



MEDICAL EDUCATION IMPLICATION ON KNOWLEDGE, ATTITUDE, PRACTICES AND BARRIERS TO IMPLEMENTATION OF NON- PHARMACOLOGICAL PAIN MANAGEMENT DURING LABOR

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Abstract

A Study to Evaluate the Effectiveness of knowledge, attitude and practice of health care providers on non-pharmacological pain management and its barriers during labor using non-experimental cross sectional descriptive study design and used a structure questionnaire to collect data from a sample of the population. The tool consists of self-administer structured questions to assess the knowledge, three point Likert scale to identify the attitude and checklist to determine the practice and barriers for using non-pharmacological pain management during labor. The majority of the health care providers' have inadequate knowledge regarding non-pharmacological pain management during labor. Health care providers have a positive attitude towards non-pharmacological pain management during labor. Most of the health care providers practice massaging, breathing exercise and encourage different laboring positions during labor. The main barriers were lack of time, lack of knowledge and patient unwillingness. The management of mothers' pain in labor is uncomprehensive. Finally, the health care providers to expose their knowledge and training program of non-pharmacological pain management during labor.

Keywords: Knowledge; Attitude; Barriers; Health care providers; Non-pharmacological; Pain management during labor

1. a. Introduction

Childbirth, however fulfilling, can be a very painful experience for women. In many High Income Countries (HIC), pain relief in labor is considered an essential part of intra-partum care and all women have the choice of and access to a range of pain relief options for labor and delivery. As the experience of pain in labor is subjective and differs from woman to woman, all woman should have a choice according to her preference and individual circumstances (National Institute for Health Clinical Excellence, 2014). Labor and birth are enormous emotional and physiologic accomplishments in life. It is one of the most marvelous and memorable segment in a woman's life. It does not really matter if the child is first, second or the third one. Each experience is unique and calls for a celebration (Dawley, 2000). The world Health Organization (WHO, 1997) defines normal labor as low risk throughout, spontaneous in onset with fetus presenting by the vertex, culminating in the mother and infant in good condition following birth. During the process of giving birth to new life, the mother has to undergo enormous pain. Labor pain is an unpleasant, complex, highly individualized phenomenon with both sensory and emotional components. Childbirth while primarily a joyful event predisposes the mother to one of the most severe forms of pain ever reported (Sr. Bartholomea Joseph, 2012). For several decades, childbirth educators have focused on the alleviation or reduction of pain and suffering during the childbearing experience. A wide array of non-pharmacological pain relief measures, as well as pharmacological interventions, is presently available to women in labor. Relaxation, breathing techniques, positioning/movement, massage, hydrotherapy, hot/cold therapy, music, guided imagery, acupressure, and aromatherapy are some self-help comfort measures women may initiate during labor to achieve an effective coping level for their labor experience (Nichols and Humenick, 2000). Non-pharmacological or natural therapies are methods that help decrease the pain. These therapies do not involve taking medicines. People have used "natural" ways to help with pain and healing from the very beginning of time. Non-pharmacologic interventions include cognitive behavioral therapy, relaxation therapy, biofeedback, patient education, self-management, and social support interventions. These types of interventions aim to change behavior, cognitions, and emotions by targeting the psychosocial processes that are implicated in the perceptions and response to pain. There is good evidence that

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these interventions can be effective in managing pain, particularly in relation to the cognitions surrounding pain; this, however, is predominantly in the short term (Demir, 2012; Reuters, 2012; James *et al.*, 2011). The health care providers should have knowledge of the use of non-pharmacological approaches such as the use of hot and cold mechanisms, acupuncture, massages and breathing measures among others employed in pain management. In addition to the areas of pain management required of a nurse, knowledge of the existing standards of pain management as well as the already established recommendations is considered to be vital, as nurses have the potential to play a vital role in pain management and education. A major prerequisite of effective care delivery is nurses who are prepared at a fundamental level of current knowledge, competence and confidence in understanding and managing pain. A pathway is created with the development of this knowledge and a skills framework which will promote consistent evidence-based practice and will thus contribute to improved health outcomes for the sufferer/s (King, 2011; Kipkorir, 2011).

b. Purpose for the Study

Childbirth has a deep significance not only to mother and her partner but also to the whole family. It is a profound physiological, psychosocial and spiritual event. It is this joy and expectation from the entire family that drives the mother to face the pain and all the suffering associated with it (Sr. Bartholomea Joseph, 2012).

