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Addressing New-Born Morbidity and Mortality in Resource Scarce Environments: The Interactions Between Culture and Health

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Abstract: Essential new-born care practices are practices that protect against new-born morbidity and mortality which include clean / hygiene cord care, thermal care (immediate drying of the baby, wrapping with clean dry cloth and delayed bathing) and early initiation of breastfeeding. The purpose of this study was to assess the patterns and cultural factors influencing essential new-born care practices among women of reproductive age at homes in Taveta Sub-County of Taita-Taveta County. *Objectives:* The objective of the study was to assess the patterns and cultural factors influencing essential new-born care practices among women of reproductive age at homes in Taveta Sub-County of Taita-Taveta County. *Methods:* The study adopted descriptive cross-sectional design and the sampling method adopted was cluster sampling to come up with 384 mothers. Both quantitative and qualitative data collection methods were used to collect data. The instruments used in this study included structured questionnaires with closed ended questions for quantitative data as well as Key Informant Interview Guide and Focus Group Discussion guide. Quantitative data was analyzed using the Statistical Package for the Social Science (SPSS) while qualitative data was analyzed thematically. Chi-squared tests and regression analysis was used to establish relationship between variables at $p \leq 0.05$. *Results:* Poor neonatal care practices were observed in 84.2% of the mothers. Cultural factors significantly influenced new born care practices in the study area ($p < 0.05$). *Conclusions:* The study concludes that there are poor neonatal care practices in the study area and that cultural factors greatly determine such practices.

Keywords: New-Born, Care Practices, Culture, Health

1. Introduction

Essential new-born care is of importance for the survival, proper development and healthy life of a baby [1]. It is strongly influenced by home care practices instituted by the mother, as well as by maternal and new-born cares services at health facilities. The women's social and health status are crucial as well. Essential new-born care practices are very vital in preventing neonatal deaths, particularly essential care of the normal new-born to prevent illnesses which include extra care of low-birth-weight babies, and access to quality emergency care for the sick new-born [2]. The health of a new-born depends on

the care provided by the caregivers. The care given to the new-born immediately after birth and in both early and late neonatal period is critical in determining its survival. Simple cost-effective interventions such as clean cord care, early initiation of breastfeeding and optimal thermal care helps in prevention of infection and promote child growth respectively [3].

The most vulnerable period of a child's life is the first 28 days and currently accounting for 44% of all under-five deaths [4, 5]. After delivery, new-borns should receive immediate new-born care, which includes thermal care (drying and wrapping, skin-to-skin care, delayed bathing), hygienic cord care and early initiation of breastfeeding [6].

Reducing new-born morbidity and mortality may therefore require better prevention and case management of severe infections, preterm births, and inpatient supportive care of ill and small new-born babies including the promotion of kangaroo mother care (KMC) [7]. Globally, 2.6 million children died in the first month of life in year 2016, approximately 7,000 new-born deaths daily at a high-risk rate of 19 deaths per 1000 live births in the first month of life [8]. Most of these deaths are preventable, but progress in reducing neonatal mortality has been slower than progress in reducing child or maternal mortality, meaning that neonatal deaths account for an increasing proportion of all child-deaths [2].

Africa accounts for 11% of the world's population but more than 25% of the world's new-born deaths [9]. Almost all (99%) of these neonatal deaths occur in low income and middle-income countries, with the highest rates occurring in Sub-Saharan Africa at 29 deaths per 1000 live births in 2014 [10]. In Zambia neonatal mortality rate (NMR) was estimated to stand at 34/1000 live births [11], in the neighbouring Ethiopia NMR accounts 29/1000 live births [9], while in South Sudan at 39/1000 live births [5].

