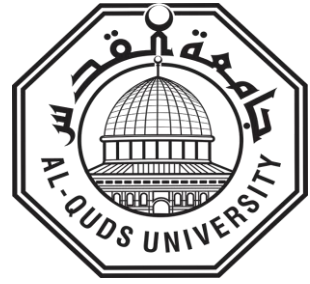**Deanship of Graduate Studies**

Al-Quds University

Factors Associated with Palestinian Midwives' Knowledge and Attitudes about Non-Pharmacological Pain Management

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M.Sc. Thesis

Jerusalem-Palestine

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Factors Associated with Palestinian Midwives' Knowledge and Attitudes about Non-Pharmacological Pain Management

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Jerusalem-Palestine

2023/1444

Dedication

This thesis is dedicated to my family who supported and encouraged me to be what I am now. I am very grateful for their love, support and prayers.

Thanks a lot.

Declaration

I hereby certify that this thesis, submitted for the degree of master, is the outcome of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed: ..*Dalal Raji*

Dalal Raji Hussein Hourani

Date14/1/2023

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Abstract

Background. Non-pharmacological approaches to pain relief offer special benefits that drugs do not offer, including providing patients with an active role in pain management. Non-pharmacological pain management (NPPM) is considered a convenient remedy to help reduce the dosage of required analgesic pharmaceuticals, to lower the risk of medication adverse effects, and to lower the risk of drug dependence. Midwives' knowledge and attitudes towards using NPPM during labor have been shown to be related to how midwives handle labor pain .

Aim. This study aimed to assess the midwives' level of knowledge and attitude towards non-pharmacological pain relief management interventions during childbirth.

Method. A descriptive cross-sectional survey research design was employed to implement this study. The target population was composed of all Palestinian midwives, who worked in labor wards of eight Palestinian hospitals. Data was collected using a self-administered questionnaire adopted from previous studies. The English version of the questionnaire was translated into Arabic language. The questionnaire contained items that aimed to assess midwives' sociodemographic characteristics, their knowledge, attitudes and associated factors. The collected data was analyzed employing the Statistical Package for Social Sciences (SPSS) Version (28).

Results. Out of 200 distributed questionnaires, 170 questionnaires were included in data analysis (85%). The results revealed that most of the midwives (70.6%) had bachelor's degree, 44.1% had less than six years of experience. Results also showed that about 63% of midwives had adequate knowledge about NPPM during childbirth, and 50% of midwives had favorable attitudes towards non-pharmacological pain management. More than two-thirds of midwives (72.4%) revealed lack of non-pharmacological pain management equipment's as well as no pain management guideline available for

managing midwife's pain in the units. Moreover, the findings showed a significant positive small relationship between knowledge score and level of education (rs =0.181, p=.018).In addition,   results revealed that level of midwives' qualification (rs =.181), years of work experience (rs =.036) were factors significantly associated with knowledge.

Conclusion. Despite Palestinian midwives' adequate levels of knowledge about NPPM, their attitudes towards the use of NPPM were not adequately favorable. Since there is a relationship between midwives' knowledge and their levels of education, there is a need for upgrading the levels of midwives' education. Furthermore, lessening the midwife to pregnant women ratio may give better chances for the midwives to develop their knowledge and attitudes towards NPPM.   .

Key words: Attitude, Associated factors, Knowledge, Midwife, Non-pharmacological pain management.

العوامل المرتبطة باستخدام القابلات الفلسطينيات لممارسات إدارة الألم غير الدوائية أثناء الولادة.

اسم الطالب : دلال راجي حسين حوراني

المشرف : د . ميساء الأ سطه

الملخص

الخلفية. تقدم الأساليب غير الدوائية لتسكين الآلام فوائد خاصة لا تقدمها الأدوية ، بما في ذلك تزويد المرضى بدور نشط في إدارة الألم. تعتبر إدارة الألم غير الدوائية (NPPM) علاجًا مناسبًا للمساعدة في تقليل جرعة الأدوية المسكنة المطلوبة ، وتقليل مخاطر الآثار الضارة للأدوية ، وتقليل مخاطر الاعتماد على الادوية. تبين أن معرفة القابلات ومواقفهن تجاه استخدام NPPM أثناء المخاض مرتبطة بكيفية تعامل القابلات مع آلام المخاض.

