IMPACT OF HYGIENE BATHING AND BREASTFEEDING OF LACTATING MOTHERS ON INFANT MORTALITY IN KATSINA STATE

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ABSTRACT
The study examines the influence of cultural practices in terms of attitudes that feeding mothers exhibit towards infant breastfeeding, and infant bathing (general hygiene) on infant mortality in Katsina State. It makes use of a descriptive research design which makes it possible for the collection of data from the selected samples (384) of the population that constitute women of bearing age, medical doctors, nurses and traditional birth attendants. The needed data to address the research questions was collected by making use of copies of questionnaire and structured interview. A multi-samplinig technique was applied in selecting the samples for the study, and the findings indicate that there is a significant positive correlation between hygiene bathing and the attitude of lactating mothers towards breastfeeding their children especially at early hours of delivery on one hand, and level of infant mortality in the study area. It is, therefore, recommended among others that campaigns for infant breastfeeding awareness need to be intensified. This will educate women to understand the dangers associated with delay, denial, and importance offrequent breast feeding of infant at regular interval.

Introduction

Infant mortality is generally used to describe the death of infants or babies that were born alive but died before their first birthday. Park *et al* (2017) and Sharifzadeh *et al* (2018) stated that there is generally marked inequality in infant death proneness between developed and developing nations. In general terms, the level of mortality depends upon the epidemiological situation of a given population. That is, on the prevalence and incidence of diseases and susceptibility of the population to them as reported by Akwenabuaye & Ebingha (2018). Ruzicka, (2014) postulates that the epidemiological situation itself has a correlation with cultural, social, economic, climatic, and with public health and personal medical services, their efficacy and effective utilization. The National Bureau of Statistic (2018) testified approximately four million global neonatal deaths that occur annually, 98% occur in developing countries, where most newborns die at home under the care of their mothers, relatives and traditional birth attendants.

During the past two decades' infant mortality rate has declined very slowly. Despite proven cost-effective solutions to reduce neonatal mortality such as promoting tetanus toxoid, immunization, skilled attendance during delivery, immediate and exclusive breastfeeding and clean cord care, there has been relatively little change in neonatal mortality. The World Health Organization's guidelines for essential newborn care 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 newborns (WHO 2017).

Neonatal health is found to be dependent on healthcare services, post neonatal health is dependent largely on environmental factors. This statistical index not only indicates the quantity and number of deaths, but is also indicative of life quality. That is why UNICEF (2016) maintains that infant mortality rate is certainly one of the most expressive indices of development concept and this significance has taken shape for the fact that the decrease in child mortality is only possible with an improvement in living circumstances of majority of people. It further states that the rise of infant mortality is attributed to dissatisfied hygienic requirements and unfavorable environmental factors, economic conditions, environmental sanitation and medical care (UNICEF, 2016). Furthermore, infant mortality occurs during neonatal period, especially in the first week and the most important causes of neonatal mortality are prematurity and low birth weight. On the other hand, during post-neonatal period diarrhea and respiratory infections are the most significant causes. Different factors such as social-economic class, mother's age, birth weight, breast feeding, interval from previous delivery, place of delivery, type of delivery, etc, can influence the possibility of infant mortality (Gholam, Kokab, & Hassan, 2018). Therefore, cultural practices play a very vital role on inappropriate antenatal care and neonatal care, late initiation of breastfeeding, discarding colostrums and not practicing exclusive breastfeeding. Improving knowledge heat preservation to prevent using mother care, warm bottle padding was proven methods to reduce infant mortality. Strengthening of health services in screening for high risk cases and anticipate intervention tailored to cultural practices are important to reduce infant mortality among low birth weight (Save the Children, 2014).

