



ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE OF KANGAROO
MOTHER CARE AMONG NURSES AND MIDWIFES STAFF AT ALERT HOSPITAL,
ADDIS ABABA ETHIOPIA IN 2023

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Acronyms

BF: Breastfeeding

BMP: Breast milk production

GA: Gestational age

HIV: Human Immunodeficiency Virus

KMC: Kangaroo Mother Care

KAP: Knowledge, Attitude, Practice

LBW: Low Birth Weight

PNC: Post-Natal Care

STSC: Skin-to-Skin Contact

UNICEF: United Nations Children's Fund

WHO: World Health Organization

Abstract

Background

Kangaroo Mother Care (KMC) is a technique of holding a small new born with skin-to skin contact (STS), prone and upright on the maternal chest. KMC was first initiated in Colombia due to shortages of incubators and the incidence of severe hospital infections of new-born infants during Hospital stay (1). It is proven to decrease rates of morbidity & mortality among premature & Low-birth-weight infants. The key components of KMC are skin-to-skin contact for 24 hours per day. It has more benefit effective for body temperature control, enhance exclusive breastfeeding, preventing infection, increased mother- infant bonding.

Objective: To assess the knowledge, attitude and practice of kangaroo mother care among nursing & midwives staff at Alert Hospital, Addis Ababa, Ethiopia, 2022.

Methods:-A Hospital based cross sectional prospective study by using Purposive sampling using a self-administered questioner and observational checklist was used for practices to collect the data to determine the KAP of nurses on KMC at Alert Hospital from October 2022 to January 2023

Result:-The study revealed that in knowledge 77(60%) of respondents were know KMC. in attitude 111(87%) of respondents were positive attitude & in practice 106 (83%) of respondents were know about kmc practice. 40.6% of the Nursing Staff received training on KMC, while 59.4% did not received training on KMC. All nursing staff didn't used placard, posters and videos for KMC implementation or teaching in this hospital.

Conclusion: This current study revealed that Staff nurses at Alert Hospital lacked KMC training. Notably, 59.4% of all nurses/midwives have never received relevant training.

in knowledge 77(60%) of respondents were know KMC. in attitude 111(87%) of respondents were positive attitude & in practice 106 (83%) of respondents were know about Kmc practice.

Recommendation: - To improve KMC implementation in hospitals, effective interventions are needed. These should include training that incorporates KMC content into the nurse/midwife extracurricular training and strategy to revert Nursing staff attitudes regarding KMC.

Keywords:-Knowledge, Attitude, Practice, kangaroo mother care.

Chapter One

1.1 Introduction

Kangaroo Mother Care (KMC) is a technique of holding a small new born with skin-to skin contact (STS), prone and upright on the maternal chest (1). When the Kangaroo Foundation was started Initially, KMC was developed in response to overcrowding, and insufficiency of resources in neonatal intensive care units (NICU). Currently, it is formally approve by world health organization.(WHO) (2). In Ethiopia, KMC was first entered in 1996 at the Black Lion Hospital. Now, it is incorporated in a series of policy documents issued by the Federal Ministry of Health (FMOH) with the Newborn and Child Survival Strategy (2015–2020), the health sector transformation plan as well as the national healthcare quality strategy. In these policies, KMC target was set to reach 80% of preterm babies with the year 2020 (3). KMC can practice for both premature and low birth weight babies. Low birth weight refers to birth weight below 2500 g [4]. Preterm is defined as babies born alive before 37 completed weeks of gestation. LBW and immaturity are strongly associated with neonatal morbidity and mortality [5]. Neonatal hypothermia is an important challenge associated with morbidity and mortality [6]. In, Ethiopia, the prevalence of low birth weight varies from place to place. It was reported 28.3% in Kersa district, Oromia region, eastern Ethiopia and 22.5% in Jimma zone, Southwest Ethiopia 17.4% in Gonder, northern Ethiopia [7,8,9].

On the other hand, in-depth analysis of the Ethiopian Demographic and Health survey 2011 indicated that 29.1% of Ethiopian babies were reported small at birth [10]. KMC has a lot of benefits to the mother, for the preterm and low birth weight infants, for the institution, and for the community at large. For mothers, it increases milk volume, double rates of successful breastfeeding, feelings of confidence competence, and satisfaction regarding baby care. For preterm and LBW infant, it normalizes temperature, heart rate, respiratory rate, and strengthens the infant's immune system. An increase weight gain and enhances mother-infant bonding, less nosocomial infection, and earlier discharge or shortens hospital stay [11].

1.2. Statement of the problem

Since neonatal hypothermia is an important challenge for low income countries associated with morbidity and mortality of low birth weight and preterm babies (12),(WHO) has recommended scaling up low cost solutions that could reduce neonatal death by three quarters which includes KMC as one (13). Not practicing KMC is one of the determinant factors of neonatal mortality among low birth weight babies. Neonatal mortality among low birth weight babies without kangaroo mother care is 15.32 times more than preterm babies with kangaroo mother care as the prevalence of kangaroo mother care was only 0.8% (14).Although KMC reduces neonatal mortality among preterm and low birth weight babies, particularly from hypothermia, it remains unavailable at-scale in most low-income countries including Ethiopia (15). Since mothers are one of the most important resources for KMC, studies concerning knowledge, attitude, and practice towards kangaroo mother care are needed to prevent mortality and morbidity related to hypothermia of premature and low birth weight babies (14). Lack of knowledge among Nursing staff regarding care of babies About kangaroo mother care can harm their babies and increase the risk of neonatal morbidity and mortality (16). According to University of Lahore in pakistan, 2020 study In knowledge domain only 32% nurses know that kangaroo mother care is a method of care in neonates; 12% nurses were sure about the components of kangaroo mother care and verbalized these components; 38% nurses answered that kangaroo mother care is beneficial for low birth weight infants; only 56% nurses know about infant position in kangaroo mother care. In attitude: 82% nurses agreed that Kangaroo mother care technique is beneficial for infants; In practice it was observed that 12(32%) nurses guided and counseled mothers how to practice it (17). This study sought to assess the knowledge, attitudes, and practices of Nurses staff regarding KMC practice in the Alert Hospital Addis Ababa, Ethiopia, 2022.

1.3 Significance of the study

Having a Good knowledge and Attitude will help practice an intervention effectively thus by assessing the KAP about KMC among nurses and midwives in Alert hospital, the study will identify any KAP gaps and reveal the result to the study site for how possible intervention, Since KMC is an efficient and affordable intervention to be implemented to save the lives of premature newborns and having to know how to do it correctly is something expected by the primary care providers beyond the research scope.

The result of this study will contributed to the understanding of challenges experienced in the Practice and implementation of KMC. Furthermore, the findings on the knowledge, attitudes and practice of health care professionals regarding KMC will be useful to the study sites hospital administrators in developing plans aimed at implementing KMC effectively and to assist in the improvement of child health and reduce neonatal mortality by introducing measures to implement and reinforce KMC practice and will be brought by the study depending on the results of the research and this purpose result in better management of low birth weight babies and preterm in nursing staff.

Chapter Two

2. Literature review

2.1 General concept

The World Health Organization recommended that, if the baby weighs < 1.7 kg or more, the mothers should provide Kangaroo Mother Care immediately after birth. Furthermore, the WHO recommends that, continuous skin-to-skin care must be provided during the transportation of the mother and the baby to the high center where the baby can receive proper care, to prevent hypothermia (18).

2.2 Benefits of Kangaroo Mother Care

One of the benefits of implementing KMC at facilities is that it prevents prolonged separation of mother and her LBW infant. (19). this separation was found to contribute to morbidity, insufficient breast milk Volume, poor growth and poor mother-to-infant bonding (20). Low birth weight infants were found to stabilize faster when the skin-to-skin contact with the mother was practiced (21). as well as reported that when implementing skin-to-skin contact the LBW infants were found to spend more time in quiet sleep, their heart rate was lower and more stable, Apnea decreased, the body temperature was maintained better and the infants' oxygenation and gas exchange improved. Another benefit of KMC is the increased stimulation of breast milk production that facilitates more frequent breastfeeding (21, 22). This is a very important benefit in developing countries where malnutrition and gastro-intestinal infections cause the death of a large percentage of infants. The infants receiving kangaroo care also tend to cry less and therefore the stress hormones in their blood are reduced. As a result of all these factors KMC was found to improve weight gain of infants, decrease the duration of stay in hospital, decrease the severity of infections, provide infants with physiologic stability, and more organized sleep/wakefulness behaviors'.(23). This empowers them through gaining confidence in handling their infant resulting in better bonding and a decrease in the chances of child neglect. (24).

