KNOWLEDGE REGARDING ASSESSMENT OF HIGH RISK NEONATES AMONG NURSES WORKING IN SELECTED HOSPITALS OF RUPANDEHI

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ABSTRACT

INTRODUCTION

There is need of early assessment and high quality nursing care for high risk neonates to reduce morbidity and mortality. Knowledge assessment is the pivotal step in assessing the status of patients' care given by the nurses. Researcher sought to assess level of knowledge regarding care of high risk neonates among nurses in selected hospitals in outreach Nepal.

MATERIAL & METHODS

A descriptive cross-sectional study was conducted to find out the knowledge regarding assessment of high risk neonates among fifty five nurses selected through non probability enumerative method. The data was collected by using self-administered semi-structured knowledge questionnaire and was analyzed by using descriptive and inferential statistics with SPSS software version 16.

RESULTS

The findings of the study revealed that more than half (58.18%) of the nurses had high level of knowledge regarding assessment of high risk neonates.

CONCLUSION

Based on the study findings, it is concluded that more than half of the respondents in the study had high level of knowledge regarding assessment of high risk neonates. Beside this, the respondents have good knowledge pertaining to predisposing factors, diagnostic tools, initial clinical assessment, preventive measures, management of high risk neonates and definition of preterm, post-term, low birth weight neonates. Respondents had low level of knowledge for clinical characteristics of small for gestational age neonates as well as clinical parameters of high risk neonates. Hence, there is utmost need to give in-service education to the nurses in order to achieve the quest to improve their knowledge relating to care of high risk neonates.

KEYWORDS Assessment of high risk neonates, knowledge, nurses

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INTRODUCTION

The high risk neonates can be defined as any neonates who have high risks of impending serious illness or death as a result of any perinatal adverse circumstances[1] which includes birth weight less than 1800 gm or gestational age less than 34 weeks, delayed passage of meconium and urine, inability to suck and swallow, reduced activity and excessive crying, marked changes in skin color, cold baby or febrile baby, rapid breathing more than 60 breaths per minute, chest retractions, superficial infections with purulent conjunctivitis, oral thrush, umbilical sepsis, pyoderma, abscess, persistent vomiting, watery diarrhea, abdominal distension, bleeding from any site and any features of injury, convulsions and abnormal movements, delayed capillary refill time or sudden loss of weight.[2]

Each year about 32.4 million of children are born with low birth weight, which is below the 10th percentile for their gestational ages; moreover, about fifteen million of them are premature. Actually, about 60% of neonatal deaths occur in low birth weight neonates related to their prematurity.[3]

In Nepal, the prevalence of pre-term birth is estimated about 14-30% and low birth weight is 12 to 32%.[4] According to Nepal Demographic Health Survey (NDHS) 2016, 21 neonatal deaths per 1000 live birth is accountable owing to infection, birth asphyxia, preterm birth and hypothermia.[5] The survey conducted in tertiary hospital of Nepal showed that about 14% of babies were born preterm and 39.3% were small for gestational age (SGA) babies in 2010. There was 12 fold increase risk of neonatal death among preterm babies. Babies who were SGA had 40% higher risk of neonatal death. Additionally, babies who were both preterm and SGA were 16 times more likely to die during the neonatal period.[6]

Nurses are among the primary managers in early identification and optimal care of high risk fetuses and neonates and thereby play pivotal role in all in minimizing deaths associated with same. Threats to wellness and indeed life can occur at anytime of perinatal period from that of the viability of the fetus to 28 days after birth.[7] The main objectives of the study were to find out the level of knowledge regarding assessment of highrisk neonates among nurses and the association between level of knowledge regarding assessment of high-risk neonates and selected demographic variable

MATERIAL AND METHODS

A descriptive cross-sectional design was adopted to assess the knowledge regarding assessment of high risk neonates among nurses. The study was conducted in Neonatal Intensive Care Unit (NICU), pediatric, postnatal and labor wards of Universal College of Medical Sciences, Teaching Hospital (UCMS-TH), Siddharthanagar-1, Rupandehi and in Siddhartha Children and Women hospital (SCWH), Butwal-7, Rupandehi. 55 nurses (29 from UCMS-TH and 26 from SCWH) were selected in the study sample through non probability enumerative method.

