

# KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING OF NEONATAL HEALTH AMONG MOTHERS IN CHIKUN LOCAL GOVERNMENT AREA, KADUNA STATE

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## ABSTRACT

Caregivers play an important role in the care of neonates and the prevention of neonatal deaths. This study aimed to determine the knowledge, attitude and practice of neonatal health among mothers in Chikun Local Government Area of Kaduna state. A community-based cross-sectional descriptive study was carried out using a self-administered questionnaire. A total of 147 mothers were selected using a multi-stage sampling technique. Data was analyzed using SPSS version 25 and results were presented in tables and charts. The mean age of respondents was  $33.4 \pm 6.9$  years. Most respondents were married (90%), attained tertiary level of education (61.2%) and had two or fewer children (53.1%). The respondents had fair knowledge (48.3%), good attitudes (95.9%) and fair practice (56.5%) regarding neonatal health. Maternal knowledge and practice regarding neonatal health were suboptimal. There is a need to mount interventions aimed at educating mothers to improve their knowledge and practices related to neonatal care and the well-being of their babies.

**Keywords:** Neonatal Health, Neonatal Care, Knowledge, Attitude, Practice, Mothers.

## INTRODUCTION

Worldwide, an estimated 2.4 million children died in the first month of life (neonatal period) in 2019, three-quarters occurred in the first week of life and more than one-quarter occurred within the first 24 hours (World Health Organization, 2020). Of these neonatal deaths, 99% occurred in developing countries, where most deaths occur at home while being cared for by their mothers, relatives, and traditional birth attendants. This high neonatal mortality has led to a slow decline in infant mortality rate in the last two decades. Reports by the United Nations inter-Agency Group for Child Mortality Estimation reported under-five and infant mortality rates of 119 and 75 per thousand live births respectively in Nigeria (IGME, 2018). Neonatal mortality takes a large portion of these deaths in Nigeria at 36 per 1000 live births.

The risk of a child dying is nearly 15 times greater in the first month of life than at any other time during the first year of life (World Health Organization, 2020). The new Sustainable Development Goal (SDG) is committed to ending preventable deaths of newborns 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 the year 2030 (United Nations, 2015). In order to meet SDG 3 by the year 2030, national governments are now realizing that it will be imperative to target neonatal mortality rates.

The modified three delays model responsible for newborn death shows that household and health facility-related delays were the major contributors to late presentation, treatment initiation and subsequent newborn deaths in many developing countries (Thaddeus and Maine, 1994). These delays, especially at the household level, are particularly important because once there is a delay in the recognition of the danger signs of newborn illnesses there are automatically delays at all other levels i.e., initiation of appropriate treatment and/or referral to a better resourced hospital among others.

In a bid to care for the newborn and decrease neonatal mortality, The World Health Organization (WHO) established guidelines for essential newborn care which include hygiene during delivery, keeping the newborn warm, early initiation of breastfeeding, exclusive breastfeeding, care of the eyes, care during illness, immunization and care of low-birth-weight babies (WHO, 2014).

It is well documented that the welfare of a child depends on the care and attention he receives before and after birth (Adigun *et al.*, 2017). The quality of care the newborn gets has been shown to be dependent upon the knowledge, skills and attitude of the mother (Adigun *et al.*, 2017). The mother's child care practices which include the timely habit of seeking care for her sick child is a vital factor in reducing neonatal mortality (Healthy Newborn Network, 2019). Such health-seeking habits cannot precede the mother being capable of recognizing early signs and symptoms of diseases and interpreting the likely severity of the illness.

Available studies indicate that awareness and perception of postnatal mothers towards neonatal care are inadequate, especially in those belonging to the lower socio-economic status and the developing countries of the world (Healthy Newborn Network 2019, Adigun *et al.*, 2017). There is a paucity of research in Nigeria and especially in the northern region on the role mothers play in reducing neonatal mortality. This study aims to determine the knowledge, attitude and practice of neonatal health among mothers in Chikun Local Government Area (LGA) of Kaduna state.