2.3.1 Knowledge of nursing staff regarding KMC

Health care professionals, especially Neonatal nurses and doctors, being the fore-runners of health care provision play a vital role in the practice and implementation of KMC. Having good knowledge about KMC can influence behaviors and therefore, brings about positive changes in

practice. (25.) Studied the influential factors of mother- Infant skin to skin, and revealed that, most midwives had sufficient knowledge on the importance of KMC.

The study further stated that, many medical professionals had poor knowledge of the Benefits of KMC. In a study done in Sweden, midwives viewed a lack of Cooperation by other medical personnel as a major obstacle against performing skin-to-skin contact.(26).For the implementation and promotion of KMC, the knowledge of health care professionals and community health workers such as extension health workers and birth attendants is important (27). According to University of Lahore in Pakistan, 2020 study was descriptive cross sectional in which data were collected from 38 Nurses department study results In knowledge domain only 32% nurses know that kangaroo mother care is a method of care in neonates; 12% nurses were sure about the components of kangaroo mother care and verbalized these components; 38% nurses answered that kangaroo mother care is beneficial for low birth weight infants; only 56% nurses know about infant position in kangaroo mother care. In attitude: 82% nurses agreed that Kangaroo mother care technique is beneficial for infants; in practice it was observed that 12(32%) nurses guided and counseled mothers how to practice it (17).

2.3.2 Attitudes of Nurses staff towards KMC

Attitude is one of the main determinants of behavior; however, it is also of paramount importance for health care professionals to have confidence in their performance and also stated that, attitude signifies the inclination of an individual towards a certain behavior. Moreover, different health care personnel share the same opinion on the importance of skin-to-skin contact in promoting the health of both the mother and infant (28).

In a study done in Iran on the opinions of midwives about Kangaroo Mother Care, argued that, perceived self-efficacy was a significant factor in the appropriate implementation of skin-to-skin contact in the viewpoint of midwives. The study concluded that, the majority of midwives had favorable attitude towards the importance of KMC, but 90% of them refused to implement it (29).

2.3.3 The practice of Kangaroo Mother Care among Nurses staff

Onubogu and Okoh (2016) investigated the implementation of Kangaroo Mother Care by Nurses staff workers in health facilities in Nigeria and reported that, only 53.5% of the health workers

practiced KMC, considering that these health workers are mostly from tertiary institutions and each tertiary institution is a referral center for other secondary and primary facilities within their region. 43% of health workers reported that they do not practice KMC due to lack of policy, and 30% reported inadequate space for mothers to stay as a problem (30). The study also included that hospitals should have written policies on KMC and provides KMC wards to improve the implementation of KMC practice indicated that trained personnel on KMC were not enough and registered protocols were lacking. These were the major barriers against skin to skin contact from the perspectives of midwives in neonatal intensive care unit (31).

Conceptual frame work

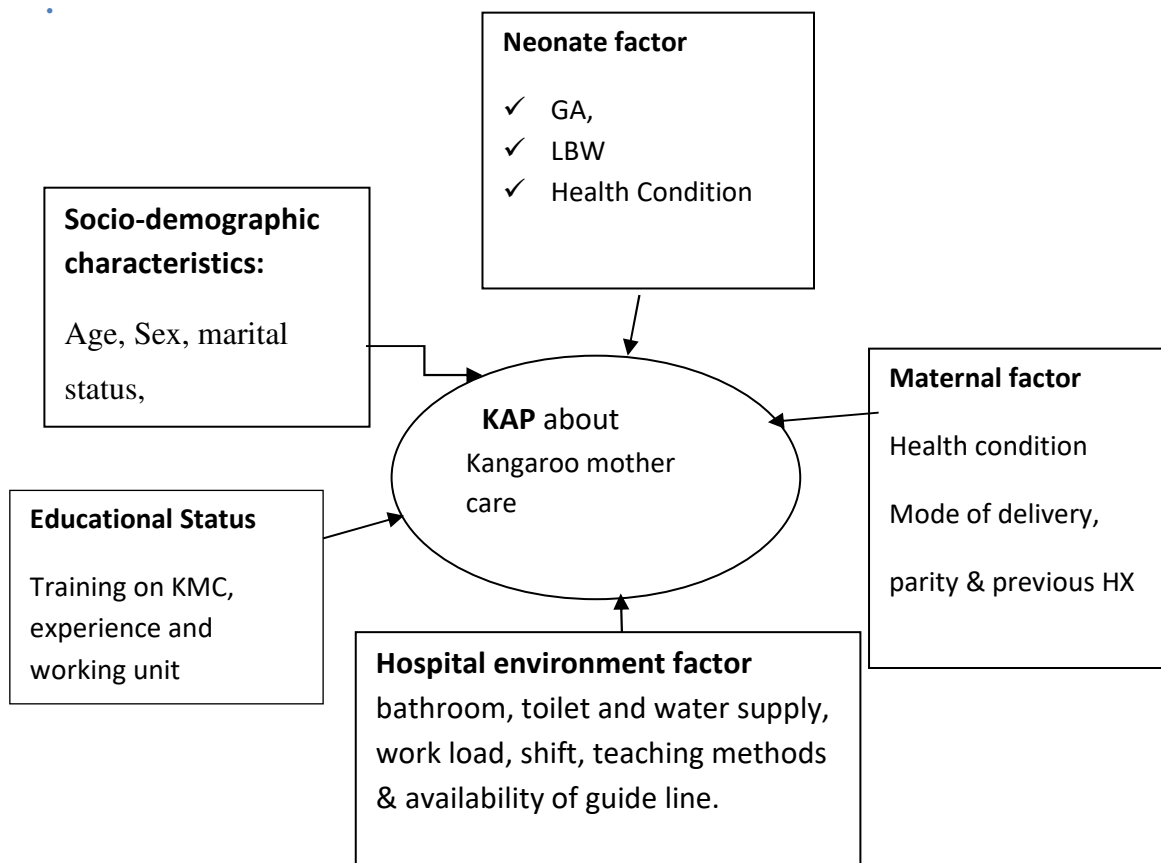


Figure: 1. conceptual framework which was adapted by investigator from different similar articles related to the study on the Assessment of knowledge, attitude & practice of KMC among nursing staff at alert hospital in Addis Ababa, 2023.

Objectivity of study

3.1 General objective

To assess of knowledge, Attitude and practice of Kangaroo Mother Care among Nurses& Midwives staff at Alert Hospital, Addis Ababa Ethiopia in 2022.

3.2 Specific Objectives

- 1, To assess the knowledge of nursing staff on KMC at Alert Hospital, Addis Ababa Ethiopia in 2022.
- 2, To assess the attitude of nursing staff towards KMC at Alert Hospital, Addis Ababa Ethiopia in 2022.
- 3, To determine the KMC practice of nursing staff at Alert Hospital, Addis Ababa Ethiopia in 20

Chapter Three

4 Methods and Materials

4.1 Study Area and period

The study was conducted in Alert comprehensive hospital. Alert hospital is one of the tertiary referral Hospitals in, KolfeKeranyo sub city Addis Ababa, Ethiopia. It is governed by of Federal Ministry of Health (FMOH). It is originally built by “Dr Thomas Lambie in 1992,” which was later named the Princess “Zenebawork” Hospital. it is the highest Level of Referral Hospital for Leprosy complications and also a WHO recognized international Leprosy training center. The alert hospital provides specialized health care for Leprosy, TB, dermatology, and ophthalmology and orthopedic. More focus on its hospital, rehabilitation of leprosy patient, training programs for leprosy personnel from around the world. Additionally in 2002 to expand different health care service especially MCH, Delivery, NICU, Pediatrics Emergency and OR service. Currently the hospital have NICU 48 bed, delivery 13 bed + 2cochs, postnatal 32 bed , ANC 2 bed and Emergency 20 bed. and all departments with rapid Expansion to have sophisticated and modernized health care services which is new for the country to reduce unnecessary outside patient referral in each department. The infrastructure this hospital has 24 hours water, electricity supply and library service and in NICU ward KMC, stable ,critical and term ,preterm Room and service had fully available.

4.2 Study Period

Study period was from November 20 to December 20, 2023.

4.3 Stud Design,

Hospital based cross-sectional descriptive study was conducted to assess knowledge, Attitude and practice of Kangaroo Mother Care among nursing staff at Alert Hospital.

4.4 population

4.4.1 Source of population

All nursing and midwives from NICU ,ANC,PNC,Gyne Emergency ,OR and high risk ward at Alert Hospital, Addis Ababa, Ethiopia in 2023.

4.4.2 Study population

The Nurses and midwives staff working at NICU ward Nurses, postnatal ward Nurses & midwives and Labor ward Nurses & midwives and ANC ward Nurses & midwives & Gyne Emergency ward during the data collection period Totally 166 Nurses.

