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Dr. Shimmaa Mansour Moustafa Mohamed
Assistant Professor,
Department of Nursing,
College of Applied Medical
Sciences, University of Bisha,
Bisha, Saudi Arabia

Dr. Sudha ARaddi
Assistant Professor,
Department of Nursing,
College of Applied Medical
Sciences, University of Bisha,
Bisha, Saudi Arabia

Mohammed Faye Alharbi
Assistant Professor, College of
Nursing, Taif University, P.O.,
Taif, Kingdom of Saudi Arabia

Sivapriya S
GD Matron, MH Wellington,
Tamil Nadu, India

Corresponding Author:
Shimmaa Mansour Moustafa Mohamed
Assistant Professor,
Department of Nursing,
College of Applied Medical
Sciences, University of Bisha,
Bisha, Saudi Arabia

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A study to assess the effectiveness of structured video assisted teaching programme on knowledge and attitude regarding kangaroo mother care among final year nursing students of Bisha University

Shimmaa Mansour Moustafa Mohamed, Sudha ARaddi, Mohammed Faye Alharbi and Sivapriya S

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Abstract

Background: Kangaroo Mother Care (KMC) is an evidence-based technique designed to improve neonatal health by fostering direct skin-to-skin contact between the mother and the newborn. Despite its benefits, gaps in knowledge and attitude towards KMC among healthcare providers persist. This study evaluates the impact of a structured video-assisted teaching programme on enhancing the knowledge and attitudes of final-year nursing students towards KMC.

Methods: A quantitative, pre-experimental one-group pre-test-post-test design was employed. Fifty final-year nursing students from Bisha University were selected through purposive sampling. A structured teaching programme, utilizing video demonstrations, covered KMC's definition, components, procedure, and benefits. Data were collected using a multiple-choice questionnaire and a Likert attitude scale before and after the intervention. Statistical analysis was conducted using paired t-tests to assess the intervention's effectiveness.

Results: Pre-test results showed that all participants had average knowledge, with none scoring in the "good knowledge" category. Post-intervention, 58% achieved "good knowledge" scores, with a significant mean improvement of 11.3 ($t = 25.71, p < 0.0001$). Similarly, while only 8% demonstrated "good attitude" in the pre-test, this figure rose to 78% post-intervention, with a significant mean increase of 10.2 ($t = 33.5, p < 0.005$).

Conclusion: The structured video-assisted teaching programme significantly improved the knowledge and attitudes of nursing students towards KMC. These findings underscore the value of integrating such innovative teaching methodologies into nursing education to enhance neonatal care practices and outcomes.

Keywords: Kangaroo mother Care, nursing education, video-assisted teaching, neonatal health, structured teaching programme, preterm care

Introduction

Kangaroo Mother Care seeks to provide restored closeness of the newborn with mother by placing the neonate in direct skin-to-skin contact. The mother's body responds to the needs of the infant directly by preventing infection, helping regulation of body temperature smoother adjusts her milk to the nutritional and immunological needs of her fragile neonate and enable neonate to sleep in the warmth and love of the mother. During 1970s, Drs. Rey and Martinez developed kangaroo mother care as a method of ambulatory care for neonates in their hospital where there had been high morbidity and mortality among newborns due to overcrowding and sepsis. The dramatic improvement in the outcome of the Bogota patients prompted investigation from the World Health Organization, UNICEF (United Nations Children's Fund) and North American, European and other health services around the world. Thereafter they brought about a conclusion of implementing kangaroo mother care into practice in majority of the health care facilities worldwide.

Dr. Nils Bergman, Medical Superintendent of Mowbray Maternity Hospital in Cape Town, South Africa (2016), has been researching KMC for twelve years. He revealed that restoration of the original model of the infant-mother early care rather than our present incubator, bottle and feeding formula model can result in happier and healthier neonates.

On recent findings in neuro-endocrinology (2017) Bergman, Professor of Liverpool university Italy, explains that it is the neonate by itself begins and directs the attachment process with the mother, that is aided by skin contact which acts as a mutually a stimulating system to which both respond by altering hormonal outputs. It also promotes lactation that allows adequate breast feeding which enhances nutritional status of the neonate and thereby leading to desired weight gain.