الهدف. هدفت هذه الدراسة إلى تقييم مستويات القابلات الفلسطينيات ، والعوامل التي تتعلق بمعرفتهن ومواقفهن تجاه تدخلات غير الدوائية لتسكين الآلام

الطريقة. تم استخدام تصميم البحث الوصفي المقطعي لتنفيذ هذه الدراسة. كانت المجموعة المستهدفة من جميع القابلات الفلسطينيات ، اللواتي عملن في أقسام الولادة في ثمانية مستشفيات فلسطينية. تم جمع البيانات باستخدام استبيان ذاتي الإدارة تم اعتماده من دراسات سابقة. تمت ترجمة النسخة الإنجليزية من الاستبيان إلى اللغة العربية. احتوى الاستبيان على عناصر تهدف إلى تقييم الخصائص الاجتماعية والديموغرافية للقابلات ومعرفتهن ومواقفهن والعوامل المرتبطة بها. تم تحليل البيانات التي تم جمعها باستخدام نسخة الحزمة الإحصائية للعلوم الاجتماعية (SPSS) (28).

النتائج. من بين 200 استبيان موزعة ، تم تضمين 170 استبانة في تحليل البيانات (85٪). وكشفت النتائج أن معظم القابلات (70.6٪) يحملن درجة البكالوريوس ، و (44.1٪) لديهن خبرة أقل من ست سنوات. أظهرت النتائج أيضًا أن حوالي (63٪) من القابلات لديهن معرفة كافية بممارسات NPPM أثناء الولادة ، وأن(50٪) من القابلات لديهن مواقف إيجابية تجاه إدارة الألم غير الدوائي. كشفت أكثر من ثلثي القابلات (72.4٪) عن نقص في معدات إدارة الألم غير الدوائية ، فضلاً عن عدم توفر إرشادات لإدارة الألم لإدارة آلام المريض في الوحدات. علاوة على ذلك ، أظهرت النتائج وجود علاقة صغيرة ذات دلالة إحصائية بين درجة المعرفة ومستوى التعليم ($rs = 0.181$ ، $p = .018$) ، بالإضافة إلى ذلك ، كشفت النتائج أن مستوى تأهيل القابلات ($rs = .181$) ، سنوات الخبرة في العمل ($rs = .036$) كانت عوامل مرتبطة بشكل كبير بالمعرفة.

الاستنتاج. على الرغم من وجود مستويات كافية من المعرفة للقابلات الفلسطينيات حول الطرق غير الدوائية ، إلا أن مواقفهن تجاه استخدام الطرق غير الدوائية لم تكن مواتية بشكل كافٍ. نظرًا لوجود علاقة بين معرفة القابلات ومستويات تعليمهن ، هناك حاجة لرفع مستوى تعليم القابلات. علاوة على ذلك ، قد يؤدي تقليل نسبة القابلات إلى الحوامل إلى إعطاء فرص أفضل للقابلات لتطوير معارفهن ومواقفهن تجاه الطرق غير الدوائية .

الكلمات الأساسية: الموقف ، العوامل المرتبطة ، المعرفة ، القابلات ، إدارة الألم غير الدوائية.

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Chapter One

Introduction

1.1 Background

Childbirth is one of the most important events that affect different aspects of women's lives (Hosseni, Pilevarzadeh & Vazirinasab, 2016). Childbirth itself has a substantial physical and emotional impact on women's well-being (Bertucci et al., 2012). However, labor pain always worries the pregnant woman and is considered a major concern for the mother and her family. (Beigi et al., 2010). Fear of labor pain is one of the major concerns that make pregnant women refuse natural vaginal delivery (Mehmet et al., 2014). In addition, low level of awareness of the different ways of reducing this pain during childbirth led to increasing rates of cesarean elections (Hosseni, Pilevarzadeh & Vazirinasab, 2016).

