

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge and Practice Regarding Pain Control Strategies During Labour

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Abstract:

During Labour, every woman experiences some degree of stress as her system responds to the physical and physiological changes that prepare her to give birth. Nearly every woman in Labour experiences severe discomfort and greater pain. Perception of pain is highly unique and differs from one individual to another although the intensity of pain stimuli is the same. An appreciation of each woman's unique experience of pain is possible when Midwives and Perinatal Midwives understand the physiological basis and its responses to pain and psychosocial factors influencing pain perception and current trends in Labour pain control strategies. It is essential to give attention towards quality midwifery care in pain control during Labour which is one of the reliable techniques to assure every woman's rights to have painless Labour. On the other hand this will reduce maternal mortality and morbidity rate.

Keywords:

Physiological, Pain stimuli, Midwives and Perinatal Midwives.

I. INTRODUCTION

Childbirth is frequently accompanied by pain. Labour pain is a complex phenomenon with sensory, emotional, and perceptive components and can be regarded as one of the most serious kinds of pain. The experience of pain during Labour is not a simple reflection of the physiologic processes of parturition. Instead, Labour pain is the result of a complex and subjective interaction of multiple physiologic and psychosocial factors on a woman's individual interpretation of Labour stimuli. For centuries in Western civilization, offering pain relief in Labour was thought to be amoral because, according to Biblical account, God commended Eve, "I will greatly multiply thy sorrow and thy conception; in sorrow thou shall bring forth children..." There is a long history of attempts to alleviate the pain of childbirth, particularly

in Asian and Middle Eastern civilizations. In the UK, it was the initial administration of chloroform to Queen Victoria by John Snow in 1853 that was widely credited with popularizing the idea that Labour pain could be treated.¹ Pain management is the alleviation of Pain or reduction in pain to a level of comfort that is acceptable to the client. Medical analgesia is now well established around the globe with a wealth of research evidence.²

Firstly, an understanding of Labour pain in a multidimensional framework provides the basis for a woman-centered approach to Labour pain management. Labour pain relief is an important aspect of women's health that has historically been neglected.³ Behavior in response to childbirth pain is observable. As Labour progresses, women may exhibit increasing outward signs of pain, such as being doubled over, moaning, groaning, and making facial grimaces. Some women may wish to express their pain in an audible way. Others may respond to pain with stoicism. Classic work documents that culture influences the neurophysiologic processes of pain perception and pain tolerance. It is difficult to predict the level of pain that women may experience.⁴ Pain during Labour is caused by contractions of the muscles of the uterus and by pressure on the cervix. This pain may be felt as strong cramping in the abdomen, groin, and back, as well as an achy feeling. Some women experience pain in their sides or thighs as well. Other causes of pain during Labour include pressure on the bladder and bowels by the baby's head and the stretching of the birth canal and vagina. Pain during Labour is different for every woman. Although Labour is often thought of as one of the more painful events in human experience, it ranges widely from woman to woman and even from pregnancy to pregnancy. Women experience Labour pain differently for some, it resembles menstrual cramps; for others, severe pressure; and for others, extremely strong waves that feel like diarrheal cramps. It's often not the pain of

each contraction on its own that women find the hardest, but the fact that the contractions keep coming - and that as Labour progresses, there is less and less time between contractions to relax.⁵

Secondly, to reduce pain during childbirth, a range of options has been developed. Many factors play a role in the degree of pain including the intensity of uterine contractions and the position of the baby and so on. In 'primary breakthrough pain' is the moment when a woman first requests analgesia during Labour. The management of this can include simple emotional support, inhaled analgesics, parenteral opioids and epidural analgesia. 'Secondary breakthrough pain' can be defined as the moment when previously used analgesia becomes ineffective. The best strategy to avert this problem is prevention by using the best techniques.⁶ Selected interventions such as massage, relaxation exercises, breathing techniques, positions, etc. to the mothers are effective in reducing their Labour pain perception. Therefore, more importance should be given to the assessment of Labour pain after which selective interventions can be given as Non-pharmacological measures and pharmacological measures with Obstetrician's order to mitigate Labour pain.⁷