4.5 Inclusion and exclusion criteria

4.5.1 Inclusion;

- All nursing staffs and midwives >6 month work experience in Alert hospital available during the study period was included in the study.

4.5.2. Exclusion;

- Health care professional in Nurses staff those were not present at all during the study
 - Student nurses assigned in the hospital was not be included
 - Free service nurses

4.6 Sample Size and Sampling Techniques

4.6.1 Sample size

Sample size was determined by using single population proportion formula with the prevalence of Nurses staff workers 46% by Adisasmita (et.al, 2021). KAP Among nursing staff in Jakarta hospital, Indonesia (34) 5% marginal error and 95% confidence level Where z stands for normal variable confidence interval 95%=1.96.

p=prevalence (46%)

q=1-p=1-0.46 =0.54

n=the desired sample size

d=the margin of sampling error (5%)

Therefore, using the formula become,

$$n = \frac{Z^2 \cdot p \cdot (1-p)}{d^2} = \frac{(1.96)^2 \cdot 0.46 \cdot (1-0.46)}{0.05^2}$$

$$n = 3.8416 * 0.46 * 0.54 / 0.0025 = 382$$

Since the study population is less than 10,000 we use correctional formula and the final sample size were.

$$n = n_i / 1 + n_i / N = 382 / 1 + 382 / 166 = 115.75 \approx 116 \text{ ad } 10\% \text{ non-responding} = \mathbf{128}$$

Therefore **128** respondents have been selected from the total population. The sample size is proportionally taken from each stratum as shown in the following table by separating each department to strata as follows.

N=166 & n =128

Table 4.6.2total sample size based on stratum

No of stratum	Category population	No of nursing staff	Sample size
1	Delivery ward	34	27
2	ANC ward	14	10
3	Postnatal ward	28	23
4	NICU ward	40	31
5	OR ward	17	13
6	High Risk ward	6	5
7	Emergency ward	27	21
Total		166	128

Source: Alert Hospital from Human Resource office 2022.

5.7 Sampling techniques

Stratify sampling technique was used for distribution of sample size and by using this method for data collection from Nurses staff.

5.8 Data Collection methods

Data was collected using quantitative data collection techniques. For quantitative data was collected with per coded self-administered questionnaire. The questionnaire has four parts (demographic data, knowledge, attitude and practice of nurses (check list) about Kangaroo Mother Care which are going to be assessing by the principal investigator during the self-administered questionnaire. The questionnaire and check list initially was prepared in English and the data was collected by the principal investigator. The observational check list included light, ventilation, hospital working environment like Room, bed, bath room, toilet and water supply availability

5.9 Data Processing and Analysis

The data was entered to Epi data. Then analysis was undertaken with SPSS 25 version. Data was presented with sentences, paragraph, tables, and figures.

5.10 Study Variables

5.10.1 Dependent Variables

- Knowledge about KMC
- Attitude toward KMC
- Practice of KMC

5.10.2 Independent Variables

- **Socio demographic characteristics**
 - ✓ Age, sex & marital status
- **Hospital environment:-** bath room, toilet and water supply, work load, shift, teaching methods & availability of guide line
- **Maternal factor:-** Health condition, Mode of delivery, parity & previous HX
- **Neonate factor:-**GA, Knowledge about KMC , Low birth weight
- **Education status:-**Level of education and training on KMC, experience and working unit.

5.11 Operational Definitions

The concepts defined below are based on the research topic “knowledge, attitudes, and practices of kangaroo mother care among nursing staff at Alert hospital and we verify them by giving a value Excellent, very good ,good and poor on KAP.

Knowledge: The condition of knowing something with familiarity gained through experience or association (35).

An attitude is defined as a mental position about a fact or state, or a feeling or emotion towards a fact or state (36).

Practice: - practices to perform or work repeatedly to become proficient (37).

Kangaroo mother care is defines Kangaroo Mother Care as a skin-to skin between mother and baby. (38)

Preterm is defined as *babies born alive before 37 weeks of pregnancy are completed.* (39).

Low birth weight (LBW) is defined as weight at birth less than 2500g. (40).

5.12 Data Quality Control

The questioner was adopted from valid guideline that can adequately measure the variable of interest, and then the data completeness was checked by investigators.

5.13 Ethical Consideration

A letter of permission was obtained from the school of Nursing Department office for the Alert hospital to gain permission to collect data.

After permission obtained from the hospital offices, informed consent gained from the respondents to collect the data.

Chapter FIVE

1. DATA ANALIYSIS AND INTERPRITATION

5.1Result

This Section contains data analysis, presentation and interpretation of findings. The study intended to determine the Assessment of knowledge, Attitude and practice of Kangaroo Mother Care Among Nurses and midwives staff at alert Hospital, Addis Ababa Ethiopia in 202.

The section discusses about the results of the study under the following headings demographic characteristics of the respondents

Table :1 Gender of respondent In this study, 66 % (n=79) participants were females, while 34% (n=21) were males. This is an indication that, the nursing profession is dominated by females.

Table :2 Age of respondent The mean Age of nurses was 29.48 (table .2) years although majority of nurses were younger 20-35 years (86%) 14% nurses were (36-51) Therefore more of nurses younger.

Table: 3 Marital status of respondent It is evident from this study that 50 % (n=50) of the participants were never married, 49% (n=49) were married, 1% (n-1) were widows.

In this study, 66 % (n=79) participants were females, while 34% (n=21) were males. This is an indication that, the nursing profession is dominated by females. From the total population of the Alert hospital (166) the sampling design was selected by using stratified sampling technique which was 128 questionnaires were collected and used for the purpose of the study but the rest were not collected and were not used for the purposes of this study.

Part: 1 Table 1: Gender of the Respondents

Variable		Frequency		Percentage	
Gender of the Respondents	Male	43		34%	
	Female	85		66%	
	Total	128		100%	
Age of Respondent (years)	Mean	Standard Deviation	Median	Minimum	Maximum
	29.48	5.212	28.00	21	51
marital status of respondent	Frequency	Percent	V/ Percen	Cumulative Percent	
Single	64	50.0	50.0	50.0	
Married	63	49.2	49.2	49.2	
Widow	1	8	8	8	
Total	128	100.0	100.0	100.0	

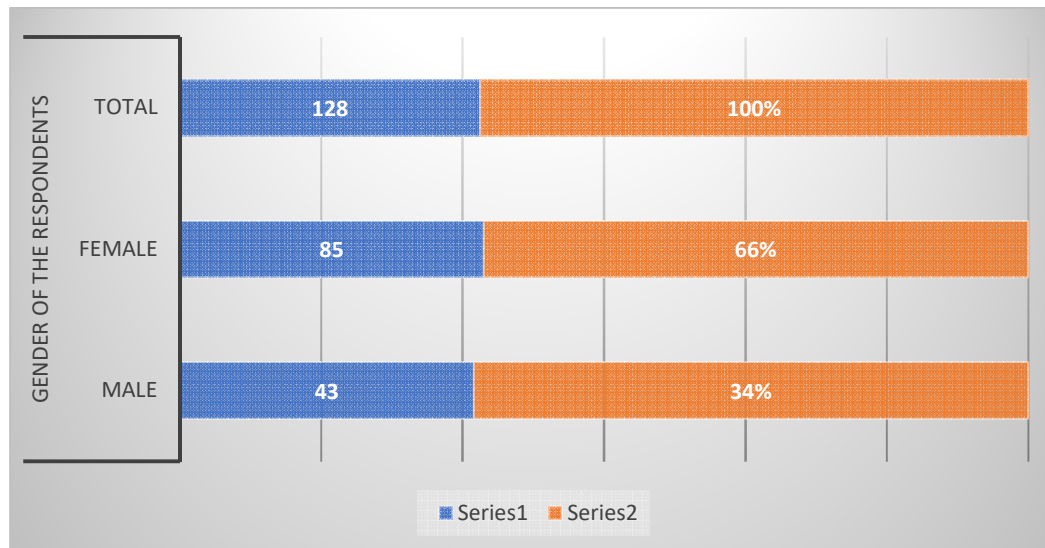
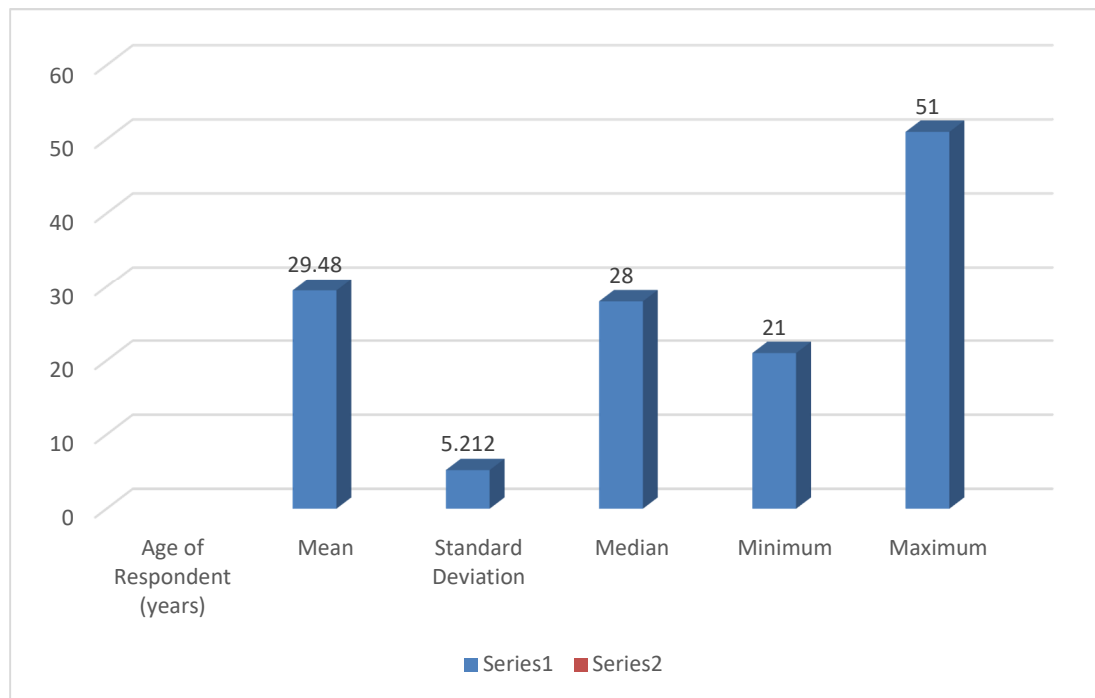


