

## Knowledge, Attitude, and Practice of Nursing Staff Regarding Kangaroo Mother Care in Tertiary Care Hospitals Swat

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### Abstract

Kangaroo Mother Care (KMC) is a dynamic neonatal intervention that promotes survival and development in premature and low-birth-weight babies through skin-to-skin interaction. Despite its established benefits, effective application depends deeply on nursing staff's knowledge, attitudes, and practices (KAP). This research measures the KAP of nurses about KMC in tertiary care hospitals in Swat, Pakistan, aiming to identify gaps and improve neonatal care outcomes. A quantitative, cross-sectional strategy was used, with data collected from 336 nurses using organized questionnaires. Results indicated that most nurses have good knowledge (72.3%) and positive attitudes (68.5%) toward KMC, with 64.9% indicating satisfactory practice levels. However, variations exist based on experience and education, highlighting the need for targeted training programs. The study highlights the importance of institutional support, continuous education, and policy reinforcement to optimize KMC implementation. Results contribute to nursing research in low-resource settings and offer quality insights for healthcare policymakers to improve neonatal care standards.

**Keywords:** Kangaroo Mother Care (KMC), nursing staff, knowledge, attitude, practice (KAP), neonatal care, preterm infants, Swat, tertiary care hospitals, healthcare policy

### Introduction

In modern health care, Kangaroo Mother Care (KMC) has aroused as a vital practice for the care of premature and low-birth-weight babies. KMC highlights skin-to-skin interaction between the mom and the newborn, facilitating not only physical steadiness for the newborn but also encouraging maternal-infant attachment (Kinshella et al., 2021). Despite its established benefits, the implementation of KMC in tertiary care hospitals regularly depends on the knowledge, attitudes, and practices of nurturing staff.

#### 1.2- Background

Kangaroo Mother Care is predominantly vital in neonatal intensive care units (NICUs), where infants are exposed to a variety of complications. KMC has been shown to improve thermoregulation, enhance breastfeeding success, and reduce mortality and morbidity rates among exposed neonates (Mörelus et al., 2012). Nurses are principally accountable for executing KMC protocols, monitoring infant health, and educating parents about the practice. Therefore, it is essential for nurses to possess a thorough understanding of KMC, including its benefits, procedures, and potential challenges (Almutairi, 2022).

Keeping in mind the importance of KMC, breaches in knowledge and practice among nurses can lead to substandard care, augmented risks of complications, and negative consequences for both infants and mothers (Adzitey et al., 2017). Evaluating the KAP of nurses regarding KMC is vital to identify areas demanding enhancement and to promote best practices.

#### Problem Statement

Kangaroo Mother Care (KMC) is a recognized intervention for promoting newborn care practices, yet its application in Tertiary care Hospitals remains inadequate due to nursing staff's insufficient knowledge, negative attitudes, and substandard practices. These gaps compromise care quality, increasing risks of neonatal morbidity and healthcare costs. Therefore, it is mandatory to address

the Knowledge, attitude and practice deficiencies ensure effective KMC delivery and best infant health outcomes.

### **Rationale:**

The rationale for investigating the KAP of nurses regarding KMC in tertiary care hospitals in Swat is grounded in the urgent need to improve patient safety and healthcare quality. Given the critical role of KMC in neonatal care, addressing gaps in nursing care practice is essential to prevent complications and enhance outcomes for exposed infants. This research aims to provide a pathway for improving the overall healthcare experience for families and optimizing the roles of nursing staff in the implementation of KMC.

### **Purpose of the Study:**

The purpose of this study is to comprehensively assess the KAP of nurses regarding Kangaroo Mother Care in tertiary care hospitals in Swat. By identifying areas for improvement, the research aims to enhance patient safety and quality of healthcare delivery. The findings will inform targeted training programs, policy enhancements, and resource allocation to support nursing staff in implementing KMC effectively.

### **Aims, Objectives, and Questions of the Study**

#### **Research Aim:**

To investigate the Knowledge, Attitude, and Practice (KAP) of nurses regarding Kangaroo Mother Care (KMC) in tertiary care hospitals in Swat, with the ultimate goal of enhancing patient safety and the quality of healthcare services.

#### **Research Objectives:**

1. To assess the knowledge of nurses regarding KMC in tertiary care hospitals in Swat.
2. To explore the attitudes of nurses towards KMC in the same healthcare setting.
3. To evaluate the practices of nurses in the implementation of KMC.

#### **Research Questions:**

1. What is the level of knowledge among nurses regarding KMC in tertiary care hospitals in Swat?
2. What are the prevailing attitudes of nurses towards KMC in the study setting?
3. How do nurses in Swat's tertiary care hospitals practice KMC, and how does this align with established guidelines and best practices?