## MATERIALS AND METHODS

### Study Area

Chikun Local Government Area is located geographically on Latitude 10° N and 10°50' North of the equator and Longitude 6°04' E and 7°05' East of the Greenwich Meridian. It is in the Southern part of Kaduna State and shares common boundaries with Kaduna North Local Government and Igabi in the North. In the Southwestern part, it has a common border with Niger State and in

the East, it shares boundaries with Kajuru and Kachia Local Government Areas. It covers a total land size of 4,801 square kilometres. It is made up of 12 wards and has a population of 368,250 with an annual growth rate of 3% and a projected population of 511,8675 as of 2019 (NPC, 2006). Chikun LGA comprises a multiethnic society with over two hundred ethnic groups inhabiting the area. The major ethnic groups include the Gbagyis who are the main indigenes and others include Atyap, Adara, Hausa/Fulani, Bajju and Koro. Inhabitants are mostly civil servants and traders who are also involved in farming activities. There are about 41 health care centers of which only 12 are government-owned in the LGA.

### Study Design

A cross-sectional study was conducted from June to July 2019.

### Study Population

This was made up of mothers living in Chikun Local Government Area. Mothers between ages 18 to 45 years and who had babies less than 2 years of age were included in the study.

### Sample size

The minimum sample size was determined using single population formula  $[n = z^2p(1-p)/d^2]$ , where  $z$  is the normal standard deviation set at 1.96, with a confidence level specified at 95% and a tolerable margin of error ( $d$ ) at 5%, considering a 10% non-response rate and proportion of women with good knowledge on essential neonatal care from a previous study of 91.5% (Ndebugri, 2017). The calculated minimum sample size was 132, this was rounded up to 150.

### Sampling Procedure

Sampling was done using a multi-staged technique. Three wards were selected from the list of 12 wards using simple random sampling by balloting. From each of the selected wards, two settlements were selected using simple random sampling by balloting. Two streets per settlement were selected using a table of random numbers. On each street, 25 houses were selected using systematic random sampling technique. The sampling interval was obtained by dividing the number of houses in the street by the sample size allocated to the street. In the final stage, one eligible mother per household was selected. Where there was more than one mother in a household, the list of eligible mothers was made and one respondent was selected by balloting.

### Data collection tools

Data was collected with a structured interviewer-administered questionnaire. The questionnaire had four sections comprising of sociodemographic characteristics; knowledge about newborn care; attitude of mothers to newborn care; and practices of mothers regarding newborn care. Data was collected by three research assistants trained on the objective of the study and research protocol.

### Data analysis

The data was analyzed using Statistical Package for Social Science (SPSS) version 25.0. Summary statistics were generated and results were presented in tables and charts. Knowledge was assessed with a total of 30 questions; attitude with 8 statements, utilizing a three-point-Likert scale (agree, disagree, and undecided) and practice with 9 structured questions. The scores were converted to percentages,

a score of  $\leq 49.9\%$  was termed as poor, 50 to 69.9% as fair and  $\geq 70\%$  as good knowledge, attitude and practice.

### Ethical consideration

The approval to conduct the study was obtained from the Health and Research Ethics Committee of Barau Dikko Teaching Hospital (02-0058), in addition, permission was obtained from ward and community heads before the commencement of the study. Verbal informed consent was also sought from respondents before conducting interviews after a full explanation about the purpose of the study and assurances about their confidentiality.

### RESULTS

A total of 150 questionnaires were administered and 147 were correctly filled and returned, giving a response rate of 98%. The mean age of the respondents was  $33.4 \pm 6.9$  years. Most respondents were married (90%), attained tertiary level of education (61.2%) and had two or fewer children (53.1%) (Table 1).