Figure:1 Gender of the Respondents



Figures:2 Age of Respondent (years)

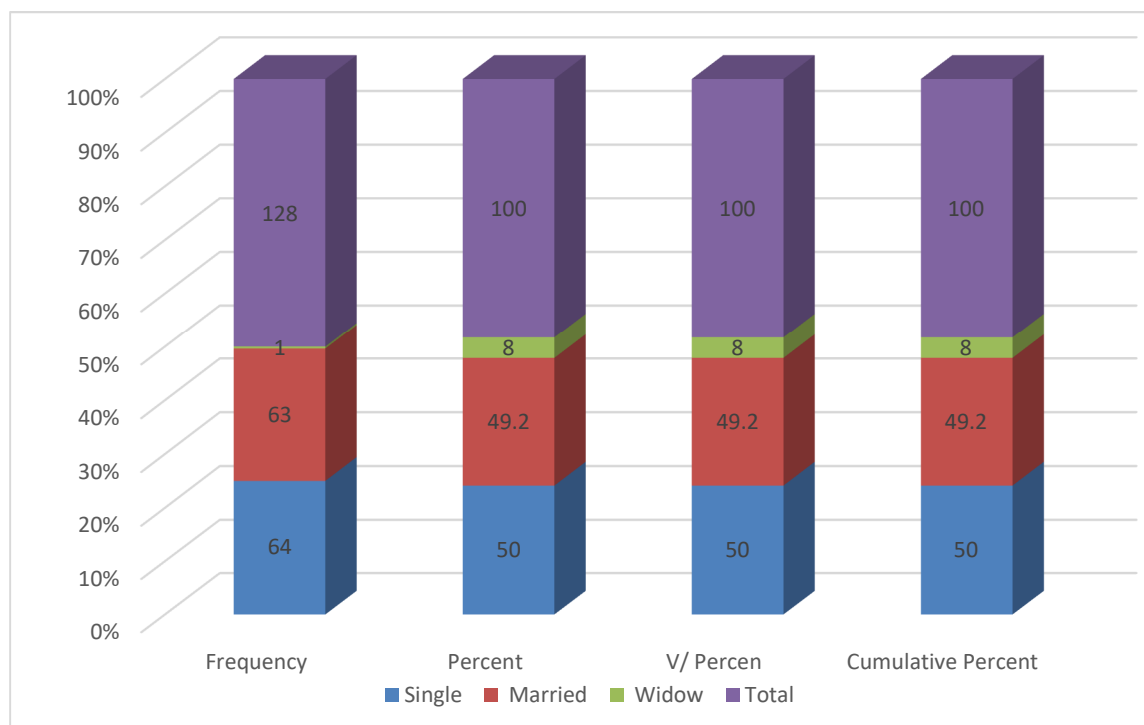


Figure:3 marital status of respondent

Table : 2 profession of respondent

what is your profession		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	clinical Nurse	57	44.5	44.5	44.5
	Midwife/NICU nurse	59	46.1	46.1	90.6
	specialty nurse, specify BSC NURSE	12	9.4	9.4	100.0
	Total	128	100.0	100.0	

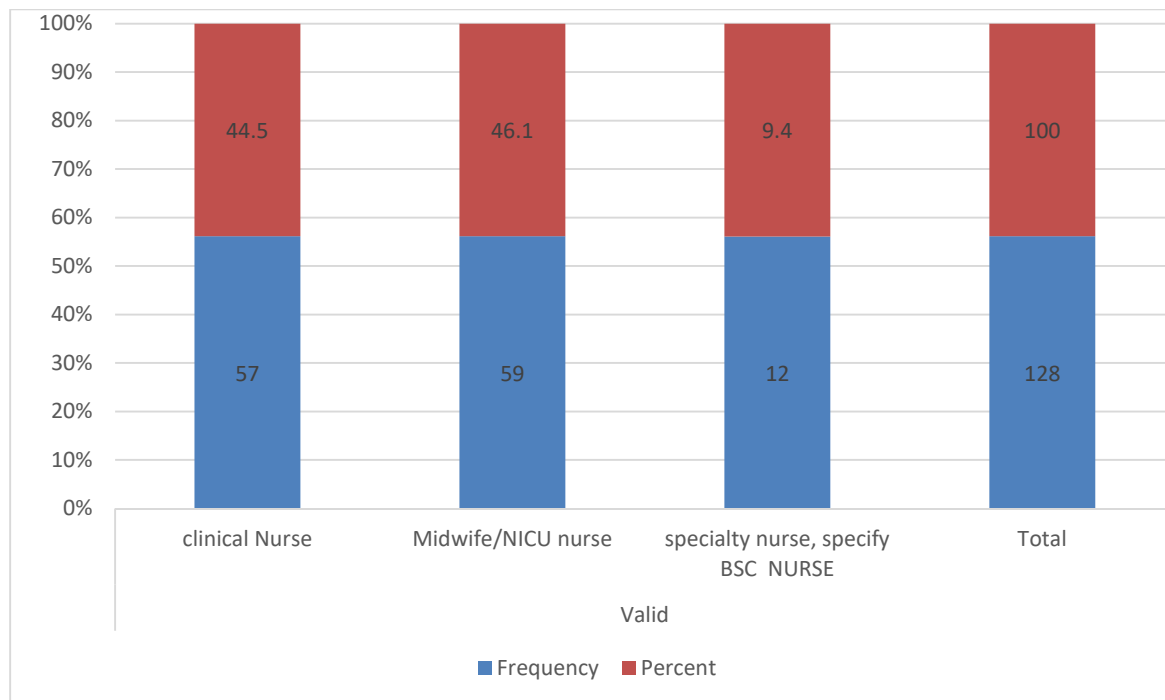


Figure: 4 profession of respondent

Experience (years) of respondent

The study indicates that 66% (n=66) participants had an experience of 0-4 years, 32% (n=32) have an experience of between 5-10 years, while 2% (n=2) have an experience of 11 years and more. It seems that younger participants have more years of experience than the older ones



Figure: 5 years of experience

Table :3 Education Level of respondent

<i>Variable</i>		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	Diploma	9	7.0	7.0	7.0
	Degree	105	82.0	82.0	89.1
	master	14	11	11	99.2
					100.0
Total		128	100.0	100.0	

Table: 5 From Above Table information 7.0% of respondent were Diploma, 82% of respondent were Degree, 11% of respondent were masters This is an indication that, the nursing profession is dominated by degree.