Background of the study

The World Health Organisation in its report (2016) recommended improvement of essential new born care practices at birth in order to reduce neonatal morbidity and mortality. A sustainable model is necessary for tackling infant mortality for better new born survival. This can be provided through Kangaroo mother care through its four vital components that add to better survival of the new born providing chances for better health status of the infant. Always knowledge will have greater impact on attitude and practices. Thus knowledge regarding kangaroo mother care should be promoted in the pre service training period among the nursing students to have positive impact on practice and attitude towards taking care of preterm babies during their postings in maternity units and NICU. Therefore, it is important that specific education and training on kangaroo mother care is necessary to bridge the gap between the knowledge of nursing students regarding new born care, breast feeding, infection prevention and thermal control in newborns and practice it in health care settings.

Need of the study

In 2020, neonatal mortality for Saudi Arabia was 3.5 deaths per 1000 live births. Between 2001-2020, neonatal mortality rate of Saudi Arabia was declining at a moderating rate to shrink from 10.8 deaths per 1000 live births in 2001 to 3.5 deaths per 1000 live births in 2020. Some 25000 babies are born prematurely in Saudi Arabia each year, according to a mid-2020 report from the General Authority for Statistics. Approximately 15 million babies are delivered preterm worldwide each year, accounting for about one in 10 all babies born.

By this study, the effectiveness of video assisted structured teaching programme can be evaluated. The structured video assisted teaching programme will have an impact on the level of knowledge and attitude regarding Kangaroo mother care among the final year B Sc students and on Kangaroo mother care practices which will ultimately lead to better survival of the neonates in a healthy manner. It will help them to provide better care in prevention of hypothermia, providing adequate breast feeding, prevention of infection and to promote bonding between mother and neonate, thereby reducing the mortality of neonate.

Statement of the Problem

A study to assess the effectiveness of structured video assisted teaching programme on knowledge and attitude regarding Kangaroo mother for Final year B.Sc Nursing students of Bisha University, KSA.

Objectives of the study

To assess the level of knowledge and attitude regarding Kangaroo mother care among final year B.Sc Nursing Students

1. To evaluate the effectiveness of structured video assisted teaching programme on knowledge and attitude regarding Kangaroo mother care among final year B.sc Nursing students.

Operational Definitions

Structured Video Assisted Teaching Programme: A structured video assisted teaching programme was implemented by lecture cum demonstration method, facilitated by the system of recordings and reproducing the contents using the video and models. The content of the structured video assisted teaching programme included definition, components, prerequisites, benefits, eligibility criteria for neonate, preparation of neonate and mother for kangaroo mother care, steps of procedure and duration, criteria for discontinuation and special considerations to be followed during kangaroo mother care.

Kangaroo mother care is a skin to skin contact technique practiced immediately after birth, in which the neonate dressed with cap, diaper and gloves on the extremities and placed in between mothers breast in upright position with head supported on mothers chest to one side with slight extension with hip flexed and arms on the mothers chest, abdomen of the neonate placed at epigastrium of mother, supported by a binder.

Assumptions

It is assumed that

- a. The final year B.Sc. Nursing students will have some knowledge and attitude towards Kangaroo Mother care.
- b. The structured video assisted teaching programme will enhance the knowledge and Practice skills of kangaroo mother care among the final year B.sc Nursing students and also increase their confidence in handling neonates.

Variables

Dependent Variables: In this study dependent variables were Knowledge and attitude regarding Kangaroo Mother Care among final year B.Sc Nursing students of Bisha University.

Independent variable: In this study independent variable was Structured Video Assisted Structured Teaching Programme regarding kangaroo mother care.

Hypothesis

- **H0 (1):** There is no difference between pre-test and post-test level of knowledge regarding Kangaroo Mother Care among final year B.Sc. Nursing students those were subjected to structured video assisted teaching programme.
- **H0 (2):** There is no difference between pre-test and post-test level of attitude scores regarding Kangaroo Mother Care among final year B.Sc. Nursing students who were subjected to structured video assisted teaching programme.

