

Effect of Educational Program on Nurses Essential Care Practices of Newborn Baby

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ABSTRACT

Background: Nurses essential care practices are important for the survival, growth, and development of a newborn baby. The care of newborn depends on the essential care practices of the nurses. In spite of its essentiality, most nurses in clinical settings have incompetent essential care practices regarding newborn baby. The essential care practices of newborn baby could be improved by implementing educational program. So, there is a dire need of educational intervention on essential care practices of newborn baby.

Objective:

1. To see the effect of educational program on nurses essential care practices of newborn baby.
2. To find out association between sociodemographic characteristics and nurses essential care practices of newborn baby.

Study Design: Quasi experimental study

Materials and Methods: A Quasi experimental study included 48 registered nurses were selected by using simple random sampling technique. A twelve weeks educational intervention consists of PowerPoint lectures on nurses essential care practices, audio visual demonstration and hands on workshop practice sessions were given by the expert of this field to registered nurses on caring of newborn baby. Data on nurse's practices were collected two times before and after the intervention via validated tools.

Results: The study showed a significant ($p < 0.001$) change in nurses essential care practices after educational intervention. Nearly, all nurses had incompetent practices before educational intervention. The practices had been competent as 45(93.8%) from 8(16.7%). There was statistically significant relationship between age and post practices while insignificant relationship was shown among total years of experience, experience in department and department name as well in post-test.

Conclusion: The educational interventions significantly improve nurses essential care practices of newborn baby in both Tertiary care Hospitals of Bahawalpur.

Keywords: Essential care practices, Educational intervention, Nurses, Newborn

INTRODUCTION

Nurses are considered the backbone of any health care system. The role of nurses is very important in assessing the newborn and providing newborn care soon after the delivery. Previous studies estimated that the nurses working in labour room don't have enough practices regarding the newborn (Nishimwe, Conco, Nyssen, & Ibisomi, 2022). Competent nurses can prevent neonatal mortality and morbidity rate to a very good extent. The importance of nurses in fostering a healthy nation cannot be overstated. The success of a country is based on a healthy people. Today's healthy children will lead to a healthier nation tomorrow. Newborn needs full attention and monitoring (Arpadi, Shiao, De Gusmao, & Violari, 2017).

The newborn stage is critical since it impacts the child's general health and, as a result, adult life. Birth is a big difficulty for the newborn in terms of successfully transitioning life in the womb to life outside of the womb. The transition from intrauterine to extra uterine life is a significant one, and the newborn must undergo significant and successful physiological changes in order to survive (Katheria, Rich, & Lakshminrusimha, 2019). Neonates are at risk for a number of health problems, even if they are born with normal birth weights. Newborns have exceptionally high rates of sickness and mortality. They require the greatest possible care in order to have a better chance of survival (Donders et al., 2020).

Practices of essential newborn care are basic to provide reduce neonatal death. As a result, the goal of this study was to examine the practices of health care providers on vital infant care. Nurses' care at the time of birth is crucial in preventing negative outcomes and guaranteeing survival with immediate management (McKinney, James, Murray, Nelson, & Ashwill, 2021). A newborn baby is assumed to be helpless and small, completely reliant on others for survival.

The term "essential newborn care" refers to a range of procedures and behaviours offered during childbirth and shortly afterward, incl

uding thermal care, hygienic childbirth practices, and early nursing (Mangwi Ayiasi, Kolsteren, Batwala, Criel, & Orach, 2016).

A comprehensive intervention plan for the health of babies is known as essential newborn care (Organization, 2018). This care begins as soon as the baby is born and includes cord care, eye care, environment, temperature, hygiene, immunization, bathing, and feeding. Nurses essential care practices of the newborn is most important part of the newborn care. The newborn are somewhat depends on the maturity and health care professional skills. Lack of monitoring and lack of newborn care may result in adverse consequences even death (Canobbio et al., 2017).

These important newborn care techniques must be offered during labour, delivery, and the immediate postpartum period, it is vital that health care providers in the labour have the skills to offer safe and timely care (Lalonde et al., 2019). As a result, essential newborn care is a comprehensive plan aimed at improving the health of babies as soon as possible after birth by interventions. The initial hours and days of life are the most vulnerable for newborns, but this crucial window of opportunity is being wasted (Negussie, Hailu, & Megenta, 2018).

A cross-sectional study was conducted in Ethiopia for essential care practices of nurses in terms of newborn care, the findings of the study estimated that more than half nurses had competent practices regarding newborn care (Yigzaw et al., 2015). Also, there was a substantial link observed between the nurse's experience and practices regarding newborn care. In addition, another study was conducted, the findings of the study explore the importance of newborn care and the essential care practices of health care providers (Shahabuddin et al., 2017).

