Assessment of knowledge, attitude and practice of kangaroo mother care among postnatal women attending at Hiwot Fana Specialized University Hospital, Harar Town, Eastern Ethiopia

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Research Article

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Abstract

Background: - Kangaroo Mother Care is a powerful method to promote the health and well-being of Low Birth Weight babies. One of the main reasons that Low Birth Weight babies are at greater risk of illness and death is that they lack ability to control their body temperature. Globally 25 mil-lion infants (17%) are born with a low birth weight and most of these occur in low-income countries.

Objective: - The aim this study is to assess knowledge, attitude and practice of Kangaroo mother care among mothers in Hiwot Fana comprehensive and specialized university hospital, Eastern Ethiopia.

Method:- A cross-sectional study was employed on mothers admitted to post-natal ward in Hiwot Fana comprehensive and specialized university hospital from January 12/2021 to January 26/2021. Random sampling method was used to select the study participants. The data was collected using semi structured interview administered questionnaire by four female data collectors who have diploma in midwifery/nursing. After checking completeness, the collected data was entered in to SPSS version 22.0 for analysis. The result of analysis was presented by using frequencies, summary measures, texts, tables, Charts and graphs

Result: - The overall study finding revealed that 34.1% mothers who participated in this study had good knowledge and 65.9% had poor knowledge towards KMC. About 18.9% respondent had positive attitude and 81.1% had negative attitude. In regards of practice, 18.4 % good and 81.6% had poor practice towards KMC.

Conclusion and Recommendation:-This study shows that there is poor knowledge, negative attitude and poor practice of KMC. Giving awareness on KMC as well as practice, training were significantly associated with level of knowledge and practice. Moreover, orientation was statistically associated with attitude. Thus, intervention that should focus on creating awareness, training KMC and positive attitude creation are required to strengthen KMC knowledge, attitude and practice in postnatal mothers.

Introduction

According to the World Health Organization's (WHO) definition, Kangaroo mother care (KMC) consists of prolonged skin-to-skin contact be-tween mother and infant, exclusive breastfeeding whenever possible, early discharge with adequate follow-up and support, and initiation of the practice in the facility and continuation at home (1).

KMC, also called kangaroo care or skin-to-skin contact was initially developed in Colombia in the 1970s. Low birth weight (LBW) and preterm infants who no longer needed intensive care were cared for skin to skin with their parents. More than 20 years of research and implementation in health care has shown that kangaroo care is more than just an alternative to incubator care.

KMC was initially conceived in Bogotá, Colombia in 1978 as an alternative to traditional methods of care for the low birth weight baby. The initiative behind this method of care was to ad-dress the problem of overcrowding, insufficient, and expensive resources in neonatal intensive care units, together with the associated high morbidity and mortality amongst this group of neonates (2).

The key features of kangaroo mother care are early, continuous and prolonged skin-to-skin contact between the mother and baby, accomplished by the baby being firmly attached to the mother chest both day and night, allowing frequent and exclusive breastfeeding. For KMC to be most effective it is recommended that the infant must have skin-to-skin contact for 24 hours of the day By practicing this mother produce large volumes of breast milk and can lactate for a longer period (3, 4).

Premature infants (when an infant is born before 37 weeks' gestational age), and low birth weight (LBW) infants (infants with a birth weight below 2500g), are usually managed by placing the infant in an incubator immediately after birth (4).

This implies that the infant is separated from the mother. The early separation from the mother results in damage to the infants' system of arousal, stress reactivity, attention and learning. When infants placed under incubators, the exposure to continuous light and non-stop noise results in damage to their biological clock (5).

The traditional alternative to incubators requires that infants are well covered in blankets and warm clothing, but this method is less effective to maintain the body temperature of the infants than incubators (6).

The benefit of KMC includes empowering the mother to care for her LBW infant, decreasing infant mortality, encouraging breastfeeding and reducing the frequency of low birth weight babies visiting clinics after discharge from hospital. KMC also reduces the workload of the health care workers (2).

Considering the benefits of KMC education for nurses and mothers is seen to be critical to its successful implementation. Globally 25 million infants (17%) are born with a low birth weight (LBW) and most of these occur in low-income countries (7).

