

Neonatal Care Practice among Nurses Working at both Public and Private Hospitals in Bangladesh

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Abstract

Background: Despite medical advancement, Bangladesh still show high infant mortality rate. Infections, pre-term birth, and birth asphyxia are identified as the three leading causes of neonatal deaths worldwide. Advanced quality care and essential newborn care practices can minimize the mortality as well as the morbidity of neonates. Therefore, this study aimed to examine the neonatal care practice among nurses working at both public and private hospitals in Bangladesh.

Methods: A descriptive cross-sectional study was conducted among conveniently selected 117 nurses working at the selected three public and two private hospitals in Bangladesh. A face-to-face interview was carried out through a structured questionnaire containing two domains including the socio-demographic part and the neonatal care-related segment. Descriptive and inferential statistics including frequency, percentage, mean, SD and t-test, and ANOVA were used to analyze the data. **Results:** The total mean score of neonatal care practice was 46.27 ± 9.22 in public hospital and 50.85 ± 5.03 in Private Hospital. The mean age of participants in public was 32.35 (SD=6.85) and in private hospitals was 29.91 (SD=3.69) years. There was a statistically significant positive relationship between number of nurses ($r=0.834$, $p<0.001$), number of bed ($r=0.559$, $p<0.001$), job experience ($r=0.294$, $p=0.023$) and neonatal care practice among nurses in public hospital. There was a statistically significant negative relationship between number of nurses ($r=-0.812$, $p<0.001$), number of beds ($r=-0.812$, $p<0.001$) and neonatal care practice among nurses in private hospitals. **Conclusion:** It is concluded that the overall neonatal care practice of nurses in Bangladesh is at a satisfactory level. Though private hospital nurses show a higher level than government hospitals with respect to neonatal care practice.

Keywords: Neonatal, Care Practice, Nurses, Public Hospital, Private Hospital, Bangladesh.

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INTRODUCTION

The neonatal period encompasses the initial four weeks of a newborn's life, regardless of whether they were born prematurely or carried to full term [1]. During this crucial time, commonly known as the neonatal period or the first 28 days of life, a child is at their most vulnerable stage in terms of survival [2]. Moreover, the well-being and proper development of the baby largely hinge on the quality of neonatal care provided. Neonatal care refers to the medical attention and support given to an infant from birth until the completion of their first four weeks of life [3].

In recent decades, there have been significant advancements in the care of newborns. However, despite these improvements, the morbidity and mortality rates for premature and critically ill neonates remain unacceptably high. In 2021, a distressing 2.3 million children worldwide lost their lives within the first month of birth, with approximately 6400 neonatal deaths occurring daily [2]. Notably, neonatal mortality rates are higher in developing countries compared to developed countries. The regions with the highest mortality rates for neonates in 2021 were sub-Saharan Africa and South Asia, with 27 and 23 deaths per 1,000 live births, respectively [2]. Shockingly, a child born in sub-Saharan Africa is more than 10 times as likely to perish within the

first month compared to a child born in a high-income country, while a child born in South Asia faces nine times the risk [2].

In 2021, the World Health Organization (WHO) reported that globally, there are four primary causes responsible for neonatal deaths. These include preterm birth, complications during childbirth (such as birth asphyxia or lack of breathing at birth), infections, and birth defects [4]. Among these factors, infections (comprising sepsis/pneumonia, tetanus, and diarrhea) accounted for 36% of neonatal mortality, followed by preterm birth at 28%, and birth asphyxia at 23% [5]. In developing countries, the major causes of neonatal infections are attributed to inadequate hygiene practices during medical procedures due to shortages in medical personnel and equipment [6]. The incidence of neonatal sepsis is approximately 40 times higher, and mortality rates are two times higher in middle-income countries compared to high-income countries [7]. Additionally, a study identified material shortages, the duration of training, and the type of health facility as significant factors affecting the practice of immediate newborn care [8]. Shockingly, 52% of neonatal deaths are attributed to a lack of appropriate care given to neonates [9]. According to UNICEF data from 2018, providing quality care for small and sick newborns could prevent up to 79% of neonatal deaths [10].

