

Pregnant Women's Knowledge regarding Kangaroo Care.

Fatma Ead Amar⁽¹⁾, Sahar Mossa⁽²⁾, Nadia Abd El Hamid⁽³⁾, Heba Mahmoud⁽⁴⁾

B. Sc. in Nursing⁽¹⁾, Professor of Maternity and Neonatal Health Nursing Department⁽²⁾, Professor of Maternity & Neonatal Health Nursing⁽³⁾, Lecturer of Maternity & Neonatal Health Nursing⁽⁴⁾
Faculty of Nursing- Ain Shams University

Abstract

Background: Kangaroo mother care (KMC) is the concept of skin-to-skin contact (SSC) between a parent or surrogate and a newborn or infant child. Kangaroo care has been found to reduce mortality and morbidity in preterm infants, increase weight gain in premature babies and improve emotional attachment in mothers. **The aim** of the study was to assess pregnant women's knowledge regarding kangaroo care through assessment of the pregnant women's knowledge. **Research design:** a descriptive design was utilized to achieve the aim of this study. **Settings:** The study was carried out at the antenatal clinic and department affiliated to Maternity Hospital Ain Shams University. **Subjects:** A simple random sample technique was used to recruit 240 pregnant women. All pregnant women in third trimester were included in the study. **Tools:** First tool was a structured interview questionnaire, It was composed of 3 parts, demographic characteristics of the pregnant women, Obstetrical history and Pregnant Women's Knowledge regarding Kangaroo Care. **Results:** sixty seven point five percent of the studied women had incorrect knowledge regarding the premature baby and kangaroo care. **Conclusion:** more than two thirds of the studied women have unsatisfactory level of knowledge regarding kangaroo care. **Recommendation:** Neonatal intensive care units should include updated policies related to developmental supportive care for neonates.

Keywords: Pregnant women, Perception, Knowledge, Attitude, Neonates, Kangaroo care

Introduction

The pregnant woman possess many physiological and psychological changes that put her at risk for many problems and complications to her and her fetus which increased risk of maternal and neonatal mortality and morbidity that could affect the health or safety of both. All pregnancies should be evaluated to know whether there are or will be at risk and help to ensure that they receive extra attention and proper care thereby significantly decreasing maternal and neonatal morbidity and mortality rates (*Pervin et al., 2015*).

Despite increased efforts in Egypt to prevent prematurity, the prevalence of premature birth has significant rate. Preterm birth is the leading cause

of death in children younger than 5 years of age worldwide. The Kangaroo Method is presented as an intervention approach complementary to neonatal technology to promote the direct contact of the neonate with the mother from the moment they both present clinical conditions to develop it (*Gabriel, 2015 & Trevisanuto, 2016*).

Kangaroo mother care (KMC) is the concept of skin-to-skin contact (SSC) between a parent or surrogate and a newborn or infant child. Kangaroo care has shown benefits for homeostasis, more likely to maintain a healthy body temperature, and show increased cardio-respiratory stability (*WHO, 2014*). Kangaroo care has been found to have physiological, behavioral,

psychosocial and cognitive developmental benefits, and it enhances mother-infant bonding (*Abrham, Binoy and Mahantesh, 2017*).

Kangaroo care, also is impact on the mother has been shown to decrease depressive tendencies and reduce mothers' stress enables the mother to become more confident when caring for her infant, returning to a state of maternal equilibrium. In addition, it promotes breastfeeding which contributing to the increase of the breastfeeding period and the volume of milk production and results in early hospital discharge (*Younis and Mahmoud, 2016*).

Kangaroo care has been found to reduce mortality and morbidity in preterm infants (*Seidman et al, 2015*). Studies have shown that it contributes to reduction of preterm mortality by 40% and reduces infection/sepsis, while increasing weight gain in premature babies and improving emotional attachment in mothers (*Chan, Labar, Wall and Atun, (2016)*).