The management of labor pain is one of the main goals of maternity care. Although pain and suffering occur together, one may suffer without pain or have pain without suffering. The goal of eliminating labor pain not only requires pain medication but also require other techniques/modalities to preserve health and maintain coping strategies. This requires highly skilled personnel to control any undesirable side effects. The effectiveness of most widely used alternative modalities is discussed with a view to educate the primary care providers, the midwives (Bolding and Simkin, 2004). The investigator's previous clinical experience and also many studies conducted in different settings show that alternative modalities are effective to relieve pain during labor. With the effectiveness of various alternative modalities proved by different studies, the investigator wants to assess the knowledge, attitude, and practice and to find out the barriers that prevent the health care providers from using non pharmacological pain management during labor.

2. a. Methodology

2.1 Study Design

This study employed a non-experimental cross-sectional descriptive survey design and used a structured questionnaire to collect data from a sample of the population at a specific point in time and determined relationships among variables of interest.

2.2 Study site

This study was conducted in medical institution providing health care services in Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu, Kenya.

2.3 Study population and Sample

To achieve the objectives of this study the research target population for all health care providers in Jaramogi Oginga Odinga Teaching and Referral Hospital. The accessible population in labor room as follows: Staff nurses - 24, Student nurses - 73, Medical officers - 5, Intent - 3 and Clinical officers - 4. The total was 119.

2.3.1 Inclusion Criteria

The study included all health care providers and maternity student nurses working in the selected hospital and who fulfill the inclusion criteria.

- Health care providers working in labor ward.
- Student nurses that are studying the maternity course and are then posted in the same.
- Health care providers and student nurses who are willing to participate in the study.

2.3.2 Exclusive Criteria

- Health care providers who are on annual leave.
- Those who are not available during data collection period.

2.4. Sampling Techniques and Sampling Procedure

A census sampling (probability and non-probability) was used to gather the information from the health care providers regarding non-pharmacological pain management during labor.

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Self-administered questions on knowledge, attitude, practice and barriers regarding non-pharmacological pain management during labor were given to the health care providers who were asked to complete the self-administered questions during their break time, so as not to interrupt client care and other daily duties.

2.5. Data Collection Instruments

The data collection instrument used in this study is a self-structured questionnaire which was compiled by the researcher by using review of literature and the text books.

Section A: Demographic data of the respondents.

Section B: Consist of parts I to XII, which are knowledge questions on general information regarding labor, non-pharmacological pain management during labor like Aromatherapy,

Massage, Breathing Exercise, Inter-dermal water blocks, Hydrotherapy, Continuous labor support, Movement and Positioning, Acupressure, Heat and Cold application and Music therapy.

Section C: Three point "Likert scale" for measuring the respondents attitude through statements will be used.

Section D: Check list was used to determine the practice of the health care providers on non-pharmacological pain management during labor.

Section E: Check list was used to determine the barriers for using non-pharmacological pain management during labor.

Section F: Reviewed the curriculum to check the medical training education implementation of non-pharmacological pain management during labor.

2.6. Data Analysis Procedures

The data in the questionnaires were to first cleaned by removing those that are not correctly filled in, especially section A that deals with the demographic data of the participants including: age, gender, position, etc. After data cleaning, the remaining questionnaires were subject to further analysis. The completed coded data was entered into the computer using Statistical Package for Social Sciences (SPSS Version 21.0). Descriptive statistics options are mainly utilized to analyze the data into mean, median,

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mode and standard deviation. The results from this study were presented in frequency distribution tables.

c. Validity and Reliability

(i). Validity

After constructing the questionnaire by modifying it based on review of recent literature, the researcher sought opinion from the supervisors with extensive experience in medical and nursing practice and training to ascertain whether the questionnaire was indeed relevant. Feedback from the supervisors and the recommendation from IREC and formal approval from JOOTRH Ethics and review Committee were incorporated into the questionnaire and corrections made accordingly.