Delimitations

The study is delimited to

- a. Regular students from Final year Nursing of university of Bisha
- b. Willingness to participate in study

Research Methodology

- **Research Approach:** A Quantitative research approach was used for this study.
- **Research design:** Pre experimental with one group pre and post-test.
- **Study setting:** Dept of Nursing, Bisha University
- **Target Population:** Final year Nursing students studying in Bisha University
- **Accessible Population:** Final year Nursing students attending college regularly at Bisha
- **Sampling Technique:** Purposive Sampling Technique.
- **Sample size:** 50 students

Selection and Description of the Study Instrument

The researcher constructed the tool based on the literature review and opinion from experts. The content validity of the tool was established by the nursing and medical experts. The suggestions of the experts were incorporated and the tool was modified accordingly. The tool was then finalised based on Content Validity Index. Items with more than CVI 0.80 included.

The reliability of the structured tool to assess the knowledge and attitude was elicited by the test re-test method. The ‘r’ value was computed by Karl Pearson’s co-efficient formula and it was found to be 0.85 for both knowledge and attitude scales. This indicates that the tools are highly reliable.

Tool consisted the following Sections

Section A: Demographic Variables

The demographic variables consisted of 2 items, age, level of class of the nursing students.

Section: A

Part-A included 25 multiple choice questions related to knowledge on Kangaroo Mother Care. The questions were constructed relevant to definition, components, procedure and benefits of Kangaroo Mother Care. Each correct answer

was given two marks and wrong options 0 marks. Hence maximum score is 50 and minimum 0

Section: B

It is Five Point Likert Attitude Scale that consisted of 10 items that included both positive and negative statements to assess the attitude towards Kangaroo mother care. Maximum score was 50 and minimum 10 as per scoring. Strongly Agree -5. Agree -4, Neutral 3, Disagree-2, Strongly disagree-1 and reverse scoring for negative statements.

Data Collection Procedure

The data collection procedure included the following steps throughout the study:

- The Ethical Committee approval was obtained from the institutional ethical committee of department of Nursing, Bisha
- The researchers selected 50 samples, those who met the inclusive criteria by purposive sampling technique. Informed consent was obtained from all the samples. Pre-test was done for the 50 students together.
- On day one, collection of demographic data, assessment of level of knowledge and attitude regarding Kangaroo Mother Care was done using structured multiple choice questionnaire and Five point Likert attitude scale respectively.
- The structured video assisted teaching programme was implemented for the samples on day one for 45 min by lecture cum demonstration method to impart the knowledge on Kangaroo Mother Care. On eighth day post-test was done to assess the level of knowledge and attitude regarding Kangaroo Mother Care.
- The data collected were coded and analysed by using descriptive and inferential statistics.

Analysis and Results

Table 1: Distribution of students based on Pre & Post-test knowledge score in study group and comparison of Pre and post-test knowledge to assess the effectiveness of video assisted teaching programme. n = 50

Knowledge score	Pre Test Knowledge Score				Post Test Knowledge Score				Mean diff SD	t value	P Value
	f	%	Mean	SD	f	%	Mean	SD			
0 – 20 (Poor)	0		29.96	4.44	0		41.4	3.33	11.3 3.62	25.71	0.0001
21 – 40 (Average)	50	100			21	42					
41 – 50 (Good)	0				29	58					