Thirdly, the qualified midwives have a vital role in providing safe and effective care to enhance reduction of Labour pain perception. It has been demonstrated that midwives sometimes underestimate the intensity of the pain experienced by women in Labour and overestimate the efficacy of pharmacological pain relief.⁸ Pain may have adverse effects on the mother and fetus. The controversy concerning medical management of women in Labour has been used to dissuade women from requesting pain relief. This debate has encouraged the use of a patient-centered philosophy of care that encourages the patient to retain control. However, good pain relief may allow the women to retain control if administered in a sensitive manner.⁹

Finally, If Midwives are well prepared about care during Labour, then they are more likely to have realistic expectations of women's levels of pain, less likely to feel a failure and have increased confidence, which in turn can lead to more positive experience. Women may have ideal hopes of what would like to happen, but they need to be educated or informed to ensure that they are prepared for what might actually happen and give them the tools to deal with this. This can be done by motivating the midwives to have an in-depth knowledge on physiological changes during Labour, understand the importance of reduction of pain during Labour, and develop skills in providing

efficient care for effective pain management during Labour.¹⁰

II. REVIEW OF LITERATURE

Review of literature is considered as the most important pre requisite to actual planning and conduct of study. Review of literature involves systematic identification, location, scrutiny and summarization of written materials that contain information regarding research problem.

The investigator carried out an extensive review of related literature on selected topics both research and non-research in order to gain maximum relevant information and to perform the study in a scientific manner.

The review of available literature was organized under the following headings.

- a) Studies related to perception and experience of Labour pain
- b) Studies related to physical methods of non-pharmacological measures in Labour pain relief.
- c) Studies related to psychological methods of non-pharmacological measures in Labour pain relief.
- d) Studies related to pharmacological approach in Labour pain control
- e) Studies related to midwife's practice in Labour pain relief.

A) Studies Related To Perception and Experience of Labour Pain

A survey of pregnant women of mixed parity from Calcutta, India. According to this survey finding, Expectation of Labour pain was very common. In the absence of an idea of its severity (78%), a majority were ready to tolerate it as a natural phenomenon (71%). For most interviewees, information about epidural Labour analgesia was new (97%), although they were prepared to ask for effective pain relief (98%) and pay for epidural analgesia, if available (95%). Nearly a quarter (24%) of subjects considered cesarean section as an option to avoid Labour pain, while most (99%) perceived cesarean section to be safer for the baby than vaginal delivery. Thus the Midwife midwives should have adequate knowledge and practice on Labour pain relief.¹¹

A study was conducted to document women's perceptions of the different aspects their childbirth experience including expectations, satisfaction and self-control. Other aspects of the Labour process including length of Labour, difficulty of Labour, effectiveness of pain control, expectations of pain level, perception of level of involvement in decisions among other variables were also explored. A descriptive cross-sectional design was used to achieve the aim of this study. A convenience sample of 177

Jordanian mothers was used. The majority of participants reported that they were not satisfied with the different aspects of the childbirth experience and perceived that they had little control during childbirth. These findings should be considered by all health-care providers, hospital administrators and policy-makers to plan and implement appropriate strategies that could help women go through the childbirth experience with less fear pain and anxiety.¹²

A study conducted on systematic review of women's expectations and experience of pain relief in Labour. The result revealed that appraisal revealed four key themes: the level and type of pain, pain relief, involvement in decision-making and control. Studies predominantly showed that women underestimated the pain they would experience. Women may hope for a Labour free of pain relief, but many found that they needed or benefited from it. There is a distinction between women's desire for a drug-free Labour and the expectation that they may need some sort of pain relief.¹³

A descriptive study was conducted a study on knowledge and expectations of the process and pain of Labour in primigravidas attending a local midwifery obstetric unit. Patients were poorly informed about the process and pain of Labour. Most women appeared highly motivated concerning their ability to cope with Labour. Most expected pain, but had no concept of the severity or duration of the pain, and knew very little concerning methods available for pain relief in Labour.¹⁴

(B) Studies Related To Physical Methods Of Non-Pharmacological measures Of Labour Pain Relief

A descriptive study on purpose of the review is to assess the effects of encouraging women to assume different upright positions (including walking, sitting, standing and kneeling) versus recumbent positions (supine, semi-recumbent and lateral) for women in the first stage of Labour on length of Labour, type of delivery and other important outcomes for mothers and babies. There is no evidence that this is associated with any advantage for women or babies, although it may be more convenient for staff. Observational studies have suggested that if women lie on their backs during Labour this may have adverse effects on uterine contractions and impede progress in Labour.¹⁵