The nurse plays major role in assessing problems for early detection and management, a nurse has to act as a caregiver, decision maker, communicator, manager of care, mothers advocator, teacher, and counselor out of all these roles nurse play a role that is more important than the other (*Jessica, 2014*).

Nurses have a responsibility to promote the health of mother's status, families, groups or communities. Also, they communicate with mothers so it requires many skills to do this and with the consideration of various domains: biological, psychological, socio cultural, spiritual and environmental to facilitate kangaroo care perception (*Chisenga, Chalanda and Ngwale, 2015*).

Significance of the study:

In Egypt, neonatal and perinatal mortalities were 14 and 15/1000 live births; Approximately 13 million babies are born prematurely worldwide (*Tadesse and Melaku, 2016*). Preterm infants,

have higher risk of morbidity and developmental delays, as well as breathing problems, feeding difficulties, vision problems, and hearing impairment. Further, preterm birth is associated with developmental, cognitive, and behavioral problems in adolescents and an increased risk of disease in adulthood.

The high levels of mothers' satisfaction with kangaroo care because it allows them to be closer to their babies and hence giving them the opportunity to observe their growth and become fully involved in the care and prevention of many complications either to the full-term or premature newborn (*Saied et al., 2013 & Ebrahim et al., 2018*).

Aim Of The Study

The aim of this study was to assess pregnant women's perception regarding kangaroo care through:

- Assessment of the pregnant women's knowledge regarding kangaroo care in the maternity unit.

Research questions:

- What about women's knowledge toward kangaroo care?

Subjects And Methods

I. Technical design

Research Design:

Descriptive design was utilized to achieve the aim of this study.

Research Settings:

The study was conducted at the antenatal clinic and department affiliated to Maternity Hospital Ain Shams University.

Subjects:

A simple random sample technique was used to recruit 240 pregnant women. All pregnant women in third trimester were included.

Tools of the study:

Tool I. A structured interview questionnaire:

This was constructed by the researcher based on review of pertinent literature to collect the necessary data from pregnant women included in the study. It was composed of 3 parts:

- **Part (1): demographic characteristics of the pregnant women** as (age – educational level – occupation – place of residence – phone number).
- **Part (2): Obstetrical history includes:** parity present pregnancy in which trimester, Is there any medical problems during pregnancy.
- **Part (3): Pregnant Women's' Knowledge regarding Kangaroo Care:**

It included meaning, importance, indication and technique of Kangaroo. etc.

Scoring system for knowledge:

Scoring system for pregnant women's knowledge regarding Kangaroo mother care:

Correct answer got score (2), while incorrect got score (1). Subsequently, total knowledge score ranged from zero to two.

Correct answers for knowledge equal 60% or more while incorrect answers for knowledge if less than 60%.

Content, Face Validity and Reliability:

All tools of data collection were sent To Three specialized university professors. According to their Comments, modifications

in phrasing and Sequencing of statements were considered.

II. Operational Design:

Preparatory Phase:

The researcher had reviewed advanced local and international books, Journals, magazines, scientific Periodicals and online references to develop The Study Tools and to get acquainted with the various aspects of the research questions, after wards a pilot study done.

Ethical Considerations

The ethical research considerations in this study were included the following:

- A letter of approval to conduct the study was obtained from the head of maternity and gynecological nursing department at Ain Shams University.
- The research approval was obtained from Scientific Research Ethical Committee in Faculty of Nursing at Ain Shams University before starting the study.
- An Official permission was obtained from the director of the Ain Shams University Maternity Hospitals where the study conducted.
- The researcher was clarified the objective and aim of the study to the all pregnant woman included in the study.
- The researcher was assured maintaining anonymity and confidentiality of the subject data.
- The researcher obtained oral consent from the pregnant women to participate in the study and informed them that they have the right to withdraw from the study at any time without penalties.
- Tools of data collection were burnet after statistical analysis done.