To address these issues and save the lives of neonates, WHO recommends several essential newborn care practices. These crucial interventions include clean cord care, thermal protection, early and exclusive breastfeeding, delayed bathing, care for low birth weight newborns, and proper management of newborns [4]. Neonatal intensive care for premature and sick newborns is typically administered by specialized nurses in various healthcare settings, including the neonatal intensive care unit (NICU), emergency room, delivery room, or specialty clinics. Unfortunately, Bangladesh is grappling with a severe shortage of trained nurses, with an estimated ratio of approximately 1.07 nurses per 10,000 people [11]. This means that the country faces a population-nurse ratio of 5000:1 and a bed-nurse ratio of 13:1, both of which fall significantly below the international standard of 4:1 for bed-nurse ratio [12].

A prior study emphasized the crucial link between higher levels of nurse staffing and lower rates of newborn mortality [13]. Despite efforts, Bangladesh still experiences a high infant mortality rate, reaching 21.556 per 1000 live births [14]. Of concern is that over two-thirds of this mortality rate is attributed to deaths occurring within the first month of life [15]. Alarming, 88% of all neonatal deaths in Bangladesh stem from three highly preventable causes: severe infection, intrapartum-related issues (such as birth asphyxia), and complications of preterm birth [16].

Previous research in Bangladesh has predominantly focused on newborn care practices in rural, sub-district, and district areas. These studies aimed to identify and describe the knowledge, factors, practices, facilities, and barriers related to newborn care. Unfortunately, there have been limited publications concentrating specifically on neonatal care practices within Bangladesh, and most of the existing research has been conducted in other countries. To address this gap, the current study aims to explore the neonatal care practices employed by nurses in Bangladesh. The findings of this research may provide valuable insights into nursing care practices for both sick and healthy neonates, potentially contributing to the reduction of neonatal morbidity and mortality rates in the country.

METHODOLOGY

This descriptive cross-sectional study involved the participation of 117 nurses who were conveniently selected from both public and private hospitals in Dhaka, Bangladesh. The study was conducted at a total of 5 hospitals, which included three public hospitals: Dhaka Medical College Hospital, Sir Salimullah Medical College Hospital, and Shaheed Suhrawardy Medical College Hospital, as well as two private hospitals: Bangabandhu Sheikh Mujib Medical University Hospital and Institute of Child and Mother Hospital, Dhaka, Bangladesh. To determine the sample size, G* power analysis was employed, using an accepted medium effect size of 0.30, significance level (α) of 0.05, and a minimum power ($1-\beta$) of 0.80. This analysis resulted in a calculated sample size of 102 [17]. To account for potential dropout, an attrition rate of 10% was added, bringing the final sample size to 117 participants. The study included nurses who met specific criteria: they had to be working in neonatal intensive care units, possess at least one-year experience in the selected area, express willingness to participate, and be mentally and physically well-oriented. These individuals were considered as the study participants for this research.

Data for this study was gathered through face-to-face interviews using a structured questionnaire. The questionnaire encompassed two domains, namely the socio-demographic profile and neonatal care practices of the nurses. The socio-demographic domain consisted of 12 items, covering age, sex, education level, religion, family income, job experience, special training on newborn care, duration of training, duration of working period, and availability of equipment. In contrast, the domain pertaining to neonatal care practices of nurses included the Neonatal Care related Questionnaire, which was developed based on WHO guidelines and widely used for assessing neonatal care practices [18]. This questionnaire consisted of 28 items, divided into five segments: practice of neonatal management (7 items), thermal protection (3 items), infection control (6 items), care of at-risk and sick neonates (6 items), and feeding and feeding difficulties (6 items). Respondents used a 3-point Likert scale (0, 1, and 2) to indicate their responses,

corresponding to "no or never" (0), "yes sometimes" (1), and "yes always" (2). The total score possible was 56, with a higher score indicating better neonatal care practices among nurses. To ensure the validity of the instruments used in this study, five experts validated them. Among the experts were two physicians working at the Neonatal Intensive Care Unit, and three nurse educators holding PhDs who were affiliated with the National Institute of Advanced Nursing Education and Research (NIANER).

After data collection, it was entered, cleaned, and analyzed using IBM SPSS program version 23. Both descriptive and inferential statistics were employed to analyze the data. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, were used to describe the characteristics and neonatal care practices of the participants. Additionally, inferential statistics, including t-test, ANOVA, and correlation coefficient, were utilized to explore the relationship between socio-demographic characteristics and neonatal care practices among nurses working at both private and public hospitals in Bangladesh.