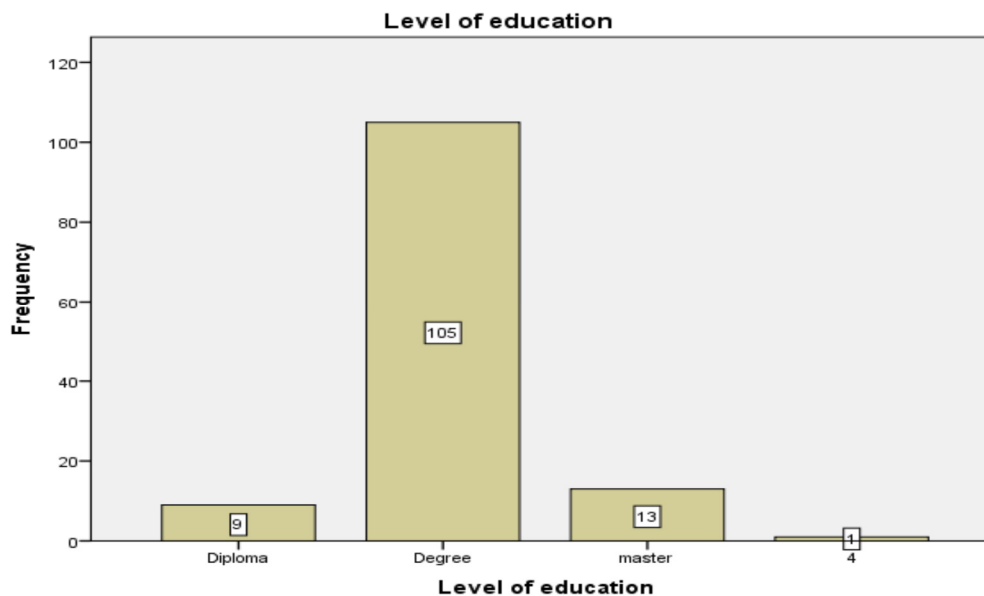


Figure :6 Educational Level of respondent

Table :4 which ward are you currently working

Variable Valid	Frequen cy	Percent	Valid Percent	Cumulative Percent
ANC	10	7.8	7.8	7.8
PNC	22	17.2	17.2	25.0
NICU	30	23.4	23.4	48.4
Labor ward	27	21.1	21.1	69.5
OR ward	13	10.2	10.2	79.7
Gynimergency ward	21	16.4	16.4	96.1
High risk ward	5	3.9	3.9	100%
Total	128	100.0	100.0	

From Above Table information 10 of participants were ANC ward, 22 of participant of were PNC ward, 30 of participants were NICU ward , 27 of participants were Labor ward, 13 of participants were OR ward, 21 of participants were Gynimergency ward and 5 of participants were High risk ward.

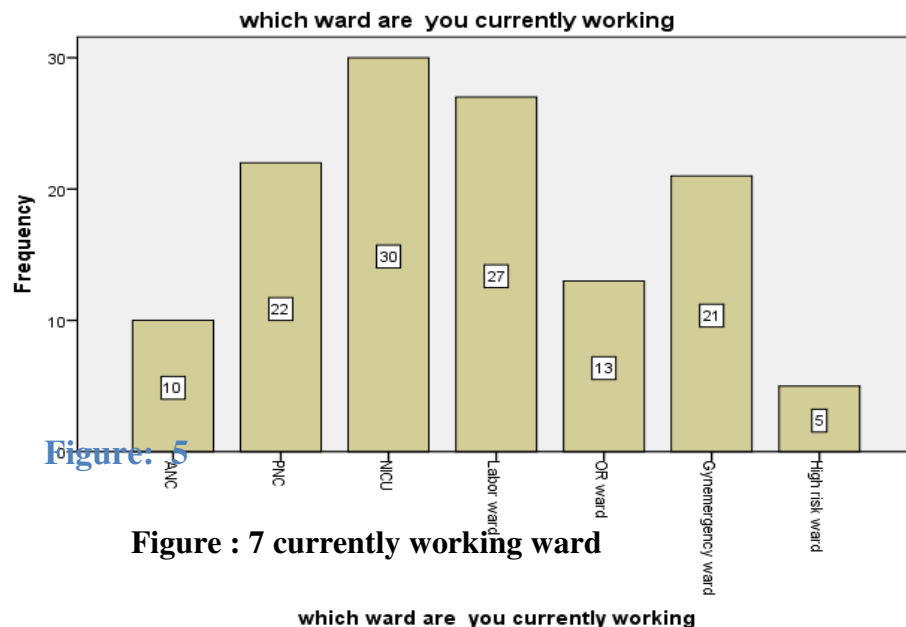


Figure : 7 currently working ward

Part 2- knowledge of nursing staff about KMC

As shown on table 5.2 below the study participants replied that all LBW and Preterm new born (19.5%) and Preterm babies weighing < 1.7kg (17.2%) need KMC respectively. some of them said both of them (5.5%) KMC can practice for both premature and low birth weight babies. Low birth weight refers to birth weight below 2500 g [4]. Preterm is defined as babies born alive before 37 completed weeks of gestation. LBW and immaturity are strongly associated with neonatal morbidity and mortality [5] On the other hand In-depth analysis of the Ethiopian Demographic and Health survey 2011 indicated that 29.1% of Ethiopian babies were reported small at birth [10]

Majority of the respondents replied as others need KMC (57.8%). Majority of the respondents replied that to initiates KMC materials such as Diapers, hats, socks for the baby & wrapping clothe is important (69.5%) and some of them replied Diaper, hat & socks only is important to

initiate KMC (19.5%) and few of them replied Diaper & wrapping clothe is enough to initiate KMC. Majority of the respondents said that KMC room is a must to start KMC (82.8%).

Regarding KMC provider majority of the respondents replied all family members can practice KMC (59.4%) and mother of the baby only (25.0%) and (14.8%) replied that any family member can provide KMC. Since mothers are one of the most important resources for KMC, studies concerning knowledge, attitude, and practice towards kangaroo mother care are needed to prevent mortality and morbidity related to hypothermia of premature and low birth weight babies (14).

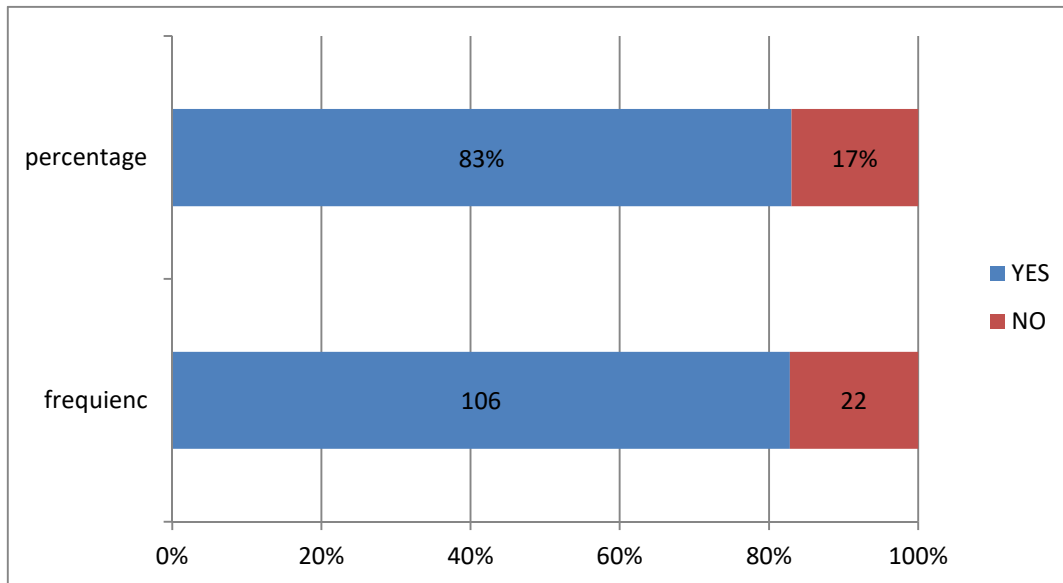
Concerning where KMC can be given majority of the respondents answered as it should be given at Hospital only (57%) and Hospital, HC and at Home (34.4%) and few of them said it can be given at Hospital and HC (7%). The respondents replied that Nurse's knowledge, unsuitable environments and maternal knowledge affects KMC (46.1%). Separately as the respondents answered unsuitable environments (19.5%) and maternal knowledge (18.8%) affects KMC Nurse's knowledge (15.6%) respectively. According to this study the respondents agreed on maternal condition such as being sick, lack of knowledge, being delivered by C/S and religion and culture can affect KMC (39.8%)

Table 4. knowledge of nursing staff about KMC

Variables	Categories	Frequency n=128	Percent (%)
Which new born's need kangaroo mother care?	All LBW & preterm new borns	25	19.5%
	preterm babies weighing <1.7kg	22	17.2%
	A & B	7	5.5%
	All	74	57.8%
	Total	128	100%
Which materials are needed to initiate kangaroo mother care?	Diaper, hat & socks only	25	19.5%
	Diaper, hat, socks for the baby & wrapping clothe mother	89	69.5%

