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Effect of an Educational Program on Knowledge and Perceived Barriers Toward Kangaroo Care among Nurses and Midwives in Kirkuk Hospitals

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Abstract:

Background: Kangaroo Care(KC) is one of the most critical actions that a mother can take to care for her infant after giving birth. This is beneficial for a variety of purposes, such as nursing, vital stability, temperature regulation, and bonding. The advantages of SSC are not being fully realized as a result of numerous obstacles, including the premature separation of infants, a lack of appropriate provider training, and a lack of adequate institutional support, particularly in settings with limited resources.

Aim: To find out how KC is beneficial, what obstacles standing in the way and how well an educational intervention in Kirkuk City hospitals improved the understanding of nurses and midwives.

Methods: A quasi-experimental study applying a pre-test/post-test methodology was conducted. A specific sample of Sixty nurse-midwives was chosen for participation. Volunteers performed a knowledge evaluation before to the intervention, followed an educational session on KC, and subsequently performed a post-intervention assessment to evaluate knowledge improvements**.**

Results: The significance of skin-to-skin contact between the pretest and posttest. In the pretest, the mean knowledge score was 0.26, classified as inadequate, with inaccurate answers prevailing across the majority of items. The posttest findings indicate a significant enhancement, with the total average score rising to 0.91, classified as good. Over 83% of participants across all items provided correct responses following the intervention.

Conclusion:
The study indicates that structured educational initiatives promote nurses' competene in KC interpretation.

Keywords: Educational program, Kangaroo care, Nurses and Midwives, Barriers.

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INTRODUCTION

Skin-to-skin contact (SSC) between a mother and her newborn immediately after birth is acknowledged as a standard practice in neonatal and maternal care. The procedure, also known as 'kangaroo care,' entails positioning the naked newborn on the mother's bare chest to establish direct physical contact immediately after birth. A variety of studies and international guidelines, including those from the World Health Organization (Hewedy et al.,

2023).Immediate skin-to-skin contact should commence within the initial 10 minutes post-birth and last uninterrupted for a minimum of 60 minutes this is called the golden hour (Li et al., 2024).

The advantages of skin-to-skin contact were first identified in the 1970s in Bogotá, Colombia, when a hospital experienced a shortage of incubators for premature infants. To substitute the incubators, two pediatricians encouraged mothers to engage in skin-to-skin contact with their infants as frequently as feasible,prompted by a lack of incubators for premature infants. KC has been demonstrated to provide various advantages, such as increased thermoregulation, diminished infant crying, increased maternal self-assurance, lower rates of postpartum hemorrhage (PPH), and decreased maternal depression and anxiety(Bejiqi et al.; Cañadas et al., 2022; Nitzan et al., 2025).Kangaroo care, often known as skin-to-skin holding, is a development care intervention that promotes neurobehavioral development. Neurobehavioral development has five dimensions: autonomic, motor, state, attention/interaction, and self-regulation(Landry et al., 2022).Kangaroo care boosts heart and respiratory function stability, reduces purposeless movements, improves behavioural state profiles, provides maternal contact during attention/interaction episodes, and allows for self-regulation behaviour expression. Kangaroo care meets some of the National Association of Neonatal Nurses' Infant and Family-Centered Developmental Care Guidelines' recommendations for handling, self-consoling/soothing, nonnutritive sucking, and parenting interventions(Immaculate, 2021).

One of the primary impediments to the implementation of KC is the absence of standardized protocols and guidelines within healthcare institutions. In numerous contexts, SSC is either inadequately enforced or not incorporated into standard obstetric policies, resulting in irregular application among providers(Kumar et al., 2016).Moreover, several hospitals maintain in emphasizing standard neonatal treatments (e.g., weighing, suctioning, and Apgar score) above initial maternal contact, according to the World Health Organization's recommendation(Ali et al., 2021; World Health Organization, 2017).In addition, in the absence of sufficient staffing or physical infrastructure, emergency preparedness or high-risk deliveries may result in deviations from KC protocols. The absence of private, designated KC areas and the overcrowding of labor spaces impede the intimate environment required for uninterrupted KC and contribute to a lack of privacy(Karimi et al., 2020).