(ii). Reliability

A test-retest reliability coefficient is obtained by administering the same test on two different occasions, then correlating the scores obtained on each occasion.

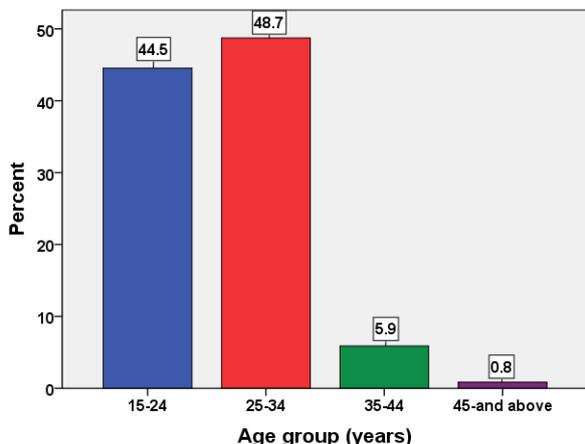
the researcher administered the test to a group of 50 health care providers in County General Hospital, Kakamega (for the pilot study) within the duration of two weeks. The correlation coefficient was calculated based on the two sets of scores obtained from this population. The correlation coefficient was found to be 0.84. (Lee, S,M. 2010) recommends that correlation values higher than 0.80 are sufficient to qualify the test as reliable.

3. Result: Data Presentation , Analysis and Interpretation

3.1. Responses for Demographic data:

The demographic characteristics of the health care providers have been described according to their age, gender, highest qualification, current position, addition of training and year of experience in labor ward.

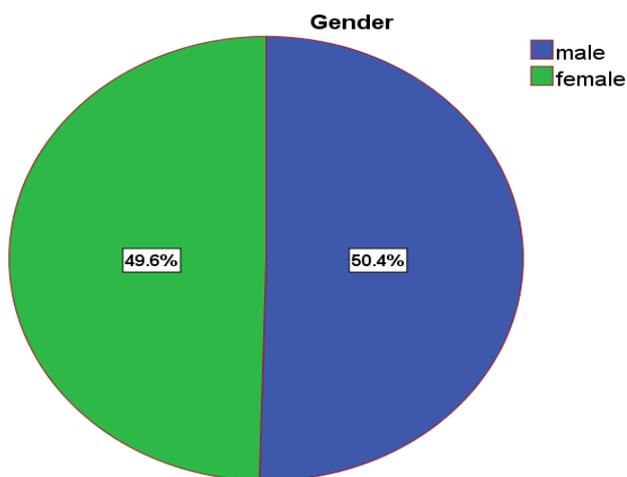
3.1.1 Age of the Respondents in Years



The age groups of the participants were as follows: 44.5 % of the participants were aged between 15 to 24 years; 48.7% of the participants were 25 to 34 years; 5.9% of the participants were 35 to 44 years and 0.8% of the respondents were over the age of 45 years.

3.1.2 Gender of the Participants

The gender of the participants comprised 49.6% females and 50.4% males.



3.1.3 Current Position of the Participants

Current position of the participants as follows: 71.4% of the participants were Upgrading Student Nurse/Midwife, Student Nurse/Midwife; 20.2% of the participants were Nurse/Midwife; 4.2% of the participants were Medical Officers; 3.4% of the participants were the House/Clinical officers and 0.8% of the participant was Consultant.

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3.1.4 Have you had any additional training in non-pharmacological pain management during labor?

Seventy nine point eight percent of the participants responded that they did not have any additional training in non-pharmacological pain management during labor. Eighteen point five percent of participants responded that they had gone for the training while 1.7 % of the respondents did not show any response.