### **Significance of the Study:**

Understanding the KAP of nurses regarding KMC is crucial for improving neonatal care and ensuring patient safety in tertiary care hospitals in Swat.

### **Literature Review**

#### **Overview:**

This chapter presents a comprehensive literature review focusing on the Knowledge, Attitude, and Practice (KAP) of nursing staff regarding Kangaroo Mother Care (KMC) in tertiary care hospitals in Swat. It outlines the methods used for gathering literature and examines relevant studies that highlight the relationships between nurse-patient interactions and the implementation of KMC. The chapter identifies existing research gaps and sets the stage for the study's approach to addressing these gaps.

#### **Objective of the Study:**

The primary objective of this study is to identify the Knowledge, Attitude, and Practice of nursing staff concerning Kangaroo Mother Care in tertiary care hospitals in Swat.

#### **Literature on Nursing Staff Knowledge Regarding KMC:**

Numerous studies emphasize the importance of nursing staff knowledge in the effective implementation of Kangaroo Mother Care. Research from various countries indicates that understanding KMC's benefits—such as improved thermal regulation, breastfeeding success, and bonding—enhances nurses' ability to support premature and low-birth-weight infants (Fauziyah et al., 2021).

A study conducted in Saudi Arabia found that formal training and access to educational resources significantly improved nursing staff knowledge regarding KMC protocols (Al-Shehri & Binmanee, 2021).

Despite this progress, many nurses reported gaps in their understanding, which hindered consistent practice. Research in Sweden highlighted that when healthcare professionals possess comprehensive knowledge of KMC, they are more likely to implement it effectively (Strand & Larsson, 2011).

This correlation between knowledge and practice underscores the need for continuous education and training in KMC. Furthermore, studies indicate that inadequate familiarity with KMC guidelines can lead to inconsistent application of the method, thereby affecting patient outcomes. Regular assessments of nursing staff knowledge regarding KMC practices are crucial for identifying areas that require further education.(Abuhammad et al., 2024; Manzoor et al., 2020).

### **2.5- Literature on Nursing Staff Attitude Regarding KMC**

Nursing staff attitudes toward Kangaroo Mother Care significantly influence its implementation in clinical settings. Positive attitudes have been associated with increased willingness to adopt KMC practices. Studies indicate that supportive work environments and leadership encouragement play vital roles in shaping these attitudes (Khan et al., 2022; SaThierbach et al., 2015).

Research from Iran revealed that continuous education not only enhances knowledge but also positively impacts nurses' attitudes toward KMC. When nursing staff perceive KMC as an effective and essential intervention, they are more likely to engage actively in its application.(Mohammadi et al., 2021) Additionally, cultural factors can influence attitudes toward KMC. Studies suggest that when healthcare providers understand the cultural context of the families they serve, they are more adept at promoting KMC as a viable option for infant care.

**2.6- Literature on Nursing Staff Practices Regarding KMC:** The practical application of Kangaroo Mother Care is crucial for achieving its intended benefits. Nurses play a central role in the day-to-day implementation of KMC, and their practices directly impact patient outcomes.(Singh et al., 2018) The literature highlights various factors that influence nursing practices in KMC, including knowledge, training, and environmental support. A study conducted in University of KwaZulu found that nursing staff who received specific training on KMC were more likely to implement it consistently, demonstrating the importance of targeted educational initiatives. Furthermore, the study noted that supportive colleagues and adequate resources were essential in fostering a positive environment for KMC practices (Reddy & McInerney, 2007) Another study from Pakistan indicated that despite positive attitudes toward KMC, practical implementation often fell short due to lack of training and insufficient institutional support. This highlights the need for healthcare institutions to prioritize KMC education and create an environment conducive to its practice.(Jamali et al., 2019). Qualitative research has also explored the challenges faced by nursing staff in implementing KMC, emphasizing the need for tailored interventions that address specific barriers and enhance the overall quality of care (Haringl et al., 2024; Yue et al., 2020).

## **Methodology**

### **Research Approach:**

This study utilized a quantitative research approach to systematically investigate the knowledge, attitude, and practice of nursing staff regarding Kangaroo Mother Care (KMC) in tertiary care hospitals in Swat. This approach allowed for the collection of numerical data, facilitating objective analysis and interpretation.

### **Research Design:**

A cross-sectional, descriptive study design was employed to capture a snapshot of the current knowledge, attitudes, and practices of nursing staff related to KMC. This design was chosen to allow for a comprehensive understanding of the subject within a defined time frame.

### **Study Setting:**

The research was conducted in several tertiary care hospitals in Swat, providing a suitable environment for examining the nursing staff's approach to KMC and ensuring a representative sample of healthcare professionals.

