Perception of Neonatal Mortality Prevention among Caregivers of Under-Five Children in Calabar Municipality, Cross River State, Nigeria.

[1&2]Ojong Idang Neji, [1]Nwakwue Ndukaku, [1]Ojo-Omagbon, Justina Durojaiye

[1]Department of Nursing Science, Faculty of Allied Medical Sciences, College of Medical Sciences, University of Calabar. Cross River State. Nigeria.

[2]Department of Nursing Science, Faculty of Allied and Health Sciences, PAMO University of Medical Sciences, Port Harcourt. Rivers State. Nigeria
Corresponding Author: Dr. Idang Neji Ojong

Abstract: *This study was conducted to examine the perception of neonatal mortality prevention among caregivers of under-five children in Calabar Municipality Local Government Area of Cross River State. Specifically, three research objectives examining the knowledge, attitude and practice towards prevention of neonatal mortality were raised and corresponding research questions were put forward with one hypothesis to guide the study. The Health Belief Model was used as the theoretical framework for this research. A descriptive cross-sectional design utilizing the multistage sampling method was applied to select 378 study participants. Data was collected using a self-developed questionnaire constructed in line with the objectives of the study which was well validated and its reliability ensured. Data collected was analyzed and presented using frequency tables and simple percentages, while the study hypothesis was tested using Contingency Chi-Square statistical analysis significant at 0.05. Findings from the study revealed that 248 (65.6%) caregivers of under-five children used for the study have good knowledge, while 206 (54.5%) caregivers had a positive attitude and 162 (42.9%) caregivers had adequate levels of intervention practices to prevent neonatal mortality. Also, the study revealed a statistically significant association between knowledge and practice of strategies to prevent neonatal mortality. Based on these findings, the researcher suggests that practical approaches be used for educating caregivers on ways of preventing neonatal mortality so as to promote a higher level of practice.*
Keywords: knowledge, attitude. Practice, prevention, neonatal- mortality
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I. Introduction

Neonatal mortality is a major global health concern especially ina developing country like Nigeria. It is the death of an infant occurring from between the time of birth and twenty eight days after birth[1]. Neonatal death itself is of two kinds-early and late neonatal death with the former occurring within the first seven days of birth and the latter occurring between seven and 28 days of birth. Nigeria ranks second worldwide and first in Africa in terms of neonatal deaths[2]. Reducing these deaths was an element of the millenniumdevelopment goals 4, which aims to reduce child mortality by two thirds[2&3].Although there has been an overall decline in these numbers; this target was currently met by only 25 percent of all the countries in the world and this excludes Nigeria[4]. Sustainable development goals 3&4 have identified strategies to eradicate this neonatal deaths in developing country like Nigeria[1].

Several conditions account for neonatal deaths; however[5], notes that they are broadly grouped into: infections, birth asphyxia and prematurity, these account for eighty eight percent of all neonatal deaths[6&2].Other causes of neonatal deaths include; congenital malformations and maternal factors[5]. Other causes including those due to maternal or other factors include; poor antenatal care, unsupervised or poorly supervised home deliveries, unhygienic and unsafe delivery practices and cord care, low birth weight, lack of exclusive breastfeeding and delays in recognition of danger signs in both mother and baby[5]. Furthermore, poor access to health care services including delays in reaching adequately equipped health care services also contribute to the high number of neonatal deaths[3,4&1]. In view of the foregoing, it is imperative that neonatal deaths be prevented and newborn health care be addressed[7].

Newborn death is preventable and can be achieved with interventions like exclusive breastfeeding for the first six months, continued breastfeeding through the first two years of life, use of insecticide treated nets for malaria prevention, immunization (especially hepatitis B, measles and tetanus), neonatal care including clean

delivery and newborn temperature management, sanitation including use of clean water, growth monitoring, elimination of mother to child transmission of HIV and AIDS and use of oral rehydration therapy for cases of diarrhoea[8&9]. Similarly, strengthening the health care system gives provision for quality neonatal health care to address some of these issues raised above[2].

In view of the foregoing it will be necessary to point out that the link between neonatal mortality and maternal or caregiver knowledge is intricate and cannot be underestimated[1]. Knowledge possessed by caregivers of newborns is a prerequisite for improved neonatal care practices[9&10].