3.1.5 If yes mention the year and types of training you have undergone

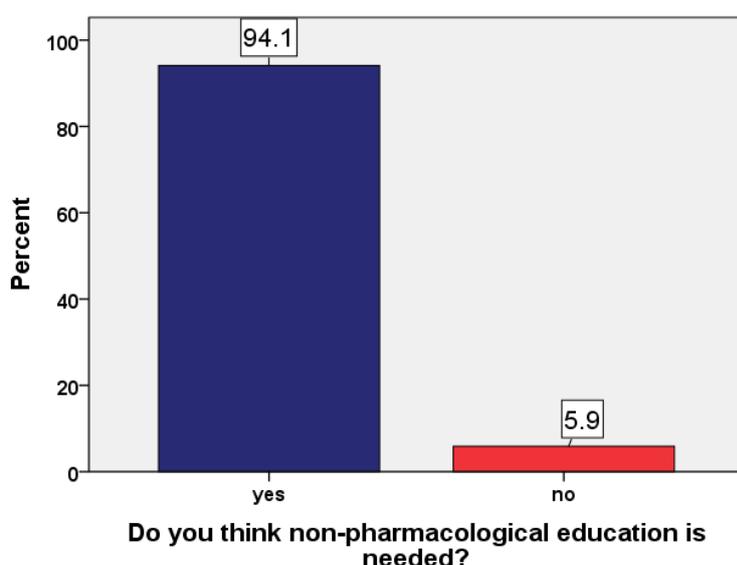
Among 119 participants one nurse midwife had a special training on first aid including pain management in labor and importance of using non-pharmacological pain management. One clinical officer had a seminar on Massage.

3.1.6 Years of Experience

Eighty five point seven percent of the respondents have 0 to 5 years' experience, 10.1% of the respondents have 6 to 10 years of experience, 3.4% of the respondents have 11 to 15 years of experience and 0.8% of the respondents have above 16 years of experience.

3.1.7. Do you think more non-pharmacological education is needed?

Ninety four point one of the respondents indicated that they need more non-pharmacological education and five point nine of the respondents indicated that no need for the education regarding non-pharmacological.



3.2.LEVEL OF HEALTH CARE PROVIDERS KNOW- -LEDGE REGARDING NON-PHARMACOLOGICAL PAIN MANAGEMENT DURING LABOR

Specific Objectives

- To assess the knowledge of the health care providers towards the non-pharmacological pain management during labor.

Overall Knowledge of non-pharmacological pain management during labor was 42.78%. Among 119 of the participants, knowledge of general information regarding labor is 53.09%, knowledge of non-pharmacological pain management during labor is 55.47%, knowledge of aromatherapy is 38.13%, knowledge of massage is 46.59%, knowledge of breathing exercises is 41.76%, knowledge of intra-dermal water blocks is 35.35%, knowledge of hydrotherapy is 40.60%, knowledge of continuous labor support is 39.44%, knowledge of movement and positioning 44.33%, knowledge of acupressure is 37.92%, knowledge of heat and cold is 41.28% and knowledge of music and audio analgesia is 39.39%.

3.3. LEVEL OF ATTITUDE TOWARDS NON-PHARMACOOGICAL PAIN MANAGEMENT DURING LABOR

- To identify the attitude of the health care providers towards the non-pharmacological pain management during labor.

3.3.1. Does aromatherapy help to reduce the level of labor pain:

Fifty point four (50.4%) of the respondents agreed that aromatherapy help to reduce the level of labor pain.

3.3.2. Do you think massage helps in release of endorphine:

Seventy two point three (72.3%) of the respondents agreed that massage helps in and release of endorphine.

3.3.3. Will back massage warm up women in labor:

Interestingly 58% of the respondents agreed that back massage warm up women in labor.

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3.3.4. Do you think breathing exercise helps the baby to get more oxygen:

It is also noteworthy that most of the respondents 60.5% agreed that breathing exercise helps the baby to get more oxygen.