	Diaper & wrapping clothe enough	14	10.9%
	Total	128	100%
KMC room is must to start KMC practice	True	106	82.8%
	False	22	17.2%
	Total	128	100%
Kangaroo mother cae can be provided by.....?	mother of the baby only	32	25%
	Husband	1	0.8%
	any family member	19	14.8%
	All can practice KMC	76	59.4%
	Total	128	100%
Kangaroo mother care can be given in/at?	Hospital	73	57%
	health center	1	0.8%
	at home	1	0.8%
	All	44	34.4%
	A& D	9	7%
	Total	128	100%
Which things can affect kangaroo mother care?	Nurse's knowledge	20	15.6%
	unsuitable environments	25	19.5%
	maternal knowledge	24	18.8%
	All	59	46.1%
	Total	128	100%
Which maternal condition affects KMC practice?	if the mother is sick	29	22.7%
	Lack of knowledge	29	22.7%
	if the mother delivered by c/s	16	12.5%
	religion & culture factor	3	2.3%
	All	51	39.8%
	Total	128	100%

Table: 4 Nine multiple choose knowledge questions was converted into a Two point scale, that is, correct and incorrect. This means that, were the respondents circle the correct answer ($\surd$) incorrect answer (x). so that in our finding results in knowledge, 77(60%) of majority respondents were know about kangaroo mother care. Only 40% of respondents were didn't know about KMC. Because of 59.4% of respondents were not resaved any training on KMC.



Part 3- Attitudes of Nursing towards KMC

As shown on Table 5.3 below Regarding whether KMC improves the mother's confidence in handling her baby or not majority of the respondents strongly agreed that KMC improves mothers confidence in handling her baby (66.4%) and 33.6% disagreed. Concerning on Kangaroo mother care promotes bonding between mother & baby majority of the respondents strongly agreed (67.2%).

Table 5.3 also indicates that 32.8% (42) participants agreed that KMC promotes breast feeding, 60.2% (n=77) strongly agreed, 7% (n=9) were not sure. The study indicates that 39.1% (n=50) participants agreed that KMC promotes mental development of the baby, 50% (n=64) strongly agreed, 6.3% (n=8) were not sure, while 2% (n=2) disagreed.

According to the study 39.8% (n=51) participants agreed that both parents should be involved in providing KMC, 52.3% (n=67) strongly agreed, 3.1% (n= 4) were not sure, and 4.7% (n=6) disagreed. In this study, 37.5% (n=48) participants agreed that nurses & midwives should

facilitate Kangaroo Mother Care, 56.3% (n=72) strongly agreed, 3.9% (n=5) were not sure, while 4.7% (n=6) disagreed. The study again shows that 28.1% (n=36) participants agreed that, facilitating KMC is a burden to Nursing, (n=49) 38.3% strongly agreed, 16.4% (n=21) were not sure, 2.3% (n=3) disagreed. This study tolled us 30.5% (n=39) participants agreed that babies who are given KMC sleep deeply, 41.4% (n=53) strongly agreed, 16.4% (n=21) were not sure, and 11.7% (n=15) strongly disagreed. Participants of the study expressed their opinions on whether incubator care stabilizes the baby's temperature than KMC twenty seven percent (n=34) agreed, 35.2% (n=45) strongly agreed, 17.2% (n=22) were not sure, 16.4% (n=21) disagreed, and 3.9% (n=5) strongly disagreed.

Table 5.3 Attitudes of Nursing towards KMC

Variables	Categories	Frequency	Percent
KMC improves the mother's confidence in handling her baby	Agree	43	33.6%
	strongly agree	85	66.4%
	Total	128	100%
Kangaroo mother care promotes bonding between mother & baby	Agree	42	32.8%
	strongly agree	86	67.2%
	Total	128	100%
KMC promotes breast feeding	Agree	42	32.8%
	strongly agree	77	60.2%
	not sure	9	7%
KMC promotes mental development of premature baby	Agree	50	39.1%
	strongly agree	64	50%
	not sure	8	6.3%
both parents should be involved in kangaroo care	Dis agree	6	4.7%
	Agree	51	39.8%
	strongly agree	67	52.3%
	not sure	4	3.1%
Nursing staff facilitate kangaroo care	dis agree	6	4.7%
	Agree	48	37.5%
	strongly agree	72	56.3%
	not sure	5	3.9%
Facilitating kangaroo care is a burden to Nursing staff	dis agree	3	2.3%
	Agree	36	28.1%
	strongly agree	49	38.3%
	not sure	21	16.4%

Babies who are given kangaroo mother care sleep deeply and wake up less often	strongly disagree	15	11.7%
	Agree	39	30.5%
	strongly agree	53	41.4%
	not sure	21	16.4%
Incubator care stabilizes baby's more than KMC	Agree	34	26.6%
	strongly agree	45	35.2%
	not sure	22	17.2%
	Disagree	21	16.4%
	Strongly disagree	5	3.9%

Table: 5 Fifteen Agree, strongly agree, not sure, Disagree & strongly disagree questions was converted into a Three point scale, that is, agree, disagree and not sure. This means that, “agree and strongly agree” were combined to form an agreement, while disagree and strongly disagree were combined to form a disagreement and were not sure. so our study results in Attitude,

111 (87%) of the majority respondents were Agreed felt positive Attitude regarding to implementation of KMC. Only 6(5%) of respondents were Dis agree and 11(8%) of respondents were Neutral from Agree and Disagree.

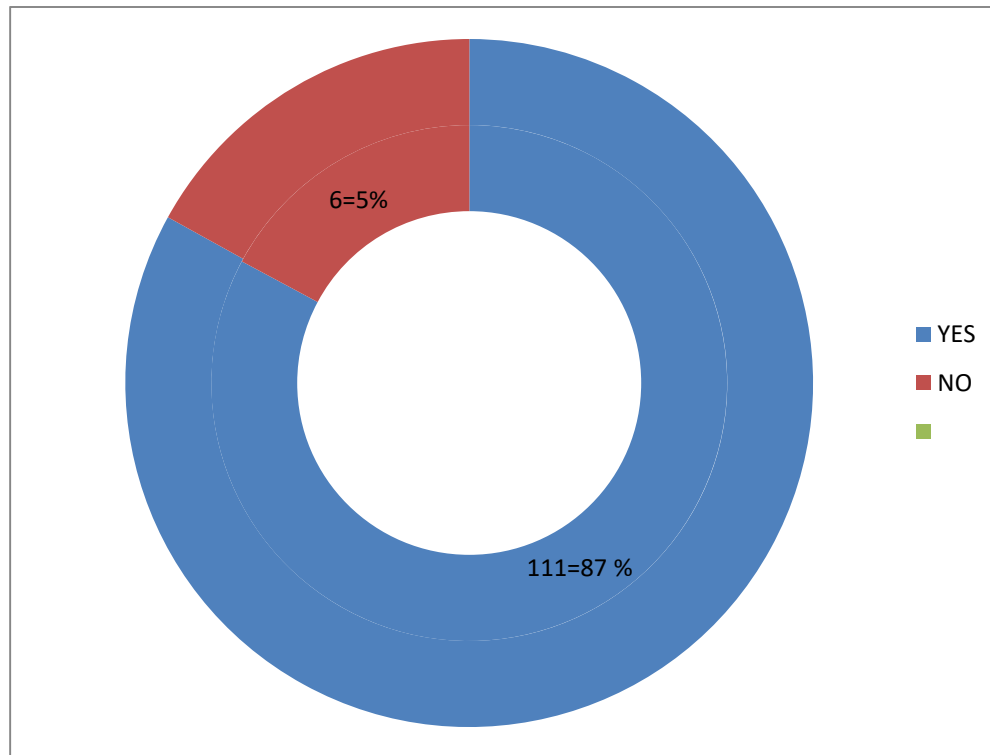


Figure: 9 Attitude of respondent on KMC.

PART 4- PRACTICE OF KMC BY NURSING STAFF

Regarding practice of KMC 100% the nurse/midwife supports the mothers to initiate KMC, explained about the benefits of KMC to the mother and father or other family members, asked the mother to bring hat, diaper, and socks and mother's clothes, explained about the KMC position of the babies & prepare the mother or other family's for KMC, advised the mother to breast-feeding the baby while practicing KMC and advised the mothers on the Length of KMC depends on the baby's progress and might continue post discharge at home . On the subject of whether the Nurse/Midwife prepared the bed or the chair to be comfortable for the mother 71.1% replied yes and 28.9% responded no. On the topic of whether Nurse/Midwife mother to re-demonstrate KMC practice based on their discussion 79.7% replied yes and 20.3% answered No.