In assessment of knowledge of prevention of neonatal mortality, a study conducted by[10] on 189 postnatal caregivers revealed that most (173; 91.5%) caregivers had satisfactory levels of knowledge about the prevention of neonatal mortality while 7 (3.7%) caregivers had adequate knowledge and 9 (4.8%) caregivers had inadequate knowledge of the prevention of neonatal mortality. Conversely, a study of the knowledge of preventive measures of neonatal mortality by[11] on 404 women reported that 312 (77.2%) respondents had an average or fair knowledge of preventive measures while 82 (20.3%) caregivers had a high level of knowledge. However, 10 (2.5%) caregivers did not have any knowledge of the preventive measures of neonatal mortality. However, a similar study conducted by[12] on the same number of caregivers (100) revealed poor levels of knowledge as only 12 (12%) caregivers had adequate knowledge while 78 (78%) had inadequate knowledge. In addition, 10 (10%) caregivers had poor knowledge of neonatal preventive care.

In addition, an investigation conducted by[13] on 603 postnatal caregivers revealed that 110 (18.2%) caregivers had good knowledge of the danger signs of neonatal mortality and could prevent neonatal death while 493 (81.7%) caregivers had poor knowledge. Furthermore, knowledge was consider as a good indicator for neonatal mortality prevention.

A study carried out by[14] on 30 postnatal caregivers indicated that a majority (28; 96.6%) of caregivers had positive attitudes towards the prevention of neonatal deaths in their infants. Moreover, a study conducted by[15] on 65 postnatal caregivers revealed that 62 (95%) caregivers had satisfactory attitudes towards preventing neonatal mortalities and were especially concerned about immunization of their infants. Furthermore, an inquiry conducted on a hundred women by[2] indicated that 39 (39%) caregivers had a favourable attitude towards preventing neonatal mortality while 61 (61%) had moderate attitudes. However, no respondent was reported to have had unfavourable attitudes to preventing neonatal mortality.

An inquiry conducted by[9] on 200 caregivers of under-five children in Ogun state revealed that 35 (17.6%) respondents had adequate practices of preventing neonatal deaths while 56 (28%) had moderate practices. However, more than half (109; 54.9%) of the respondents had poor practices of preventing neonatal mortality. In contrast, an investigation conducted by[7] on 189 postnatal caregivers reported that 102 (54%) had adequate practice while 86 (45.5%) caregivers had satisfactory practice scores. Nevertheless, only one (0.5%) respondent demonstrated inadequate practice of preventing neonatal mortality. A similar investigation conducted by[2] on 53 postnatal caregivers revealed higher levels of practice as a majority (48; 90.56%) of study participants had high levels of practice and were able to take preventive actions against the danger signs of neonatal deaths. However, 5 (9.43%) respondents had moderated levels of practice and no participant recorded a low level of practice.

Moreover, a research conducted by[16] on 30 caregivers of under-five children reported that 16 (53.33%) caregivers had excellent practices while 14 (46.67%) caregivers had good practices of newborn care and prevention of neonatal deaths. In sharp contrast, a study conducted by[17] on 423 postnatal caregivers revealed that only 113 (26.7%) caregivers fulfilled all essential newborn care practices and were noted to have successfully prevented neonatal mortality.

From the foregoing, it will be evident that the caregivers have a large role to play in the prevention of infant death. However, there is a gap in information on neonatal care practices in both rural and urban settings such as Calabar Municipal. It is therefore the focus of this study to bridge this gap and provide this information by assessing the perception of neonatal mortality prevention among caregivers of under-five children in Calabar Municipality, Cross River State, Nigeria.

Research Questions
1. What is the knowledge of neonatal mortality prevention among caregivers of under-five children in Calabar Municipality?
2. What is the attitude of caregivers of under-five children towards neonatal mortality prevention in Calabar Municipality?
3. What practices do caregivers of under-five children engage in to prevent neonatal mortality in Calabar Municipality?

Research Hypothesis

There is no significant association between the knowledge and practice of neonatal mortality prevention among caregivers of under-five children.

Application of Health Belief Model to the Study

The health belief model is best applicable to this study because it describes caregivers of under five health behaviours as an expression of their health belief, attitude and perception. The HBM helps explain why caregiver of under-five children may accept or reject the practices that prevent neonatal mortality.

In the context of this study, perceived susceptibility means a high probability of susceptibility of a caregiver's child to neonatal death. Preventing neonatal mortality depends on their perceived susceptibility and perceived benefits of preventing deaths among their babies which is basically on their knowledge of prevention.