Despite the documented benefits, the implementation of KC is often inadequate in various healthcare environments, especially in low- and middle-income nations.The disparity between evidence-based recommendations and clinical practice is frequently ascribed to complex and interconnected barriers.The factors include inadequate professional training for healthcare providers, limited awareness of KC protocols, understaffed maternity wards, excessive workloads, and the lack of standardized institutional policies(Abdulghani et al., 2020; Shayan et al., 2019).The optimal time for establishing unique interactions between a mother and her infant occurs within the initial hours post-birth. The initial hour post-delivery, characterized by skin-to-skin contact, facilitates interaction between the mother and the newborn. This approach improves the mother's ability to care for her child, thereby enhancing her self-worth and attachment.(Mejbil et al., 2018).The World Health Organization refers to KC as the act of laying a newborn in a prone position on the mother's tummy or bosom, which results in immediate ventral-to-ventral skin-to-skin contact. In the first 10 minutes following delivery, skin-to-skin contact occurs. From the instant of delivery until twenty-three hours post-birth, early skin-to-skin contact was defined. An continuous period of skin-to-skin contact should be maintained for a minimum of 60 minutes.(Organization, 2017).Before the WHO's definition,a consistent definition of KC was absent, potentially leading to considerable discrepancies in the definitions utilized throughout research. (Organization, 2017).There are numerous methods for determining the appropriate time to initiateKangaroo Care . Research has identified three primary categories of early skin-to-skin contact for healthy, full-term infants: immediate skin-to-skin contact, which occurs within the first minute of delivery; early skin-to-skin contact, which occurs within the first 24 hours after birth; and delayed skin-to-skin contact(Ciavarella, 2023).Moreover, neonates get numerous advantages, such as less crying, enhanced thermoregulation persisting during the initial days, and a reduction of the negative consequences linked to the "stress of being born."Research has shown thatKangaroo Care (KC) enhances the onset of breastfeeding and promotes exclusive breastfeeding, while decreasing the reliance for hospital formula supplements, thereby facilitating a more effective initial nursing experience and improved sucking ability (Séassau et al., 2023).Mothers are able to fully leverage on the opportunity for breastfeeding by employingKangaroo Care (KC) techniques. Additionally, the initiation of lactation in conjunction with KC at birth may facilitate the prevention of postnatal hemorrhage (PPH) by reducing the incidence and severity of this condition. Additionally, the global

reduction in maternal morbidity and mortality could be facilitated by the reduction in PPH rates(Ginnane et al., 2024).The potential for postpartum depressive symptoms in women to be effectively alleviated is demonstrated by a simple, natural, and promising technique: daily skin-to-skin contact between the mother and neonate. During KC, the mother places the unclothed infant, who is only wearing a diaper, on her bare bosom(Cooijmans et al., 2017).For premature or low-birth-weight infants, the KC technique was created as an alternative to incubators.(Carneiro et al., 2024),Research has consistently shown that daily Kangaroo Care (KC) in preterm neonates is associated with diminished maternal depressive symptoms.(Cooijmans et al., 2022).In addition to the possible effectiveness of KC on maternal postpartum depressed symptoms, KC may potentially confer further advantageous effects for the mother. Studies with preterm infants demonstrate that daily Kangaroo Care (KC) is associated with less maternal worry and stress, as reported by mothers.(Ulmer-Yaniv et al., 2023).Nurses frequently provide care for mothers and infants who are admitted to healthcare facilities, which is why they are instrumental in the promotion of KC to address newborn development in healthcare. Therefore, it is crucial to enhance their skills and abilities. A multifaceted approach is necessary to maintain the practice of KC, which includes the cultivation of positive interdepartmental communication, regular reinforcement through practical demonstrations, and comprehensive staff training programs.(Joseph, 2020).