PART 4- PRACTICE OF KMC BY NURSING STAFF

Regarding practice of KMC 100% the nurse/midwife supports the mothers to initiate KMC, explained about the benefits of KMC to the mother and father or other family members, asked the mother to bring hat, diaper, and socks and mother's clothes, explained about the KMC position of the babies & prepare the mother or other family's for KMC, advised the mother to breast-feeding the baby while practicing KMC and advised the mothers on the Length of KMC depends on the baby's progress and might continue post discharge at home .

On the subject of whether the Nurse/Midwife prepared the bed or the chair to be comfortable for the mother 71.1% replied yes and 28.9% responded no. On the topic of whether Nurse/Midwife mother to re-demonstrate KMC practice based on their discussion 79.7% replied yes and 20.3% answered No.

Table 5.6 Practice of KMC by Nursing Staff

Answer Yes or No to the following questions

s/NO	Variable	Frequency		percentage
1	The Nurse/Midwife support the mothers to initiate KMC	YES	128	100%
		NO	0	
2	The Nurse/Midwife explained about the benefits of KMC to the mother and father or other family members	YES	128	100%
		NO	0	
3	The Nurse/Midwife used placard, posters and videos for KMC implementation while teaching	YES	0	
		NO	128	100%
4	The Nurse/Midwife asked the mother to bring hat, diaper, and socks and mother's clothes /Sharp/?	YES	127	99%
		NO	1	1%
5	The Nurse/Midwife prepared the bed or the chair to be comfortable for the mother	YES	91	71%
		NO	37	29%
6	The Nurse/Midwife explained about the KMC	YES	128	100%

	position of the babies & prepare the mother or other family's for KMC	NO	0	
7	The Nurse/Midwife advised the mother to breast-feeding the baby while practicing KMC	YES	128	100%
		NO	0	
8	The Nurse/Midwife asked the mother to re-demonstrate KMC practice based on their discussion	YES	102	80%
		NO	26	20%
9	The Nurse/Midwife advised the mothers on the Length of KMC depends on the baby's progress and might continue post discharge at home?	yes	126	98%
		NO	2	2%

Practice of Nursing staff towards KMC we had prepare nine questions was converted into Two point scale, that is, YES and NO. This means that, were the respondents we asked by observational interview. 106 (83%) of The majority respondents were Yes About implementation and practiced KMC. But all Nursing staff didn't used placard, videos and posters for KMC implementation or teaching purpose in this hospital.

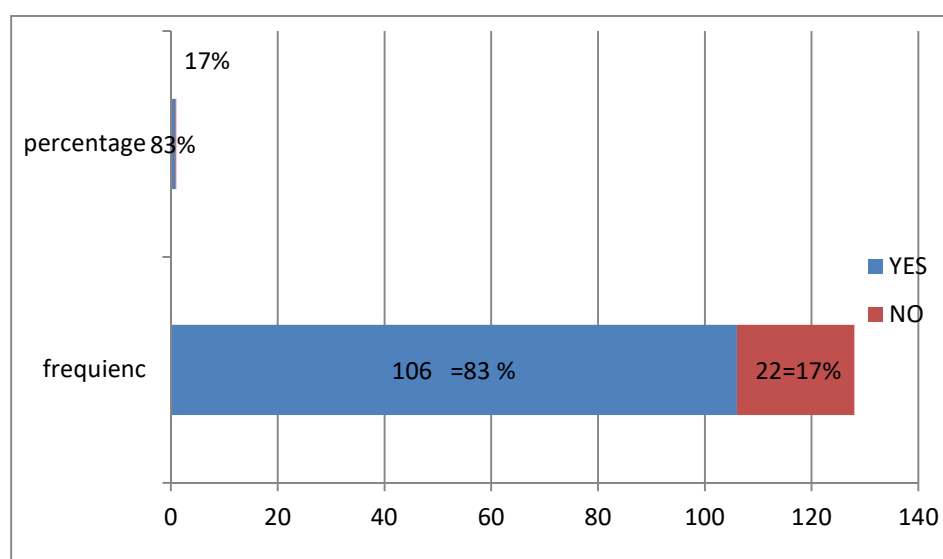


Figure: 10 practice of respondent on KMC.

CHAPTER 6

6 .Discussion,

6.1 Demographic characteristics of the participants

Participants who took part in this study were 128 (100%). Female nurses were 85 (66.4%) male nurses were 43 (33.6%), The reason for a high number of female nurses might be that nursing is still regarded as a profession for women.

6.1.2 Knowledge

The discussion in this section is based on the findings on the knowledge of Nursing staff about KMC practice. Nine multiple choice knowledge questions was converted into a Two point scale, that is, correct and incorrect. This means were the respondents circle the correct answer (✓) incorrect answer (x). so that in our finding results **in knowledge**, 77(60%) of majority respondents were know about kangaroo mother care. Only 40% of respondents were didn't know about KMC. The study revealed that only 40.6% of the Nursing Staff received training on KMC, while 59.4% did not received training on KMC. **in Attitude**, 111 (87%) of the majority respondents were Agreed felt positive Attitude regarding to implementation of KMC. Only 6(5%) of respondents were Dis agree and 11(8%) of respondents were Neutral from Agree and Disagree.

In practice 106 (83%) of The majority respondents were Yes About implementation and practiced KMC. But all Nursing staff didn't used placard, videos and posters for KMC implementation or teaching purpose in this hospital.

Our study result is higher than the study conducted At University of Lahore in Pakistan, 2020 study was descriptive cross sectional study's results In knowledge domain only 32% nurses know about kangaroo mother and In attitude: 82% nurses agreed that Kangaroo mother care technique is beneficial for infants; in practice it was observed that 12(32%) nurses guided and counseled mothers how to practice it (17). When participants were asked which material are needed to initiate kangaroo mother care, 69.5% of them said Diaper, hat, socks for the baby & wrapping clothe mother, 19.5% replied Diaper, hat & socks only and 10.9% of them listed Diaper & wrapping clothe is enough, This is an indication of poor knowledge about the components of KMC. Having good knowledge about KMC can influence behaviors and

therefore, brings about positive changes in practice. (27.)For the implementation and promotion of KMC, the knowledge of health care professionals is important (29).

This was followed by 57.8% of participants who agreed that low birth weight babies need Kangaroo Mother Care the most, while 42.2% disagreed. To the question whether KMC can be provided at Hospital, the majority 57% of participants agreed, 9% were not sure, while 5% disagreed. This assistance can be of enormous help to the nursing staff, especially in hospitals and clinics where staffing is inadequate. When enquired whether family members should be involved in the provision of KMC 92% participants agreed that family members should be involved in providing KMC 3% were not sure and 4.7% disagreed.

Concerning on KMC promotes bonding between mother & baby majority of the respondents strongly agreed 67.2%. One of the benefits of implementing KMC at facilities is that it prevents prolonged separation of mother and her LBW infant (19). This separation was found to contribute to morbidity, insufficient breast milk Volume, poor growth and poor mother-to-infant bonding (20). This study tell us 30.5% (n=39) participants agreed that babies who are given KMC sleep deeply, 57.8% strongly agreed, Low birth weight infants were found to stabilize faster when the skin-to-skin contact with the mother was practiced (21). as well as reported that when implementing skin-to-skin contact the LBW infants were found to spend more time in quiet sleep, their heart rate was lower and more stable, Apnea decreased, the body temperature was maintained better and the infants' oxygenation and gas exchange improved. Another benefit of KMC is the increased stimulation of breast milk production that facilitates more frequent breastfeeding (21,22). This is a very important benefit in developing countries where malnutrition and gastro-intestinal infections cause the death of a large percentage of infants.

The study indicates that 39.1% (n=50) participants agreed that KMC promotes mental development of the baby, 50% (n=64) strongly agreed, 6.3% (n=8) were not sure, while 2% (n=2) disagreed.

The infants receiving kangaroo care also tend to cry less and therefore the stress hormones in their blood are reduced. As a result of all these factors KMC was found to improve weight gain of infants, decrease the duration of stay in hospital, decrease the severity of infections, provide infants with physiologic stability, and more organized sleep/ wakefulness behaviors'.(23)

Our study also agreed with the above study. In our study 68% of participants agreed that babies who are given kangaroo care cry less than those who are not given kangaroo care and 86% of participants agreed that KMC leads to early discharge from Hospital. Eight three percent of participants agreed that KMC reduces infection.