In the world, 2.8 million newborns die each year, comprising 44% of under-five child deaths (1).

Newborns in low and middle-income countries contribute to 98% of this burden, with more than three-quarters of the deaths in sub-Saharan Africa and South Asia (2).

In sub-Saharan Africa, 14% of babies are born LBW, a birth weight of less than 2500 g. Most newborn babies who die are LBW accounting for 60 to 90 % of newborn deaths globally. As a result, Kangaroo Mother Care (KMC) found to improve the survival of pre-term or LBW babies. Identifying small babies and providing extra support for feeding also have great potential to reduce neonatal mortality rate (3).

The time immediately after birth presents the greatest risk of death, which is exacerbated for preterm newborns as they have less physiological reserve, greater challenges with temperature regulation, immature organs(especially lungs, leading to respiratory distress syndrome) poor immune function, and heightened vulnerability to severe infections putting them at risk for problems associated with the transition to extra uterine life (7, 8).

These low birth weight infants suffer from high rates of morbidity and mortality and often remain underweight, stunted or wasted from the neonatal period through childhood (1).

Newborn deaths currently account for approximately 40% of all deaths of children under- five years of age in developing countries. Birth weight is a significant determinant of newborn survival. LBW is an underlying factor in 60–80% of all neonatal deaths. LBW infants are approximately 20 times more likely to die, compared with heavier babies (9).

One-third of LBW babies die within the first 12 hours after delivery. One of the main reasons that LBW/premature babies are at greater risk of illness and death is that they lack the ability to control their body temperature, i.e., they get cold or hypothermic very quickly. A cold newborn stop feeding and is more susceptible to infection (1).

In most countries, the use of incubators is standard for thermal care of LBW babies. However, “incubator care” is not widely available in developing countries. Even in the limited cases where incubator care is available, the use of this method can be very challenging. In addition, excess demand resulting from too many LBW/preterm newborns and insufficient machines results in many babies sharing an incubator. This practice can lead to increased infection rates. Since it largely excludes the participation of the mother, it can also lead to decreased breastfeeding and maternal-newborn bonding. Fortunately, there is an alternative approach for providing thermal care for LBW infants that is both effective and affordable namely, KMC (1).

KMC is a practical and inexpensive option and therefore the best way to provide this care and warmth especially during incidence of power failing and in households who do not have access to electricity. The immediate effect of KMC is to prevent prolonged separation of the mother and her LBW infant which can contribute to an in-crease in morbidity, insufficient breast milk volume, poor growth and poor mother-to-infant bonding (8).

In Ethiopia, about 120,000 babies die every year in the first four weeks of life. This accounts for 42% of all deaths in children younger than five years of age. The risk of death is highest in the first 24 hours of life when more than half of deaths occur and about three quarters of all neonatal deaths occur within the first week of life (10).

The situation is not different in the study area. Therefore, to ensure the survival of newborns there is a need to understand how the newborns are protecting from hypothermia.

Considering the benefits of KMC educating the society specially mothers based on evidence-based knowledge is critical to its successful implementation. Therefore, this study aimed at evaluating the knowledge, attitude and practice of postnatal mothers regarding kangaroo mother care.

Methods And Materials

Study area

The study was in Harari Regional State, which is located at the Eastern parts of Ethiopia. It found 526kms away from Addis Ababa, which is the capital city of Ethiopia. According to the Harari Regional State Health Bureau Annual Report 2021, there are 3 governmental and 2 private Hospitals, 9 Health Center, 27 Community Health Posts and 1 Regional laboratory found in the town (11).

This study was conducted at Hiwot Fana comprehensive and specialized university Hospital was established and began services in the Era of colonial Italian in 1933 G.C currently, this hospital is administered by Haramaya university and The hospital also gives a teaching service for the health science in Harar Town Eastern of Ethiopia.

Study design and period

Institution based cross-sectional study design was used to assess knowledge, attitude and practice of kangaroo mother care in Hiwot Fana comprehensive and Specialized University Hospital) in Harari Region Eastern Ethiopia, from January 12/2021 to January 26/2021.