Self-administered pretested semi-structured knowledge questionnaire was developed by researchers reviewing the related literatures and consulting with the subject experts. There were altogether twenty questions formed relating to assessment of high risk neonates.

The researchers reached every ward and obtained the written informed consent with each nurses for enrollment in this study with semi-structured knowledge questionnaire. Data collection was done after two weeks of formal assessment.

Administrative and ethical approval was obtained from the concerned authorities prior to data collection. Descriptive and inferential statistical method was used with SPSS version 16 to analyze the data.

The questionnaire consisted of two parts;Part I: related to socio-demographic variables and Part II: related to knowledge regarding assessment of high-risk neonates.

The study was conducted from 12th February to 25th April 2017. Pretest of the instrument was conducted on 6 respondents in Devdaha Medical College, Teaching Hospital, Devdaha-9, Nepal.The exclusion criteria were nurses not willing to participate and auxiliary nurse midwives working in intensive care units. All the collected data were analyzed by using descriptive statistics and inferential statistics with Statistical Package for Social Sciences (SPSS) software version 16.

RESULTS

Most (89.1%) of the nurses had completed Proficiency Certificate Level in Nursing. Regarding current working department, 43.6% nurses were in pediatric ward and only 12.7% were in labor ward. Forty percentage of nurses had working experience of more than 3 years. None of the nurses had received training pertaining to care of high risk neonates.

With regards to knowledge regarding predisposing factors of high risk neonates, 80% of nurses correctly answered pregnancy between 15-19 years as the most common factor while only 1.8% of them cited proper birth spacing for the same. As per aspects of knowledge regarding initial assessment of high risk neonates, 89.1% of the nurses answered APGAR score as the initial assessment tool for high risk neonates.

Table 1. Nurses' knowledge regarding predisposing factors and initial assessment of high risk neonates

Variables	Frequency (n=55)	Percentage
Predisposing factors**		
Pregnancy between 15-19 years*	44	80.0
Elderly pregnancy above 35 years*	39	70.9
Term gestation	-	-
Medical illness*	28	50.9
Proper birth spacing	1	1.8
Multiple pregnancy*	34	61.8
Abnormal pregnancy*	35	63.6
Low socio economic status*	34	61.8
Initial Assessment		
Newborn examination	5	9.1
APGAR score*	49	89.1
Blood test	1	1.8
Urine Test	-	-

**Multiple responses; *Correct response
Mean percentage score of predisposing factors of high risk neonates- 64.83

As per knowledge regarding preterm neonates, 61.8% of nurses labeled neonates born before 37 weeks of gestation for the same, while 1.8% of them answered neonates born after 32 weeks of gestation as the criteria for defining preterm neonates. Around 85% of nurses answered undescended testicles and 3.6% answered scanty vernix as the sign of a preterm male baby. 61.8% of nurses answered soft flat ears with little cartilage and 10.9% answered labia majora covering labia minora as the clinical characteristics of preterm neonates. Eighty percentage of the nurses answered neonates born after 42 weeks of gestation and 3.6% answered neonates born at 40-42 weeks of gestation as the definition of post-term neonates. Most (78.2%) of the nurses correctly answered birth weight less than 2500 as the low birth weight neonates. Regarding meaning of very low birth weight neonates, 58.2% of nurses answered birth weight less than 1500 gm. Pertaining to the meaning of extremely low birth weight neonates, 89.1% of respondents answered birth weight less than 1000 gm. More than half (65.5%) of the nurses answered less than 10th percentile of its gestational age as the meaning of small for gestational age neonates. Regarding characteristics of small for gestational age neonates, 76.4% of nurses answered old man look and 1.8% answered weight more than 2500 gm. Total of 60% of respondents answered hypothermia as the major complication among small for gestational age neonates. Near to half (49.1%) of the nurses answered more than 90th percentile of its gestational age as the meaning of large for gestational age neonates. Regarding diagnostic evaluation during pregnancy for high risk neonates, 83.6% of the nurses opted for ultrasonography and 1.8% of them chose magnetic resonance imaging.