Pilot Study:

A pilot Study was Carried out on The pregnant women whom were admit to previous Setting for one month (10% of total Period of data collection) Start from the 1st of April 2021 to the 15 April 2021. The entire sample, involved in the pilot study was 24 cases were included in the study sample as no modification done in the tools of data collection.

Fieldwork:

Through This phase, the researcher visited the previous mentioned study setting Three days per week from 09:00 am to 02:00 pm To Collect data for two months started from 1st April, 2021 to the end of May.2021

At beginning of The interview The researcher start To introduce herself and explained berifely The aim of The study To The studied women To gain Confidence and Trust Then Took oral Consent from Them.

The researcher interviewed pregnant women who fulfilled The Sample Criteria individually in antenatal unit at Ain Shams maternity hospital.

The average number of women interviewed per day were (5-8 pregnant women) filling on The structured interviewing questionnaire which were used to assess pregnant women's general characteristics, obstetric history, knowledge about kangaroo mother Care within time range (8-10) minutes. In addition to assessment attitude of kangaroo mother Care using 8 items open and closed ended questions filling within time range (7-10) minutes:-

The Total duration of each interview was (15-20) minutes.

The researcher repeated the previous steps until Finished the duration of data collection.

III. Administrative Design:

An official Permission letter containing The Title and purpose of The Study was sent to the director of The Ain shams university maternity hospitals.

IV. Statistical Design:

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 24. Data were presented using descriptive statistics in the form of frequencies, percentages. Chi-square test (X²) was used for comparisons between qualitative variables. Spearman correlation measures the strength and direction of association between four ranked variables.

Significance of the results:

-Highly significant at p-value < 0.01.

-Statistically significant was considered at p-value < 0.05

-Non-significant at p-value ≥ 0.05

Results

Table (1): showed that (49.6%) of the studied women were 18-35 years old with mean value (±SD) 26.77±6.12 years old, (55.4%) had Middle education, (50.8%) didn't work. In addition, (71.2%) were from urban area.

Figure (1): represented that (67.5%) of the studied women had incorrect knowledge, while (32.5%) of them had correct knowledge.

Table (2): illustrated that there was a highly statistically significant relation between the studied women's total knowledge about the premature baby and kangaroo care and their age (X²=10.452, P=.001**) and their Educational level (X²=7.693, P=.004**). A statistically significant relation existed with Mothers'

Occupation (X²=4.215, P=.011*) and their Residence (X²=4.124, P=.021*).

Table (3): Portrayed that there was a highly statistically significant relation between the studied women total knowledge regarding the premature baby and kangaroo care and their Number of pregnancies (X²=7.998, P=.005**)

and their Number of births ($X^2=7.998$, $P=.005^{**}$). No statistically significant relation was found with Problem during pregnancy, Fetus exposed to problem during previous pregnancy and Problem

during previous delivery ($X^2=1.034$, $P=.074$), ($X^2=1.601$, $P=.068$) and ($X^2=1.222$, $P=.071$) respectively.

Table (1): Number and percentage distribution of the studied subjects according to their socio-demographic characteristics (n=240).

Personal information	N	%
Age		
< 18	46	19.2
18-35	119	49.6
> 35	75	31.2
\bar{x} S.D 26.77±6.12		
Educational level		
Illiterate	7	2.9
Read and write	11	4.6
Middle	133	55.4
High	89	37.1
Mothers' Occupation		
Do not work	122	50.8
Professional work	87	36.2
Craft work	31	13.0
Residence		
Urban	171	71.2
Rural	69	28.8

*Significant at $p < 0.05$. **Highly significant at $p < 0.01$. Not significant at $p > 0.05$

Figure (1): Percentage distribution of the studied subjects according to their total knowledge regarding the premature baby and kangaroo care (n=240).

