Original Article

New Born Care Practices and Knowledge of Risk Factors Associated with Neonatal Mortality among Post Natal Mothers in Ibadan

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Abstract

Background: Reducing neonatal mortality remains a big challenge for a developing country like Nigeria. Mothers' knowledge in neonatal care plays an important role in bringing down the mortality as well as morbidity.

Objective: This study assessed mothers' knowledge of newborn care practices and factors contributing to neonatal mortality.

Methodology: The study adopted a descriptive design. The study was conducted in one tertiary and one secondary hospital in Ibadan. In all 206 postpartum women participated in the study. Simple random sampling technique was used to recruit participants. Semi structured self-administered questionnaire whose validity and reliability has been previously ascertained was the instrument used for data collection which took a period of three months. Data generated was analysed using Statistical Package of Social Sciences (SPSS) version 16.

Results: Participants age ranged between 21 and 42 with the mean age being 31.6 years, SD= 4.199. Overall, 57.3% of the respondents had average knowledge of risk factors for neonatal mortality. Knowledge of mothers was inadequate in areas of umbilical cord care (100%), and, bathing (76%). Also, 57.8% of the respondents practiced good/ appropriate neonatal care.

Conclusion: There is need to increase awareness of mothers regarding neonatal mortality, its prevention, signs of neonatal sickness and the importance of seeking care from trained personnel during pregnancy, childbirth, and for their newborn.

Key words: Newborn care practices, Knowledge, Risk factors, neonatal mortality.

Introduction

Worldwide, estimated 130 million infants are born each year, approximately 4 million die in the first 28 days of life and three-quarter of these neonatal deaths occur in the first week of life and more than one-quarter occur in the first 24 hour (Jehan, Harris, Salat, Zeb, Pasha, Mclure 2007).

Of this approximated 4 million global neonatal deaths that occur annually, 98% occur in developing countries, where most neonates dies at home while they are cared for by mothers, relatives, and traditional birth attendants. This high neonatal mortality causes slow declining of infant mortality rate in the last 2 decades.

In Nigeria, about 5.3 million children are born yearly which are about 11,000 children per day (WHO 2003). The neonatal mortality rate in Nigeria is 31 per 1000 live birth (NDHS, 2014). The highest death rate of infants within the first 28 days of life is in the North West and North East regions of Nigeria, and lowest in the South South (NDHS, 2013). According to United Nation Children Emergency Fund Report (2012) the under five and infant mortality rates are 124 and 78 per thousand live births respectively in Nigeria. Neonatal mortality contributes a major part of these deaths at 39 per 1000 live births (UNICEF, 2012). This is an improvement from Nigeria Demographic Health Survey, (2008) which shows that the under five mortality, infant mortality and neonatal mortality are 157, 75, and 40 respectively. Although being newborn is not a disease, large number of children die soon after birth, many of them during the first four weeks of life. A child's risk of death is nearly 15 times greater in the first month of life than at any other times during the first year of life (Daly, Taylor, Tinker 2003).

The Millennium Development Goals (MDG) represents the widest commitment in history to addressing global poverty and ill health (UN Millennium Project 2005; Lawn, Cousens, Zupan 2005). The fourth goal (MDG-4) which commits the international community to reducing mortality in children aged younger than 5 years by two-thirds between 1990 and 2015 had most impact on children who have already survived their first month of life. Globally, there was a slower decline in neonatal mortality compared to children younger than five years old. In 2015 there were 2.7 million neonatal deaths globally which represents 45% of all death among children under five. The new Sustainable Development Goal (SDG) is also committed to end preventable deaths of newborn and children under five years of age with all countries aiming to reduce neonatal mortality to at least as low as 10 per 1000 live births by year 2030. In order to meet the SDG 3 by the year 2030, national governments are now realizing that it will be imperative to target neonatal mortality rates. In an attempt to care for the newborn and reduce neonatal mortality, The World Health Organization established guidelines for essential newborn care which include: hygiene during delivery, keeping the newborn warm, early

initiation of breast feeding, exclusive breast feeding, care of the eyes, care during illness, immunization and care of low birth weight babies[9].