Variables of the study

Dependent variable

Knowledge, Attitudes and Practice of KMC

Independent Variable

Socio-demographic characteristics like

1. Age
2. occupation
3. marital status
4. level of education
5. income

Obstetrics characteristics like

1. Parity

2. Gravidity
3. Gestational age
4. ANC

The Source and study population

Source population

The source population was all women who was attended in Hiwot Fana comprehensive and specialized university hospital in Harari Region, Eastern Ethiopia 2021.

Study population

The study population was all women who were gave live birth and admitted in post-natal wards during the study period.

Inclusion and Exclusion Criteria

Inclusion criteria

All women who were gave live birth and admitted in post-natal wards during the study period.

Exclusion criteria

Women who are mentally or critically ill and cases of clinically unstable.

Sample size determination and sampling technique

The required sample size for this objective was determined by using a formula for single population proportion using a confidence level of 95% and an acceptable margin of error at 5%.

$n = (Z\alpha/2)2p\ (1-p)/d2$

Where; n = Minimum sample size for a statistically significant survey z= is the significance level (at 5% significance level its value is 1.96)

p= is proportion of women practicing skin-to-skin care.

d= is the margin of error (It has been taken as 5%).

Table 1: Sample size calculation for Knowledge, attitude and practice of KMC among postnatal mothers in HFCSUH, Harari region, 2021.

Consideration	Prevalence	Calculated Sample size	Reference
Knowledge of KMC	63.3%	$n=(1.96)^2*0.63(1-0.63)/(0.05)^2$ = **358.1**	(12)
Attitude of KMC	56%	$n= (1.96)^2 * 0.56(1-0.56)/(0.05)^2$ = **379**	(12)
Practice of KMC	54.1%	$n= (1.96)^2 * 0.54(1-0.54)/(0.05)^2$ = **382**	(12)

Since, our total population is 299, which is less than 10,000. Use correction formula as follow.

$nf=(ni)/(1+(ni)/N)$

$nf= (369)/(1+(369)/299$

= 165

By adding 10% contingency =17, the total sample size is 182

Sampling techniques

Our study participants were selected Random sampling technique was employed.

Data collection procedure and Instrument

The data was collected on the questionnaires were prepared in English and then trans-late to Amharic, Afan Oromo communication and translated back to English for accuracy and consistency. Five collected it-trained BSc Midwives by using semi-structured questionnaire were prepared.

Data quality assurance

The quality of the data was assured by Copy of the questionnaire were given to the qualified experts to examine whether the number and type of the items in the questionnaire can measure the concept or objective of the study and by taking suggestion necessary amendment was done. The questionnaire was first prepared in English, translated to Amharic and Afaan Oromo, and then translated back to English by a language expert in order to ensure its consistency. The data collectors and supervisor were given two days of training about the objective of the study and each component of the questionnaire and after the training, 5% pretest was conducted on 9 postnatal women's at Haramaya Hospital, East Hararghae, then correction were made accordingly before the actual data collection. Principal investigator and supervisor were check and review all the questionnaires to ensure completeness and consistency of the information collected and immediate action was taken accordingly. To minimize bias, interviews was conducted in an area with adequate confidentiality and privacy and without any involvement of health care provider.

Data processing and analysis

The collected data was carefully checked for completeness as well as consistency. Any confusion on the data collection procedure and/or response. Data was entered, coded and analyzed using SPSS, version 22. Descriptive statistics like frequencies and percentages was used to present the categorical independent variables, and mean/standard deviation was used to describe a continuous variable. Frequency tables were used to present descriptive results.

Operational definition of terms

Knowledgeable: refer to for those who were scored mean and above the mean considered knowledgeable.

Not knowledgeable: refers to for those scored below the mean were considered as not knowledgeable.

Positive attitude: refers to for those scored the mean and the above mean.

Negative attitude: refers to for those scored below the mean.

Kangaroo mother care Practice: Those who ever had perform once in a lifetime considered as skill and those who never practiced was regarded as having no skill.

Result

This chapter presents the study results includ-ing socio-demographic, Obstetric characteris-tics, Knowledge, attitude and practice of newborn care. A total of 185 postnatal moth-ers were interviewed and the response rate was 100%.