### Sociodemographic Characteristics

**Table 1:** Socio-demographic characteristics of the mothers in Chikun local government area (N=147)

Variables	Frequency	Percent
<b>Age (in years)</b>		
19– 28	44	29.9
29 – 38	63	42.9
39 and above	40	27.2
<b>Marital status</b>		
Single	13	8.8
Married	120	81.6
Separated	5	3.4
Widow	9	6.1
<b>Level of education</b>		
None	0	0.0
Primary	11	7.5
Secondary	46	31.3
Tertiary	90	61.2
<b>Religion</b>		
Christian	132	89.8
Muslim	15	10.2
<b>Tribe</b>		
Hausa	15	10.2
Yoruba	14	9.5
Igbo	14	9.5
Gbagyi	16	10.9
Others (Atyap, Koro, Jaba, Kagoro, Tiv, etc)	88	59.9
<b>Occupation</b>		
Government employee	49	33.3
Self-employee	34	23.1
Daily labourer	22	15.0
Farmer	3	2.0
Housewife	26	17.7
Others (security personnel, cleaner, private teachers)	13	8.8
<b>Characteristics of respondent's last child</b>		
<b>Age of last baby (in months)</b>		
0– 8	20	13.6
9 – 16	40	27.2
17 – 24	87	59.2
<b>Number of children</b>		
$\leq 2$	78	53.1
3 – 5	65	44.2
6 – 8	4	2.7

Common sources of information of respondents about the care of the neonate came from health workers (46.3%) and family members (25.2%), followed by personal experience (17%) (Figure 1).

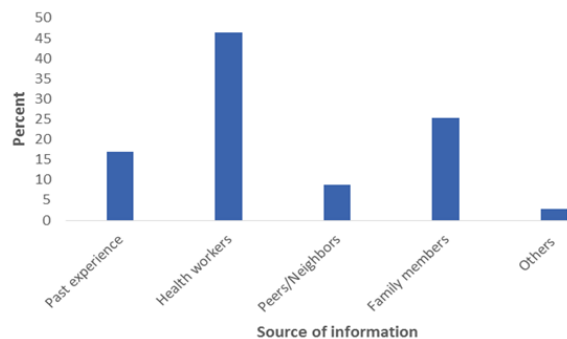


Figure 1: Sources of information of mothers on neonatal health

Overall results revealed that majority had fair knowledge (48.3%), good attitudes (95.9%) and fair practice (56.5%) towards neonatal health (Table 2).

Table 2: Grading of maternal knowledge, attitude and practice on neonatal health

Grade	Frequency	Percent
<b>Knowledge</b>		
Poor	67	45.6
Fair	71	48.3
Good	9	6.1
<b>Attitude</b>		
Fair	6	4.1
Good	141	95.9
<b>Practice</b>		
Poor	47	32.0
Fair	83	56.5
Good	17	11.6

Knowledge about components of immediate neonatal care and danger signs were low. Thirty-one percent of mothers mentioned immediate wiping and wrapping of babies followed by early initiation of breastfeeding (29.0%), hygienic cord-cutting (20.6%) and Skin to skin contact of baby (15.5%) as components of immediate neonatal care. While 16.6%, 13% and 12% of mothers mentioned unable to feed, baby feels too hot to touch and difficulty in breathing as the most common danger signs of the newborn respectively (Table 3).

Table 3: General knowledge of mothers about neonatal health

Variables	Frequency	Percent (%)
<b>*Components of immediate care of the neonate</b>		
Immediate wiping and wrapping	103	30.7
Hygienic cord-cutting practice	69	20.6
Skin to skin contact of baby	52	15.5
Early initiation of breastfeeding	97	29.0
Don't know	11	3.3
<b>*Danger signs in neonates</b>		
Unable to feed	86	16.6
Unconsciousness	33	6.4
Difficulty in breathing	62	12.0
Convulsion	37	7.1
Fast breathing	39	7.5
Eye discharge	44	8.5
Reddening of eyes	27	5.2
Swollen eye	16	3.1
Baby feels too cold to touch	55	10.6
Baby feels too hot to touch	70	13.5
Yellow eyes, palms and sole	49	9.5

Mothers had better knowledge about cord care and breastfeeding practices (Table 4).