The mother's child care practices which include timely behaviour in seeking care for her sick child is a critical factor to reducing neonatal mortality. Such seeking behaviour will not take place unless the mother recognizes signs and symptoms of illness, interprets the possible severity of the conditions, and take an action to seek care in a timely manner (Hill & Choi 2006). The level of knowledge about diseases influences a mother's ability to recognize the danger signs of a sick neonate. Mothers' perception of the severity of an illness is also an important type of recognition problem.

This study was undertaken to determine mothers' newborn care practices and to assess their level of knowledge of risk factors associated with neonatal mortality with a view to examine their knowledge of danger sign of neonatal illness.

Materials and methods

This study adopted descriptive design to assessed mothers' knowledge of newborn care practices and factors contributing to neonatal mortality. This study was conducted among mothers attending post natal clinic at University College Hospital and Oluyoro Catholic Hospital in Ibadan. Respondents were selected using simple random sampling technique. Only mothers who were willing to participate were recruited for the study. The calculated sample size of 258 which was obtained by employing the statistical formula for population < 10,000 was utilised for the study. The formula is stated thus: $nf = n/1 + n/N$ [11]

Structured questionnaire developed from literature review was the instrument used for data collection. The questionnaire is divided into 3 sections. Section A asked questions about sociodemographic characteristics of mothers, section B assessed mothers' knowledge of neonatal morbidity and mortality while section C was on child care practice. The validity of the questionnaire was established through expert review of the questionnaire by experts in the field of study (neonatologist, midwife). The reliability of the instrument was established by test-retest with a reliability coefficient of 0.72.

Ethical approval was obtained from the joint U.I/UCH Institutional review committee and the ethical committee of the Oluyoro Catholic Hospital, Oke Offa, Ibadan. Written Informed consent was also obtained from eligible respondents before administration of the questionnaire.

Data generated were analysed using to Statistical Package for Social Sciences analysis SPSS version 16.0. Only 206 questionnaires were suitable for analysis. Scores were assigned for each of the right responses on knowledge and practice. The sum of knowledge scores reflect on how knowledgeable the mother is on causes of neonatal mortality while the sum of practice score reflects how aware a mother is regarding the right neonatal care practices

Results

A total of 206 postnatal women participated in the study. Participants age ranged between 21 and 42 with the mean age being 31.6 years, SD= 4.199. Out of the 206 participants 200 (97.1%) indicated that they are married. Of the respondents, 120 (58.2%) are multipara while 10 of the participants failed to disclose their parity. One hundred and fifty two (73.8%) of the women had tertiary education, while only 6(2.9%) had no formal education. Majority of the respondents were gainfully employed, only 21 (10.2%) of the respondents are unemployed.

Table 1 Nursing mothers' knowledge of risk factors associated with Neonatal death during pregnancy

Risk Factors	N	Percentage (%)
Anaemia/Low Packed Cell Volume	8	3.88
Ante partum Haemorrhage	58	28.16
Fever	5	2.43
Draining of liquor	5	2.43
Generalised Oedema	6	2.92
Headache	1	0.49
Hepatitis	5	2.43
High Blood Pressure	40	19.42
Human immunodeficiency virus	2	0.97
Premature Contraction	2	0.97
Reduced Foetal Movement	9	4.37
Trauma	1	0.49
Urinary Tract Infection	1	0.49
Prolong Labour	4	1.94
Typhoid fever	11	5.34
Loss of appetite	4	1.94
Others		

Table 2: Mothers' knowledge of newborns danger signs

| SIGNS AND SYMPTOMS	N	%
High Temperature	75	36.4
Difficulty in breathing	5	2.43
Cough and catarrh	39	18.93
Excessive Crying	33	16.02
Inability to feed well	136	66.02
Inactivity/Lethargy	6	2.91
Loss of weight	5	2.43
Rashes	1	0.49
Restlessness	5	2.43
Vomiting	1	0.49
Sleeplessness/insomnia	5	2.43
Jaundice / Yellowish discoloration of eye	14	6.80
Malaria	4	1.94
Hypertension	1	0.49