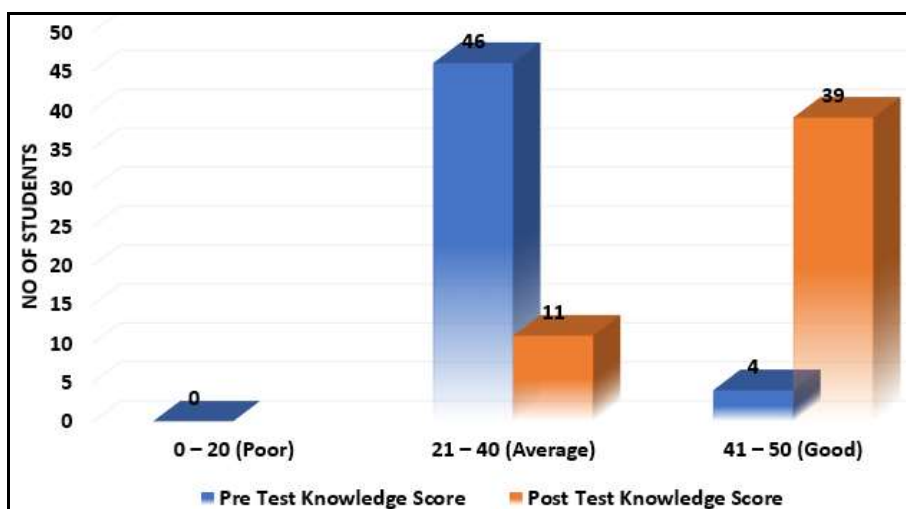


Fig 1: Comparison of pre & post-test knowledge score

In the above table and Fig knowledge scores are categorised as 0 -20 poor knowledge, 21-40 average knowledge and 41-50 as good knowledge. Based on this categorization all the students are in the category of average or good knowledge All the students had average knowledge in pre-test. They have shown tremendous improvement in post-test as 58%

student scored more than 41 marks in post-test. t value calculated to compare the mean difference between pre and post test score. Calculated t value is 25.71 and p value 0.0001. As the p value is <0.05 there is a significant difference between pre and post test score which indicates the effectiveness of structured video assisted programme.

Table 2: Distribution of students based on Pre & Post-test knowledge score in study group and comparison of Pre and post-test knowledge to assess the effectiveness of video assisted teaching programme

Attitude score	Pre Test Attitude Score				Post Test Attitude Score				Mean diff SD	t value	P Value
	f	%	Mean	SD	f	%	Mean	SD			
0 – 20 (Poor)	0		33.44	4.02	0		43.95	3.35	10.2	33.5	0.005
21 – 40 (Average)	46	92			11	22			3.4		
41 – 50 (Good)	4	8			39	78					