Table 4: Maternal knowledge on the care of the umbilical cord and breastfeeding of the newborn

Knowledge Variables	Frequency	Percent (%)
<b>CORD CARE</b>		
<b>Instrument best used in cutting baby's cord</b>		
*New blade	125	85.0
Old or unsterilized blade	1	0.7
Scissors	21	14.3
<b>What should be used in cleaning baby's cord</b>		
*Chlorhexidine gel	91	61.9
Butter/oil(cooking oil)	9	6.1
Turmeric powder	2	1.4
Do not apply anything	2	1.4
Others	43	29.3
<b>What should be used in tying baby's cord</b>		
Thread	30	20.4
Cord tie	13	8.8
*Cord clamp	104	70.7
<b>BREASTFEEDING</b>		
<b>Time to start breastfeeding after delivery</b>		
*Within 30 minutes	79	53.7
During the first 1 hour	43	29.3
2-8 hours	17	11.6
Don't know	8	5.4
<b>How often a baby should breastfed in a day</b>		
*As often as the baby needs it	126	85.7
Every 30 minutes	8	5.4
Every 1 hour	9	6.1
Three times a day	1	0.7
Don't know	3	2.0
<b>Duration on breastfeeding before weaning</b>		
6 months	9	6.1
12 months	22	15.0
18 months	64	43.5
*24 months	49	33.3
Don't know	3	2.0

\*Correct response

Though however, only 33% answered correctly about the duration of breastfeeding before weaning off breast milk. Though the majority of mothers (99%) knew about the importance of immunization, most did not know about the number of immunizations considered for a child to be fully immunized (Table

5). Also, though most of the mothers knew about the importance of keeping babies warm, a significant 42.9% did not correctly answer the question on how soon after delivery a baby should be wrapped (Table 5).

**Table 5:** Maternal knowledge on immunization and warmth of the newborn

Knowledge Variables	Frequency	Percent (%)
<b>IMMUNIZATION</b>		
Is it important for a child to be fully immunized		
Yes	146	99.3
Don't know	1	0.7
Number of immunizations considered for a child to be fully immunized		
6	46	31.3
*8	49	33.3
10	7	4.8
12	23	15.6
Don't know	22	15.0
Is it important for a child to be fully immunized		
Yes	146	99.3
Don't know	1	0.7
<b>WARMTH TO THE BABY</b>		
How soon after delivery should a baby be wrapped?		
*Less than 5 minutes	84	57.1
5 to 10 minutes	49	33.3
More than 10 minutes	8	5.4
Don't know	6	4.1
Does skin to skin contact help in keeping a baby warm		
Yes	120	81.6
No	7	4.8
Don't know	20	13.6
It is important to keep a baby warm at all times		
Yes	133	91.1
No	5	3.4
Don't know	8	5.5

\*Correct response

A greater proportion of mothers correctly answered each of the questions that assessed attitude (Table 6).

**Table 6:** Maternal attitude towards neonatal health (N=147)

Variable	Frequency (percent %)	Frequency (percent %)	Frequency (percent %)
	Agree	disagree	undecided
Postnatal clinic visits are important for the health of a neonate.	138 (93.9)	0 (0.0)	9 (6.1)
Exclusive breastfeeding for 6 months before introducing complementary feeds is healthy for the newborn.	120 (81.6)	14 (9.5)	13 (8.8)
Colostrum should not be given to the baby.	37 (25.2)	70 (47.6)	40 (27.2)
Breastfeeding within the first 30 minutes of life is best.	119 (81.0)	15 (10.2)	13 (8.8)
Bathing a baby immediately after birth is best.	52 (35.4)	71 (48.3)	24 (16.3)
Skin to skin contact is a good way of keeping a baby warm.	116 (78.9)	12 (8.2)	19 (12.9)
Immunization is not important for the survival of a baby.	14 (9.5)	130 (88.4)	3 (2.0)
The cord can be cut by any available instrument as long as it is sharp.	7 (4.8)	132 (89.8)	8 (5.4)

Regarding maternal practices mothers generally had fair scores but scored low in practices related to how long after birth the baby got its first bath (Table 7) and what was given to the baby before commencing breastfeeding (Table 8). A majority however had good practices related to cord care (Table 7).