Pain experienced during childbirth is a complex, multidimensional, and subjective phenomenon with minimal or no harm to the mother, fetus, and the progress of labor (Boateng, Kumi, & Diji, 2019). Childbirth pain varies from pleasurable to unbearable; some women cope well with labor pain without any intervention, whereas others require pain relief remedies (Thomson et al., 2019). Pain can be affected by all aspects of life such as environmental, cultural, physiological, and psychological factors (Hosseni, Pilevarzadeh & Vazirinasab, 2016). So, pain relief is considered a priority during childbirth in order to satisfy women and respond to their needs (Larkin, Begley, & Devane, 2017).

Childbirth pain relief measures are divided into two major sections, which are pharmacological and non-pharmacological methods (Hosseni, Pilevarzadeh & Vazirinasab, 2016). Pharmacological methods have been used worldwide to treat the somatic (physiological and emotional) aspects of pain during labor, and these interventions include epidural analgesia and opioids. In particular, Pethidine (Meperidine) is believed to be an effective form of pain relief, that have many side effect including drowsiness, dizziness, itching or sweating, depression and a weakened immune system associated with nausea, vomiting and also adverse effects on woman's ability to breastfeed her child safely (Thomson et al., 2019). Non-pharmacological interventions provide significant benefits to women and their infants during childbirth without causing any harm (Chaillet et al., 2014). Such therapies include meditation, progressive relaxation, dreaming, rhythmic respiration, biofeedback, therapeutic touching, transcutaneous electrical nerve stimulation (TENS), hypnosis, musical therapy, acupressure, cold-hot treatments, positioning, exercises, and massage (Demir, 2012). These methods have significant benefits including faster expulsion, improved neonatal status, and higher maternal satisfaction. Also, they reduce the severity of labor pain, delay the use of pharmacological analgesia, and improve some obstetric outcomes with no identified adverse effects (Gallo et al., 2018).

The aim of this study is to investigate the midwives' level of knowledge and attitude towards non-pharmacological pain management (NPPM) during childbirth and their associated factors.

1.2 Problem Statement

For many women, the pain they experience during labour and childbirth will be the most severe form of pain they have ever experienced (Beigi et al., 2010). Pain is considered a unique and individual experience. Some women cope well with labour pain

without any intervention, whereas others require pharmacological and/or non-pharmacological methods for pain relief. Effective pain management has become an essential component of the care plan for childbearing women (Thomson et al., 2019). Non-pharmacological methods such as water or showers, warm/cold packs applied to the back, neck, chest, face or other painful areas during or between contractions, gentle massage, range of motion exercises and breathing exercises are considered important pain relief measures that have several benefits: They have no negative effects on mother and baby, help labor progress, and are even comfortable for both mother and fetus. (Ranjbaran et al., 2017). There are few studies in Palestine that focus on the use of non-pharmacological methods during childbirth. Despite the importance of childbirth in Palestinian society, knowledge and attitude toward NPPM have never been assessed, the study found a gap between reported practices and scientific evidence, which has serious consequences for birthing care. Understaffing, overcrowding, and ineffective interventions create concerns about the management of maternity care. (Wick et al., 2005).

1.3 Significance of the Study

This study aimed to assess the midwives' level of knowledge and attitude towards non-pharmacological pain relief management interventions during childbirth. This study will serve as a platform for future studies aimed at raising awareness about the importance of non-pharmacological methods of childbirth. It will also shed light on the midwives' role and in decreasing pain using non-pharmacological pain relief methods, which was expected to decrease medicalization of childbearing women. (Kennedy, 2002). Moreover, knowledge and attitude of midwives have a significant impact on the adoption of non-pharmacological pain management strategies. According to many studies, midwives had inadequate information and had a negative attitude toward non-

pharmacological pain management, and the majority of midwives did not apply non-pharmacological pain management strategies (Kheshti et al., 2016). Besides, studying the factors that influence NPPM will help formulate a plan and recommendations to facilitate non-pharmacological pain management use, so that mothers can deliver naturally while coping with their labor pain successfully. These recommendations will be shared with stakeholders such as midwives, nurse midwives, obstetricians and hospital administrators to promote midwives' knowledge and attitude toward non-pharmacological methods. Also, this research will add to Palestinian literature about NPPM during labor and pain management, and it will be one of the first studies in Palestine that search NPPM interventions and related factors.