Socio-demographic characteristics of the respondents

The mean age of the postnatal mothers was 26.1 years (SD ± 5.1) with a minimum and maximum age of 18 and 40 respectively. Most of the study participants 72(38.9%) were in the age group of 25–29 years, and the least 14(7.6%) were in the age group of 15–19 and 14 (7.6%) above 35 years.

Out of 185 interviewed mothers 171(92.4%) were married while 3 (1.6%) were single, 3(1.6%) were divorce and 8 (4.3%) were widowed. Out of total interviewed mothers were 53(28.6%) illiterate, primary school 76(41.1%), secondary school 25 (13.5%) and 31(16.8%) were Diploma and above. 86 (46.5%) were housewife, 34 (18.4%) were private employee, 34 (18.4%) were government employee and out of the total respondents 56 (30.3%) of them had a monthly family income ranging 1401–2350 birr.

Table 1
Distribution of socio demographic characteristics of postnatal mothers in Hiwot Fana comprehensive and Specialized University Hospital, Harar Town, Eastern Ethiopia, 2021.

Variables		Frequency (n = 185)	Percent %
Age of mothers	15–19	14	7.6
	20–24	56	30.3
	25–29	72	38.9
	30–34	29	15.7
	> 35	14	7.6
Marital status	Single	3	1.6
	Married	171	92.4
	Divorced	3	1.6
	Widowed	8	4.3
Mother's occupation	Housewife	86	46.5
	Private employee	34	18.4
	Government employee	34	18.4
	Merchant	21	11.4
	Student	10	5.4
Mother's level of education	Illiterate	53	28.6
	Primary (1–8)	76	41.1
	Secondary(9–12)	25	13.5
	Diploma and above	31	16.8
Monthly income (ETB)	151–650	6	3.2
	651–1400	48	25.9
	1401–2350	56	30.3
	2351–3500	48	25.9
	3551–5000	27	14.6

Obstetric characteristics

Out of the 185 interviewed mothers 73(39.5%) were pregnant for the first time and 72 (38.9) only one time. Only 22 (11.9%) of the respondents had stillbirth and 101 (54.6%) had a normal gestational age

which is above 37 weeks. More than half of the respondents 96 (51.4%) had labor which lasted 7 to 12 hours, and 135(73%) delivered their baby through spontaneous vertex delivery (SVD) and almost all of the respondents 176 (95.1%) delivered their baby in hospital. Almost all respondents 159 (85.9% of newborns had a birth weight ranging 2.5-4 kilograms and Male neonates' accounts 94 (50.8%) while female were 91 (49.1%).

Of the total interviewed mothers, 184 (99.5%) of them had babies aged below one week and majority of the respondents 177 (95.6%) feed their breast and out of the 177 respondents who give breast milk 90 (50.8%) of them preferred this feeding because it prevent the borns from disease.

Table 2
Obstetric characteristics of post-natal mothers in Hiwot Fana comprehensive and Specialized University Hospital Harar Town, Eastern Ethiopia, 2021.

Variables		Frequency (n = 185)	Percent %
Number of pregnancy	Only one time	**73**	39.5
	Two times	**56**	30.3
	Three times	**30**	16.2
	More than three times	**26**	14.1
Mother parity	Only one time	**72**	38.9
	Two times	**60**	32.4
	Three times	**28**	15.1
	More than three times	**25**	13.5
Still birth	Yes	22	11.9
	No	163	88.1
Gestational age	28–30 weeks	7	3.8
	31–36 weeks	77	41.6
	Above 37 weeks	101	54.6
Time of labour	1–6 hrs	21	11.4
	7–12 hrs	96	51.9
	13–24 hrs	67	36.2
	Above 24 hrs	1	.5
Type of delivery	SVD	135	73
	Caesarean section	33	17.8
	Instrumental	17	9.2
Place of delivery	Hospital	176	95.1
	Health center	9	4.9
Sex of new born	Male	94	50.8
	Female	91	49.1
Weight of neonate	Below 2500 gms	17	9.2
	2500–4000 gms	159	85.9

Variables		Frequency (n = 185)	Percent %
	Above 4000 gms	9	4.9
Age of neonate	Below one week	184	99.5
	1–2 weeks	1	.5
Types of feed	Breast milk	177	95.6
	Formula feed	8	4.3
Reason for choose these feed	Prevention from disease	90	48.6
	Have strong nutritional value	87	47.0
	Breast pain	8	4.3