A comparative research study was conducted on between massage and music therapies to relieve the severity of Labour pain. Overall, 101 primigravidae who were hospitalized for vaginal delivery were recruited and randomly stratified into

two groups of either massage (n = 51) or music (n = 50) therapies. Pain was measured using the visual analog scale and the two groups were compared in terms of pain severity before and after the interventions. Mothers in the massage therapy group had a lower level of pain compared with those in the music therapy group (p = 0.009). A significant difference was observed between the two groups in terms of pain severity after intervention (p = 0.01). Agonizing, or most severe, Labour pain was significantly relieved after massage therapy (p = 0.001).¹⁶

A quazi experimental study on perineal massage in Labour and prevention of perineal trauma in India. At 36 weeks' gestation, women expecting normal birth of a singleton were asked to join the study. Women became eligible to be randomized in Labour if they progressed to full dilatation of the cervix or 8 cm or more if nulliparous or 5cm or more if multiparous. 1340 were randomized into the trial. Rates of intact perineum's, first and second degree tears, and episiotomies were similar in the massage and the control groups. There were fewer third degree tears in the massage group (12 (1.7%) v 23 (3.6%); absolute risk 2.11, relative risk 0.45; 95% confidence interval 0.23 to 0.93, P<0.04), though the trial was underpowered to measure this rarer outcome. Groups did not differ in any of the secondary outcomes at the three assessment points. The practice of perineal massage in Labour does not increase the likelihood of an intact perineum or reduce the risk of pain, dyspareunia, or urinary and faecal problems.¹⁷

An experimental study on sterile water injection for Labour pain in India to determine if sterile water injection for low back pain compared to placebo or alternative therapy increased or decreased the rate of Caesarean section. Randomized controlled trials (RCTs) of included eight RCTs. The Caesarean section rate was 4.6% in the sterile water injection group and 9.9% in the comparison group (n = 828) (RR 0.51, 95% CI: 0.30, 0.87). We believe that a large RCT should be mounted to validate our findings regarding the impact of sterile water injections on mode of delivery.¹⁸

A longitudinal study was conducted to observe position and movements in hydrotherapy in the U.K. A rural community hospital that provided hydrotherapy in Labour. Women (N = 7) who intended to use hydrotherapy in Labour were recruited prenatally from a midwife-managed practice. For 15 minutes of each hour during the first stage of Labour, position and movements of the participants were observed and recorded on a laptop computer. Only 3 of the 7 participants laboured in the tub. Women demonstrated a greater range of positions and

movements in the tub than in bed, both throughout Labour and during late first-stage Labour (7-10 cm of dilatation). Women had more contractions and made more rhythmic movements while in the tub than in bed.¹⁹

(C) Studies Related To Psychological Methods Of Non-Pharmacological Measures Of Labour Pain Relief

A descriptive study revealed that the practice of toning in pregnancy and Labour. Participant experiences that is Women, primarily from the author's childbirth education classes, were taught the practice of toning, i.e. voicing the exhalation of breath on a single pitch, using a vowel sound or a hum. Women were encouraged to explore toning during pregnancy and use it as a resource for Labour. Postpartum, 22 women described their experiences with tone, pointing to a variety of effects such as increase debility to cope with pain, useful forms of focus, and feelings of connection with nature, bodily vibration, relaxation, emotional release, diminished anxiety and a greater sense of power. Holistic aspects of breath and tone are described, as are specific applications of toning for pregnancy and Labour. Careers who wish to use tone with clients are encouraged to develop a personal toning practice.²⁰

A survey was conducted on advocate of 'natural' childbirth grandly Dick-Read method among maternity hospitals in London and revealed that after the 50th anniversary of the death of grandly Dick-Read today he is almost forgotten, but many years back his name was well known throughout the world among doctors, midwives and, indeed, the lay public for his advanced, and at the time controversial, views on the management of pregnancy and Labour. Now a day's fear, pain & tension cycle in Labour is almost forgotten among doctors, midwives. Henceforth he suggested that this valuable psychological method must apply among Labour women.²¹