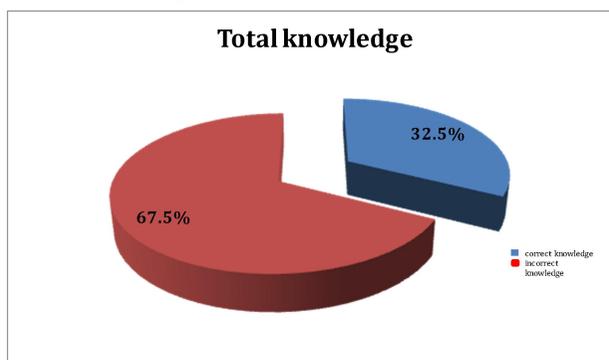


Table (2): Relationship between socio-demographic characteristics of studied subjects and their total knowledge regarding the premature baby and kangaroo care (n=240).

Items	Total knowledge	X^2	P-
-------	-----------------	-------	----

		Satisfactory N=78		Unsatisfactory N=162			Value
		N	%	N	%		
Age	< 18	0	0	46	28.4	10.452	.001**
	18-35	7	9.0	112	69.1		
	> 35	71	91.0	4	2.5		
Educational level	Illiterate	0	0	7	4.3	7.693	.004**
	Read and write	0	0	11	6.8		
	Middle	5	6.4	128	79.0		
	High	73	93.6	16	9.9		
Mothers' Occupation	Do not work	3	3.8	119	73.5	4.215	.011*
	Professional work	69	88.5	18	11.1		
	Craft work	6	7.7	25	15.4		
Residence	Urban	67	86.0	104	64.2	4.124	.021*
	Rural	11	14.0	58	35.8		

*Significant at $p < 0.05$. **Highly significant at $p < 0.01$. Not significant at $p > 0.05$

Table (3): Relationship between obstetric history of studied subjects and their total knowledge regarding the premature baby and kangaroo care (n=240).

Items		Total knowledge				X ²	P-Value
		Satisfactory N=78		Unsatisfactory N=162			
		N	%	N	%		
Number of pregnancies	Primigravida	8	10.3	50	30.9	7.998	0.005**
	1-3 times	20	25.6	97	59.8		
	>3 times**	50	64.1	15	9.3		
Number of births	Primipara	8	10.3	50	30.9	7.998	0.005**
	1-3 times	20	25.6	97	59.9		
	>3 times**	50	64.1	15	9.2		
Problem during pregnancy	Yes	36	46.2	74	45.7	1.034	0.074
	No	42	53.8	88	54.3		
Fetus exposed to problem during previous pregnancy	Yes	9	11.5	13	8	1.601	0.068
	No	69	88.5	149	92		
Problem during previous delivery	Yes	2	2.6	5	3.1	1.222	0.071
	No	76	97.4	157	96.9		

*Significant at $p < 0.05$. **Highly significant at $p < 0.01$. Not significant at $p > 0.05$

Discussion

Regarding age of the studied pregnant, the present study displayed that about half of them their age ranged between 18 to 35 years

old with mean value (\pm SD) is 26.77 ± 6.12 years old. From researcher point view, this result might be due to safe time of childbearing. This result nearly similarly to **Safari et al., (2018)** who conducted study about "The effect of mother and newborn early skin-to-skin contact on initiation of breastfeeding, newborn temperature and duration of third stage of labor" and showed that mean age of the mothers was mean \pm SD 26.29 ± 6.13 .

Concerning on Educational level, the present study revealed that more than half had Middle education. This outcome was in agreement with the study of **Essa & Ismail, (2016)** who conducted study about "Effect of second stage perineal warm compresses on perineal pain and outcome among primiparae" and showed that about half of the studied women had secondary education.

Regarding to Residence, the present study showed that less than three quarters of the studied Pregnant. This finding was consistent with **Bedaso et al., (2019)** who conducted study about "Assessment of skin-to-skin contact (SSC) during the postpartum stay and its determinant factors among mothers at public health institutions in Ethiopia" and reported that More than three-fifths of the study sample from urban area.