Regarding clinical features of high risk neonates, 81.8% answered poor reflexes whereas only 9.1% responded excess presence of vernixcaseosa for the same. Pertaining to the common problems of high risk neonates, 87.3% answered respiratory distress whereas 5.5% answered polycythemia and anemia. Majority (92.7%) of the nurses responded to regular antenatal checkup whereas 81.8% identified intake of nutritious diet as the preventive measures for high risk neonates.

Table 2. Nurses' knowledge regarding clinical features, common problems and prevention of high risk neonates

Variables	Frequency (n=55)	Percentage
Clinical Features**		
Labia majora covering labia minora	9	16.4
Soft flat ears with little cartilage*	19	34.5
Wrinkled and loose skin*	28	50.9
Poor reflexes*	45	81.8
Excess presence of vernixcaseosa*	5	9.1
Presence of edema around eyes, face and scrotum	19	34.5
Fragile skin*	31	56.4
Little subcutaneous fat*	23	41.8
Common problems**		
Respiratory distress*	48	87.3
Hypothermia*	34	61.8
Polycythemia	3	5.5
Feeding problems*	38	69.1
Neonatal sepsis*	29	52.7
Birth asphyxia*	29	52.7
Hypoglycemia*	25	45.5
Anemia	3	5.5
Prevention**		
Intake of nutritious diet*	45	81.8
Heavy exercise	4	7.3
Avoid smoking and alcohol*	41	74.5
Regular antenatal checkup*	51	92.7
Reducing weight	5	9.1

**Multiple responses; *Correct response

Mean percentage score of clinical feature of high risk neonates- 45.75
Mean percentage score of common problems of high risk neonates- 61.51
Mean score percentage of prevention of high risk neonates- 81.35

Regarding management of high risk neonates, 78.2% of nurses answered clearing the airway as the initial step whereas 78.2% responded with infection control and 3.6% answered fluid restriction as the subsequent management options of high risk neonates.

Table 3. Nurses' knowledge regarding management of

high risk neonates

Variables	Frequency (n=55)	Percentage
Initial management		
Umbilical cord care	-	-
Clear the airway*		
Breast feeding	43	78.1
Eye care	10	18.4
Later management**	2	3.5
Systemic assessment*	32	58.2
Maintain warmth*	39	70.9
Prevention from infection*	43	78.2
Place in cross ventilated environment*	27	49.1
Maintain feeding pattern*	37	67.3
Fluid restriction	2	3.6

**Multiple responses *Correct response

Mean percentage score of later management of high risk neonates- 68.65%

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More than half (58.18%) of the nurses had high level of knowledge regarding assessment of high risk neonates.

Table 4. Overall knowledge regarding assessment of high risk neonates

Level of knowledge	Frequency (n=55)	Percentage
High	32	58.18
Average	-	-
Low	23	41.82

Mean score- 14.23

There was no significant association between work experience and nurses' level of knowledge regarding assessment of high risk neonates (p= 0.990).

Table 5. Association between work experience and nurses' level of knowledge regarding assessment of high risk neonates

n=55

Work Experience	Level of Knowledge		χ^2	p- value
	gh	Low		
Less than 1 year	7(58.3)	5(41.67)	0.00	0.990
More than 1 years	25(58.13)	18(41.87)		

Significance level at 0.05

DISCUSSION

The findings of the study showed that 80% of the nurses had knowledge regarding pregnancy between ages 15-19 years, 50.9% had knowledge regarding medical illness and 61.8% had knowledge regarding multiple pregnancy as predisposing factors of high risk neonates. The findings of the study is not consistent with the study of Levision et al (2014) conducted in Malawi (Africa) which showed 64.3% had knowledge regarding pregnancy between age 15-19 years and 23.2% had knowledge regarding medical illness. The findings are consistent with the study of Levision et al (2014) which showed 65% of responders had knowledge regarding multiple pregnancy.[8]