**Table 7:** Maternal practices on cord care in newborns (N=147)

Variable	Frequency	Percent (%)
<b>Instrument used to cut the umbilical cord of the baby</b>		
*New blade	115	78.2
Old or unsterilized blade	0	0.0
Scissors	32	21.8
<b>Material used to tie cord</b>		
Thread	26	17.7
Cord tie	6	4.1
*Cord clamp	114	77.6
String	1	0.7
<b>What was applied to the cord</b>		
Nothing	2	1.4
Oil/shear butter	7	4.8
Methylated spirit	98	66.7
Shea butter with powder	1	0.7
Ointment	3	2.0
Chlorhexidine gel/antibiotics ointment	30	20.4
Others	6	4.1

\*Correct response

**Table 8:** Maternal practices on warmth and breastfeeding of newborns (N=147)

Variable	Frequency	Percent (%)
<b>WARMTH OF THE BABY</b>		
<b>How soon after delivery was the baby wrapped</b>		
*Less than 5 minutes	78	53.1
5 to 10 minutes	56	38.1
More than 10 minutes	7	4.8
Don't know	6	4.1
<b>How long after birth did baby get its first bath</b>		
Soon after delivery	39	26.5
1 to 6 hours	63	42.9
More than 6 hours but less than 24 hours	35	23.8
*More than 24 hours	5	3.4
Don't know	5	3.4
<b>BREASTFEEDING</b>		
<b>When breastfeeding was initiated after delivery</b>		
*Within 30 minutes	77	52.4
During the first hour		46
2 – 8 hours	19	12.9
Do not remember	5	3.4
<b>What was given to baby before commencing breastfeeding</b>		
Water	57	38.8
*Colostrum	62	42.2
Spiritual water	2	1.4
Others	26	17.7

\*Correct response

## DISCUSSION

This study found overall that majority had a fair to poor knowledge about neonatal health, which was similar to a study done in Nepal but in contrast to a study done in Udipi district of India, where the majority (76.6%) of mothers had good knowledge of neonatal health (Castalino *et al.*, 2014; Bhandari and Sharma, 2016). This difference could be explained by differential exposure of the mothers to neonatal health education messages, an effective and important means of passing accurate and relevant information. Regarding the individual components of essential neonatal health care, the mothers demonstrated good knowledge of the immediate care of the neonate, 96.7% of the mothers knew at least one component of immediate neonatal care. This was higher when compared to findings of a similar study conducted in Ethiopia where 80.4% of the mothers knew at least one component of immediate newborn care (Misgna, Gebru, & Birhanu, 2016). All of the mothers in this study knew at least one neonatal danger sign. This was

better than what was reported in findings of a study conducted in India, where only 67.2% of the respondents knew at least one neonatal danger sign (Dongre, Deshmukh, & Garg, 2009). A mother's knowledge about neonatal danger signs is an important factor in determining whether she presents early to the hospital for medical care when her baby develops any danger signs. Inability to recognize danger signs early and report to the hospital could be related to lack of knowledge about it and can lead to increased neonatal morbidity and mortality.

With regards to the knowledge of breastfeeding, about half of the mothers in this study knew that breastfeeding should be started within 30 minutes after delivery. This contrasted with findings from a study conducted in Kenya where about 72% of the mothers knew that breastfeeding should be initiated within 30 minutes of a baby's life (Boor, Ogada, & Kimiywe, 2018). Mothers in this study had poor knowledge about the duration of breastfeeding before weaning a child. This contrasted with an Indian study where the majority (83.3%) of the mothers knew that breastfeeding should continue until a baby is 24 months old (Vijayalakshmi, Susheela & Mythili, 2015). In this study, 85% of the respondents had a good knowledge of the best instrument to be used in cutting a baby's cord, which was similar to a study carried out in Iran where 82.3% of mothers knew about the use of a new blade in cutting a baby's cord (Sharafi & Esmaeeli, 2013). More than half of the mothers knew about the use of chlorhexidine gel as the best agent for cleaning a baby's cord. This contrasted with findings of a study done in the upper Himalayas where a higher percentage (81.8%) of the mothers knew this (Singh *et al.*, 2019). This study findings highlight the need for mounting educational interventions to target the deficiencies in knowledge the various area of neonatal health that have been elicited in this study.