6.2.3 Attitudes of Nursing staff towards KMC

When the participants were asked whether KMC improves the mothers' confidence in handling their babies, 100% of the Nurses Agreed. The result of this study correlates with the previous study conducted In Iran on the opinions of midwives about Kangaroo Mother Care, argued that, perceived self-efficacy was a significant factor in the appropriate implementation of skin-to-skin contact in the viewpoint of midwives.

Mean while, 89.1% of the participants agreed that KMC promotes the baby's mental development, 6.3% were not sure, and 2% disagreed.

The result of this study shows that 64% of the participants agreed that, facilitating KMC is a burden to Nursing staff. This indicated as the participants had poor attitude. Attitude is one of the main determinants of behavior; however, it is also of paramount importance for health care professionals to have confidence in their performance. In a study done in Iran on the opinions of midwives about Kangaroo Mother Care, argued that, perceived self-efficacy was a significant factor in the appropriate implementation of skin-to-skin contact in the viewpoint of midwives. Lack of knowledge among the nursing staff regarding care of their tiny babies including kangaroo mother care can harm babies and increase the risk of neonatal morbidity and mortality (16) Participants of the study expressed their opinions on whether incubator care stabilizes the baby's temperature than KMC twenty seven percent (n=34) agreed, 35.2% (n=45) strongly agreed, 17.2% (n=22) were not sure, 16.4% (n=21) disagreed, and 3.9% (n=5) strongly disagreed. This study showed that Nursing staffs and midwives of Alert Hospital preferred Incubator than KMC for new born eligible for KMC. WHO has recommended scaling up low cost solutions that could reduce neonatal death by three quarters which includes KMC as one (13).). Low birth weight infants were found to stabilize faster when the skin-to-skin contact with the mother was practiced (21).

6.3.3 The practice of Kangaroo Mother Care among Nurses staff

In this study regarding Practice of KMC 100% the nurse/midwife supports the mothers to initiate KMC, explained about the benefits of KMC to the mother and father or other family members, asked the mother to bring hat, diaper, and socks and mother's clothes, explained about the KMC position of the babies & prepare the mother or other family's for KMC, advised the mother to breast-feeding the baby while practicing KMC and advised the mothers on the Length of KMC depends on the baby's progress and might continue post discharge at home.

6.5 Conclusions

This finding results **in knowledge**, **77(60%)** of majority respondents were know about kangaroo mother care. Only **40%** of respondents were didn't know about KMC. The study revealed that only **40.6%** of the Nursing Staff received training on KMC, while **59.4%** did not received training on KMC. **in Attitude**, **111 (87%)** of the majority respondents were Agreed felt positive Attitude regarding to implementation of KMC. Only **6(5%)** of respondents were Dis agree and **11(8%)** of respondents were Neutral from Agree and Disagree.

In practice 106 (83%) of The majority respondents were Yes About implementation and practiced KMC. But all Nursing staff didn't used placard, videos and posters for KMC implementation or teaching purpose in this hospital.

6.6 Recommendations

There is a need for strengthening in-service education not only for Nursing staff based in health care facilities, to provide information of the efficacy and beneficial effects of kangaroo mother care for infant and parents.

During health education sessions, health care professionals including student nurses should stress the importance of KMC to all mothers attending antenatal and postnatal clinics and their partners should also be involved.

Utilizing mothers who have given KMC to their infants can be very beneficial in promoting KMC and helping other to provide KMC.

Health service managers should ensure that the staffs attend on-the-job training sessions and workshops to keep them updated regarding the kangaroo care practice.

Further extensive studies need to be conducted to identify the gap in the practice of KMC to improve this very important practice.

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Informed Consent

Questionnaire

St Paul's Hospital Millennium Medical College school of Nursing Department questionnaire to assess the Knowledge, attitude, and practice of kangaroo mother care among Nursing staff: at Alert hospital from October to November 2022.

Dear respondents

The assessment is made for fulfillment of graduate Neonatal nursing in Degree. The questionnaire contains questions, which are provided in a self-administered form. There will also be a practice session where you will be asked by the data collector to demonstrate practical part of KMC. You are therefore kindly requested to provide genuine answers to the questions.

The information you provide is confidential and is used only for the purpose of this study. If you have any question, don't hesitate to ask the data collector.

Your cooperation and participation until the completion of the questionnaire is very necessary for the successful completion of the assessment. However, you have the right to discontinue at any time, we therefore request your written consent for participation.

Thank you

Signature _____

Date _____

Research Title: Knowledge, attitude, and practice of kangaroo mother care among nursing staff:
in Alert hospital.

Code _____

Part 1- Demographic characteristics of nursing staff: circle the appropriate answer:

S.No	Questions	Options
1	Sex	a. Male b. Female
2	Age	a. 20 – 30 b. 31 – 40 c. 3.41 – 50 d. 4.51 – 60
3	Marital status	a. Single b. Married c. Widow/ Widower d. Divorced
4	What is your profession ?	✓ Clinical Nurse ✓ Midwife ✓ Specialty nurse, Specify _____
5	Years of experience in your profession	✓ 0—2 ✓ 3—5 ✓ 6—8 ✓ above 9
6	Level of education	➤ Diploma ➤ degree ➤ masters degree
7	Which ward are you currently working?	A.ANC E. OR ward b .PNC f. Gyni emergency ward C.NICU g. High risk ward D.Labor ward ...

Part 2- knowledge of nursing staff about KMC

8	Which newborns need KMC?	• All Low birth weight and preterm newborns • Preterm babies weighing <1.8kg • preterm baby only • A and B • All
9	Which materials are needed to initiate KMC	a. Diaper, hat and socks only b. Diaper, hat , socks for the baby and a wrapping clothe mother c. Diaper and wrapping clothe is enough
10	KMC room is a MUST to start KMC practice	➤ True ➤ False
11	Kangaroo mother care can be provided by--	1. Mother of the baby only 2. husband 3. any family member 4. All can practice KMC
12	KMC can be given in/at ?	a. hospital b. health center c. clinic d. at home e. All
13	Which things can affect KMC ?	a. Nurse's knowledge b. unsuitable environment c. maternal knowledge D. all
14	Which maternal conditions affect KMC practice?	a. If the mother is sick b. Lack of knowledge c. if the mother delivered by C/S

		d. religion and culture factor e. All
15	Have you received any training on KMC?	a. yes b. No
16	How to measure yourself about your knowledge on KMC.	a. excellent b. very good c .good d. poor

Part 3- ATTITUDES OF NURSING TOWARDS KMC

Indicate whether you agree, strongly agree, not sure, disagree, or strongly disagree

	Item	Agree	Strongly Agree	Not Sure	Disagree	Strongly Disagree
17	KMC promotes bonding between mother and baby					
18	KMC improves the mother's confidence in handling her baby					
19	KMC promotes breast feeding					
20	KMC promotes mental development of premature babies					
21	Both parents should be involved in kangaroo care.					
22	NURSING staff should facilitate kangaroo care					
23	Facilitating kangaroo care is a burden to Nursing staff					
24	Babies who are given kangaroo mother care sleep deeply and wake up less often.					
25	Incubator care stabilizes baby's more than KMC					
26	Babies are who given kangaroo care cry less					
27	KMC promotes baby's growth and development					

28	KMC results in reduced infection in the baby					
29	KMC leads to early discharge from hospital					
30	If the baby is well and eligible for KMC, KMC can be started immediately after birth					

Part 4- PRACTICE OF KMC by nursing staff

Code _____

S.No	Items	Yes	No	Remark
30	The Nurse/Midwife support the mothers to initiate KMC?			
31	The Nurse/Midwife explained about the benefits of KMC to the mother and father or other family members.			
32	The Nurse/Midwife used placard, posters and videos for KMC implementation while teaching?			
33	The Nurse/Midwife asked the mother to bring hat, diaper, and socks and mother's clothes /Sharp/?			
34	The Nurse/Midwife prepared the bed or the chair to be comfortable for the mother.			
35	The Nurse/Midwife explained about the KMC position of the babies & prepare the mother or other family's for KMC			
36	The Nurse/Midwife advised the mother to breast-feeding the baby while practicing KMC.			
37	The Nurse/Midwife asked the mother to re-demonstrate KMC practice based on their discussion.			
38	The Nurse/Midwife advised the mothers on the Length of KMC depends on the baby's progress and might continue post discharge at home?			

III ASSURANCE OF INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific, ethical and technical conduct of the research project and for provision of required progress reports as per terms and conditions of the Research or /and Department of neonatal nurses of St Paul's Hospital Millennium Medical College.

Name of Student_____ Date_____ Signature_____

Name of student_____ Date_____ Signature_____

Name of student_____ Date_____ Signature_____

Name of student_____ Date_____ Signature_____

APPROVAL OF ADVISOR

Name of the adviser : **Redeat Workneh (Bsc, MPH, RN)**

Signature.....