As regard to total knowledge about kangaroo care, the current study represented that more than two thirds of the studied women have incorrect knowledge, while rest of them have correct knowledge. from researcher point view, this result might be due to limited information on kangaroo mother care during antenatal Care as majority of distant health facilities lacked kangaroo mother care services. This outcome was in agreement with study by **Mose et al., (2021)** who conducted study about "Skin-to-Skin Care Practice and Its Associated Factors

among Postpartum Mothers in Gurage Zone, Southern Ethiopia" and reported that more than one third of the women have good knowledge about Skin-to-Skin Care.

On other hand, this finding disagreement with study by **Kassahun et al., (2019)** who conducted study about "Knowledge, attitude, practice and associated factors of Kangaroo Mother care for neonatal survival among care takers of preterm and low birth weight infants in health care settings" and reported that about two thirds of the studied mothers had good knowledge about Kangaroo Mother care.

Regarding Relationship between socio-demographic characteristics of studied subjects and their total knowledge regarding the premature baby and kangaroo care, the present study revealed that their age ($X^2=10.452$, $P=.001^{**}$) and their Educational level ($X^2=7.693$, $P=.004^{**}$). A statistically significant relation exists with Mothers' Occupation ($X^2=4.215$, $P=.011^*$) and their Residence ($X^2=4.124$, $P=.021^*$).

This finding was similar to **Chamhene & Moshi, (2021)** who conducted study about "Predictors of Knowledge on Kangaroo Mother Care Practice among Postnatal Mothers with Preterm Babies in Tanzania" and founded that there A statistically significant relation exists with Mothers' age group ($2=18.919$ $P<0.001$), [education level ($2=54.878$; $P<0.001$)], [occupation $2=24.943$; $P<0.001$] [residence ($2=17.780$; $P<0.001$) and knowledge.

Concerning on Relationship between obstetric history of studied subjects and their total knowledge regarding the premature baby and kangaroo care, the present study displayed that there high highly statistically significant relationship between number of pregnancy and numbers of birth and level of knowledge. this outcome harmony with study

by *Berhan & Gulema, (2018)* who conducted study about " Level of knowledge and associated factors of postnatal mothers' towards essential newborn care practices at governmental health centers in Addis Ababa, Ethiopia" and showed that significant association between parity and mother's knowledge on kangaroo mother care and found that those mothers who were primipara were almost two-folds more likely to have poor knowledge compared to grand-multipara

The present study showed that there highly statistically significant positive correlation between the studied subjects' Total knowledge and Total attitude ($r=.845$, $p=0.000^{**}$). This finding in same line with study by *El-Sayed et al., (2018)* who conducted study about " Assessment of Nurses' Knowledge and Practice Regarding to Kangaroo Care at Neonatal Intensive Care Unit (NICU)" and reported that that there highly statistically significant positive correlation between the studied subjects' Total knowledge and Total attitude ($r=.845$, $p=0.000^{**}$).

Conclusion

In light of the current study, it can be concluded that, more than two thirds of the studied women have unsatisfactory level of knowledge, while almost one third of them have satisfactory level of knowledge regarding kangaroo care.

Recommendations

Based on the findings of the study results, the following recommendations were advocated

1. Adoption of educative and care strategies on KMC accessibility and utilization targeting mothers and the community may promote KMC uptake.
2. Initiate KMC open days to showcase KMC models that will share their KMC lived experiences and help clear misconceptions related to LBWI and KMC.
3. More researches should be done to further investigate pregnant women's perception regarding Kangaroo care.
4. This study could be replicated to larger sample and in different settings to generalize the findings.
5. This study could be replicated to larger sample and in different settings to generalize the findings.