Figure 1: Respondents knowledge score
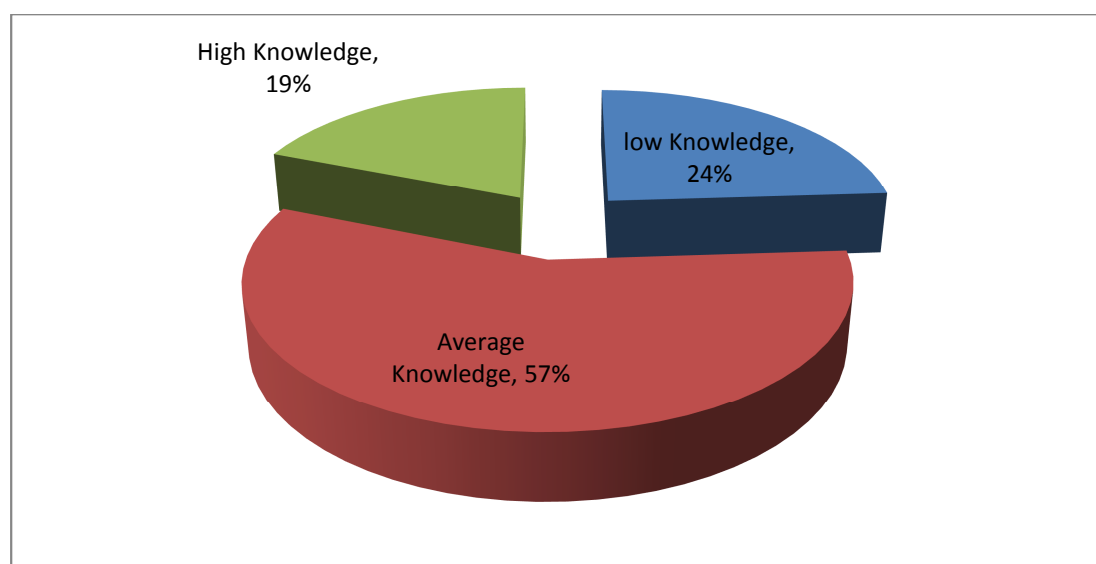