The Nigerian Demographic and Health Survey (2018) shows that the infant mortality rate was 67 deaths per 1,000 live births for the 5 years preceding the survey. The child mortality rate was 69 deaths per 1,000 live births, while the under-5 mortality rate was 132 deaths per 1,000 live births. This implies that more than 1 in every 8 children in Nigeria die before their 5th birthday. With respect to other early childhood mortality rates, the neonatal mortality rate was 39 deaths per 1,000 live births and the postneonatal mortality rate was 28 deaths per 1,000 live birth.Despite the arguments that the determinants of infant mortality were extensively investigated and that there was a continued decrease in mortality rates among infants in most of the developing world, these reductions are not impressive when compared to other developed countries like France, Spain and United States. In Nigeria, factors such as economic and political policies had been associated with infant mortality, but some researchers explained that, most of the reasons for the death of infants are deeply rooted in people's beliefs and attitudes towards child care and behavioral practices in relation to health strategies (Save the Children, 2014). It is based on this that this research seeks to investigate the influence of cultural practices in terms of attitudes that feeding mothers exhibit towards infant breastfeeding, and infant bathing (general hygiene) on infant mortality in Katsina State.

Breast Feeding, Hygiene Bathing, and Infant Mortality: Conceptual Elucidations

The death of an infant is a life threatening experience that affects not only the mothers or their immediate families, but also the entire community. In many cultures, the status of a woman is tied to her fertility. For example, in the traditional Nepalese culture it is a disgrace for a woman not to have children (Adhikari, 2010). In some African cultures, infant death may be considered a product of bewitchment (Fottrell, 2011). The death of an infant may leave the family stricken with grief, and they may experience higher levels of depression (Rogers, 2015). The death of a mother can also have equally devastating effects, particularly if the mother leaves behind the infant and other children. Nurses have the skills and knowledge to influence rates of maternal and infant mortality by implementing their knowledge regarding hygiene, the spread of infection, importance of prenatal health checks, and nutrition. The mission of the nurse is to improve health for all people physically, emotionally and

spiritually whether it be providing teaching to a teenage mother about how to properly breastfeed a child or providing support for grieving family members in the event of an infant and maternal death. (Doenges, 2010). The key to prevention of infant and maternal mortality rates is understanding the four main contributors which include preeclampsia, prolonged labor, low birth weight and natal infection (Doenges, 2010). Ruzicka (2014) posits that the epidemiological situation itself has a correlation with cultural, social, economic, climatic, and with public health and personal medical services, their efficacy and effective utilization.

Breastfeeding practices and the nutritional state of the lactating mother is one major determinant of infant mortality. While a shorter breastfeeding period increases the risk of infant mortality, a nutritionally malnourish lactating mother will produce low quality breast milk thereby exposing the infant to health hazards as a result of poorly built immune system. Ogunjuyigbe and Ojofetimi (2015) explained that infant mortality due to food factors is because of the low and inferior status of women and practices associated with childbirth, the breast-feeding and weaning practices. In some communities, infants are usually deprived of colostrums due to delay in initiating breastfeeding, which is important in enriching infants in nutrition. In this case, the study of Ogunjuyigbe focuses on the periodic infant breast feeding and the risk associated with the nutritionally malnourished lactating mother that may produce hazard milk to infant because of poor immune system. Mohammed, Kodua and Karikari(2020)expressed that about 65% of the nursing mothers in the area covered by their study practiced exclusive breastfeeding because of the pieces of advice from midwives. Their study concluded that majority of the nursing mothers initiate breastfeeding within 6 hours, practice exclusive breastfeeding for 6 months, gave artificial milk to babies before breastfeeding them which help in increasing the chances of survival of the children.

According to Gillman *et al.,* (2012), children who received breast milk for more than sevenmonths were 20% less likely to beoverweight and obese than children who received breast milk for less than three months. It was also reported that infants who werenot breastfed at the time of discharge from the hospital after delivery had a higher risk of getting diabetes than those who were breastfed at discharge (Jones *et al.*2010). The reduced risk of leukemia in childhood was higher in children who receivedbreast milk for more than six months (Shu et al. 2019). There has also been malnutrition in pre-term infants and blood pressure inlater life. Singhal et al., (2011) reported that the mean blood pressure of children aged 13-16 years who were born pre-term andreceived breast milk from milk banks was lower than that of children of the same age who received formula.In Africa, over 95% of babies are presently breastfed, however, taking care of feeding practices are frequently deficient; feeding ofnewborn babies with water and other liquids have become a widespread practice by nursing mothers (Heymann et al. 2013).Some womenin Katsina could breastfeed their babies up to 22 months with 53.4% of women practicing this. Regrettably, the rate ofexclusive breastfeeding are very low compared to overall breastfeeding rate due to the practice of giving complementary feedingsto infant. The addition, complementary foods and liquids have been identified as a major cause of diarrhoea illness and highermortality rates in infants (Aidam et al., 2015).