Methodology

Design and Setting

A quasi-experimental study pre-test/post-test design was carried to assess nurses-midwives‟ knowledge regarding KC.It was conducted on the nurses who work in the maternity departments (labor rooms) of three hospitals under the Kirkuk Health Directorate: Kirkuk Teaching Hospital, Azadi Teaching Hospital, and Al-Naser Maternity and Child Hospital. The recruitment period spanned from December 12, 2024, to May 5, 2025.

Sample

Study sample A purposive non probability sampling technique was used to recruit 60 nurses in maternity (labor room)departments of the selected hospitals.

Inclusion Criteria: Nurses who agreed to participate, nurses with over two years of expertise in the labor room, nurses selected for morning shifts, and nurses working in the maternity (labor room) section were all suitable.

Exclusion Criteria

who refused to participate in the study, Possessed less than one year of experience.Nurses involved in the pilot study, those assigned to night shifts, and nurses not employed in maternity (labor room).

Methods of data Collection

Data were collected through a self-administered questionnaire that was structured.The questionnaire was developed through a review of the literature and previous research.(Mejbel et al., 2012; Omer, 2021; Turenne et al., 2016).

Part (1): Nurse Midwive Socio demographic

Include five items that address the following: age, marital status, educational background, place of domicile, and socioeconomic status.

Part (2): Functional characteristics

This section has seven questions pertaining to the functional characteristics associated with the study sample nurses, including job descriptions, years of service, years of experience in midwifery, specialized training in Socratic methods related to their employment, and work timeliness.

Part (3): Knowledge of nurses – midwives

This section concentrated on two domains evaluated by closed-ended items ("I know" or "I do not know"):

1-Nurses' and midwives' understanding of the relevance of Kangaroo Care(23 items)

2-Nurses' and midwives' understanding of the obstacles to the implementation of Kangaroo Care (7 items)

Tool Validity and Reliability

A panel of nine specialists confirmed the content validity of the instructional program and the survey instrument. Participants included a physician from the College of Medicine at the University of Kirkuk, a couple from the College of Nursing at the University of Kirkuk, two individuals from the College of Nursing at the University of Mosul, two representatives from the University of Baghdad, and a couple of practicing gynecologists. Cronbach's alpha was utilized to assess internal consistency, while Pearson's correlation coefficient was used to examine item relationships.

Data Analysis

Data and results were analyzed and interpreted using the Statistical Software for Social Sciences (SPSS), version 26.0. The computation of Mean (M), Standard Deviation (SD), Frequency (f), and Percentage (%) are basic components of descriptive data analysis. Statistical methodologies utilized in inferential data analysis include Cronbach's Alpha (α), the Pearson correlation coefficient (r), Spearman's Rank Correlation Coefficient, Point Biserial Correlation, and Wilcoxon Signed-Rank Test.

The Results

Table (1): The distribution of Nurse-Midwives by Socio-Demographic Characteristics

List	Characteristics		F	%
1	**Age (year) M±SD= 33.5 ± 7.7**	20 –29	24	40
		30 –39	22	36.7
		40 –49	12	20
		50 and more	2	3.3
		Total	***60***	***100***
2	**Marital status**	Married	33	55
		Unmarried	22	36.7
		Divorced	3	5
		Widowed	2	3.3
		Total	***60***	***100***
3	**Level of education**	Nursing Intermediate school	4	6.7
		Nursing preparatory school	15	25
		Midwifery Preparatory sch.	8	13.3
		Nursing Diploma	4	6.7
		Midwifery Diploma	11	18.3
		Bachelor	18	30
		Total	***60***	***100***
4	**Residency**	Urban	49	81.7
		Rural	11	18.3
		Total	***60***	***100***
5	**Perceived socioeconomic status**	Low	1	1.7
		Moderate	17	28.3
		High	42	70
		Total	***60***	***100***