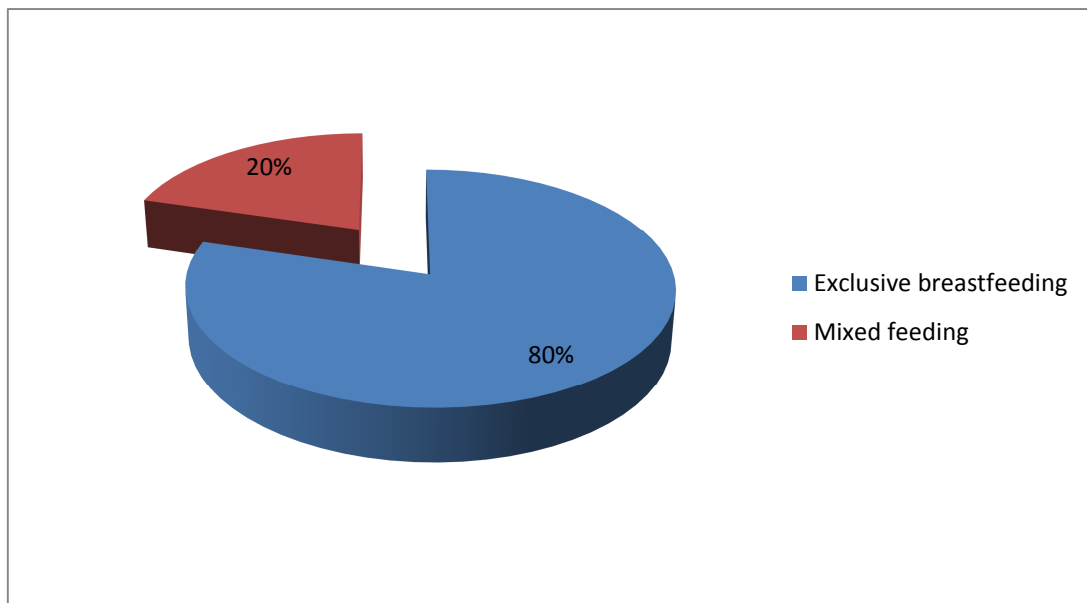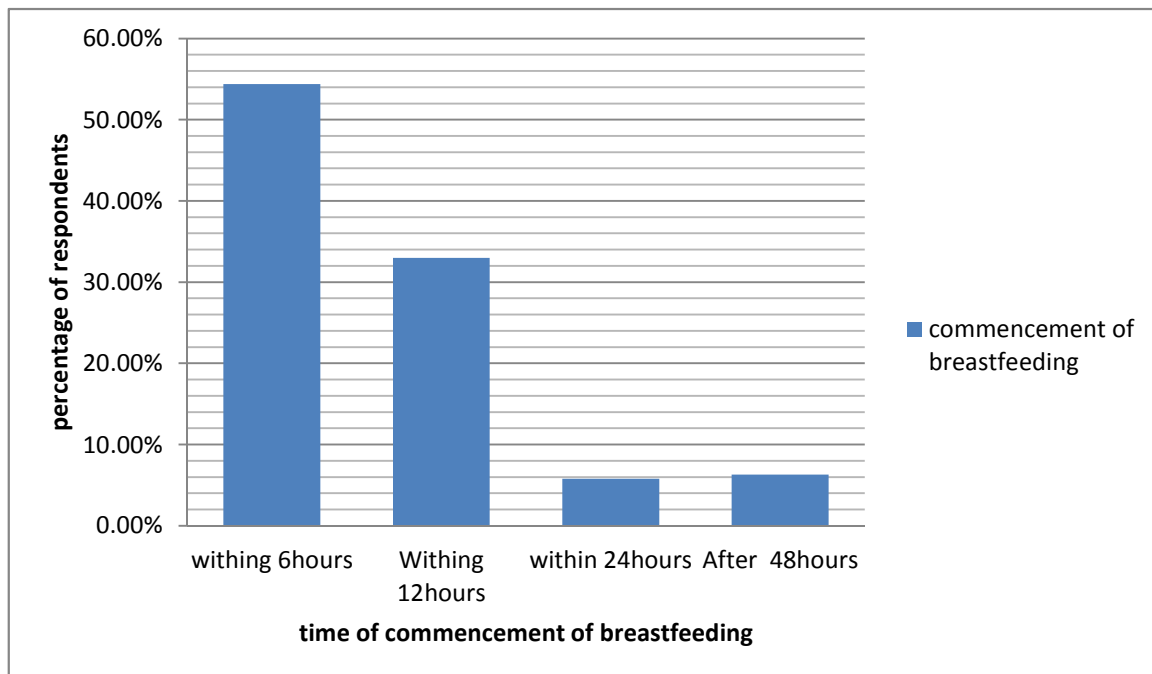**Figure2: Breastfeeding practice**