Before commencing the study, the researchers obtained consent from the Institutional Review Board (IRB) of the National Institute of Advanced Nursing Education & Research (NIANER), as well as from Bangabandhu Sheikh Mujib Medical University (BSMMU) in Dhaka, Bangladesh. Written permission was obtained from the Director of Dhaka Medical College Hospital, Sir Salimullah Medical College Hospital, Shaheed Suhrawardy Medical College Hospital, Bangabandhu Sheikh Mujib Medical University Hospital and Institute of Child and Mother Hospital, granting the use of the hospital as the study location. Participants were provided with a detailed explanation of the study's purpose, and both verbal and written consent were obtained, ensuring confidentiality and anonymity. To avoid potential errors in data

collection, the consent form was translated into Bengali language.

RESULTS

The section presents the socio-demographic characteristics of the participants, neonatal care practice of them, and the relationship between socio-demographic characteristics and neonatal care practice among the participants of this study.

Table 1 shows the description of socio-demographic characteristics of the participants from both public and private hospitals. The private hospital participants mean age was 32.35(SD 6.847) and public hospital participants mean age was 29.91(SD 3.695). All the participants from both settings were female (100%). Muslim was identified as the religious identification by the majority of participants in both public (n= 41, 68.3%) and private (n= 45, 78.9%) hospital. Similarly, most of the participants in both public (n=32, 53.3%) and private (n=33, 57.9%) hospital had mentioned their highest academic qualification was diploma. The average job experience among public hospital participants was 8.67 (SD 6.868) years and private hospital respondents was 5.49 (2.317) years. 58441.7 (SD 21471.915) Taka and 52349.1(SD 17559) Taka was the average family income of public and private hospital study subjects, respectively. Almost all of the nurses from public hospital (n=55, 91.7%) and private hospital (n=57, 100%) had training on newborn care. The average number of nurses in each hospital from the both settings was 25.86 (SD 8.194) and 30.61(SD 5.006) persons, respectively. The mean number of beds was 21.52 (SD 9.327) in public hospital and 28.37 (SD 3.004) in private hospital. Regarding availability of equipment, maximum number of respondents from public hospitals (n=45, 75%) mentioned insufficient while maximum number of participants from private hospitals (n=38, 66.7%) mentioned sufficient presence.

Table 1: Distribution of Socio-Demographic Characteristics of the Participants (N=117)

Variable	Categories	Public (n=60)			Private(n=57)		
		n	%	Mean \pm SD	n	%	Mean \pm SD
Age (years)				32.35 \pm 6.847 (Min=20, Maxi=50)			29.91 \pm 3.69 (Min=23, Max=41)
Gender							
	Female	60	100		57	100	
Educational level							
	Diploma	32	53.3		33	57.9	
	BSc	22	36.7		22	38.6	
	MSc/ MPH	6	10.0		02	3.5	
Religion							
	Muslim	41	68.3		45	78.9	
	Non-Muslim	19	31.7		12	21.1	
Family income				58441.7 \pm 21471.915 (Min=28,000, Max=100,000)			52349.1 \pm 17559.014 (Min=27,000, Max=100,000)
Job experience				8.67 \pm 6.87 (Min=1year; Max=25years)			5.49 \pm 2.82 (Min=1year, Max=9years)
Special training on Newborn							

Variable	Categories	Public (n=60)			Private(n=57)		
		n	%	Mean ±SD	n	%	Mean ±SD
	Yes	55	91.7		57	100	
	No	5	8.3		-	-	-
	Duration of training period			1.28±.454			1.04±.19
	Duration of working period			7.80±.605			7.93±.37
	Number of nurses			25.85±8.194			30.61±5.01
	Number of bed			21.52±9.327			28.37±3.00
	Availability of Equipment						
	Sufficient	15	25		38	66.7	
	Not sufficient	45	75		19	33.3	

Table 2 presents participants' neonatal care practice in details. The total mean score of neonatal care practice of public hospitals was 46.27 (SD=9.22) and private was 50.85 (SD=5.03) in a 3-point Likert scale. In the domain of neonatal management, the mean score was 1.48±.625 in public settings and 1.76±.291 in private hospitals. On the other hand, the mean score for public was 1.63±.61 and private was 1.93±.26 for the domain of

thermal protection. For the practice on infection control, the mean score was 1.52±.39 in public hospital and 1.78±.17 in private hospitals. In regards to the segment of care of at risk and sick neonates, the mean score for public hospital was 1.77 ±.39 and private hospital was 1.88±.28. 1.87±.19 and 1.78±.17 mean score was found for public and private hospital for the domain of practice on feeding and feeding difficulties, respectively.