F: Frequency, %, %: Percentage, M: Mean, SD: Standard deviation

Table (1) presents the demographic information of the 60 nurses participating in the study. The findings indicate that the predominant demographic of nurse-midwives consists of younger individuals, with forty percent of the overall population aged 20 to 29 years, followed by 37.7% in the 30 to 39 years age group. The mean age of nurse-midwives is 33.5 ± 7.7 years. My findings align with a research conducted in hospitals in Kirkuk city(Mehammed-Ameen et al., 2019). Who found that the majority of nurses are aged between 20 and 29 years, The results of the participants' outcomes indicated that the majority of nurse-midwives belonged to the younger age demographic, likely due to the profession's demanding nature, the direct transition from education, and the necessity for a sustainable workforce with extended career longevity. These findings align with the research conducted by (Hussein & Abbas, 2021),in Baghdad City/Iraq which indicated that over 20% of all nurse-midwives were in the ages of 21 and 27.The marital status variable is a consequence of the continuing study of the findings of patients' nurse-midwives. It indicates that over half

of the nurse-midwives are married, while one-third of them are still unmarried. This is due to the fact that the sample community considers this age to be the appropriate time for marriage. The result corresponds with a study conducted by (Hamood & Khairi, 2017) in Bagdad which found that most midwife was married with (47%) from total sample.

Reviewing the results of the level of education for nurse-midwives reveals that one-third of the sample has a bachelor's degree in nursing (30%), while one-quarter have graduated from nursing preparatory institutions (25%). My study agreement with a study conducted by (Shakor & Salih, 2020) in Kirkuk city hospitals they founded a (35%) of nurses have bachelor drgree in nursing. In controversial to this finding a study done by(Ali & Ghafel, 2022) found that over two-thirds of the total cohort had completed secondary education in midwifery. According to the current study, the majority of participants were classified as "Urban Residency," which is consistent with previous research done in Saudi Arabia by (Abdulghani et al., 2020). More than seventy-five percent of the survey participants were classified as possessing "high" or "moderate" economic status. This discovery corresponds with analogous research undertaken by (Esan et al., 2020) in Nigeria.

Table (2): Distribution of Nurse-Midwives according to their Professional Characteristics

List	Characteristics		F	%
1	**Job description**	Nurse	36	60
		Nurse-midwife	7	11.7
		Midwife	17	27.3
		Total	***60***	***100***
2	**Years of experience in nursing M±SD= 10 ± 6**	1 – 5	11	18.3
		6 – 10	26	43.3
		11 – 15	17	28.3
		16 – 20	0	0
		21+	6	10
		Total	***60***	***100***
3	**Years of experience in midwifery M±SD= 4.7 ± 4.6**	1 – 5	41	68.3
		6 – 10	13	21.6
		11 – 15	4	6.7
		16 – 20	1	1.7
		21+	1	1.7
		Total	***60***	***100***
4	**Training courses**	None	29	48.4
		1 – 3	23	38.3
		4 – 6	6	10
		7 +	2	3.3
		Total	***60***	***100***
5	**Practice in occupation**	Hospital only	38	63.3
		Public & private Hosp.	21	35
		Hospital & home	1	1.7
		Midwife's home	0	0
		Client's home	0	0
		Total	***60***	***100***
6	**Working shift**	Morning	60	100
		Night	0	0
		Total	***60***	***100***
7	**Interest to work in Midwifery**	No	24	40
		Yes	36	60
		Total	***60***	***100***

F: Frequency, %: Percentage, M: Mean, SD: Standard deviation

Table (2): Distribution of Nurse-Midwives according to their Professional Characteristics

The data analysis in Table (2) show the professional characteristics of nurse-midwives, The higher percentage of midwives and nurse is inferred from their years of nursing experience. About one third of the sample has a duration of