Figure 3: Time of commencement of breastfeeding

The majority of the respondents (40.8%) indicated their estimated monthly income to be above 50,000 naira while only 23(11.2%) had no income at all. One hundred and sixty two of the participants live in a flat while only 15(7.3%) lived in a face to face apartment. Majority of these is in a rented apartment while only 41(19.9%) claimed ownership of the apartment.

From the study, majority of the respondents have no knowledge of conditions during pregnancy that can affect neonatal health. Only 28% of the mothers mentioned ante-partum haemorrhage as a risk factor for neonatal mortality while only 19% recognised high blood pressure as risk factors. Also 3.9% associate anaemia in pregnancy with neonatal mortality and only about 4.3% mentioned reduced foetal movement as shown in Table 1.

The results also revealed that significant number of the respondents 136 (66%) mentioned inability to feed as one of the danger signs of neonatal illness, 6(2.9%) mentioned lethargy, 33(16.0%) Excessive Crying, 75 (36.4%) high temperature while 39(18.9%) mentioned cough, catarrh or difficult breathing as shown in the Table 2. One hundred and eighteen (57.3%) of the respondents had average knowledge while only 39(18.9%) high knowledge of neonatal mortality and its contributory factors respectively as shown in Figure 1.

Approximately eighty percent of the respondents (nursing mothers) practiced exclusive breastfeeding while 20.4% practiced mixed feeding as shown in figure 2.This shows that majority of the mothers recognises importance of breastfeeding in the prevention of neonatal mortality. Figure 3 revealed that, one hundred and twelve (54.4%) of the respondent mothers initiated breast feeding within 6hrs of delivery while13 (6.3%) did not give colostrums at all. Reason given was that they delivered through Caesarean Section.

On care of the umbilical cord, the study revealed that none of the respondents followed the WHO recommendation of leaving the umbilical without application of anything while 87.9% utilised methylated spirit. Also, Sixty two (30.1%) of the respondents gave their baby gripe water because they believe it prevents colic in a baby while one hundred and forty four (69.9%) claimed they do not believe in it.

With respect to having knowledge of the time of first bathing the newborn bathing, only 33.3% of the respondents knew that the newborn should not be bathed until 24 hours after birth. Most of the mothers (66.7%) replied that newborns should be bathed before 24 hours after birth. About 88.3% claimed they will take their baby to the doctor if they noticed signs of jaundice in their baby while 10.7% claimed they will put the baby in the early morning sunlight. Twenty eight percent of the mother believed that jaundice is normal in a baby while 86.4% believed it is abnormal. About 99.5% of the respondents believed that hand washing is essential before handling their neonate.

One hundred and ninety six (95.1%) of the respondents claimed that they will take their baby immediately to the hospital as soon as they show any sign of illness while only 10(4.9%) said they will wait for some time. In all one hundred and nineteen (57.8%) of the respondents practiced good neonatal care while 87(42.2%) performed poorly

Discussion

This study found average level of appropriate health knowledge on causes of neonatal mortality, danger sign of neonatal illness as well as danger signs during pregnancy and also that poor practices existed in relation to the care of the umbilical cord and immediate breastfeeding.

This study revealed that there is significant relationship between maternal educational level and knowledge of risk factors associated with neonatal. Respondents who had tertiary education demonstrated higher knowledge than those with lower level of education. This is in contrast to a study by Rosato, Lewayka, Mwanambo, Kasembe, Costello (2009) that was conducted in Mchinji district, Malawi which reported lower knowledge levels amongst all mothers for neonatal health problems. A study in Egypt by Stanton and Langsten (1998) which assessed rates of and factors associated with morbidity and mortality among Egyptian neonates and infants found that most mothers did not recognize signs of neonatal health problems immediately when they appeared. Caregivers sometimes recognized symptoms one day prior to the death of the neonate. Mesko, Osrin and Tamang (2003) found that there were delays in

recognizing and acting on the neonatal danger signs amongst women in Nepal.

In this study 57.8% of the respondents practiced good/ appropriate neonatal care while 42.2% practiced poor neonatal care. Childbearing age was associated with good neonatal care practice. In addition, respondents with tertiary education demonstrated good neonatal care practice. The association between maternal education and neonatal care practices was found to be statistically significant. This might also be due to the trend that women who belong to higher socio-economic status and those with better education tend to get pregnant at a later age. In the study, higher socio-economic status correlated with better neonatal care score. This could be because of the educational status of the mothers from higher socio economic class. Majority of the mothers (45.9%) had per capita income of more than 50, 000.00 naira.

In this study only a few of the respondents had the right knowledge of when a baby should be given his first bath. Even though majority of the mothers in this study delivered in the hospital, they believed that the babies were bathed immediately after delivery. In addition majority of the respondents are aware of how to maintain normal body temperature but none of them knew about kangaroo method. This shows that more effort needs to be put into educating these women to prevent hypothermia in newborns especially the premature babies.