In Kenya, much has been done such as the “beyond zero” campaign aimed at reducing neonatal mortality to zero [12]. The trends of neonatal mortality reduction has had a marginal pace of 33 deaths per 1000 live births (1999-2003), 31 deaths per 1000 live births (2004-2008) to the current 22 deaths per 1000 live births (2010-2014) in Kenya [13]. However, Taita-Taveta County recorded the highest neonatal death rate of 62 deaths per 1000 live births, [13] which is far above global, regional and national rates. Thus, attainment of the Sustainable Development Goal 3 Target 3, aimed at 12 deaths per 1000 live births by year 2030 is still a distant mark to achieve [14]. It is with this conviction that this study was undertaken in Taveta Sub County, Taita Taveta County to determine patterns and cultural factors influencing essential newborn care practices at household levels with a view to recommend low-cost interventions to save the lives of many neonates who die in this County.

2. Methodology

The study was conducted in Taveta Sub-County, TaitaTaveta County, one of the six Counties in the Coastal region of Kenya. We adopted a descriptive cross-sectional design. Both qualitative and quantitative methods of data collection and analysis were employed. The primary study population comprised of WRA (18 to 49 years) with children aged 0-11 months that consented and live in Taveta Sub-County. Fisher formula Fisher *et al.* (2007) was used to arrive at a sample size 384. A total of 320 questionnaires were completed and returned. Quantitative data was analysed using SPSS version 25. Qualitative data was analyzed using MAXQDA version 12.

3. Findings

3.1. Demographic Characteristics of the Respondents

Demographic factors considered included age, marital

status, Level of education, religion, occupation, employment status, gravidity and parity. Table 1 below presents the demographic characteristics of the respondents.

Table 1. Demographic characteristics of the respondents.

Age category	Frequency n (%)	
Age		
Under 20 years	16	4.90
20–34 years	240	75.00
At least 35 years	42	13.20
36 year and above	22	6.90
Religion		
Christianity	186	58.2
Islam	134	41.8
Marital Status		
Married	255	79.7
Single	62	19.4
Divorced	1	0.2
Widowed	2	0.7
Educational Level		
None	28	8.8
Primary	76	23.6
Secondary School	104	32.4
College/University	113	35.2
Gravidity		
<i>Primigravidae</i>	127	39.7
<i>Secundigravidae</i>	101	31.6
<i>Multigravidae</i>	92	28.7
Parity		
<i>Primiparous</i>	162	50.5
<i>Secundiparous</i>	85	26.6
<i>Multiparous</i>	74	23
Total	320	100.0

As indicated in Table 1 above, most women who participated in the study were aged between 20–34 years (75%). The mean age was 28.5 (SD 5.6) years with a range of 18–49 years. The details of the sample characteristics including maternal educational level, marital status, religion of mothers and maternal age distribution are shown in Table 1 above. About 8.8% of the mothers had no formal education and 32.5% attained secondary level of education. The majority of the mothers 79.7% were married. Most of the mothers 58.2% were Christians. Those who were *primiparous* were 50.5% and *Primigravidae* 39.7%.

3.2. New-Born Care Practices

Essential new born care practices investigated included umbilical cord instrumentation, cord tying, materials applied, baby wrapping and birth. Table 2 below presents the findings.

Table 2. New born care practices.

New born care practice	Frequency	%
Instrument used to cut the umbilical cord		
New blade	37	11.6
Any available blade	7	2.2
Scissors	270	84.4
Others	6	1.9
Material used to clamp tie cord		
Thread	14	4.4
Cord tie	16	5.0
Cord clamp	286	89.4
Others	4	1.3

New born care practice	Frequency	%
What was applied to cord		
Nothing	28	8.8
Oil	144	45.0
Spirit	112	35.0
String	22	6.9
Others	14	4.4
Time baby was wrapped		
Immediately (< 5 min)	164	51.3
5–10 min	122	38.1
30–60 min	9	2.8
Unknown	25	7.8
Timing of new-born’s first bath		
Soon after birth	22	6.9
1–6 h	127	39.7
More than 6 h but less than 24 h	113	35.3
More than 24 h	4	1.3
Can’t tell	54	16.9
Reasons for applying substances to the cord stump		
Prevent infection	234	73.1
To aid healing	24	7.5
Keep it dry	28	8.8
Prevent water from entering the stomach	14	4.4
Midwives advised me to used	12	3.8