Table 2: Distribution of Neonatal Care Practice Related Questionnaire (NCPQ) of the Participants (N=117)

Sl. No	Variables	Government				Private			
		no, never	yes, sometimes	yes, always	Mean (SD)	no, never	yes, sometimes	yes, always	Mean (SD)
		(0)	(1)	(2)		(0)	(1)	(2)	
		n(%)	n(%)	n(%)		n(%)	n(%)	n(%)	
	Practice on neonatal management				1.48±.625				1.76±.29
1	Clamp and cut the umbilical cord after 1 minute, if the baby breathing well	13 (21.7%)	12 (12%)	35 (58.3%)	1.37±.82	2(3.5%)	6(10.5%)	49(86%)	1.82±.47
2	Immediate drying and wrapping by replacing wipe cloths	12(20%)	2(3.3%)	46 (76.7%)	1.57±.81	3(5.3%)		54 (94.7%)	1.89±.45
3	Assess the baby's breathing and color while drying	12(20%)	9(15%)	39(65%)	1.45±.81	2(3.5%)		55 (96.5%)	1.93±.37
4	Taking APGAR score	12(20%)	8 (13.3%)	40 (66.7%)	1.47±.81	2(3.5%)	2(3.5%)	53(93%)	1.89±.41
5	Check and Sucks the air way	3(5%)	14 (23.3%)	43 (71.7%)	1.67±.57	30 (52.6%)	3(5.3%)	24 (42.1%)	.89±.98
6	Vitamin K prophylaxis (1 mg of vitamin K intramuscularly)	8 (13.3%)	13 (21.7%)	39(65%)	1.52±.72		3(5.3%)	54 (94.7%)	1.95±.22
7	Wipe both the eyes separately with sterile swab	11 (18.3%)	16(26.7%)	33(55%)	1.37±.78		3(5.3%)	54 (94.7%)	1.95±.22
	Practice of thermal protection				1.66±.48				1.79±.19
8	Leave the baby between the mothers breasts to start skin to skin care for at least an hour	4 (6.7%)	14 (23.3%)	42(70%)	1.63±.61		4(7%)	53(93%)	1.93±.26
9	Cover the baby's head with a cap	2 (3.3%)	22 (36.7%)	36(60%)	1.57±.56		31(54%)	26(45.5%)	1.46±.50
10	Encourage mother to initiate breastfeeding (within half an hour of birth)	3(5%)	7 (11.7%)	50 (83.3%)	1.78±.52		1(1.8%)	56(98.2%)	1.98±.13
	Practice on infection control				1.52±.39				1.78±.17
11	Apply chlorhexidine to cord after cord cutting	5 (8.3%)	5(8.3%)	50(83.3%)	1.75±.60		2(3.5%)	55 (96.5%)	1.96±.19
12	Apply Tetracycline eye ointment once	39 (65%)	11(18.3%)	10(16.%)	.52±.77	35(61.4%)	2(3.5%)	20(35.1%)	.74±.95