Complying with and practicing health behaviours (such as registering for antenatal, delivery and post-natal care, exclusively breastfeeding their babies, keeping cord clean, skin warm, immunization of neonates, going for regular check up of their babies amongst others) that prevent neonatal death depends on the caregivers perceived susceptibility and perceived benefits of such practices. That is, if they perceived that registering for antenatal, immunization, check up and others are relevant for the safety of their babies, caregivers would be willing to comply with the practices. But if after weighing the perceived threat, pains, and financial costs, duration and accessibility of these measures, the caregivers may likely not accept it if it has less or negative impact on the society.

The health belief model
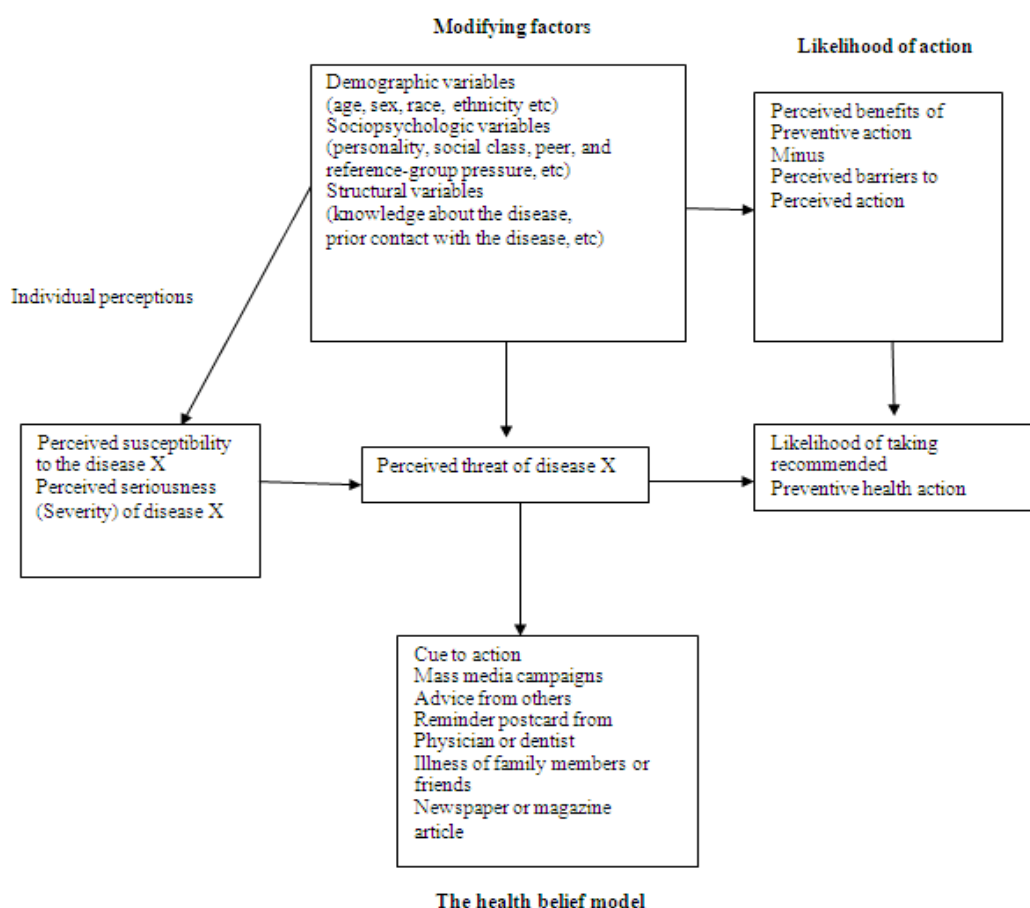
Source: Basavavanthppa (2013)

Study Design: The study utilized the descriptive cross sectional design.This design is considered appropriate because it involves collection of primary data from the population under study with no manipulation of any of the variables. .

Study Setting: This research was conducted in Calabar Municipality, which is one of the Eighteen Local Government Area in Cross River State, Nigeria

Sample size: Three hundred and seventy eight caregivers of under five children (378) Taro Yammane sample size determination was used to get the sample size. The inclusion criteria was caregivers of under-five that were physically fit and willing to participate in the study

Sampling Technique: A multi-stage sampling method was adopted to select three hundred and seventy eight (378) caregivers in Calabar Municipality. This technique was chosen because of its simplicity, the technique added a degree of regularity into an otherwise random selection of subjects.