1.4   Aim of the Study

To assess Palestinian midwives' levels of knowledge and attitudes regarding non-pharmacological pain relief methods during childbirth, and their related factors.

1.5   Specific Aims of Study

1. To assess the midwives' levels of knowledge, and attitudes about NPPM strategies during childbirth.

2. To assess the relationships between midwives' knowledge and attitudes toward NPPM.

3. To identify the differences between midwives' knowledge and attitudes in relation to their sociodemographic characteristics (level of education, place of work, age, and years of experience) and the associated factors.

4. To assess hospital-related factors associated with midwives' knowledge and attitudes about NPPM interventions, including working unit, the midwife to pregnant woman ratio, hours of working per day, pain management guideline and training on non- pharmacological pain management.

5. To assess patient-related factors associated with midwives' knowledge and attitudes towards NPPM interventions; pregnant woman /family intention to use drug, mother strong beliefs in drugs, the mother was un- cooperatives and the mother valuing pharmacological management.

1.6   Research Question:

1. What is the level of midwives' knowledge and attitudes of non-pharmacological pain management strategies during childbirth?

2. What are the relationships between midwives' knowledge and attitudes?

3. What are the differences between the knowledge, attitude in relation to socio-demographic characteristics of the midwife?

4. What are the system-related factors associated with midwives' knowledge and attitudes towards NPPM interventions regarding working unit, midwife to mother ratio, hours of work, guidelines for pain management and training on NPPM?

5. What are the pregnant woman related factors associated with midwives' knowledge and attitudes towards of NPPM interventions regarding intention to use drug, strong beliefs in drugs, and valuing pharmacological management?

Chapter Two

Literature Review

2.1 Introduction

This chapter demonstrates the results of reviewing literature related to the aims of this study including measuring the level of knowledge attitude and practice toward the non-Pharmacological pain management practices during childbirth among midwives in southern hospitals of west bank. An electronic literature search was conducted to identify the literature available on the various variables of this study and to select relevant resources for the review. The search was performed using various electronic databases: PubMed Central (PMC), SciELO Social Sciences, and Google Scholar search engine was also utilized.

Keywords used were knowledge, attitude, practice, non-pharmacological, midwives, pain relief and childbirth, also including the midwives who work in childbirth units. The search was limited to resources in English and was conducted over the period from 2012 to 2020. Reference lists of relevant studies were also searched. The search was focused on the importance and impact of non-pharmacological pain management on women and babies during childbirth, the level of midwives' knowledge regarding non-pharmacological pain management, attitude toward the practice of non-pharmacological pain management and the barriers that hinder NPPM use.

2.2 The Review

This review will be divided into three main sections that will be presented as labor pain and non-pharmacological pain management, the knowledge of the midwives, their attitude toward practicing non-pharmacological methods, and the associated factors of NPPM.

Labor Pain and Non-Pharmacological Pain Management Strategies

Labor is a dynamic process that most women go through during childbirth. A woman's labor progresses and changes, and so does the pain (Zwelling, Johnson & Allen, 2010). Labor imposes the worst pain that most women ever face, yet each woman's experience of labor pain is highly individual in concern to both the nature and intensity of the sensations and woman's ability to cope with pain (Rooks, 2012). The perception of pain is influenced by a variety of factors including the woman's culture, her ability to cope with pain, her physical body, her surroundings, and her support systems. To adequately assist laboring mothers who are coping with labor pain to achieve the most gratifying birthing experience, healthcare workers need to thoroughly understand labor pain (Zwelling, Johnson & Allen, 2010).