Sl. No	Variables	Government				Private			
		no, never	yes, sometimes	yes, always	Mean (SD)	no, never	yes, sometimes	yes, always	Mean (SD)
		(0)	(1)	(2)		(0)	(1)	(2)	
		n(%)	n(%)	n(%)		n(%)	n(%)	n(%)	
13	Taking hand wash before and after touching the baby	1 (1.7%)	12(20%)	47(78.3%)	1.77±.46			57(100%)	2.00±.00
14	Hand washing before any procedure		12(20%)	48(80%)	1.80±.40			57(100%)	2.00±.00
15	Hand Wash for one minute before entering the unit	8 (13.3%)	5(8.3%)	47 (78.3%)	1.65±.71			57(100%)	2.00±.00
16	Ensuring the mother wash her hands	9(15%)	4(6.7%)	47 (78.3%)	1.63±.74		2(3.5%)	55 (96.5%)	1.96±.19
	Care of at risk and sick neonates				1.77 ±.39				1.88±.28
17	Weigh and record the baby's weight daily	7 (11.7%)	7 (11.7%)	46 (76.7%)	1.67±.43			57(100%)	2±.00
18	Assess danger sign:								
	(a) stopped feeding well,		10(16.7%)	50 (83.3%)	1.83±.38	29 (50.9%)		28 (49.1%)	.98±1.01
	(b) history of convulsions	1 (1.7%)	9(15%)	50 (83.3%)	1.82±.43	1(1.8%)	29(50.9%)	27 (47.4%)	1.46±.54
	(c) fast breathing		11(18.3%)	49 (81.7%)	1.82±.43	32 (56.1%)	25(43.9%)		1.44±.50
	(d) severe chest in-drawing		8(13.3%)	52 (86.7%)	1.87±.34	2(3.5%)	55(96.5%)		1.96±.19
	(e) no spontaneous movement		13(21.7%)	47 (78.3%)	1.78±.41		1(1.8%)	56 (98.2%)	1.98±.13
	(f) Temperature >37.5°C or <35°C	2 (3.3%)	12(20%)	46 (76.7%)	1.73±.52		29(50.9%)	28 (49.1%)	1.49±.50
19	Wash the face, neck and underarms of the baby daily	1 (1.7%)	16(26.7%)	43 (71.7%)	1.70±.50			57 (100%)	2.00±.00
20	Prepare a note regarding baby's condition and care	9(15%)	5(8.3%)	46(76.7%)	1.62±.74		1(1.8%)	56 (98.2%)	1.98±.13
21	Turn off unnecessary lights at night to promote development of diurnal cycles (day and night)		13(21.7%)	47 (78.3%)	1.78±.41		5(8.8%)	52 (91.2%)	1.91±.28
22	Reassure the mother and family for the very sick neonate		1(1.7%)	59(98.3)	1.98±.13		1(1.8%)	56 (98.2%)	1.98±.13
	Practice on feeding and feeding difficulties				1.87±.19				1.85±.47
23	Show the mother correct position and attachment		1(1.7%)	59(98.3)	1.98±.13		1(1.8%)	56 (98.2%)	1.98±.13
24	Ask the mother to get help if there is a breastfeeding difficulty		6(10%)	54(90%)	1.90±.30		3(5.3%)	54(94.7)	1.95±.22
25	Assess breastfeeding in every baby before planning for discharge.		5(8.3%)	55 (96.7%)	1.92±.28		1(1.8%)	56 (98.2%)	2.33±.65
26	If the mother reports a BF difficulty, assess BF and help her with attachment and positioning		1(1.7%)	58 (96.7%)	2.00±.18			57(100%)	2.00±.00
27	Manage engorged breast and nipple difficulties		10(16.7%)	50 (83.3%)	1.83±.38	3(5.3%)	27(47.4%)	27 (47.4%)	1.42±.60
28	Provide oketani massage in insufficient milk supply	4 (6.7%)	18(30%)	38 (63.3%)	1.57±.62	3(5.3%)	28(49.1%)	26 (45.6%)	1.40±.59
	Total nursing care practice				46.27±9.22				50.85±5.03

Table 3 illustrates the relationship between socio-demographic characteristics and neonatal care practice of nurses in both public and private hospitals. In public hospitals, educational level ($F=8.976$, $p<.001$), job

experience ($r=.294$, $p=.023$), ($r=.273$, $p=.035$), number of nurses ($r=.834$, $p<.001$) and number of bed ($r=.559$, $p<.001$) were positively related with the neonatal care practice of nurses. In private hospital, on the other hand,

there was a statistically significant negative relationship between age of the participants and neonatal care practice ($r=-.490$, $p<.001$), number of nurses and neonatal care practice ($r=-.812$, $p<.001$), number of bed ($r=-.812$, $p<.001$) and neonatal care practice. In addition, there was a statistically significant positive relationship

between family income and neonatal care practice ($r=.549$, $p<.001$), job experience and neonatal care practice ($r=.392$, $p=.003$), and availability of equipment and neonatal care practice ($r=.549$, $p=<.001$) in private hospitals.

Table 3: Relationship between Socio-Demographic Characteristics and Neonatal Care Practice (N=117)