Instrument for Data Collection: The research instrument that was used to collect data for this study was self-developed well-structured questionnaire designed in line with the study objectives. **The reliability coefficient** of 0.83 was ascertained through Cronbach Alpha reliability test

Ethical Consideration: An oral informed consent was obtained from each participant. They were not coerced in any form to participate in the study. Other major ethical issues which were adhered to during the process of study include: voluntary participation, ensuring privacy and confidentiality of the respondents

Method of Data Analysis: Sociodemographic Data collected for this study was analyzed using percentages. Chi-Square Statistical Analysis was used to compare the variables when testing the hypothesis. Statistical difference was considered significant if the p-value is less than 0.05 at 95% confidence level.

II. Results
Table1. Knowledge of Prevention of Neonatal Mortality amongCaregivers (n=378)

S/No.	Items	Options		
		Yes	No	Total
1.	The eyes of a newborn should be kept clean by using a sterile swab	260 (68.8%)	118 (31.2%)	378 (100.0%)
2.	Immunization is necessary for a newborn baby	343 (90.7%)	35 (9.3%)	378 (100.0%)
3.	Newborns are first fed with colostrum (the first breast milk after birth)	319 (84.4%)	59 (15.6%)	378 (100.0%)
4.	Duration of exclusive breastfeeding should be at least six months	236 (62.4%)	142 (37.6%)	378 (100.0%)
5.	Umbilical cord can be kept clean with cotton wool and warm water	213 (56.3%)	165 (43.7%)	378 (100.0%)
6.	The umbilical cord should be left uncovered after birth	248 (65.6%)	130 (34.4%)	378 (100.0%)
7.	The newborn should not be bathed for the first few days	165 (43.7%)	213 (56.3%)	378 (100.0%)
8.	Skin to skin contact between mother and child can prevent heat loss and death	319 (84.4%)	59 (15.6%)	378 (100.0%)

Table 2. Summary of Respondents' Knowledge on Prevention of Neonatal Mortality (n=378)

Knowledge Status	Frequency	Range of Score (1-16)	Percentage (%)
Good Knowledge	248	≥9	65.6
Poor Knowledge	130	≤8	34.4
Total	378		100.0

The summary of the respondents knowledge of intervention to prevent neonatal mortality among the respondents is presented in table 4.3 above. The table reveals that 248 (65.6%) respondents have good knowledge of intervention to prevent neonatal mortality while 130 (34.4%) respondents have poor knowledge of intervention regarding prevention of neonatal mortality

Table 3.Attitude of Caregivers Toward Prevention of Neonatal Mortality (n=378)

S/No.	Item	Options				
		SA	A	D	SD	Total
9.	Substances (aside from those prescribed by the doctor) can be applied on the baby's eyes if any discharge is noted	47 (12.4%)	154 (40.7%)	154 (40.7%)	23 (6.1%)	378 (100.0%)
10.	Use of vaccines are harmful to the baby	12 (3.2%)	189 (50.0%)	165 (43.6%)	12 (3.2%)	378 (100.0%)
11.	Infants can be breastfed at any time	45 (11.9%)	103 (27.2%)	201 (53.2%)	29 (7.7%)	378 (100.0%)
12.	Other foods and fluids apart from breast milk can be given to infants	37 (9.8%)	180 (47.6%)	83 (22.0%)	78 (20.6%)	378 (100.0%)
13.	Babies can be cared for at home when they fall sick	58 (15.3%)	154 (40.7%)	118 (31.2%)	48 (12.7%)	378 (100.0%)
14.	A previously used instrument can be used to cut an infant's umbilical cord	60 (15.9%)	143 (37.8%)	130 (34.4%)	45 (11.9%)	378 (100.0%)
15.	Hygiene should be ensured when caring for babies	83 (22.0%)	201 (53.2%)	71 (18.8%)	23 (6.1%)	378 (100.0%)
16.	Mother-infant skin contact is necessary and should be adhered to	95 (25.1%)	142 (37.6%)	138 (36.5%)	3 (0.8%)	378 (100.0%)

| 17. | A baby can be bathed with cold water | 39 (10.3%) | 131 (34.7%) | 140 (37.0%) | 68 (18.0%) | 378 (100.0%) |
| 18. | Easy recognition of danger signs can prevent mortality | 87 (23.0%) | 152 (40.2%) | 132 (34.9) | 7 (1.9%) | 378 (100.0%) |