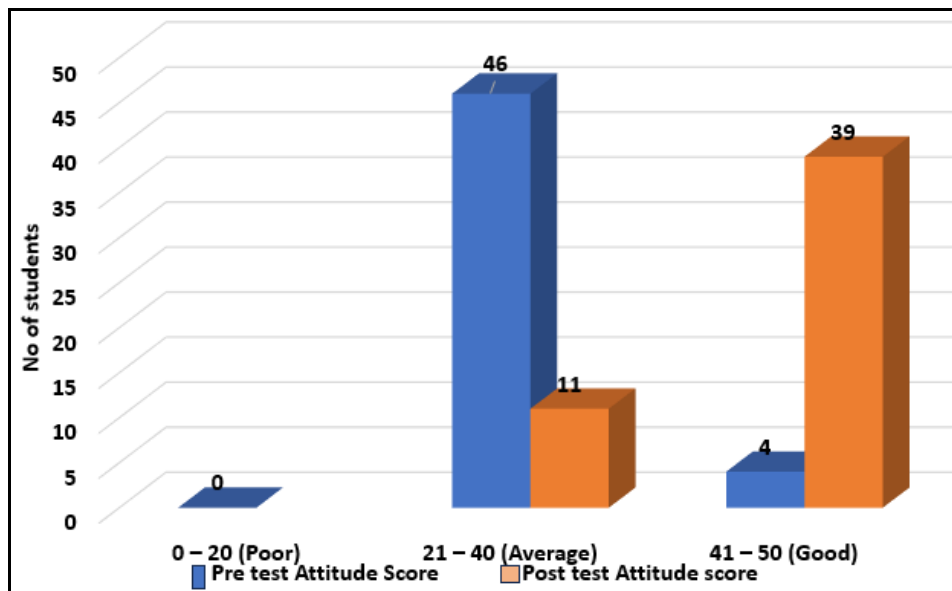


Fig 2: Comparison of Pre & Post Attitude Score

In the above table and Fig attitude scores are categorised as 0 -20 poor attitude, 21-40 average attitude and 41-50 as good attitude. Based on this categorization all the students are in the category of average or good attitude Majority of students had average attitude in pre-test. They have shown tremendous improvement in post-test as 78% student scored more than 41 marks in post-test. t value calculated to compare the mean difference between pre and post test score. Calculated t value is 33.5 and p value 0.005. As the p value is <0.05 there is a significant difference between pre and post test score which indicates the effectiveness of structured video assisted programme.

Main Findings

All the students had average knowledge in pre-test. They have shown tremendous improvement in post-test as 58% student scored more than 41 marks in post-test. t value calculated to compare the mean difference between pre and post test score. Calculated t value is 25.71 and p value 0.0001. As the p value is <0.05 there is a significant difference between pre and post test score which indicates the effectiveness of structured video assisted programme. Majority of students had average attitude in pre-test. They have shown tremendous improvement in post-test as 78% student scored more than 41 marks in post-test. t value calculated to compare the mean difference between pre and

post test score. Calculated t value is 33.5 and p value 0.005. As the p value is <0.05 there is a significant difference between pre and post test score which indicates the effectiveness of structured video assisted programme.

Discussion

The findings of this study demonstrate the significant effectiveness of a structured video-assisted teaching program in improving both knowledge and attitudes of students regarding Kangaroo Mother Care (KMC). The results align with existing evidence in the field of nursing education, particularly in the context of video-assisted teaching strategies.

The improvement in knowledge, with 58% of students scoring above 41 marks in the post-test, highlights the role of visual and auditory learning in fostering better understanding of concepts. Recent studies emphasize the effectiveness of video-assisted teaching in nursing education due to its ability to simplify complex topics, promote retention, and provide a consistent learning experience. For instance:

A study by Sharma *et al.* (2022) [3] reported that nursing students who underwent video-based training on neonatal care showed a 60% improvement in post-test knowledge scores compared to traditional lecture methods.

Similarly, Chaudhary *et al.* (2021) [4] found video-assisted

programs to be particularly beneficial in skill-based learning areas like KMC, where visual demonstrations enhance the comprehension of techniques and procedures. The structured video content likely catered to different learning styles, enabling students to revisit the material and consolidate their understanding, which could explain the statistically significant improvement ($t = 25.71$, $p = 0.0001$). The substantial improvement in attitudes, with 78% of students scoring above 41 marks in the post-test, further underscores the importance of using video-assisted methods for behavioural and perceptual changes. Attitude formation in nursing education often requires experiential learning, which video-assisted programs can mimic effectively. Supporting evidence includes:

A study by Ramesh *et al.* (2023) ^[5] demonstrated that students exposed to video-assisted teaching on patient-centred care showed improved empathy and readiness to adopt best practices in clinical settings.

Patel and Desai (2022) ^[6] also highlighted that video interventions helped nursing students develop a positive attitude toward KMC, citing increased awareness of its benefits for neonatal health and maternal bonding.

Conclusion

The findings are consistent with the principles of Cognitive Theory of Multimedia Learning, which posits that combining verbal and visual information enhances cognitive processing. The use of video-assisted teaching aligns with this theory by engaging students through interactive and visually rich content, making abstract concepts like KMC more tangible and relatable. Given the significant improvements in both knowledge and attitudes, integrating video-assisted teaching programs into nursing curricula can be a transformative approach for educating students on critical topics such as KMC. These programs can serve as effective supplements to traditional teaching methods, particularly in areas requiring visual demonstration and skill acquisition.

The structured video-assisted teaching program proved to be an effective educational intervention, significantly enhancing knowledge and attitudes toward KMC among nursing students. These findings corroborate recent evidence supporting video-assisted teaching strategies in nursing education and highlight their potential for widespread implementation in academic and clinical training settings.

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