According to the literature, nurse's roles and the value of essential newborn care information and practice are vitally wanted because these protected four predominant regions; umbilical cord care (to prevent contamination), early initiation and distinctive breastfeeding, thermoregulation measures, and early recognition of chance signs (Jemutai, 2019). There is paucity of research on newborn care in Pakistan. Preventive interventions regarding

essential newborn care may help in decreasing the Burden of morbidity and mortality of newborn(Lassi, Mansoor, Salam, Das, & Bhutta, 2014).

According to evidence, children who die in the first 28 days of life have illnesses and disorders connected to a lack of competent care and treatment shortly after birth and on the first day of life. Many newborn emergencies can be avoided, as well as 50% of unfavorable effects and 45 percent of neonatal deaths that occur after birth and during the postnatal period, if immediate infant care is provided(Ntambue, Malonga, Dramaix-Wilmet, Ngatu, & Donnen, 2016). The majority of newborn deaths were caused by poor implementation of basic neonatal care, with up to two-thirds of them being preventable or treatable. Because delivery and the first few hours of life are essential periods for an infant's growth and development, the quality of care provided to the newborn will affect the child's future well-being(Bokulich et al., 2016).

MATERIALS AND METHODS

The study objective was to see the effect of educational program on nurses essential care practices of newborn baby and to find out association between socio demographic characteristics and nurses essential care practices of newborn baby. A quasi experimental study was conducted at Civil Hospital and Bahawal Victoria Hospital Bahawalpur, Punjab Pakistan from September 2021 to February 2022. The study was approved by the institutional board of University of Lahore. 48 staff nurses were chosen by using simple random sampling procedure. Staff nurses from labour room, NICU and gynecology ward of hospital signed a written informed consent. The nurses who gave informed consent were between the ages of 25-40 years.. A twelve weeks educational intervention consists of PowerPoint lectures on nurses essential care practices, audio visual demonstration and hands on workshop practice sessions were given by the expert of this field to registered nurses on caring of newborn baby. Data on nurse's practices were collected two times before and after the intervention via validated tool. The demographic form consists of age, total years of experience, experience in department and department name. Data on practices was collected through 24 items of observational checklist designed from(Negussie et al., 2018) . Practices was categorized as competent if score >50% and incompetent if score <50%. The options were scored one when done correctly and not done were scored zero(Organization, 2014)..

Pilot study: The Pilot study was conducted to see how effective the tool. 10% of the study participants were taken who later excluded from the study sample. The questionnaire was modified according to the results of Pilot study. The reliability has been collected through Croanbach's alpha which is 0.72. Content validity of tool was also calculated which is 0.935.

Post-test data was collected by using the same questioner. Data was entered and analyzed by using Statistical package for social sciences (SPSS) version 21. The frequencies, percentages, mean and standard deviation were used as descriptive statistics while Wilcoxon signed rank test was used to compare the difference in pre and post-practice scores after educational intervention. P < 0.05 will be considered as statistically significant.

RESULTS

The mean age of participants was 30.10+ 4.5 years. There were 30(62.50%) participants having the age of 25-30 years. There were 26 (54.2%) participants having experience of 2-5 years and 22 (45.8%) participants have > 5 years of experience in recent department. Majority of the 28(58.3%) participants were from Labour Room, 14(29.2%) were working in gynecology ward and 6(12.5 %) nurses were in neonatal intensive care unit (Table 1). There was statistically significant relationship between age and post practices while insignificant relationship was shown among total years of experience, experience in department and department name as well in post-test.

When the participants asked if they wipes their face and eyes, 41(85.4%) done, while 7(14.6%) did not done at all. In terms of Apgar score 40 (83.3%) of the participants done it during a delivery, while 8 (16.7%) did not done it solely for babies. When it came to airway clearance 40 (83.3%) participants done the principle of checking and sucking airway for babies they delivered, 8(16.7%) did not. Majority, 36(75.0%) were checked for breathing while drying it, while 12(25.0%) were not (Table 3).

When it came to thermal protection, 38 (79.2%) of the participants dried newborns right after delivery with a dry towel while 10(20.8%) did not apply. Out of the total responses, 39 (81.3%) kept all babies on their mothers bellies immediately after birth while 9(18.8%) did not, 36 (75.0%) discarded wet towels and covered all babies with dry towels, while 12(25.0%) did not. The majority, 40(83.3%) began breast feeding within the few hours following delivery (Table 4).