Table 4. Summary of Respondents' Attitude toward Prevention of Neonatal Mortality (n=378)

Attitude	Frequency	Range of Scores (1-40)	Percentage (%)
Positive Negative	206 172	≥ 21	54.5 45.5
Total	378	≤ 20	100

The table above presents the summary of respondents' attitude towards prevention of neonatal mortality. The table reveals that 206 (54.5%) of the 378 respondents have positive attitude towards intervention to prevent neonatal mortality while 172(45.5%) have negative attitude towards intervention to prevent neonatal mortality.

Table 5. Practice of Caregivers Toward Prevention of Neonatal Mortality (n=378)

S/No.	Items	Options			
		Often	Occasionally	Never	Total
19.	My hands are washed before I handle my infant	250 (66.1%)	128 (33.9%)	- (0.0%)	378 (100.0%)
20.	The umbilical cord is kept clean	248 (65.6%)	106 (28.0%)	24 (6.5%)	378 (100.0%)
21.	The Baby is wrapped in warm clothes after bath	142 (37.6%)	224 (59.2%)	12 (3.2%)	378 (100.0%)
22.	I begin breastfeeding as soon as possible after birth	154 (40.7%)	201 (53.2%)	23 (6.1%)	378 (100.0%)
23.	The first breast milk is discarded before subsequent breastfeeding	99 (26.2%)	201 (53.2%)	23 (6.1%)	378 (100.0%)
24.	My delivery is conducted by skilled birth attendants (like doctors, nurses and midwives)	161 (42.6%)	213 (56.3%)	4 (1.1%)	378 (100.0%)
25.	A clean delivery kit is used for conducting my deliveries	148 (39.2%)	197 (52.1%)	33 (8.7%)	378 (100.0%)
26.	A cord clamp is used to tie my infant's cord after delivery	165 (43.7%)	205 (54.2%)	8 (2.1%)	378 (100.0%)
27.	I go to the hospital for antenatal, delivery care and postnatal care	130 (34.4%)	190 (50.3%)	58 (15.3%)	378 (100.0%)
28.	Nothing is applied to my infant's umbilical cord after cutting	118 (31.2%)	195 (51.6%)	65 (17.2%)	378 (100.0%)

Table6. Summary of Respondents' Intervention Practices to Prevent Neonatal Mortality (n=378).

Practice	Frequency	Percentage (%)
Highly adequate	162	42.9
Adequate	186	49.2
Inadequate	30	7.9
Total	378	100.0

The above table presents the summary of the respondents' intervention practices to prevent neonatal mortality. The table reveals that among the 378 respondents that participated in the study, 162 (42.9%) had a highly adequate level of intervention practices to prevent neonatal mortality while 186 (49.2%) had adequate level of intervention practices and 30 (7.9%) respondents had inadequate level of intervention practices to prevent neonatal mortality.

Table 7 Contingency Chi-Square Analysis Showing the Association Between Knowledge and Practice of Intervention to Prevent Neonatal Mortality among the Respondents (n=378).

Knowledge	Practice						
	Highly Adequate	Adequate	Inadequate	Row Total	Df	x^2-Cal.	x^2-Crit.
Good	93	135	20	248			
Poor	69	51	10	130	2	8.86	5.99
Column Total	162	186	30	378			

Significant at 0.05

The above result revealed that the calculated x2 of (8.86) was greater the than the critical x2 of (5.99) at 0.05 level of significance. The null hypothesis was rejected meaning that there is a significance association

between knowledge and practice of neonatal prevention strategies among under five caregivers in Calabar Municipality.

III. Discussion

According to the result on knowledge of prevention of neonatal mortality, majority of the study respondents knew that the eyes of the newborn should be kept clean using a sterile swab while nearly all of them possessed the knowledge that immunization is necessary for the newborn baby. A majority of respondents also knew that babies are first fed with colostrum while more than half of the respondents knew that the duration of breastfeeding should be at least six months. A greater percentage of respondents knew that the umbilical cord of the baby should be kept clean with cotton wool and warm water while a majority were of the opinion that the umbilical cord should be left uncovered after delivery. Moreover, most respondents knew that the newborn should not be bathed for the first few days while a majority reported that skin to skin contact between mother and baby prevented heat loss and death among neonates. In summary of the above stated results revealed that most of the study participants had good knowledge of intervention to prevent neonatal mortality.