"6 to 10 years."The distribution of expertise among nurse-midwives is characterised by a higher percentage of practitioners with "1–5 years of midwifery experience." In Australia, this investigation aligns findings by (Sheehy et al., 2019)This study reveals that many midwives are either at the onset of their careers or have transitioned into midwifery after prior nursing experience. This may be due to the years of experience category representing a significant professional stage that combines work stability with the acquisition of new clinical skills, hence enhancing midwives' efficacy in providing quality care. This group is often preferred in healthcare employment due to its blend of expertise and comparatively reasonable labour expenses relative to other experience levels. The participants included nurses possessing at least five years of experience in hospitals affiliated with Mashhad Medical University. The stipulation of five years of experience originates from Benner, who deems it crucial for professional progression. They had 5 to 20 years of professional experience in Iranby(Amiri&Heydari, 2017). This period may have been deemed crucial for professional progress. The results demonstrate that the majority of proficient nurse-midwives commenced their careers in nursing prior to transitioning to midwifery. The advancement in this field has resulted in a greater accumulation of nursing experience relative to midwifery, underscoring the significant disparity in average years of experience between the two professions. About fifty percent of the individuals have not participated in training courses on skin-to-skin contact, which is a substantial proportion. Approximately one-third of them participated in "1 – 3" training courses. The results of the investigation are inconsistent with A study that was conducted by (Almutairi, 2022)in Saudi Arabi, that third of nurses did not receive training on KC during orientation, while 42.5% perceived KC guidelines and protocols as unclear and lacking comprehensiveness. This may because that nurse possessed a moderate understanding of KC, revealing significant correlations among their knowledge, attitudes, education, and the execution of KC practices. These finding agree with A study by (Abd Elhakm &Elbana, 2018) in Benha, Egypt. Shows that just 23% of nurses and midwives engaged in training courses aimed at enhancing their knowledge and practical skills by. The low participation rate may because a larger problem of inadequate training facilities or dedication to job development for Kangaroo Care (KC).This result contradict by A study (Adeli & Azmoudeh, 2016) in Iran. This cross-sectional study was conducted on 50 midwives working in hospitals of TorbatHeydariyeh, Iran in 2015, Over 90% of midwives identified training programs, service accessibility, and adequate facilities as significant factors in the effective implementation of KC.The participation' rate in training courses relevant to this vital practice can be ascribed to numerous primary issues, Insufficient Institutional Support For Continuing Education, there is a significantlack of institutional support from hospitals and healthcare organizations for the ongoing professional development of nurses and midwives. Hospital administrations frequently neglect to commit essential resources—be they financial or logistical—to support consistent and focused training programs. Moreover, personnel are infrequently allocated designated time away from clinical responsibilities to participate in these courses.Concerning interest for working in midwifery, more than half of nurse-midwives are responding their interest to work in midwifery, while more than third forty have no interest. these finding agree with A research conducted among preparatory students in Ethiopia indicated that merely 18.1% want to pursue a profession in midwifery. The reasons for the disinterest were a lack of enthusiasm for the field (49.4%), apprehension over blood exposure (17.4%), the view of the occupation as stressful (11.2%), excessive workload (3.7%), and inadequate information about the profession (0.2%), The perceived public disdain for the profession and the necessity of nightshift work constituted substantial obstacles(Tadesse et al., 2020) in Ethiopia.So, the very limited interest in a long-term career in midwifery , this may be linked to various causes and interrelated variables. The challenges encompass the emotionally and physically demanding elements of midwifery, frequently resulting in professional burnout; insufficient financial and professional rewards that fail to acknowledge the job's difficulty; inadequate methods for ongoing professional development, leading to job decline; and, in certain instances, midwifery being chosen as an additional or externally influenced career choice rather than a personally driven aspiration. These issues may collectively prevent midwives' commitment for years to the profession.