This is closely related to a study done in rural India which has proven that even when pregnant mothers have access to a trained birth attendant for delivery at home, thermal care is the component of essential newborn care which gets neglected (Baquis, Ahmed, Arifeen, Darmstadt, Rosecraus, 2008) ; According to them; it is a very common practice in India to bath the newborns immediately after birth. This puts the newborn at risk of hypothermia, which gets worse with the lack of adequate drying and warm clothes. The reason for this practice is the belief that the blood/fluid/vernix, which stays on, newborn's skin after birth is impure and has to be removed thoroughly.

Care of umbilical cord has always been stressed since it can provide entry for microbes. Because this study was conducted in a hospital setting and the initial part of cord care is taken care of by the hospital staff, the focus was on the knowledge and practice of postnatal mothers towards the care of cord stump. The World Health Organization recommends dry cord care (where nothing is placed on cord stump unless indicated (WHO, 1998). Various studies carried out in developing countries have reported mothers applying substances like mustard oil, turmeric, cow dung, antiseptic lotion etc on the cord stump. In this study none of the respondents indicated that they would leave the stump as such, majority of the respondents claimed they used methylated spirit and cotton wool.

This is contrast to a study conducted by Padiyath, Bhat, Ekambaram (2010) in India where 65% of mothers responded that they would leave the cord stump as such, and 25% of mothers were applying coconut oil on the umbilical stump. This shows the gap in the education provided to them despite the fact that they were taken care of in a hospital setting.

Although immunizations does not come under the essential newborn care practices, it is crucial that the mothers are imparted the elementary lessons regarding immunization before they get discharged from hospital. Majority of the respondents had good knowledge of immunisation and its importance. There is still need for reinforcement of the knowledge, as better knowledge would improve vaccine coverage

Use of Gripe water is another neonatal care practice worthy of note which was being used as a non-prescription medicine in the past for infantile colic until it was banned in most of the developed countries in the 1980's (Bluemental 2000). However, it is still available in most pharmacy in Nigeria. Mothers' believed that the alcohol in gripe water provides soothing effect to the neonates. In this study, it was discovered that quite a number of mothers (30.1%) of the mothers administer gripe water to their babies.

This is in contrast to 13% of mothers who were using gripe water in a developed country like England (Headley, Northstone, 2007). The respondents believed that it prevents and cure infantile colic. Since there is always, a chance that administration of gripe water might mask the symptoms of a major illness this practice needs to be discouraged.

Conclusion

This study observed postnatal women had average knowledge of risk factors for neonatal mortality and practiced good neonatal care in Nigeria. . Mothers were discovered to have little knowledge on risk factors for neonatal mortality especially during pregnancy. Majority of the mothers claimed that they are practicing exclusive breastfeeding and hand washing while handling their babies, however it was discovered that there is paucity of knowledge concerning cord care, majority are still using methylated spirit while the WHO has recommended leaving the cord without applying anything unless otherwise indicated. Maternal education has been shown to influence mothers' knowledge as well as practice.

Increasing mothers' knowledge about danger signs in pregnancy and neonatal illness can be the first step to enhance healthy behaviours; through education programmes during pregnancy. Effective media is to be used for creating awareness on newborn care practices. Programs may be taken to increase awareness on danger signs of the neonates so that early care can be provided. Proper knowledge on advantage of breast-feeding and colostrums is still lacking. Appropriate knowledge on neonatal care and emphasis on appropriate practice on neonatal care may be included in the primary education.

Implication for nursing practice:

Nurses/ midwives play a vital role in impartation of information to the clients. Therefore nurses need to make conscious effort to educate mothers on dangers signs during pregnancy that could affect their baby's health as well as danger sign of neonatal illness. Mothers should also be educated on the need for exclusive breastfeeding and appropriate newborn care practice. It is therefore imperative that nurses/ midwives continually update themselves on recent advancement in childcare practice.

Recommendations

- There is need for information and health education regarding essential newborn care practice in Nigeria
- Integration of neonatal and maternal health services from policy level to service delivery level.
- There is a need to focus on community-based interventions.
- Enhancing female education and empowerment must be addressed as a long term goal to improve maternal and newborn survival

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