New born care practice	Frequency	%
Not Applicable	8	2.5
Total	320	100.0

Most mothers who participated in the study indicated that they used scissors for cutting the umbilical cord (84.4%). While 4.4% of the mother indicated that they used thread to clamp tie the cord, 89.4% of them indicated that they used cord clamp. Oil and spirit was commonly allied to the cord (45% and 35% respectively). Most babies were wrapped less than 5 minutes after birth (51.3%). Timing of the new-born’s first bath mostly occurred 1-6 hours after birth (39.7%) and more than 6 hours but less than 24 hours after birth (35.7%). Essential new born care practices were further categorized into cord care, thermal care and neonatal care. A separate response category with responses on essential neonatal care practices was used to compute the overall neonatal care scores (Good and poor). Figure 1 below presents the new born care practices categorization.

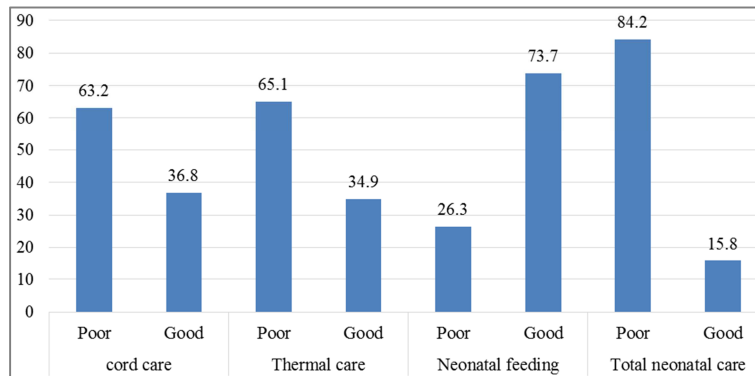


Figure 1. Essential neonatal care practices categorization.

As indicated in Figure 1 above, 63% of the mothers had poor cord care practices. Only 36.8% presented good cord care practices. Further, only 34.9% of the mothers exhibited good thermal care practices. Good neonatal feeding practices were however registered by a majority of the respondents (73.7%). However, total neonatal care scores for most of the mothers was established to be poor (84.2%).

3.3. Cultural Factors Influencing Essential New-Born Care Practices

Cultural factors investigated include customs on bath, feeding, umbilical cord care, jaundice and evil eye. Figure 2 below.

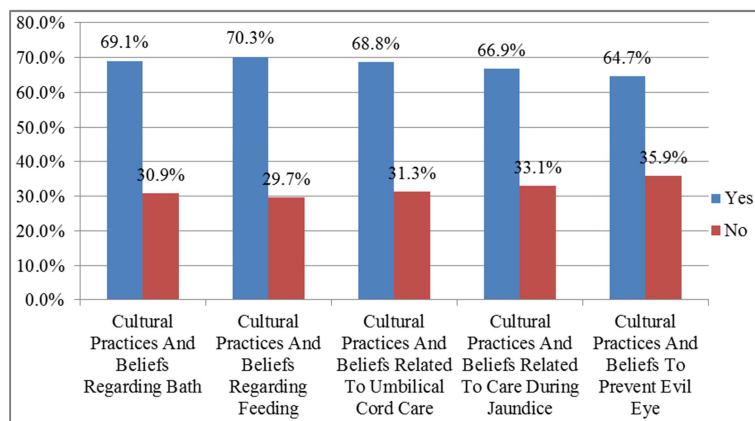


Figure 2. Cultural beliefs and practices.

From Figure 2 above, 69.1% of the mothers indicated that they subscribed to cultural practices regarding bath. The findings also indicated that 70.3% of the mothers subscribed to cultural beliefs regarding feeding of the new born. Further, about 68.8% of the mothers indicated that they took carefully beliefs and customs regarding umbilical cord care. Those who subscribed to cultural practices and beliefs to prevent

evil eye and to care during jaundice were 64.7% and 66.9%. Details on the cultural beliefs on essential new-born care practices were as presented in Figure 2 above.