When it came to personal protective equipment, 44(91.7%) utilized sterile gloves during cord care while 4(8.3%) did not. Of the total participants, only 39(81.3%) wore a clean mask for deliveries, while 8(18.8%) did not, 36(75.0%) wore a clean apron during deliveries they conducted and 12(25.0%) did not. 41 (85.4%) showed that they washed their hand with soap and water before procedure while 7(14.6%) did not. On the other hand, 40(83.3%) of the study participants made sure that mothers washed their hands before handling the baby. When it came to cord care, 41 (85.4%) waited 2-3 min after delivery to clamp the umbilical cords of crying babies while 7 (14.6%) clipped the cords of all crying babies in less than 2 min or soon after the baby was delivered.

Table 1: Demographic information of the participants (n=48).

Variables	F	%
Age in years (n=48)		
25-30	30	62.50
30-35	06	12.50
35-40	12	25.00
Total years of Job experience (n=48)		
2-5 Years	26	54.2
6-10 Years	08	16.7
> Than 10 Years	14	29.2
Years of working experience in recent department (n=48)		
1-3 Years	8	16.7
3-5 Years	18	37.5
> Than 5 Years	22	45.8
Name of department, Participant working in (n=48)		
Labour Room	28	58.3
Gynecology Ward	14	29.2
NICU	6	12.5

Table 2: Association of Demographic characteristics to Practices at post intervention (n=48).

	25-30	30-35	35-40	χ ²	P value
Age	1.00	1	1	15.538 ^a	.000
	2.00	31	0		

Total years of Experience

	2 to 5 years	6 to 10 years	greater than 10 years	χ ²	P value
1.00	0	1	2	3.810 ^a	.149
2.00	26	7	12		

How many years you are working in recent Department

	1 to 3 years	3 to 5 years	greater than 5 years	χ ²	P value
1.00	0	0	3	3.782 ^a	.151
2.00	8	18	19		

Department Name

	Labour room	Gynecology ward	NICU	χ ²	P value
1.00	0	2	1	4.521 ^a	.104
2.00	28	12	5		

Table 3: Practice on neonatal airway management (n=48).

Item of practice	Response	f	%
When the head is delivered, wipes the eyes and face	Not done	7	14.6%
	Done	41	85.4%
Taking Apgar Score	Not done	8	16.7%
	Done	40	83.3%
Check and Sucks the air way	Not done	8	16.7%
	Done	40	83.3%
Check for breathing while drying	Not done	12	25.0%
	Done	36	75.0%

Table 4: Practice of thermal protection n=48).

Item of practice	Response	f	%
Drying the baby immediately with dry towel	Not done	10	20.8%
	Done	38	79.2%
Discarding wet towel and cover the baby with dry towel	Not done	12	25.0%
	Done	36	75.0%
Keeping the baby on mothers belly immediately after birth	Not done	9	18.8%
	Done	39	81.3%
Keeping skin to skin contact with the mother	Not done	12	25.0%
	Done	36	75.0%
Initiating breast feeding Within the first hour of delivery	Not done	8	16.7%
	Done	40	83.3%

After clamping the cord, the clear majority of 28(58.3%) used sterile scissor to cut it, although 20(41.7%) did not. Of the study participants, 37(77.1%) reported that they cleaned the cord care and let it to air dry while 11(22.9%) did not do so for the babies they delivered. On eye care, 39(81.3%) did this care while 9(18.8%) of the total participants did not, 39(81.3%) applied eye ointment to the newborns they delivered, 9(18.8%) did not. When applying eye ointment, 39(81.3%) applied it without touching the eyes with the tip of ampule whereas 9(18.8%) did not. More half of the participants weighed and recorded the weights of babies they delivered (Table 5).

Results indicated that before intervention participants had incompetent practices whereas 8(16.7%) had competent practices. After educational intervention competent practices was 45(93.8%) and incompetent score was 3(6.3%) (Table 6). On the other hand,

Table 7: Comparison of practice scores pre-and post-intervention (n=48)

Descriptive Statistics						Percentiles		
	N	Minimum	Maximum	Mean	Std. Deviation	25 th	50 th	75 th
pre score practices	48	2.00	19.00	9.5625	3.64899	7.0000	9.5000	12.0000
Post score practices	48	11.00	24.00	19.7708	3.86055	17.0000	21.0000	23.0000

Table 8: Wilcoxon signed rank test for Comparison of practice scores pre-and post-intervention (n=48)

Variables	Pre intervention	Post intervention	Median difference	z-value	Sig.
Practices score	9.5000	21.0000	11.5	-5.778 ^b	.000

DISCUSSION

The current study aims to assess the effect of educational intervention on nurses essential care practices of newborn baby. Practice is one of the most important skill in fundamental of nursing and lack of practices might obstruct provision of quality care to newborn baby (Hockenberry & Wilson, 2018). The study results showed that the competent practice score was 8(16.7%) before educational intervention and competent practice score was 45(93.8%) of the participants after educational intervention.