These findings are in line with those of[7&13];amongst others who reported that caregivers in their respective studies had satisfactory, adequate and good knowledge of the prevention of neonatal mortality. Conversely, the above result disagrees with those of[11&12] who reported fair and poor knowledge towards prevention of neonatal mortality among caregivers in their respective studies.

Findings on attitude towards neonatal mortality prevention revealed that an equal proportion of study participants agreed and disagreed that substances aside from those prescribed by the doctor could as well be applied on the baby's eyes if any discharge was noted. Similarly, few respondents were of the opinion that use of vaccines were harmful to the neonate. However, most of caregivers disagreed that infants could be breastfed at any time while most indicated that other foods or fluids apart from breast milk can be given to infants. Similarly, a greater percentage of respondents reported that babies could be cared for at home if they fell sick while many of the respondents indicated that a previously used instrument could be used to cut the cord of their infants. Nevertheless, results also revealed that most respondents indicated that hygiene should be ensured when caring for babies while many respondents agreed that mother-infant skin contact was necessary and should be adhered to. However, a higher proportion of participants disagreed that a baby can be bathed with cold water and nearly half of them agreed that early recognition of danger signs can prevent mortality among neonates. On the whole, findings under this research question revealed that most of the study participants have positive attitude towards intervention to prevent neonatal mortality.

These findings corroborate with[14] who found that attitude of postnatal caregivers towards the prevention of neonatal mortality was positive. Similarly, results of this study corresponds with those of[15] who reported that nearly all of their study participants had satisfactory attitudes towards prevention of neonatal mortality and were especially concerned about immunization and their infants. However, respondents in this study though were vested with knowledge of immunization as a preventive measure of neonatal mortality, few of them indicated that vaccines were harmful to babies.

Findings from practice of neonatal mortality preventionrevealed that most of the respondents washed their hands often before handling any infant while most of them kept the umbilical cord of their infants clean often. In addition, a greater percentage of caregivers occasionally wrapped their babies in warm clothes after bathing them while many of them occasionally began breastfeeding as soon as they put to birth. However, a lot of them discarded the first breast milk occasionally. Also, more than half of the respondents said they delivered with skilled birth attendants sometimes while most indicated that clean delivery kits were used occasionally. Moreover, a greater percentage of participants used cord clamps for their infants occasionally while most of the respondents went for antenatal, delivery and postnatal care services occasionally. Furthermore, a high proportion of participants did not apply anything on their infants' umbilical cord after cutting. Summarizing the above results, revealed adequate level of intervention practices to prevent neonatal mortality among the respondents.

These finding agrees with[7] who reported that more than half of the caregivers of under-five children that participated in their study had adequately practiced prevention of neonatal mortality and about 45.5 percent had satisfactory practice. Similar findings were reported from other authors such as[16,17&13].
. The result of the hypothesis testing showed a statistical significant association between knowledge and practice of intervention to prevent neonatal mortality by caregivers of under-five children in Calabar Municipality.
.This study correlates with the results obtained from[9]. Who indicated that there was a significant association between knowledge and practice of caregivers towards prevention of Neonatal mortality
However, the study disagree with that of[16] who indicated that there was no statistically significant association between knowledge and practice.

IV. Conclusion

Based on the results of the study, it is concluded that caregivers of under-five children in Calabar Municipality have good knowledge and positive attitude towards prevention of neonatal mortality. Similarly, the study revealed that intervention practices to prevent neonatal mortality amongst participants were adequate. Nevertheless, it was found that knowledge of intervention to prevent neonatal mortality significantly related with practice among caregivers of under-five children in the study area.

V. Recommendations

In view of the results above, the following are recommended:
1. Health care providers should ensure that caregivers (especially mothers) are empowered with information on the prevention of neonatal mortality which should include risk factors. Enhancing caregiver education and empowerment will improve newborn survival.
2. Antenatal, postnatal and other relevant maternity units should have a teaching manual to provide instructions on the kind of information to be given so that midwives know the information to be given to mothers and other caregivers and how to obtain feedback to ensure retention of knowledge.
3. Caregivers and community members should be encouraged to eliminate harmful practices that predispose newborns to deaths during the neonatal period.
4. A qualitative study is recommended to elaborate more on newborn care knowledge, attitude and practices among caregivers in the area.

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