Such cultural beliefs and practices were cross tabulated against the established essential new-born care practices. Table 3 below presents the responses cross tabulated with essential new-born care practices.

Table 3. Cultural factors influencing essential new-born care practices.

Cultural beliefs			Child care practices		OR (95% CL)	P-value
			Poor	Good		
Cultural Practices and Beliefs Regarding Bath	Yes	221 (69.1%)	219	2	1	<0.001
	No	99 (30.9%)	50	49	>100	
Cultural Practices and Beliefs Regarding Feeding	Yes	225 (70.3%)	222	3	1	<0.001
	No	95 (29.7%)	47	48	75.6	
Cultural Practices and Beliefs Related to Umbilical Cord Care	Yes	220 (68.8%)	213	7	1	<0.001
	No	100 (31.3%)	56	44	23.9	
Cultural Practices and Beliefs Related to Care During Jaundice	Yes	214 (66.9%)	211	3	1	<0.001
	No	106 (33.1%)	58	48	58.2	
Cultural Practices and Beliefs to Prevent Evil Eye	Yes	205 (64.1%)	201	4	1	<0.001
	No	115 (35.9%)	68	47	34.7	
Total		320 (100%)	269	51		

The findings indicate that cultural beliefs significantly influenced essential new-born care practices. Most mothers from the study were subscribed to various cultural practices and beliefs regarding bath, feeding, cord care, care during jaundice and prevention of evil eye. Table 3 above provides details of the cultural practices. Mothers who subscribed to beliefs regarding bath were more than 100 times likely to have poor new-born care practices. Those with cultural practices and beliefs to prevent evil eye were 34 times more

likely to have poor new-born care practices. Mothers who held to beliefs and practices relating to jaundice were 58 times more likely to have poor new-born care practices. Those holding to cultural practices and beliefs on umbilical cord care were 23.9 times more likely to have poor new-born care practices. Regression analysis conducted revealed significant relationship between cultural beliefs and practices and new-born care practices ($p=0.00$). The findings are as summarized in Table 4 below.

Table 4. Influence of cultural beliefs and practices on essential new-born care practices.

ANOVA	df	Multiple R	R Square	F	Significance F	t Stat	P-value
Regression	1	0.994822	0.989672	766.566	0.00	51.81	0.00
Residual	8						
Total	9						

The findings as indicated in Table 4 above indicates a 99% perfect fit in the regression equation for cultural factors against essential new-born care practices. There was also a positive R square value of 0.98 indicating positive relationship between the predictor variable and the outcome variable. This is to imply that presence of the particular cultural belief and practice influenced poor new-born care practices.

From the Key Informant Interviews, it emerged that deeply rooted cultural factors influence essential new-born care practices. The informants indicated that where there were certain beliefs and traditions related to essential new-born care, mothers tend to ignore the standard care practices given to them by health professionals. One of the informants indicated that,

We have cultural practices relating to child birth and care. Those who hold to the cultural and traditional beliefs that a new-born baby must be washed at a specific time and rituals conducted may not follow the advice given to them

by the doctors. In other cases, the concept of the “evil eye” will influence the type of care accorded to the new-born. Such cultural beliefs are held dearly and most people do not go against them. Even those who claim to be learned will still follow such cultural beliefs (KII.2).

During the Focus Group Discussions, it also emerged that most mothers in the region subscribe to cultural beliefs and traditions regarding new-born care and that such beliefs override care procedures provided by the hospitals. One of the participants indicated that,

There is a belief in our culture regarding when and how the umbilical cord is treated. When mothers deliver in the hospitals, they are still required to follow those procedures. So you find that such mothers may not be able to comply with the advice given to her in the clinics. Such beliefs are sometimes not in line with the requirements of the doctors. So I believe that mothers who hold to such beliefs may not be able to follow the instructions on new born care given by the health professionals. As such, they

normally have poor new-born care practices as compared to their counterparts who maybe are not aware of such practices and are only following what the doctors tell them (FG1. P5).