The study had shown significant (p<0.001) improvement in practices of registered nurses after educational intervention. In our study age was significantly(p<0.001) associated with essential care practice of nurses as in cross sectional study (p<0.11) conducted by H Abdu et al(2019) and work experience was statistically insignificant(p<.149) with essential care practice of nurses as in study (Negussie et al., 2018).

In our study, the results shown the significant (p<0.001) improvement in participants practices after educational intervention. The results are supported by Ebrahimi, H.K. et al(2020) where registered nurses had competent practices(p<0.05)

results revealed that changes in mean of pre and post intervention. Pre intervention was 9.5625 and after intervention it was changed to 19.7708(Table 7). Median difference was 11.5. Wilcoxon signed rank test was used to compare the change in practices score of pre and post intervention. Results indicate that post intervention change in practices scores was significant among participants. Hence there is effectiveness in improving practices of new born essential care among registered nurses (Table 8).

Table 5: Practice of infection prevention and cord care (n=48).

item of practice	Level of practice	
	Not done	Done
Put on sterile glove	4(8.3%)	44(91.7%)
Wearing mask	8(18.8%)	39(81.3%)
Wearing apron	12(25.0%)	36(75.0%)
Hand washing before the procedure	7(14.6%)	41(85.4%)
Clean eyes right after birth from medial to lateral side with a swab dipped in sterile water	9(18.8%)	39(81.3%)
Using Sterile Scissor	20(41.7%)	28(58.3%)
Clamping the cord within 2-3 min	7(14.6%)	41(85.4%)
Ensuring the mother wash her hands	8(16.7%)	40(83.3%)
Giving eye ointment	9(18.8%)	39(81.3%)
Not touching the eyes with the tip of the ampule	9(18.8%)	39(81.3%)
Cleaning the cord and letting to air dry	11(22.9%)	37(77.1%)
Weigh and record the baby's weight	8(16.7%)	40(83.3%)

Table 6: Pre-and Post-intervention of newborn essential care Practices score among Nurses (n=48)

Variables	Pre- practices intervention	Post- practices intervention
Incompetent practices	40(83.3%)	3(6.3%)
Competent practices	8(16.7%)	45(93.8%)

regarding Apgar score, concerning airway clearance, checking and sucking airway and checking for breathing.

The need of thermal protection in newborns cannot be overstated. Because it can prevent hypothermia complications (Lunze et al., 2014). Breastfeeding exclusively has a considerable anti-infectious impact. (Raheem, Binns, & Chih, 2017). A study conducted by Bayisa Bereka Negussie (2016) 62.1% participants had competent practices where the infant should be kept immediately after birth, discarded wet towel, covered with dry garments, and kept the baby in skin to skin contact with the mother after educational intervention in Ethiopia. The results are supported our study that educational intervention increase essential care practices of nurses related to thermal protection and the time of breast feeding initiation within one hours of delivery(p<0.001).

Clean cord care is highly crucial in preventing early neonatal infections(Ludwig, Schuelper, Brown, Anders, & Raupach, 2018).Hand washing practices are efficient and cost-effective intervention aimed at reducing neonatal deaths(Kuti et al., 2021). Despite some misunderstanding about gloving regulations among

nurses, the majority of surveyed nurses utilized gloves when performing general care duties (Moussa, Aziz, Sadki, & El Marnissi, 2020). Our study had shown significant ($p < 0.001$) improvement in practices of registered nurses after educational intervention. The results of our study were align with study conducted in Ethiopia, shown the significant ($p < 0.001$) improvement of nurses essential care practices of nurses regarding practices on infection prevention and cord care (Negussie et al., 2018).

To our knowledge, this is the first study conducted in Tertiary Hospitals of Bahawalpur, Pakistan to determine the effect of educational intervention on nurses essential care practices of newborn. This study is useful for faculty and programme directors in charge of pre-service nursing curriculum reform in colleges of nursing. However there are certain limitations such as the lack of control group, which may restrict its actual usefulness. The sample size was small and this study was confined to only diploma nurses.

CONCLUSIONS

This study supports the educational intervention in improving essential care practices of nurses regarding newborn care. The nurses had shown significant improvement in their practices after educational intervention. Moreover, this study revealed socio-demographic characteristics such as total years of experience, experience in department and department name which had insignificant relationships with nurses' essential care practices of newborn.

Recommendations: Essential care practices of nurses plays an important role regarding newborn care. There is need to develop effective in service educational training programs for nurses. Future a large sample size is recommended for estimating the real effect of educational programme on nurse's practices for newborn. This study is considered to be a baseline for further research that could explore in more depth the role of the nurses in enhancing essential care practices.

Conflict of Interest: Nil

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