References

- Abrham, A., Binoy, S., and Mahantesh, A., (2017):* Knowledge, Attitude and Practice of Kangaroo Mother Care by Postnatal Mothers who Gave Birth to Preterm and Low Birth Weight Babies in Public Hospitals, Eastern Ethiopia, *Neonatal Biol* 2017, 6:3
- Bedaso, A., Kebede, E., & Adamu, T. (2019):* Assessment of skin-to-skin contact (SSC) during the postpartum stay and its determinant factors among mothers at public health institutions in Ethiopia. *BMC research notes*, 12(1), 1-7.
- Berhan, D. & Gulema, H. (2018):* Level of knowledge and associated factors of postnatal mothers' towards essential newborn care practices at governmental health centers in Addis Ababa, Ethiopia. *Advances in Public Health*, 2018.
- Chamhene, N., & Moshi, F. V. (2021):* Predictors of Knowledge on Kangaroo Mother Care Practice among Postnatal Mothers with Preterm Babies in

- Tanzania: A Hospital-Based Cross-Sectional Study.
- Chan, G., Labar, A., Wall, S., and Atun, R., (2016):** Kangaroo mother care: a systematic review of barriers and enablers, *Bull World Health Organ*, 2016; 94(2):130–141.
- Chisenga, J., Chalanda, M., and Ngwale, M., (2015):** Kangaroo Mother Care: A review of mothers' experiences at Bwaila Hospital and Zomba Central Hospital (Malawi). *Midwifery* 31: 305-315.
- Essa, R. M., & Ismail, N. I. A. A. (2016):** Effect of second stage perineal warm compresses on perineal pain and outcome among primiparae. *Journal of Nursing Education and Practice*, 6(4), 48.
- Gabriel, S. (2015):** Barriers and Enablers of Kangaroo Mother Care Practice: A Systematic Review, *PLOS One*, pp: 23-25.
- Kassahun, G., Efa, A., & Samuel, H. (2019):** Knowledge, attitude, practice and associated factors of Kangaroo Mother care for neonatal survival among care takers of preterm and low birth weight infants in health care settings. *Journal of Health, Medicine and Nursing*, 58, 42-47.
- Mose, A., Adane, D., & Abebe, H. (2021):** Skin-to-Skin Care Practice and Its Associated Factors Among Postpartum Mothers in Gurage Zone, Southern Ethiopia: A Cross-Sectional Study. *Pediatric Health, Medicine and Therapeutics*, 12, 289.
- Pervin, J., Gustafsson, F., Moran, A., Roy, S., and Persson, L., (2015):** Implementing Kangaroo mother care in a resource-limited setting in rural Bangladesh, *Acta Paediatr* 104: 458-465.
- Safari, K., Saeed, A. A., Hasan, S. S., & Moghaddam-Banaem, L. (2018):** The effect of mother and newborn early skin-to-skin contact on initiation of breastfeeding, newborn temperature and duration of third stage of labor. *International breastfeeding journal*, 13(1), 1-8.
- Saied, N., Abed El-Azim, H., and Mahmoud, S., (2013):** Effect of Kangaroo Mother Care on Premature Infants' Physiological, Behavioral and Psychosocial Outcomes in Tanta Maternity and Gynecological Hospital, Cairo, Egypt, *Life Science Journal* 20113; 10(1)
- Seidman, G., Unnikrishnan, S., and Kenny, E., (2015):** Barriers and enablers of kangaroo mother care practice: a systematic review. *PLoS One*; 10(5):e0125643.
- Tadesse, A., and Melaku, U., (2016):** Prevalence and predictors of "small size" babies in Ethiopia: In-depth analysis of the Ethiopian Demographic and Health Survey, 2011. *Ethiop J Health Sci* 26: 243-250.
- Trevisanuto, D., Putoto, G., Pizzol, D., Serena, T., and Manenti, F., (2016):** Is a woolen cap effective in maintaining normothermia in low-birth-weight infants during kangaroo mother care? Study protocol for a randomized controlled trial. *Trials* 17: 265.
- World Health Organization, (2014):** Kangaroo mother care to reduce morbidity and mortality and improve growth in low-birth-weight infants. http://www.who.int/elena/titles/kangaroo_care_infants/en
- Younis, J., and Mahmoud, N., (2016):** Kangaroo Care: effect on physiologic measurements and physiologic responses to pain of a heel stick in pre term neonates, *Journal of Nursing Science*; 2(2): 7-14.