Knowledge of post-natal mothers

Regarding knowledge of KMC, out of the study participants 38(20.5%) had knew about KMC, 147 (79.5%) had don't knew concerning KMC. Out of the those participants who had knowledge about KMC, 18 (47.3%), 11(28.9%) and 9 (23.7) of them got their knowledge or information from health workers, friends and through reading, respectively. out of the interviewed mothers 63 (34.1%) were aware of the need of newborn baby to be kept warm at birth and of these mothers' 25 (13.5%) of them preferred skin to skin contact and 38(20.5%) of them preferred wrapping the baby in a cloth as a method of keeping the newborn warm and 16(8.6%) of them preferred both methods.

Table 3
Knowledge on newborn care among postnatal mothers in Hiwot Fana comprehensive and Specialized University Hospital, Harar Town, Eastern Ethiopia, 2021.

Variables		Frequency (n = 185)	Percent %
Mothers knowledge or information about KMC	Yes	38	20.5
	No	147	79.5
Source of information	Health works	18	9.7 /47.3
	Friends	11	5.9 /28.9
	Though Reading	9	4.9 /23.7
Baby should be kept warm after birth	Yes	63	34.1
	No	122	65.9
Method used to keep Newborn warm	Skin to skin	25	13.5
	Wrapped the baby in a cloth immediately	38	20.5
	Both 1&2	16	8.6

The overall knowledge score of the study participants shows that 63 (34.1%) of the respondents had good knowledge and the remaining 122(65.9%) had poor knowledge with a mean knowledge score 1.18 (SD ± 1.8) and maximum & minimum value of 6 and 0 points respectively.

Attitude of post-natal mothers

Out of the 185 respondents 34 (18.4%) thought KMC crucial for newborns. in addition to this, 21 (11.4%) of the respondents consider KMC has side effects like difficulty of breathing for the baby and prevent freedom of the baby.

Table 4
Attitude on newborn care among postnatal mothers in Hiwot Fana comprehensive and Specialized Hospital University Hospital, Harar town, Eastern Ethiopia, 2021.

Variables		Frequency (n = 185)	Percent %
Know about benefit of KMC	Yes	38	20.5
	No	147	79.5
Mothers think KMC is necessary for the baby	Yes	34	18.4
	No	151	81.6
Mothers think KMC has side effect for the baby	Yes	21	11.4
	No	164	88.6
Side effect mentioned by mothers	Prevent freedom of child	8	4.3
	It prevent breathing	13	7

The overall attitude score of the study participants shows that 38 (20.5%) of the respondents had positive attitude and the remaining 147 (79.5%) had negative attitude with a mean attitude score 1.27(SD ± 0.59) and maximum & minimum value of 3 and 1 points respectively.

Practice of post-natal mothers

Out of the 185 respondents 26 (14.1%) had the experience of practicing KMC before and 28(15.1%) were practicing KMC during the survey period. Out of those respondents who were practicing KMC, 9 (4.9%) started KMC after 12–24 hours after delivery. In addition to this, 19 (10.3%) of the respondents faced practical problem with KMC, among them 10 (5.4%) faced problem associated with lack of support. Moreover 170 (91.9%) of the interviewed mother did not have the will to continue KMC after discharge. Only 18 (9.7%) of the respondents got support from nursing staff.

Table 5
Practice on newborn care among postnatal mothers in Hiwot Fana comprehensive and Specialized Hospital University Hospital, Harar town, Eastern Ethiopia, 2021

Variables		Frequency (n = 185)	Percent %
Mothers practiced KMC before	Yes	26	14.1
	No	159	85.9
Confident to give KMC	Yes	27	14.6
	No	158	85.4
Currently provide KMC	Yes	28	15.1
	No	157	84.9
Time of starting KMC	One -six hours	5	3.78
	Seven - twelve hours	3	1.6
	Twelve - twenty four hours	9	4.9
	Above twenty fours	9	4.9
Problem with KMC	Yes	19	10.3
	No	166	89.7
Problem faced	No supporter	10	5.4
	It affect my activity	2	1.1
	Weakness	7	3.8
KMC continued after discharge from hospital	Yes	15	8.1
	No	170	91.9
Reason to continued	Increase bonding	2	1.1
	Prevent hypothermia	8	4.3
	Prevent infection	2	1.1
	Keep health of child	6	3.2
Support from nurse	Yes	18	9.7
	No	167	90.3
Mothers need support from nurse	Audio visual	44	23.8
	Practical demonstration	47	25.4