Maintaining a normal body temperature is extremely important in newborns because of their larger body surface area. More than half of the mothers in this study believed that a baby should be wrapped in less than 5 minutes after delivery. This was slightly lower than findings of a study done in North Ethiopia, where 66.9% of the mothers mentioned the need for immediate wrapping of a baby within 5 minutes of delivery (Berhea, Belachew & Abreha, 2018). The inadequate knowledge of mothers in this study about neonatal care is a source of concern, as knowledge is a key and influential factor that affects the health seeking behaviour and invariably the level of care their babies would receive. Poor knowledge can translate into poor practices, which can eventually result in poor outcomes for neonates and increased neonatal morbidity and mortality.

Most of the mothers in this study (95.9%) had an overall good attitude toward neonatal care. This was similar to a study done in Nepal where 95% of the mothers had good attitudes towards newborn care (Bhandari and Sharma, 2016). Most of the mothers in this study had good attitudes to exclusive breastfeeding, immunization, cord care and postnatal clinic visits with agreed with studies conducted in Nepal, Ethiopia and Bangladesh (Gopalakrishnan, 2014; Premlata *et al.*, 2014; Majumder *et al.*, 2018). However, only 48.3% of mothers in this study had the right attitude regarding thermal care of their babies and believed that a baby's first bath should be delayed for about 24 hours. This was similar with mothers of a study in India where 48% of them felt babies first bath should be delayed to keep the babies warm (Singh

*et al.*, 2019). The good attitude displayed by mothers in this study can be leveraged on, as mother would probably be receptive to educational interventions to improve their knowledge of neonatal health.

With regard to practices, majority of mothers in this study (56.5%) had fair practice scores. This contrasted with similar studies done in India and Southwest Ethiopia where a greater percentage of mothers, 66.7% and 59.5% had good practice scores respectively (Castalino, Nayak and D'Souza, 2014; Tura, & Fantahun, 2015). Regarding practices on cord care, clean cord practice was found in about three-quarters of the mothers in this study. Some mothers in this study reported the use of shea butter and other agents such as salt and lime in cleaning their babies' cords. Only half of the mothers in this study reported that their babies were wrapped less than 5 minutes after delivery which exposes babies to cold air and predispose them to hypothermia. Only 3% of mothers reported that it took more than the ideal 24 hours before their babies had their first bath. Studies done in India and Uganda showed better thermal care practices, 75% of mothers in the Indian study said that the first bath was given after the 1st day of birth, while in the Ugandan study 48% of the mothers practiced optimal thermal care (Singh *et al.*, 2019; Waiswa *et al.*, 2010).

The good practice of initiating breastfeeding within 30 minutes of delivery was reported by 52.4% of the mothers in this study. This was lower than the finding from an Ethiopian study where 93.2% of the mothers-initiated breastfeeding within 30 minutes of delivery (Misgna, Gebru & Birhanu, 2016). About less than half of the mothers in this study gave colostrum to their babies, as pre-lacteal feed. Interestingly, the others gave substances that were not ideal such as water, spiritual water, anointing oil and palm wine to their babies before commencing breastfeeding. The suboptimal practices of mothers in this study regarding neonatal health underscore the importance of mounting interventions at community levels to address identified lapses in practice. Less than half of the mothers in this study obtained information about neonatal health from health workers. It is therefore important for outreaches to be carried out to reach women at community and household levels with accurate information about neonatal health.

## Conclusion

This study revealed generally fair knowledge, good attitudes and fair practice of mothers towards neonatal care. There is a need for mounting interventions aimed at educating mothers to improve their knowledge and practices about neonatal care. The recommendations proposed include that

1. Essential newborn care information should be provided to mothers by health care workers in various health facilities where these mothers attend neonatal and postnatal clinics.
2. Health awareness campaigns on essential newborn care should be organized for mothers in the community by government health authorities to improve maternal knowledge and neonatal care practices.
3. Propagation of effective media messages by health authorities through the radio and television can also play a part in improving awareness and educating the mothers in the communities with accurate information on newborn care.
4. The government health authorities can institute regular training programmes on newborn care for healthcare workers in health facilities in the LGA to equip them with updated knowledge which they can disseminate to women.

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