Psychosocial factors influencing personal control in pain relief were studied. A questionnaire was administered to 100 women (50 primigravidae, 50 multigravidae) to investigate the influence of psychosocial factors on personal control in pain relief. Personal control was measured using a 36-item scale based on the concept of 'Rule'. The women were asked to rate each rule on a 7-point Likert scale. Measures of psychosocial factors included assessment of the women's expectations of Labour pain, maternal confidence, pain intensity, antenatal training and partner support. Demographic variables including parity were also recorded. The questionnaires were completed prior to and within 48 h following the

women's delivery (whilst they were inpatients on the postnatal ward). Two variables, antenatal training and pain intensity, emerged as predictors of personal control in pain relief following stepwise multiple regression analysis. These findings have implications for clinical practice particularly in the area of psychological factors antenatal care and planning care during Labour.²²

An experimental study conducted on hypnosis for pain relief in Labour and childbirth. Clinical trials where hypnosis during pregnancy and childbirth were compared with a non-hypnosis intervention and non-treatment or placebo. Reference lists from retrieved papers and hypnotherapy texts were also examined. There were no language restrictions. Our primary outcome measures were Labour analgesia requirements (no analgesia, opiate, or epidural use), and pain scores in Labour. Five RCTs and 14 non-randomized comparisons (NRCs) studying 8395 women were identified where hypnosis was used for Labour analgesia. Four RCTs including 224 patients examined the primary outcomes of interest. Of the two included NRCs, one showed that women using hypnosis rated their Labour pain less severe than controls ($P < 0.01$). The other showed that hypnosis reduced opioid (meperidine) requirements ($P < 0.001$), and increased the incidence of not requiring pharmacological analgesia in Labour ($P < 0.001$).²³

(D) Studies Related To Pharmacological Measures of Labour Pain Relief

A comparative study conducted study on adverse effects of combined spinal-epidural versus traditional epidural analgesia during Labour in New York. To compare two neuraxial block techniques during Labour for maternal and fetal effects. Women in Labour at term with cephalic singleton fetuses were randomized (non-blinded) to receive either Labour epidural (EPI) or combined spinal-epidural (CSE) analgesia. Primary outcome was prolonged deceleration (PD) of fetal heart rate. Outcomes also included hypotension, mode of delivery, and efficacy of analgesia by visual analog pain scale (VAPS) before and after block placement and omization occurred in 127 patients: 63 received EPI, 64 received CSE. There was no difference in the rate of PD in the EPI group compared with the CSE group (3.2% vs 6.2% respectively; $P = 0.43$, RR 2.0; 95% CI 0.4-9.3), rate of cesarean delivery, or mean epidural duration. VAPS ratings were significantly lower in the CSE group. There were no differences in the rate of PD or other adverse outcomes. Hypotension occurred more frequently with CSE during Labour at term. The study supports both EPI and CSE during Labour as safe and effective techniques for neuraxial analgesia.²⁴

An exploratory research revealed on effect of Labour analgesia on Labour outcome at Toronto in Canada. The findings were compared with parenteral opioids; neuraxial analgesia does not increase the incidence of cesarean section, although it is associated with a longer (approximately 16 min) second stage of Labour. The incidence of operative vaginal delivery is higher in the epidural group but this may be due to indirect reasons such as changes in physician behavior. There was no difference in Labour outcome when CSE was compared with low-concentration epidural analgesia, but higher concentrations may prolong Labour. Early administration of neuraxial analgesia does not increase the incidence of operative delivery or prolong Labour. They concluded that Neuraxial analgesia does not interfere with the progress or outcome of Labour. There is no need to withhold neuraxial analgesia until the active stage of Labour.²⁵

A critical review revealed that childbirth ranks among the most intense experiences of acute pain. Neuraxial analgesia (i.e. epidural or combined spinal-epidural technique) is the most effective way to relieve that pain but it is contraindicated or impossible to perform for some parturient. The response rate was 67.5% (36 centers). Among the responding hospitals, EA was available for 68% (range 25-85%) of Labors and deliveries. When EA was not available or contraindicated, a parenteral opioid (piritramide, tramadol or pethidine) was proposed in 19% (7/36) of the centers, Entonox in 11% (4/36), a pudendal block by obstetricians in 28% (10/36) and non-pharmacologic alternatives (i.e. hypnosis, sophrology, baths and massages) in 19% (7/36). In 28% (10/36) of the centers however, no analgesic alternative was proposed. Opioid PCIA was employed in 36% (13/36) of the centers and for an additional 11% (4/36) only in case of intrauterine death. Remifentanyl was the first choice (76.5% of the PCIA), followed by sufentanil (23.5%). Other opioids (piritramide, morphine, fentanyl) and ketamine were also administered by PCIA. In conclusion, the survey demonstrated that, when EA is contraindicated, systemic opioid administered by PCIA is used in almost half of the centers (47%) and that remifentanyl is the first choice, particularly when a live birth is expected.²⁶