The findings of the study showed that 61.8% of the nurses had knowledge regarding low socio economic status as predisposing factors of high risk neonates which is consistent with the study by Amoula et al (2016) conducted in Sudan, Africa which showed 62% had knowledge regarding low socio economic status as predisposing factors of high risk neonates.[9]

The findings of the study showed that 61.8% of the nurses had knowledge regarding preterm neonates which is not consistent with the study of Hassan (2010) conducted in Gezira State, Sudan which showed 88.9% of them correctly defined preterm neonates. The findings of the study showed that 80% of the nurses had knowledge defining post-term neonates as those born after 42 weeks of gestation.[10]

The findings of the study showed that 78.2% of the nurses had knowledge regarding low birth weight neonates which is not consistent with the study of Ayiasiet al (2014) conducted in Masindi, Uganda, Africa which showed only 45.4% had accurate knowledge regarding low birth weight neonates.[11]

The findings of the study showed that 65.5% of the nurses had knowledge regarding small for gestational age neonates.[12] The findings of the study showed that 49.1% of the nurses had knowledge regarding large for gestational age neonates. The findings of the study showed that 78.2% of the nurses had good knowledge regarding history taking and 83.6% correctly opted for ultrasonography as the diagnostic evaluation to identify high risk neonates during pregnancy which is not consistent with the study of Levision et al (2014) conducted in Malawi, Africa which showed that 54.6% had good knowledge regarding history taking and 97% had knowledge regarding ultrasonography as the diagnostic tool in identifying high risk neonates during pregnancy.[8]

The findings of the study revealed that 89.1% of the nurses had knowledge regarding APGAR score as initial assessment tool in high risk neonates. The findings of the study showed that 34.5% of the nurses had knowledge regarding soft flat ears with little cartilage as the clinical marker of high risk neonates which is not consistent with the study of Hassan (2010) conducted in Gezira State, Sudan which showed 83% of respondents had knowledge regarding characteristics of premature infants.[10] The findings of the study showed that 87.3% of the nurses had knowledge regarding respiratory

distress and 61.8% had knowledge regarding hypothermia as common problems among high risk neonates which is not consistent with the study of Hassan (2010) conducted in Gezira State, Sudan which showed 86.7% had similar knowledge.[10]

The findings of the study showed that 78.2% of the respondents had adequate knowledge regarding initial management of high risk neonates which is not consistent with the study of Amoula et al (2016) conducted in Sudan, Africa which showed that almost 90% had the knowledge of clearing the airway by suctioning as the immediate management for high risk neonates.[9] The findings of the study showed that 70.9% of the respondents had knowledge regarding maintaining warmth and 78.2% had knowledge regarding prevention from infection as the management algorithm of high risk neonates. The findings of our study is consistent with the study of Ayiasi et al (2014) conducted in Masindi, Uganda, Africa which showed 79.2% of the respondents had knowledge regarding keeping the child warm whereas the findings of our study is not consistent with the study of Ayiasi et al (2014) which reported 72.1% had knowledge regarding prevent from infection as the subsequent management strategy among high risk neonates.[11]

CONCLUSION

Based on the study findings, it is concluded that more than half of the nurses have high knowledge regarding assessment of high risk neonates. Nurses have high knowledge regarding predisposing factors, diagnostic tests, preventive measures, management of high risk neonates and meaning of preterm, post-term, low birth weight and small for gestational age neonates whereas nurses have low knowledge regarding characteristics of preterm neonates and small for gestational age neonates, meaning of large for gestational age neonates and clinical features of high risk neonates. There is no statistically significant association between duration of work and respondents' level of knowledge regarding assessment of high risk neonates. Therefore, there is need to provide in-service education to the nurses in order to improve their knowledge relating to assess and care of high risk neonates which help to decrease morbidity and mortality of neonates.

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