Table (3): Assessment of Nurses-Midwives' Knowledge about the Applicability of Kangaroo Care during Pretest and Posttest (N=60)

List	Knowledge about the Applicability of Kangaroo Care	Scale	Pre-test			Post-test		
			f (%)	M	Ass.	F (%)	M	Ass.
1	Nurses' midwives' knowledge about the preparation of the expectant mother	**Incorrect**	25(41.7)	.58	Fair	3(5)	.95	Good
		Correct	35(58.3)			57(95)		
2	Is it necessary to clarify the procedure for skin seam for the expectant mother?	**Incorrect**	35(58.3)	.42	Fair	4(6.7)	.93	Good
		Correct	25(41.7)			56(93.3)		
3	Is it necessary to obtain consent from the expectant mother before applying the skin seam necessary?	**Incorrect**	49(81.7)	.18	Poor	3(5)	.95	Good
		Correct	11(18.3)			57(95)		
4	Is it necessary for the delivery room to be at 27-28 degrees Celsius?	**Incorrect**	47(78.3)	.22	Poor	6(10)	.90	Good
		Correct	13(21.7)			54(90)		
5	Does the nurse prepare a headdress for the mother and a diaper for the newborn?	**Incorrect**	40(66.7)	.33	Poor	6(10)	.90	Good
		Correct	20(33.3)			54(90)		
6	Is it necessary to provide a clean blanket or sanitized sheet?	**Incorrect**	48(80)	.20	Poor	6(10)	.90	Good
		Correct	12(20)			54(90)		
7	Does the nurse prepare all the necessary tools for childbirth?	**Incorrect**	40(66.7)	.33	Poor	6(10)	.90	Good
		Correct	20(33.3)			54(90)		
8	Does the nurse support the mother during childbirth?	**Incorrect**	48(80)	.20	Poor	5(8.3)	.92	Good
		Correct	12(20)			55(91.7)		
9	Is it necessary to have an escort with the expectant mother at this stage?	**Incorrect**	45(75)	.25	Poor	6(10)	.90	Good
		Correct	15(25)			54(90)		
10	Is it necessary to clean the mother's abdomen and chest before skin contact?	**Incorrect**	49(81.7)	.18	Poor	7(11.7)	.88	Good
		Correct	11(18.3)			53(88.3)		
11	Is it necessary to clean the face of a newborn immediately after birth?	**Incorrect**	48(80)	.20	Poor	3(5)	.95	Good
		Correct	12(20)			57(95)		
12	Is the umbilical cord cut after the pulse stops in it?	**Incorrect**	42(70)	.30	Poor	4(6.7)	.93	Good
		Correct	18(30)			56(93.3)		
13	Is the body of the newborn dried and cleaned?	**Incorrect**	38(63.3)	.37	Fair	5(8.3)	.92	Good
		Correct	22(36.7)			55(91.7)		
14	Should the nurse calculate the Abkar Score schedule during the first five minutes of birth?	**Incorrect**	48(80)	.20	Poor	7(11.7)	.88	Good
		Correct	12(20)			53(88.3)		
15	Does the nurse place the newborn on his mother's chest and abdomen?	**Incorrect**	41(68.3)	.32	Poor	7(11.7)	.88	Good
		Correct	19(31.7)			53(88.3)		
16	Does the nurse cover the mother and her newborn with one cover so that the mother's skin is in contact with the baby's skin?	**Incorrect**	47(78.3)	.22	Poor	4(6.7)	.93	Good
		Correct	13(21.7)			56(93.3)		
17	Should the nurse encourage the mother to breastfeed the baby?	**Incorrect**	41(68.3)	.32	Poor	4(6.7)	.93	Good
		Correct	19(31.7)			56(93.3)		
18	Does the nurse encourage the mother to change her clothes after giving birth?	**Incorrect**	43(71.7)	.28	Poor	5(8.3)	.92	Good
		Correct	17(28.3)			55(91.7)		
19	Does the nurse monitor cyanosis in the limbs of the newborn?	**Incorrect**	49(81.7)	.18	Poor	4(6.7)	.93	Good
		Correct	11(18.3)			56(93.3)		
20	Is it necessary to assess the health status of the breast before breastfeeding?	**Incorrect**	48(80)	.20	Poor	5(8.3)	.92	Good
		Correct	12(20)			55(91.7)		
21	Does the nurse measure the mother's pulse and blood pressure?	**Incorrect**	46(76.7)	.23	Poor	6(10)	.90	Good
		Correct	14(23.3)			54(90)		
22	Is it necessary to monitor the screaming of the newborn?	**Incorrect**	46(76.7)	.23	Poor	10(16.7)	.83	Good
		Correct	14(23.3)			50(83.3)		
23	Is it necessary to monitor the mother's breathing while placing the newborn on her chest?	**Incorrect**	51(85)	.15	Poor	9(15)	.85	Good
		Correct	9(15)			51(85)		
Total Average				***.26***	***Poor***		***.91***	***Good***