(E) Studies Related To Midwives Practice In Labour Pain Relief

A study examined the determinants of Midwives' intentions to practice on Labour. The results revealed that scores measuring Midwives' attitudes, subjective norms, and intentions regarding continuous Labour support for women with epidural

analgesia were significantly lower than those for women without epidural analgesia ($p < .0001$). Multiple regression analyses revealed that previous Labour support courses, subjective norms, and perceived behavioural control explained 55% of the variance in Midwives' intentions to provide continuous Labour support to women without epidural analgesia while 88% of the variance in intentions to provide continuous Labour support to women with epidural analgesia was explained by subjective norms and attitudes. Midwives' intentions to provide continuous Labour support are lower for women receiving epidural analgesia and are influenced by the perceived social pressures on their unit. Midwives view organizational barriers as important factors influencing their ability to provide continuous Labour support.²⁷

A study was conducted on Lesotho midwives' utilization of non-pharmacological pain management methods during the first of stage Labour. The purpose of this study was to determine the use of non-pharmacologic methods of pain management used by midwives in Lesotho. The research design was non-experimental and of a descriptive nature. The data was obtained by means of structured questionnaire which was compiled after a thorough literature analysis was done. Midwives, working in the Maternity wards of the Christian Hospital Association of Lesotho as well as the government Hospitals completed the questionnaires. All data was analyzed on a nominal descriptive level. According to the results, the midwives indicated that they were taught non-pharmacologic methods of pain management, however they expressed that they inadequately use these methods during the first stage of Labour due to shortage of staff, lack of privacy and space, a high midwife-mother ratio, culture and hospital policies. In the light of these findings, recommendations were made of maximizing the use of non-pharmacologic methods during the first stage of Labour.²⁸

A descriptive study revealed about use of Patient-controlled epidural analgesia for Labour. Patient-controlled epidural analgesia (PCEA) for Labour was introduced into clinical practice 20 years ago. The PCEA technique has been shown to have significant benefits when compared with continuous epidural infusion. We conducted a systematic review using MEDLINE and EMBASE (1988-April 1, 2008) of all randomized, controlled trials in parturients who received PCEA in Labour in which one of the following comparisons were made: background infusion versus none; ropivacaine versus bupivacaine; high versus low concentrations of local anesthetics; and new strategies versus standard strategies. The outcomes of interest were maternal analgesia, satisfaction, motor block, and the incidence of unscheduled clinician interventions. A continuous

background infusion improved maternal analgesia and reduced unscheduled clinician interventions. Larger bolus doses (more than 5 mL) may provide better analgesia compared with small boluses. Low concentrations of bupivacaine or ropivacaine provide excellent analgesia without significant motor block. Many strategies with PCEA can provide effective Labour analgesia. High volume, dilute local anesthetic solutions with a continuous background infusion appear to be the most successful strategy. Research into new delivery strategies, such as mandatory programmed intermittent boluses and computerized feedback dosing, is ongoing.²⁹