Variables		Frequency (n = 185)	Percent %
	Diagrammatic	36	19.5
	Open discussion	33	17.8
Support from other mothers	Yes	10	5.4
	No	175	94.6
Any change after using KMC	Yes	24	13
	No	161	87
Mothers seen changes	Good sucking reflex	16	8.6
Multiple response from mothers	Well health	7	3.8
	Good attachment	6	3.2
	Good physical activity	1	0.5

The overall practice score of the study participants shows that 28(15.1%) of the respondents had good practice and the remaining 157 (84.9%) had poor practice with a mean practice score 1.8(SD ± 1.95) and maximum & minimum value of 9 and 1points respectively.

Discussion

In this study, assessed knowledge, attitude and practice of women attending postnatal at Hiwot Fana comprehensive and Specialized Hospital University Hospital towards KMC. Because KMC is an initiating concern for developing country.

Regarding to the knowledge level in this study 34.1% has good knowledge; it was lower than study conducted in Asmara Eritrea 48.15%. This possibly was due to study population, study area

This survey shows that 81.1% had negative attitude, it is far higher than the study done in South Africa 13.3% (13). This may be due to difference in orientation, awareness and training on KMC.

In this study, 18.4% has good practice; it is lower than the studies conducted in Mekelle city hospitals 36.2%, as well as Kumasi Ghana 84.6% (14, 15). This difference was possibly due to difference in awareness and training on KMC. Study population and study area may be the other reason.

Strengths of Study

Recall bias was minimized since the respondents were postnatal mothers

Limitations

Since the study is cross-sectional it may not be strong enough to demonstrate direct cause and effect between dependent and independent variables.

Qualitative method to support the quantitative findings was not used. Therefore, there was a risk that mothers may report what was expected of them but their actual practices may be different.

Conclusion And Recommendation

Conclusion

The overall study finding revealed that mothers who were participated in this study 34.1% had good knowledge and 65.9% had poor knowledge towards KMC. About 18.9% respondent had positive attitude and 81.1% had negative attitude. In regards of practice, 18.4 % good and 81.6% had poor practice towards KMC.

Recommendation

Keeping in view of the present research study findings, the following recommendations have been made:

For Hiwo fana specialized university hospital There is a need to explore client-provider interactions in provision of KMC services in maternity ward and give Trainings on KMC for health care workers to fill gaps and orientation to change attitude towards KMC

Further, the Regional health office and the health facilities should continue the current endeavor that emphasizes the maternal and child health through communication program highlighting the importance of the KMC on print and electronic channels of mass media.

Other researcher should better to conduct this research with large sample size to explore further knowledge

Declarations

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Conflicts of Interest

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

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Ethical Approval and Informed Consent

The health research ethical and technical re-view committee of Harar Health Science College approved this research (Approval number: ERC 019/2021; Date: January 03, 2021). Informed consent was not needed as anonymous data were collected from study participants.

Data availability

The data supporting this research are available from the authors on reasonable request.