Variable	Categories	Government (n=60)			Private (n=57)		
		Mean SD	r/t/f	P value	Mean SD	r/t/f	P value
Age			.068	.604		-.490	<.001
Gender:	Female	55.46±10.74			58.65±6.31		
Educational level			8.98	<.001		.873	.424
	Diploma	59.88±7.28			59.45±6.3		
	BSc	51.36±11.75			57.27±6.23		
	MSc & MPH	45.17±11.16			60.50±7.78		
Religion			-.351	.728		-.471	.640
	Muslim	54.95±10.84			58.44±6.37		
	Non – Muslim	56.00±10.75			59.42±6.30		
Family income			-.140	.286		.549	<.001
Job experience			.294	.023		.392	.003
Special training on neonates			-.084	.946			
	Yes	55.25±10.9			58.65±6.31		
	No	55.60±8.53					
Duration of training period			-.645	.540		4.322	.349
Duration of working period			.273	.035		-.032	.814
Number of nurses			.834	<.001		-.812	<.001
Number of bed			.559	<.001		-.812	<.001
Availability of Equipment			1.56	.13		-1.56	.124
	Sufficient	58.47±8.23			57.74±5.96		
	Not sufficient	54.22±11.33			60.47±6.76		
			-.140	.286		.549	<.001

DISCUSSION

This study attempted to investigate the neonatal care currently provided by Bangladeshi nurses working in both public and private hospitals. The study's findings may offer information about nursing care practices for both sick and healthy newborns, which could help Bangladesh to lower its expected rate of neonatal morbidity and mortality.

In this study, the total mean score for neonatal care practice among nurses in public hospitals was 46.27 ± 9.22 , indicating a moderate level of neonatal care being practiced in government hospitals in Bangladesh. On the other hand, nurses in private hospitals obtained a total mean score of 50.85 ± 5.03 , suggesting a good level of neonatal care practice in the private setting. Comparing the mean values of the two groups reveals that nurses in private hospitals exhibit a higher level of neonatal care practice compared to those in public hospitals.

The better neonatal care practice in private hospitals could be attributed to several factors. Private hospitals may have more resources to invest in continuous training and professional development for their nursing staff, leading to enhanced knowledge and skills in neonatal care practices. Additionally, access to

more advanced medical technology and state-of-the-art facilities in private hospitals may positively impact the quality of care provided. Moreover, the lower patient-to-nurse ratios in private hospitals may allow nurses to provide more focused and individualized care to neonates, contributing to the higher level of neonatal care observed in this setting.

In public hospitals, the participants' level of education and duration of working period were found to be positively linked to neonatal care practice. The findings suggested that nurses holding diplomas were more involved in neonatal practice compared to those with higher education levels. This difference could be attributed to the limited human resources in hospital settings, where highly educated nurses may be engaged in managerial activities, leaving more hands-on care to diploma holders. These results align with previous studies conducted by other authors [19, 18]. Additionally, this study also revealed a statistically significant positive relationship between job experience and neonatal care practice, which mirrors the findings of a previous study [19].

Similar to previous studies by some authors [20, 21], a statistically significant positive relationship was

observed between neonatal care practice and the number of nurses and beds available in public settings. This suggests that having more nurses leads to better care practices. Evidence indicates that nurse understaffing is linked to higher infection rates, while proper and adequate staffing is associated with lower morbidity and mortality rates [20]. However, in the Private Hospital, a statistically significant negative relationship was found between neonatal care practice and the age of nurses, as well as the number of nurses and beds. This finding contradicts other past studies [19, 20]. The difference in results may be attributed to variations in sample size, study settings, study periods, and hospital policies across regions. In contrast to some previous authors [18, 19, 21], this study noticed a statistically significant positive correlation between family income and neonatal care practice among nurses in private establishments.

In both public and private hospitals, there was a statistically significant association between job experience and neonatal care practices in this study. This suggests that nurses with more experience in Neonatal Intensive Care Units (NICUs) demonstrated a higher level of neonatal care practices compared to those with less experience. This finding aligns with previous studies conducted by Tasew *et al.*, (2019) [22] and Negussie *et al.*, (2017) [18]. However, it is essential to acknowledge the limitations of the current study, which was designed as a cross-sectional study with a limited sample size from only five selected tertiary-level hospitals. Therefore, the results cannot be generalized to all hospitals in Bangladesh, particularly district and sub-district level hospitals where NICU services may differ. To address this limitation, a population-based study is recommended for a more comprehensive understanding of neonatal care practices in the country.

CONCLUSION

Nurses in both public and private hospitals practice neonatal care according to WHO guidelines in their workplace. Though nurses in private hospitals show a higher level of neonatal care practice than their counterpart nurses in public hospitals. Nurses' education level, job experience, duration of the working period, number of nurses, and number of beds influence the neonatal care practices in public hospitals, on the other hand, in private hospitals, nurses' age, family income, job experience, number of nurses, and number of bed influence the neonatal care practices. The overall neonatal care practice of nurses can be described as satisfactory in Bangladesh.

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