4. Discussion

The findings of the study reveal that most mothers used scissors for cutting the umbilical cord, used cord clamp and applied oil and spirit to the cord. Most babies were wrapped less than 5 minutes after birth and that Timing of the new-born's first bathe mostly occurred 1-6 hours after birth and more than 6 hours but less than 24 hours after birth. Essential new born care practices were further categorized into cord care, thermal care and neonatal care. As such, up to 63% of the mothers had poor cord care practices., 34.9%, good thermal care practices, 73%, good neonatal feeding practices. The total neonatal care scores for most of the mothers were established to be poor (84.2%). The findings may lead to an understanding that most mothers in the study area have poor essential new born care practices. This finding agrees with those of C Mani, PK Lal and L Kumar [15] who also established poor essential new born care practices among rural populations. TY Chichiabellu, B Mekonnen, FH Astawesegn, BW Demissie and AA Anjulo [16] also established poor essential new-born care practices among home delivered mothers. It would thus be probable to come to an understanding that mothers in the study area have poor essential new born care practices and that such practices may be influenced by several factors.

The study established that most of the mothers were aware of and believed in various cultural practices on essential new-born care. Such practices included those regarding new-born bath, feeding, umbilical cord care, prevention of evil eye and care during jaundice. The study further established that all the cultural aspects of new-born care were significantly associated with essential new-born care practices. Mothers who held to the beliefs that cultural fulfillment of such practices was important did not exhibit good essential new-born care practices. Such findings also emerged in the Key Informant Interviews and the Focused group discussions. Significant relationship between cultural factors and essential new-born care practices was also established.

The findings of this study therefore may lead to an understanding that cultural factors influence essential new-born care practices. This therefore implies that adoption of essential new-born care practices is a product of the underlying social issues in the society. This position is also supported by S Kaphle, H Hancock and LA Newman [17] who argues that while childbirth is a biological event, the pregnancy and birth experiences surrounding it are mostly social constructs, shaped by cultural perceptions and practices. A study conducted in India for instance established that breastfeeding of neonate was started on the third day after birth and during the period to the third day, a form of pre-lacteal feed which was sugar water or in some cases sugarcane juice was given [1]. This practice was with respect

to the cultural norms found in the community regarding breastfeeding. Similarly, a study conducted by PS Coffey and SC Brown [18] revealed that mothers applied ashes, soot, powder or dry cow dung on neonates as a cultural practice. A Nigerian study conducted by PI Opara, T Jaja, DA Dotimi and BA Alex-Hart [19] observed that cord care was done by grandmothers and that this contributed to poor new-born care practices.

5. Conclusion

The study sought to understand essential new born care practices as well as the cultural factors that influence essential new-born care practices among women of reproductive age in Taveta Sub-County. From this study therefore we do conclude that there are cultural factors that influence essential new born care practices in the study area and hence poor essential new born care practices.

6. Recommendations

Based on the study findings, recommendations are made for further research, policy and practice. Future studies may seek to understand the effects of awareness creation on essential new-born care practices. For policies, the study recommends that the county government of Taita Taveta could develop policies in consultation with the national government aimed at ensuring improving uptake of essential new-born care practices at households. Such policies could enhance access to knowledge and information on essential new-born care practices. Policies should also be put into place to counter the negative effects of cultural practices and beliefs on uptake of essential new-born care practices.

Relevant programs aimed at promoting essential new-born care practices at community and household levels should be implemented. Such programs may include awareness creation on the importance of essential new-born care practices in ensuring neonate survival in the county. The programs could also target cultural barriers to essential new-born care practices. Such programs could be implemented by the county governments as well as other development partners. Different stakeholders could also leverage on the gains made in the educational sectors as well as technology to promote essential new-born care practices.

Conflicts of Interest

The authors declare no conflicts of interest.

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