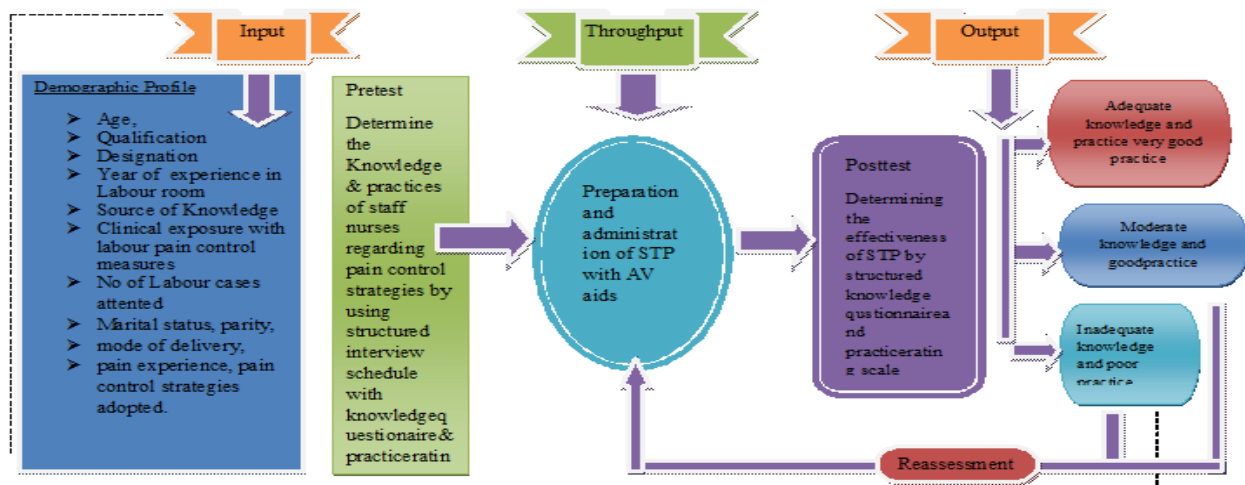
A descriptive study focused on the effect of psychological care environments on the disclosure practices of Midwife midwives relative to methods of pain management in childbirth. A multivariable model of characteristics in the Midwife-patient relationship that influence the disclosure practices of Midwives was developed to investigate the effects that characteristics of the Midwife midwife, the patient, and the setting have on the disclosure practices reported by Midwife midwives. Data were collected by a mailed questionnaire using multiple-choice questions and patient case studies. The questionnaire was sent to a random sample of 500 certified Midwife midwives. No association occurred between variations in patient characteristics and the content disclosed by Midwife midwives. Many of the patient demographic characteristics were observed to be significantly related to the method and time of disclosure. Results of the study suggested that the psychological as well as the immediate health-care environment influenced the disclosure of information.³⁰

III. CONCLUSION

In the light of these findings, the influences of pain and pain relief measures during intra partum

on subsequent satisfaction are neither as obvious nor as powerful as the influences of women's attitudes and Knowledge and practice of Midwives. Many pregnant women have concerns about the pain they will encounter and the methods of pain relief that are available during labor. Midwives and women's lack of appropriate knowledge about the risks and benefits of the various methods of pain relief can heighten anxiety. There are choices to be made during pregnancy about options available for pain relief during labor; each method has its own risks and benefits, with variations in effectiveness, availability and acceptability. Weinberg and others have argued that this involvement should allow patients to make better-informed decisions by presenting the clinical evidence and the likely effects of alternative interventions.

This leads to the conclusion that there is an imbalance between maternal expectations and labour pain services. This can be alleviating by improving knowledge and practices of midwives in terms of current pain controls strategies according to their hospital policy. Above all, during the clinical experience, the investigator had opportunity to assist many child births. The moment the women were holding the hand of the investigator and cried with a loud voice for labor pain, really touched the heart. Being a caring person having empathy as well as sympathy and good intelligence the investigator comforted many women in labor with suitable interventions. In fact, taking into an account of all midwives and their practices in labour rooms. The investigator felt that it is essential to undertake a study so as to plan further pain control strategies for women in labor through adopting new knowledge and practice by midwives.





Included in the study

----- not included in the study

Fig: 1 Conceptual Framework on Modified General System Theory by Von Bertalanffy-1998