Ass: Assessment, M: Mean, (Poor= 0-0.33, Fair= 0.34-0.66, Good= 0.67-1).

Table (3): Assessment of Nurses-Midwives' Knowledge about the Applicability of KangarooCare during Pretest and Posttest

The results Table (3) indicates the notable enhancement in nurses' and midwives' understanding of the applicability of Kangaroo Care. The pretest revealed a total average knowledge score of 0.26, categorised as inadequate, with incorrect responses dominating most items. For example, only 18.3% of participants correctly understood the necessity of cleaning the mother's abdomen and chest before Kangaroo Care, and merely 15% acknowledged the importance of monitoring the mother's breathing when the newborn is placed on her chest.These findings support the effectiveness of targeted education in equipping healthcare professionals with the procedural knowledge necessary for KC application. (World Health Organization, 2017). The knowledge gap is caused by insufficient training and institutional constraints in newborn care. The excessive focus on obstetric interventions, such as deliveries, undermines comprehensive maternal-infant care, resulting in the neglect of essential practices like Kangaroo Care (KC) and consequently, inadequate compliance and diminished awareness of its importance among nursing and midwifery personnel.The current research demonstrated a notable enhancement in the knowledge of nurses and midwives after the educational intervention, especially concerning the proper information related to Kangaroo Care (KC) and the identification of critical clinical barriers. These findings are consistent with previous studies done in comparable healthcare contexts.(Ali & Ghafel, 2022)show a significant correlation between insufficient clinical training and the inadequate implementation of current neonatal care protocols, particularly in resource-constrained hospital environments. This underscores that disparities in staff education are a significant factor influencing inconsistent or ineffective practices in newborn care.

Table (4): Assessment of Nurses-Midwives' Knowledge about the Barriers of Non-Application Kangaroo Care for the Newborn during Pretest and Posttest (N=60)

List	Knowledge about the Barriers of Non-Application Kangaroo Care	Scale	Pre-test			Post-test		
			f (%)	M	Ass.	f (%)	M	Ass.
1	Apgar scores less than 7 scores of newborns	**Incorrect**	52(86.7)	.13	Poor	7(11.7)	.88	Good
		Correct	8(13.3)			53(88.3)		
2	The mother has a chronic disease (blood pressure, diabetes….)	**Incorrect**	44(73.3)	.27	Poor	5(8.3)	.92	Good
		Correct	16(26.7)			55(91.7)		
3	Abnormal delivery (CS, foresees birth ….)	**Incorrect**	40(66.7)	.33	Poor	5(8.3)	.92	Good
		Correct	20(33.3)			55(91.7)		
4	Maternal fatigue or discomfort during labor	**Incorrect**	46(76.7)	.23	Poor	4(6.7)	.93	Good
		Correct	14(23.3)			56(93.3)		
5	The mother has an infectious disease (hepatitis, tuberculosis...)	**Incorrect**	46(76.7)	.23	Poor	7(11.7)	.88	Good
		Correct	14(23.3)			53(88.3)		
6	Lack of staff awareness about its SSC importance	**Incorrect**	46(76.7)	.23	Poor	4(6.7)	.93	Good
		Correct	14(23.3)			56(93.3)		
7	Insufficient time during shifts to facilitate SSC	**Incorrect**	46(76.7)	.23	Poor	4(6.7)	.93	Good
		Correct	14(23.3)			56(93.3)		
Total Average				***.24***	***Poor***		***.91***	***Good***

Ass: Assessment, M: Mean, (Poor= 0-0.33, Fair= 0.34-0.66, Good= 0.67-1).