Provenance and Peer Review

Not commissioned; externally peer reviewed

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Figures

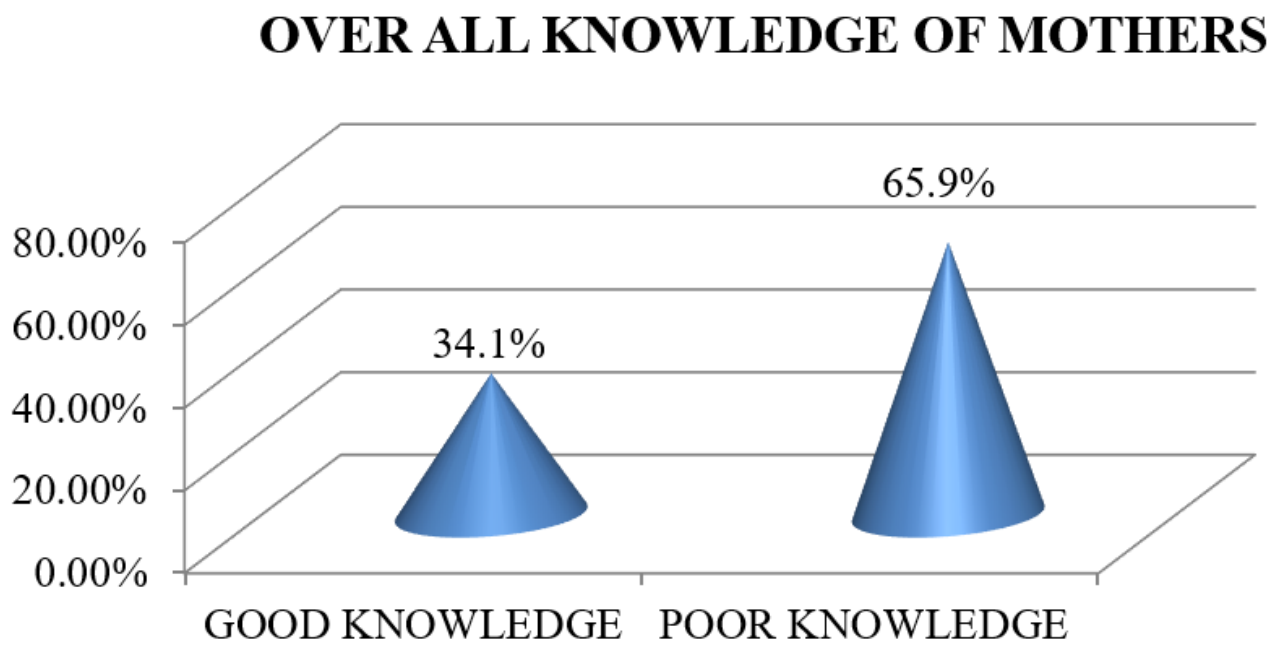

Figure 1

Mothers' overall knowledge level of Kangaroo Mother Care in Hiwot Fana comprehensive andSpecialized Hospital University Hospital, Harar town, Eastern Ethiopia, 2021.