3.3.5. Would you recommend the breathing exercise during labor:

Eighty one point five of the respondents agreed that they would recommend the breathing exercise during labor.

3.3.6. Do you think hydrotherapy helps during labor to reduce pain:

Sixty two point two percent of the respondents agreed that hydrotherapy helps to reduce labor pain.

3.3.7. Does water immersion help in increased circulation:

Forty two percent of the respondents agreed that water immersion help in increased circulation.

3.3.8. Do you think heat and cold application helps in reducing the labor pain:

Fifty three point eight percent (53.8%) of the respondents agreed that heat and cold application helps in reducing labor pain.

3.3.9. Would you recommend continuous labor support:

Seventy seven point three percent of the respondents agreed that they will recommend continuous labor support during labor.

3.3.10. Does acupressure help muscle fibres elongate and relax allowing blood to flow more freely:

Forty six point two percent of the respondents agreed that the acupressure help muscle fibers elongate and relax allowing blood to flow more.

3.3.11. Do you think semi sitting position during labor is not comfortable?

Forty one point two percent of the respondents agreed that semi sitting position during labor is not comfortable.

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3.3.12. Would you recommend squatting position for rapid descent of fetal head during labor:

Sixty eight point five percent of the respondents agreed that they would recommend squatting position during labor.

3.3.13. Does music therapy help to reduce the level of labor pain:

Interestingly, seventy one point four percent of the respondents agreed that music therapy helps to reduce the level of labor pain.

3.3.14. Would soothing music increase catecholamine levels thus help to maintain heart rate and blood pressure

Forty two point nine percent of the respondents agreed that music therapy helps to maintain heart rate and blood pressure.

3.4. LEVEL OF PRACTICE OF NON-PHARMACOLOGICAL PAIN MANAGEMENT DURING LABOR

- To determine the practice of health care providers towards non-pharmacological pain management during labor.

Table 3.4.1. I use Aromatherapy during labor

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NO RESPONSE	15	12.6	12.6	12.6
ALWAYS	5	4.2	4.2	16.8
SOMETIMES	28	23.5	23.5	40.3
NEVER	71	59.7	59.7	100.0
Total	119	100.0	100.0	

Table 3.4.2. I massage the laboring mother

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NO RESPONSE	13	10.9	10.9	10.9
NEVER	51	42.9	42.9	53.8
SOMETIMES	47	39.5	39.5	93.3
ALWAYS	8	6.7	6.7	100.0
Total	119	100.0	100.0	

Table 3.4.3. I encourage mothers to do breathing exercise during labor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	12	10.1	10.1	10.1
	NEVER	84	70.6	70.6	80.7
	SOMETIMES	22	18.5	18.5	99.2
	ALWAYS	1	.8	.8	100.0
	Total	119	100.0	100.0	

Table 3.4.4. I use intradermal water block during labor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	12	10.1	10.1	10.1
	NEVER	9	7.6	7.6	17.6
	SOMETIMES	19	16.0	16.0	33.6
	ALWAYS	79	66.4	66.4	100.0
	Total	119	100.0	100.0	

Table 3.4.5. I encourage and use hydrotherapy during labor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	17	14.3	14.3	14.3
	NEVER	10	8.4	8.4	22.7
	SOMETIMES	31	26.1	26.1	48.7
	ALWAYS	61	51.3	51.3	100.0
	Total	119	100.0	100.0	

Table 3.4.6. I would always ensure women's relatives are with a laboring women during the entire labor process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	15	12.6	12.6	12.6
	NEVER	24	20.2	20.2	32.8
	SOMETIMES	73	61.3	61.3	94.1
	ALWAYS	7	5.9	5.9	100.0
	Total	119	100.0	100.0	

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Table 3.4.7. I always use different positions according to the need of the laboring women

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	16	13.4	13.4	13.4
	NEVER	46	38.7	38.7	52.1
	SOMETIMES	54	45.4	45.4	97.5
	ALWAYS	3	2.5	2.5	100.0
	Total	119	100.0	100.0	

3.4.8. If you support different positions kindly mention the position you use for the laboring women

Forty three percent of the respondents encouraged squatting position for laboring women and 25% used standing and squatting position. Fifteen percent of the respondents encouraged knee chest, side lying, standing and lithotomy positions.