REFERENCE

- [1] Adele Pillitteri. Maternal Child Nursing. 3rd ed. Philadelphia: Lippincott publications; 2005.
- [2] Wieland Ladewig, Marcia London L, Sally Brookens Olds. Essentials of maternal and newborn nursing. 3rd ed. California: Addison Wesley Publications; 1994.
- [3] Campbell D. Parenteral Opioids for Labor Analgesia. Clinical Obstet&Gynaecol. 2003; 46(3):616-622.
- [4] Arlene Burroughs. Maternity Nursing. 7th ed. Tokyo: W.B Sanders publications; 1997.
- [5] Shirish N Daftary, Sudip Chakravarti. Manual of Obstetrics. 2nd ed. Elsevier publications. 2005
- [6] Mi-Tec Medical Publishing report: Pain relief during child birth. J Austr society Anesth. 2009 Aug; 10(2):12-19.
- [7] Jaya Bharathi B. Effective nursing interventions on pain during labor. nurs J India. 2010 Jun; 6(2):14-16.
- [8] Baker A, Ferguson S, Roach, Dawson D. Perceptions of labor pain by mothers and their attending midwives. J Adv Nurs. 2001; 35:171-9.
- [9] May AE, Elton CD. The effects of pain and its management on mother and fetus Baillieres ObstetGynaecol. 1998; 12(3):423.
- [10] Maria Iliadou. Labor pain and pharmacological pain relief practice J health science. 2009; 3(4):15-20.
- [11] Mitra G.R, Kar Mahapatra R.M, Schneider M.C. Survey of pregnant women of mixed parity in India. JobstetGynecol 2008; 17:25.
- [12] Oweis A (2009) women's perceptions of childbirth experience. J Acta ObstetGynecol Scand. 2009; 66(1):9-14.
- [13] Lally JE, Murtagh MJ, Macphail S, Thomson R. A systematic review of women's expectations and experience of pain relief in labor. J BMC Med. 2008; 14 (2):6-7
- [14] Ibach F, Dyer RA, Fawcus S, Dyer SJ. Knowledge and expectations of labor among primigravid women in the public health sector. J Med. 2008; 97(6):461-4.
- [15] Lawrence A, Lewis L, Hofmeyr GJ, Dowswell T, Styles C Use of different upright positions in labour women Aust J Adv Nurs. 2010; 17(2):21-7.
- [16] Taghinejad H, Delpisheh A, Suhrabi Z. Comparison between massage and music therapies to relieve labor pain. J Midwif Women's Health. 2010 Jan-Feb; 49(6):489-504.
- [17] Stamp G, Kruzins G, Crowther C. Perineal massage and prevention of perineal trauma in labour. In J Adv Nurs. 2008; 12(12):2-17.
- [18] Hutton EK, Kasperink M, Rutten M, Reitsma A, Wainman B Sterile water injection for labour pain in India. In J Adv Nurs. 2008; 8(2):21-29.
- [19] Stark MA, Rudell B, Haus G. Observing position and movements in hydrotherapy in U.K. J Nurs research. 2007; 153 (8):42-43.
- [20] Pierce B. Practice of toning in labour and childbirth: participant experiences. J Complement Ther Nurs Midwifery 2010; 12(12):2-17.
- [21] Ellis H. Advocate of 'natural' childbirth Grantly Dick-Read method among maternity hospitals. Int J Nurs Stud. 2009 Dec; 37(6):493-503.
- [22] McCreagh H, Wright ME, Stringer M. Psychosocial factors influencing personal control in pain relief. J Midwif Womens Health. 2008 Nov-Dec; 49(6):189-194
- [23] Cyna AM, McAuliffe GL, Andrew MI. Hypnosis for pain relief in labour and childbirth. J Ther Nurs Midwifery. 2007 Mar; 4(2):51-56.
- [24] Skupski DW, Abramovitz S, Samuels J, Pressimone V et al. Adverse effects of combined spinal-epidural versus traditional epidural analgesia during labor in New York. Clinical Obstet&Gynaecol. 2011 Sep; 46(3):616-622.
- [25] Halpern SH, Abdallah FW. Effect of labor analgesia on labor outcome at Toronto in Canada. J Curr Opin Anaesthesiol. 2010 Jun; 23(3):295-299
- [26] Lavand'homme P, Roelants F. Childbirth ranks among the most intense experiences of acute pain. Neuraxial analgesia. J Obstet Anesth 2009 Jul; 21 (3):323-333
- [27] Payant L, Davies B, Graham ID, Peterson WE, Clinch J. Examine the determinants of nurses' intentions to practice on labour. J Obstet Anesth 2010; 21:113-128
- [28] Roets L, Moru MM. NelM. midwives utilization of non-pharmacological pain management methods during the first of stage labor. J Curationis. 2009 Aug; 28(3):73-77.
- [29] Halpern SH, Carvalho B. Use of Patient-controlled epidural analgesia for labor. J Obstet Anesth 2009 Aug; 21 (3):32-45
- [30] Trandel-Korenchuk DM. (2008) The effect of psychological care environments on the disclosure practices of nurse midwives relative to methods of pain management in childbirth: a survey of UK practice. J Complement Ther Nurs Midwifery 2008; 12(2):112-119.