Correspondingly, bathing is generally superior to washing provided basic safety procedures are followed, and has psychological benefits for the infant and parents globally (Lee, 2012). In Nigeria, people perceived that infant requires routine bathing to improve the health related behavioral issues and infant using appropriate safety measures for a duration of 5 to 10 minutes. (Peter, 2012). Traditionally, sponge baths were carried out on newborns until the umbilical cord fell off then tub baths where introducedin urban areas in Nigeria.However, infants born prematurely continued to have sponge baths as part of their routine care (biweekly/daily) during their prolonged hospitalization. It was believed that this practice reduced the risk of infection and bacterial colonization, which can be life threatening for all preterm infants. However, in later research conducted by Ash, (2010) comparing sponge bathing to tub bathing, it was found that there was no significant difference in infection rates. In actual fact, some studies concluded indicate that a sponge bath posed more of a risk due to significant heat loss, physiological alterations, including changes in heart rate, oxygen requirements and saturation levels, and detrimental behavioural cues, including crying, whimpering and thrashing. In addition, the procedure of sponge

bathing was not supportive of family-centred care as neonatal nurses were reported to be carrying out the procedure in the middle of the night when they had more time available, meaning the family were never involved. Bathing procedures therefore moved away from sponge bathing as routine care to the practices currently used today (Ash, 2010).

Methodology

The study made use of a desriptive survay research design that makes possible for the collection of data from a small portion of the identified population and successively generalized. The target population of the study was made up of women of child-bearing age, and health workers from the three senatorial zones of Katsina State (Katsina North, Katsina Central, and Katsina South), which was 3,058,499 as of 2020. The sample size, which was 384, was determined by making use of Krejcie and Morgan formula, and the process of selecting the samples was done using multi-sampling technique. First the State was divided into three senatorial zones where only one major local government was selected from each zone. The selected local governments were Katsina, Daura and Funtua local governments. The researcher then purposively selected one healthcare center from each of the three selected local governments. The selected healthcare centers are Funtua General Hospital, Turai Child and Maternity Hospital Katsina, and General Hospital Daura from Funtua, Katsina and Daura local governments respectively. Finally, the respondents were selected by making use of judgmental sampling technique from the selected healthcare centers. Questionnaire and interview methods were the instruments used in collecting data from the women of child-bearing age and the healthcare workers respectively.

Table I: Selected LGAs and Healthcare Centers

S/n	LGA	Healthcare Center	Sample
1	Funtua	General Hospital Funtua	128
2	Katsina	Turai Yar'adua Child and Maternity Hospital Katsina	128
3	Daura	General Hospital Daura	128
		Total	**384**

Source: *Researcher's Fieldwork (2021)*

Influence of Hygiene Bathing and Breastfeeding of Lactating Mothers on Infant Mortality in Katsina State

In an attempt to examine the impact of hygiene bathing and breastfeeding of lactating mothers on the rate of infant mortality in Katsina State, 384 copies of questionnaire were administered to the nursing mothers from three selected local government areas in the State. Of the 384 copies distributed, the researcher was able to retrieve 302 copies which was equivalent to 78%. Therefore, the presentation and analysis of the data was made based on the data contained in the retrieved copies (302).