Table 3.4.9. I give acupressure during labor process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	15	12.6	12.6	12.6
	NEVER	7	5.9	5.9	18.5
	SOMETIMES	25	21.0	21.0	39.5
	ALWAYS	72	60.5	60.5	100.0
	Total	119	100.0	100.0	

Table 3.4.10. I do warm fomentation for labor women to relieve her pain

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO RESPONSE	11	9.2	9.2	9.2
	NEVER	9	7.6	7.6	16.8
	SOMETIMES	32	26.9	26.9	43.7
	ALWAYS	67	56.3	56.3	100.0
	Total	119	100.0	100.0	

Table 3.4.11. I use ice packs during labor for decreasing the labor pain

	Frequency	Percent	Valid Percent	Cumulative Percent
NO RESPONSE	12	10.1	10.1	10.1
NEVER	6	5.0	5.0	15.1
Valid SOMETIMES	27	22.7	22.7	37.8
ALWAYS	74	62.2	62.2	100.0
Total	119	100.0	100.0	

Table 3.4.12.I encourage the laboring women to listen to soothing music during labor

	Frequency	Percent	Valid Percent	Cumulative Percent
NO RESPONSE	11	9.2	9.2	9.2
NEVER	20	16.8	16.8	26.1
Valid SOMETIMES	41	34.5	34.5	60.5
ALWAYS	47	39.5	39.5	100.0
Total	119	100.0	100.0	

3.5. BARRIERS TOWARDS NON-PHARMACOLOGICAL PAIN MANAGEMENT DURING LABOR

- To assess the barriers to non-pharmacological pain management during labor.

3.5.1. HEALTH-CARE SYSTEM RELATED BARRIERS

In terms of health care system related barriers among 119 participants, 86 participants responded that the main barrier was lack of time, 89 participants responded that their barrier was regulatory issues (policy), 94 participants responded that their barrier was inadequate staff members and 93 participants responded that their barrier was lack of equipment.

3.5.2. HEALTH-CARE PROVIDER RELATED BARRIERS

In health care provider related barriers among 119 participants, 73 participants responded that the main barrier was Dr./RN unwillingness, 74 participants responded

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that lack of knowledge; 80 responded that it is difficult to apply; 77 participants responded that they need critical thinking; 85 participants responded that it's hard to measure and 82 participants responded that the barrier was efficacy.

3.5.3. PATIENT RELATED BARRIERS

In patient related barriers among 119 participants; 89 participants responded that the main barrier was patient unwillingness; 84 participants responded that it is sometimes not as concrete; 86 participants responded that strong beliefs of analgesia; 95 participants responded that pain was too severe; 94 participants responded that they needed build to trust and 80 participants responded that it depended on the age of the client.

4. Summary and Conclusions

In this study, health care providers have inadequate knowledge regarding non-pharmacological pain management during labor. But when coming to their level of education for the undergraduate students, non-pharmacological pain management is not elaborated in their curriculum that makes their practice less effective during labor for the laboring mother, whereas for the postgraduate students they do an elaborate study about non-pharmacological pain management during labor but coming to the point of practicum they do lesser work when compare with undergraduate. Health care providers have a positive attitude towards non-pharmacological pain management during labor. Most of the health care providers practice massaging, breathing exercise and encourage different laboring positions during labor. The main barriers were lack of time, lack of knowledge and patient unwillingness. The management of mothers' pain in labor is uncomprehensive.

As a researcher, we would like to suggest that the non-pharmacological pain management during labor to include in their curriculum in a detailed way. This will help the health care providers to practice non-pharmacological pain management during labor effectively so as the laboring mother will be benefited out of it.

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