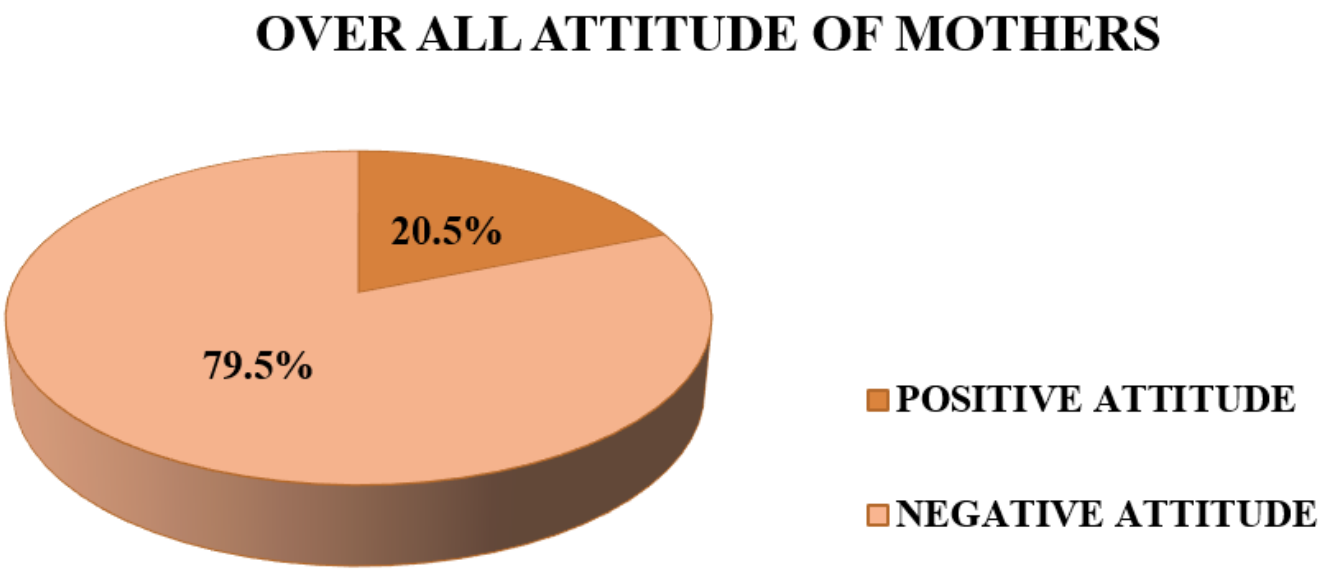

Figure 2

Distribution of overall attitude level towards Kangaroo Mother Care in Hiwot Fana comprehensive and Specialized Hospital University Hospital, Harar town, Eastern Ethiopia, 2021.

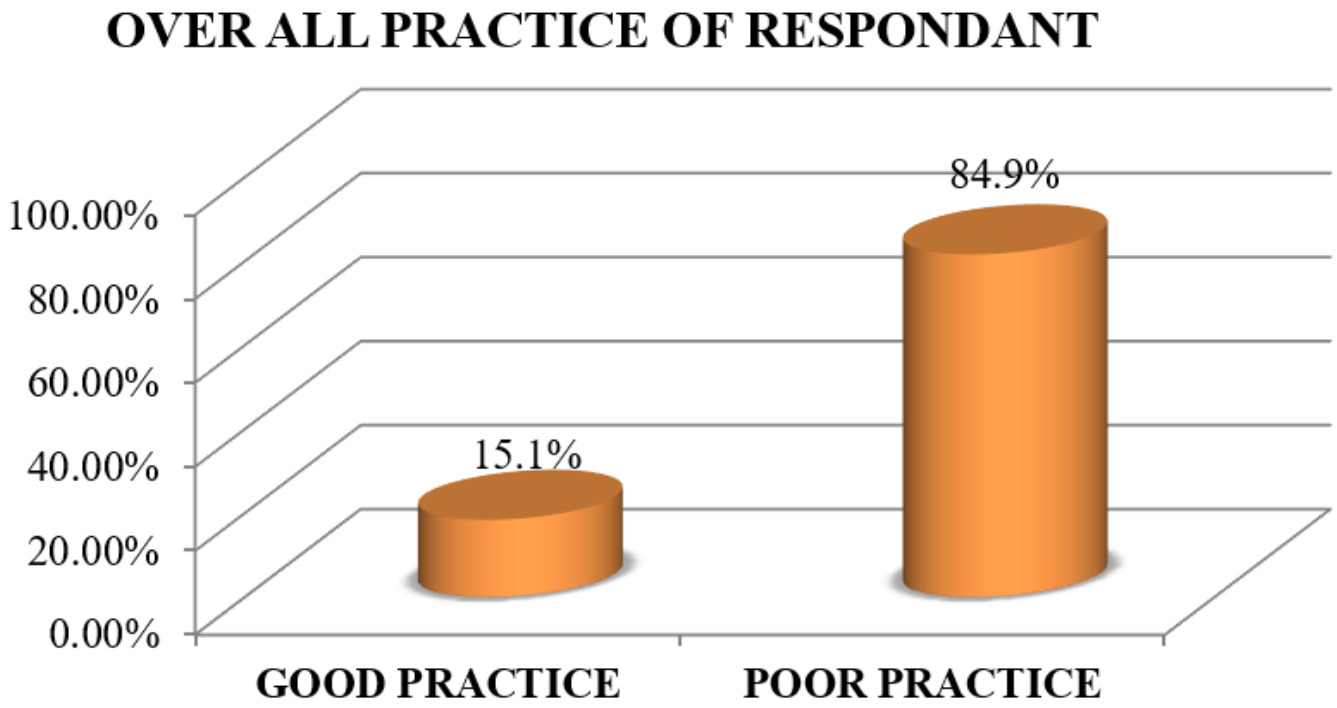

Figure 3

Distribution of respondents by overall practice level of Kangaroo Mother Care in Hiwot Fana comprehensive and Specialized Hospital University Hospital, Harar town, Eastern Ethiopia, 2021.