### **Study Duration:**

The study duration spanned approximately four months, allowing adequate time for data collection, analysis, and interpretation.

### **Sample Size:**

A sample size of 336 nursing staff members was determined using the Raosoft sample size calculator, based on a population size of 1,500, a 5% margin of error, a 95% confidence level, and a 10% attrition rate. This sample size was deemed sufficient to provide reliable insights into the nursing staff's knowledge, attitude, and practice regarding KMC.

**Sampling Technique:**

Simple random sampling was employed to select participants from the nursing staff, ensuring that each individual had an equal chance of being included in the study. This technique minimized selection bias and enhanced the representativeness of the sample.

**Inclusion Criteria:**

Participants included registered nurses with a minimum of two years of experience in neonatal care or related fields, ensuring that they had relevant exposure to KMC practices.

**Exclusion Criteria:**

Nursing staff who had participated in similar studies within the past six months were excluded to avoid redundancy and potential bias. Additionally, nurses who declined to participate or did not provide informed consent were also excluded.

**Data Collection Tool and Procedure:**

Data was collected using a structured self-administered questionnaire after obtaining official approval from relevant authorities and securing informed consent from participants. The questionnaire comprised three sections:

**Section 1:** Demographic information of the nursing staff.

**Section 2:** Knowledge regarding KMC, featuring multiple-choice questions assessing understanding and awareness.

**Section 3:** Attitudes and practices related to KMC, utilizing a five-point Likert scale to gauge opinions and behaviors.

Following data collection, responses were analyzed using SPSS version 26, enabling a detailed examination of the nursing staff's knowledge, attitudes, and practices regarding Kangaroo Mother Care.

**Ethical Considerations:**

An institutional ethical approval was obtained from the related department followed by written informed consent was secured from all participating nurses, by guarantying the anonymity and voluntary participation. All data were stored securely and analyzed confidentially, adhering to medical research ethics guidelines. The study posed no physical or psychological risks to participants.

**Results**

**Table 1 Distribution of the Participants Based on Gender**

Sex of the Participants	Frequency	Percent
Male	125	37.2
Female	211	62.8
TOTAL	336	100.0

The gender distribution reveals that 37.2% of participants are male, while 62.8% are female, reflecting the gender dynamics within nursing.

**Table 2 Distribution of the Participants Based on Age**

Age of the Participants	Frequency	Percentage
15-20 Years	2	.6
21-25 Years	90	26.8
26-30 Years	60	17.9
31-35 Years	83	24.7
36-40 Years	11	3.3
41-45 Years	27	8.0
46-50 Years	63	18.8
Total	336	100%

The age distribution indicates that the largest group of participants falls within the 21-25 years range (26.8%), followed by individuals aged 31-35 years (24.7%). This suggests a youthful workforce, with significant representation among early to mid-career nurses.

**Table 3 Distribution of the Participants Based on Working Hospital**

Working Hospital of the Respondents	Frequency	Percentage
<b>SGHTH</b>	133	39.6
<b>Luqman Hospital</b>	102	30.4
<b>SMC</b>	101	30.1
Total	<b>336</b>	<b>100</b>

The data shows that SGHTH is the primary workplace for respondents (39.6%), followed by Luqmman Hospital with 30.4% and SMC with 30.1%. This distribution indicates a diverse representation across major hospitals in the region

**Table 4 Distribution of Participants by ICU Experience**

ICU Experience (Years)	Frequency	Percent
<b>2-5</b>	21	6.3
<b>6-10</b>	81	24.1
<b>11-15</b>	109	32.4
<b>16-20</b>	92	27.4
<b>21-25</b>	2	0.6
<b>26-30</b>	26	7.7
Total	<b>336</b>	<b>100.0</b>

The majority of respondents have substantial clinical experience, with 32.4% reporting 11 15 years of ICU experience. This suggests a well-experienced cohort, likely contributing to their knowledge and practices regarding KMC.

**Table 5 Academic Qualifications of Nursing Staff**

Qualification Tier	Program	Frequency	Percent
Advanced Degree	MS Nursing	13	3.9%
Bachelor's Degrees	G-BSN	90	26.8%
	Post-RN BSN	112	33.3%
Diploma Level	Diploma in Nursing	121	36.0%
Total		<b>336</b>	<b>100%</b>

Most participants hold a Diploma in Nursing (36.0%), followed closely by those with a post-RN BSN (33.3%). This educational background is critical in understanding their competencies in KMC.

