide more evidence that simulation would be valuable for nurse's development.
3. Reinforcement for psychomotor skill on the bases of simulation in clinical area for other procedure.

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