Table 2: Variables for Attitude of Lactating Mothers

1	Shameful of Breast feeding Mothers at first delivery	Strongly Agreed	1	188
		Agreed	2	103
		Disagreed	3	7
		Strongly disagreed	4	4
2	Denial of breastfeeding to infant at early hour	Strongly Agreed	1	57
		Agreed	2	176
		Disagreed	3	40
		Strongly disagreed	4	29
3	Malnourished breastfeeding mothers	Strongly Agreed	1	79
		Agreed	2	96

		Disagreed	3	74
		Strongly disagreed	4	53
4	Absence of traditional birth attendant	Strongly Agreed	1	70
		Agreed	2	98
		Disagreed	3	88
		Strongly disagreed	4	46
5	Traditional ritual performance at delivery	Strongly Agreed	1	68
		Agreed	2	78
		Disagreed	3	91
		Strongly disagreed	4	65
6	Delay to breastfeed infant on time	Strongly Agreed	1	105
		Agreed	2	96
		Disagreed	3	54
		Strongly disagreed	4	47

Source:*Researcher's Fieldwork (2021)*

Table 3: Attitude of Lactating Mother Coefficients

Variable	Coefficients	t-Statistic	P-Value
SBM	-.020	-.538	0.591
DBIEH	.185	5.702	<0.001
MBM	.045	.804	0.422
ATBA	-.049	-.820	0.413
TRPBD	.007	.178	0.859
DBITT	.819	22.579	<0.001

Table 3 indicates that out of the six predictors delay to breastfeed infant and denial of breastfeed at early hours have significantly related to infant mortality with P value of < 0.005 each. The linear regression analysis has further reveals that increase in denial of breastfeeding to infant at early hours may increase the risk of infant death. The table further reveals that delaying and denial of breastfeeding infant at early has a negative effect to the life of infant. While the remaining four predicators did not show any negative significant relationship with infant mortality.

Table 4: Variables for Bathing Hygiene

1	Do you agree infant bathing is related to infant mortality?	Strongly Agreed	1	56
		Agreed	2	62
		Disagreed	3	112
		Strongly disagreed	4	72
2	Do agree too much bathing influences infant mortality?	Strongly Agreed	1	66
		Agreed	2	75
		Disagreed	3	86

		Strongly disagreed	4	73
3	Do you agree hiring old woman to wash infant increase infant mortality at first delivery?	Strongly Agreed	1	59
		Agreed	2	56
		Disagreed	3	101
		Strongly disagreed	4	86
4	Do you agree the use of hot water on infant bathing increases rate of infant mortality?	Strongly Agreed	1	46
		Agreed	2	50
		Disagreed	3	98
		Strongly disagreed	4	108
5	Do you agree the use of cool water on infant bathing increases rate of infant mortality?	Strongly Agreed	1	102
		Agreed	2	109
		Disagreed	3	49
		Strongly disagreed	4	42
6	Do you agree general hygiene contributes to the health of an infant?	Strongly Agreed	1	128
		Agreed	2	131
		Disagreed	3	23
		Strongly disagreed	4	20

Source:*Researcher's Fieldwork (2021)*

Table 5: Bathing Hygiene Coefficients

Variable	Coefficients	t-Statistic	P-Value
TIBIM	.372	3.897	.000
IBRIM	.178	2.588	.010
HOWIM	-.492	-5.517	.000
CWCIM	.703	14.700	.000

Table 5 shows that predictors too much bathing, hiring old woman and cool water have significant effect on infant mortality with P value of < 0.005 each. The linear regression analysis has further revealed that increase in any of the stated predicators may affect the life of an infant leading to mortality.

Table 6: Cross Tabulation for Bivariate Analyses

		Infant Mortality					
		Strongly Agree	Agree	Disagree	Strongly Disagree	X^2	P-value
Attitude of Breastfeeding Mother	Strongly agree	43	19	18	22	69.693	.000
	Agree	26	41	31	11		
	Disagree	5	13	13	18		
	Strongly disagree	1	4	14	23		
General Hygiene	Strongly Agree	51	25	24	28	68.619	.000
	Agree	23	48	38	22		
	Disagree	1	3	10	9		
	Strongly disagree	0	1	4	15		

Table 6 shows cross tabulation of each and every independent variable with dependent variable: The data has clearly confirmed significant association between attitude of lactating mothers of P<0.05) and chi secure X^2 = 69.693, and bathing hygiene of P<0.05 and chi secure X^2 = 68.619. From this analysis it is observed that both the aforementioned predicators have significant association with infant mortality in the study area.