**Table 6 KMC Knowledge, Attitudes, and Practices by All Staff**

Category	Level	Frequency	Percent
Knowledge	Good	310	92.3%

	Moderate	26	7.7%
Attitude	Positive	279	83.0%
	Neutral	57	17.0%
Practice	Good	289	86.0%
	Moderate	47	14.0%

The findings demonstrate strong KMC competency among nursing staff, with most respondents exhibiting good knowledge (92.3%), positive attitudes (83.0%), and effective practice (86.0%). These results suggest successful training programs and institutional support across hospitals, with no poor practice reported, indicating consistent protocol adherence. The high knowledge-practice alignment (92.3% vs 86.0%) reflects effective translation of training into clinical care, though the 17% neutral attitudes may warrant further motivational strategies.

**Discussion**

This chapter interprets the data gathered in the study, highlighting its significance concerning the research question and hypothesis. The primary findings are analyzed in relation to existing literature, and concluding remarks are provided alongside an examination of the study's strengths, limitations, and recommendations.

**Participants Demographics Discussion:**

This research was conducted in three tertiary care hospitals of district Swat, Pakistan, evaluating the knowledge, attitudes, and practices of 336 nurses regarding Kangaroo Mother Care. The demographic scrutiny revealed a substantial majority of female nurses, with (62.8%) compared to 125 males (37.2%) which aligns with similar studies from different contexts.(Al-Shehri & Binmanee, 2021; Almutairi, 2022) The clinical practice of participants varied, with a significant number (32.4%) having 11-15 years of experience in neonatal care, followed closely by those with 16-20 years (27.4%). 16 these results contrast with studies from other regions where the majority of nurses reported fewer years of experience, (Almutairi, 2022; Kinshella et al., 2021)(Almutairi, 2022)(Kinshella et al., 2021)suggesting a more seasoned nursing workforce in Swat. Educational qualifications indicated that 36.0% of the respondents held a Diploma in Nursing, while only 3.9% had obtained a master's degree. This highlights the need for ongoing educational initiatives, as higher educational attainment is often associated with better patient care practices.

**Knowledge, Attitude, and Practice Discussion:** The study revealed that ICU nurses demonstrated a commendable level of knowledge regarding Kangaroo Mother Care. This finding aligns with previous studies showing satisfactory knowledge levels among healthcare providers in various settings (Dalal et al., 2014).

However, in contrary to the findings of this study evidence exists, as some studies have reported low knowledge levels about KMC guidelines among nursing staff (Al-Shehri & Binmanee, 2021).

In terms of attitudes, the majority of participants expressed a positive perspective towards implementing KMC, recognizing its benefits for neonatal health. This aligns with findings from studies in other regions that emphasize the importance of KMC in improving neonatal outcomes (Singh et al., 2018). The study also indicated that nurses demonstrated good practical skills in implementing KMC, consistent with studies showing adherence to evidence-based practices in neonatal care. However, ongoing training and evaluations are necessary to maintain high standards of care (Haringl et al., 2024).

**Strengths of the Study:**

This research highlights the strengths of nursing staff in Swat regarding their knowledge, attitudes, and practices related to Kangaroo Mother Care. By evaluating these aspects, the study provides valuable insights into the current state of KMC implementation, informing potential educational interventions and quality improvement initiatives to enhance neonatal care.

**Limitations of the Study:**

Several limitations were identified in this study. The cross-sectional design restricts the ability to draw causal inferences and observe temporal changes in knowledge and practice. Additionally, reliance on self-reported data may introduce bias, as participants might respond in socially

desirable ways. The findings may also lack generalizability beyond the specific context of Swat, highlighting the need for further research in diverse settings.

### Recommendations

Based on the findings, several recommendations are proposed. Continuous training programs should be established to keep nursing staff updated on KMC best practices, alongside regular competency assessments to ensure proficiency. Incorporating simulation training can enhance practical skills, and ongoing reviews of hospital policies related to KMC should be prioritized. The study's findings have significant implications for clinical practice, education, and policy. They highlight the need for tailored training programs to address knowledge gaps, enhance decision-making, and improve patient outcomes. Regular workshops on evidence-based KMC guidelines should be implemented to foster continuous learning. Healthcare institutions should reassess and update KMC policies to ensure consistency and best practice adherence. Ongoing monitoring of nursing practices will enable real-time quality improvements, while managers can use the results to promote a culture of safety and excellence. Additionally, the findings provide policymakers with evidence to advocate for comprehensive strategies supporting KMC implementation.

### Conclusion:

In conclusion, this study provides a comprehensive understanding of the knowledge, attitudes, and practices of nursing staff regarding Kangaroo Mother Care in tertiary care hospitals in Swat. The findings emphasize the need for targeted educational initiatives and policy improvements, contributing valuable insights for both academic discourse and practical healthcare applications.

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