Table (4): Assessment of Nurses-Midwives' Knowledge about the Barriers of Non-Application Kangaroo Care for the Newborn during Pretest and Posttest

The results in Table (4) indicate a significant increase in the knowledge of nurses-midwives regarding the obstacles to the non-application of Kangaroo Care for newborns. However, only thirteen-point three percent of the nurses correctly identified low Apgar scores as a barrier, and over half of the nurses were unaware of the potential impact of insufficient staff awareness and time on skin-to-skin contact implementation. A substantial increase in correct responses was observed in the posttest results, with scores improving from poor to excellent across all items, resulting in a total average score increase from 0.24 to 0.91.

These discrepancies are consistent with a study conducted in Boston by (Boundy et al., 2016) in Boston, which found that institutional obstacles, including inadequate staff training and an excessive caseload, impede SSC compliance. Additionally, these results are consistent with previous research, as indicated by(Turenne et al., 2016). This confirms

that these educational programs can facilitate evidence-based changes in nursing practices regarding skin-to-skin contact during birth. These results correspond with (Crenshaw, 2014) in the United Kingdom, The fact that over fifty precent of participants were unaware of staff-related issues suggests a disconnect between theoretical considerations in clinical practice and the realities of the workplace. It is common for maternity units, especially those with low resources, to struggle with time limits, staffing shortages, and heavy workloads; nonetheless, these issues are more often seen as obstacles than "difficulties." The normalisation of systemic limits and their subsequent disdain as changeable hurdles may be the cultural cause of this knowledge gap.

A substantial number of participants oblivious to staff-related obstacles indicate a disparity between theoretical comprehension and real constraints. In some clinical settings, especially those facing understaffing, the execution of SSC may be delayed or overlooked due to competing demands. However, if healthcare professionals are not directed to critically evaluate structural obstacles, they may fail to recognize them as such (Pulse & DiCioccio, 2021).

The educational intervention likely decreases this weakness by directly targeting workplace-related obstacles, like workflow issues and insufficient staffing. The results suggest that the problem lies not in a lack of enthusiasm among nurse-midwives, but in the lack of organised, scientific training on the specifics of KC implementation. To rectify this deficiency, it is necessary to reassess training approaches, offer a thorough examination of both benefits and obstacles, and foster critical analysis concerning the influence of systemic factors on clinical treatment. Educational interventions must provide guidance not only on the acts to be undertaken but also on the time, logic, and contextual elements influencing those actions. Furthermore, the initial low awareness identified in this study regarding standardized KC procedures aligns with the findings of (Abdulrahman et al., 2024)which indicated that a majority of healthcare providers were insufficiently aware of standardized neonatal practices. These findings highlight the necessity for ongoing professional development and institutional support to facilitate the effective implementation of critical neonatal care practices, including Kangaroo Care.

Conclusion

The results of this study indicate that the educational program considerably improves nurse-midwives' understanding of Kangaroo care(KC), its implementation, and the related obstacles. The findings underscore the significance of ongoing training and institutional backing for the successful execution of (KC) in clinical settings.

Recommendation

1. The study concluded that there was an enhancement in nurses' and midwives' understanding of the obstacles to the implementation of Kangaroo Care for newborns post-intervention. Pretest results indicated inadequate knowledge regarding all evaluated barriers, with most participants failing to accurately recognize factors such as low Apgar scores, maternal chronic or infectious diseases, abnormal delivery methods, and staff-related limitations.
2. Application of the Kangaroo care (KC) into the hospital system's regulations will streamline labor room procedures. formulating a plan for continuing education programs to improve the clinical skills of nurses and midwives on a regular foundation, as well as improving their knowledge and performance in this field.

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