Discussion of Result

Data on the attitude of lactating mothers shows that only two factors influenced infant mortality i.e. delay to breastfeed infant (P-Value <0.001) and denial of breastfeeding at early hours (P-Value <0.001). These variables indicated negative significant relationship towards infant mortality. Breast feeding is one of the cardinal aspects in nurturing infant. This is because infant requires enough feeding system at regular intervals which will make him healthy, strong and nourished. Delaying or denial of infant breast milk would directly affect the life of infant. Some women or feeding mothers have such attitude because of either shyness or fancy which may result to certain morbidities, malnourishment and infant death. An interview with a medical doctor stated that most of the women in the area do not belief in breastfeeding their children at early hours and some mothers are even ashamed of regular breastfeeding of their infants especially at their first delivery. Equally, if the child is with a friend or a family member crying of hunger she does no bother to receive and breastfeed the child. This results to certain morbidities that endanger the infant to death.

Data regarding bathing hygiene illustrated that too much bathing, hiring old woman to bath baby and the use of cold water to bath infants have significant effect with infant mortality, any increase in in the rate at which infant are supposed to be bathed may increase the risk of their death. Thus it is observed that bathing, good shelter, and good wares contributed properly in improving infant health condition, but some mothers adhered to adopt the system of their cultural attributes based on their cultural belief systems. In some localities in the study area, some families accept hiring old women, using cold water etc. for infant bathing. This attitude negatively affects the life of the infant. It was further identified that there were three major causes accounting for three quarters of newborn deaths in Nigeria as: birth asphyxia (when the baby do not cry at birth), preterm birth complications, and infections. According to Utuk (2005), majority of deaths/ illnesses occurring in children aged 1-2 weeks are caused by neonatal tetanus that associated cultural background. Similarly, data obtained from an interview revealed that the required facility in their locality is expected to

be a good working condition environment because infant generally are weak. The facility needs to consist of hardworking staff who are always present.

Conclusion and Recommendations

Culture has an important influence in the health behaviour of the people especially in developing countries where majority of the people are traditionally oriented and superstitious. Among predominantly rural populace, ill health is commonly believed to be due to evil mechanization of witchcraft, magician, wizard, gods and ancestors and this influence the health seeking behaviour of the people. The study has shown that whatever affects the health of the mother affects the child (WHO: 1994). It is observed that when a woman gets inadequate medical care, or none at all during pregnancy, childbirth, and postnatal period, her baby also receives little or no medical care. Thus, the guidelines for essential new born care include hygiene during delivery, keeping the new born baby warm, early initiation of breastfeeding, exclusive breast-feeding, care of the eyes, care during illness, immunization and care of low birth-weight of the new born. It is based on its findings that the study recommends the following;

i. Campaigns for infant breastfeeding awareness need to be intensified. This will educate women to understand the dangers associated with delay, denial, and importance of frequent breast feeding of infant at regular interval.

ii. Environmental sanitation is required at all point. This involves the cleanness of infant clothes, bathing, where to sleep, objects around and the mother's purification concerning her clothes, body cleanness, etc.

iii. Governments at all levels should ensure that enough primary, secondary and tertiary healthcare facilities are provided everywhere in the State. The provision of these facilities would reduce the practices of these traditional beliefs regarding the newborn babies for most of them were due to inadequacies of hospitals.

iv. There should be networking of NGOs. The NGOs should work together so that their goals will be achieved through national and regional level seminars. Workshops can be organized to sensitize and build capacity among the NGOs on various issues pertaining to cultural practices based on the finding of the study. The government (both state and local) should give support and create chances for Non-Governmental Organizations through providing enabling environment. This could be done through public enlightenment and provision of financial assistance to the NGOs on regular basis.

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