Women often want to feel the least amount of pain possible. Socio-cultural views like these ultimately affect the definition of "coping" with labor as well as the methods used to cope (Whitburn, Jones, 2019). Non-pharmacological methods for pain relief do not remove the pain entirely but help to empower laboring mothers to cope with the pain they are experiencing more naturally (Zwelling, Johnson & Allen, 2010). To prepare women for their changing needs and desires, it is important to educate them on the several options available so they can make stress-free decisions as their pain transforms (Woodyard, 2011).

There are various types of non-pharmacological pain relief methods. Some of these methods are water immersion or showering during labor in which this promotes the release of oxytocin and endorphin hormones, it reduces pain, accelerates labor, and gives women a high level of satisfaction. As the literature found that women can be encouraged to shower and take baths during labor and delivery or, warm/cold packs in which applying them to the back, neck, chest, face, or any other painful areas in which it best suits the woman's comfort during or between contractions. Also, the gentle massage is a great non-pharmacological method that loosens and relaxes the woman's body, calms her anxiety by creating a sense of safety, improves maternal satisfaction, and mood it can be applied during contraction or between contractions. Finally, mobility and positions in which moving around during labor and vertical positioning ease pain, produce better fetal-maternal circulation, improve fetal oxygenation, and produce more effective uterine contractions, with standing, sitting, squatting, or any other comfortable position chosen by the mother can be effective and have no negative impact on mothers or their infants (Bonapace et al., 2018).

One of the studies showed the benefits of non-pharmacological pain relief methods which were: Absence of side effects, improved sense of patient self-control, postpone need of medications, provide a sense of comfort and relaxation, and they are cost-effective, available, easy to use and build trusting relationships (Almushait & Ghani, 2014). Also, they have the potential to reduce obstetrical interventions, increase breastfeeding rates, and improve mothers' satisfaction without increasing morbidity (Bonapace et al., 2018).

Knowledge of midwives on non-pharmacological pain management

Knowledge of health care providers and especially midwives play a vital role in the utilization of non-pharmacological pain management and their implementation. As a

result, this section will focus on the level of midwives' knowledge regarding non-pharmacological pain management and its benefits during childbirth.

Experience and knowledge of non-pharmacological methods have been effective in reducing labor pain; therefore, it has been suggested that midwives and nurses use non-pharmacological methods of reducing labor pain such as breathing techniques, relaxation and massage, help women during labor to change their attitude towards labor pain and delivery in addition to decreasing labor and make their attitude positive towards these issues. On the other hand, the use of these techniques is more effective when the training is given to mothers during pregnancy (Jira et al., 2020).

A qualitative descriptive study was conducted by McCauley, Danna, Mrema and van den Broek (2018) aimed to investigate the knowledge and attitudes of healthcare providers regarding the provision of pain relief options. They used semi-structured interviews for 24 participants and two focus group discussions of 10 members in Moshi, Tanzania. The study revealed that many healthcare providers reported a good knowledge of non-pharmacological methods of pain relief such as comforting and counselling the women, provision of psychological support, back massage, breathing techniques, encouraging the presence of a companion in the early stages of labor and encouraging the mother to walk or have a bath and yoga. Also, healthcare providers reported that they did routinely offer non-pharmacological options such as counselling women about the nature and severity of labor pain and providing psychological support and reassurance. However, other healthcare providers commonly encouraged the support of a companion during the early stages of labor. This study concluded that most healthcare providers are aware of the pain management approaches including both pharmacological and non-pharmacological options as they are an integral part of maternity care.

Moreover, in line with the previous study, a descriptive phenomenological study conducted by Boateng, Kumi, & Diji (2019) in Ghana explored the participant's experiences with using non-pharmacological intervention in labor. Results showed that all participants provided an accurate explanation of non-pharmacological interventions for labor pain management. Some of them reported learning about these methods from varied sources, including their midwifery or nursing training colleges, workplaces, and workshops and they were aware of and used non-pharmacological methods. The most known and used non-pharmacological methods were sacral massage, deep breathing exercises, and diversional therapy. Also, they implied that the benefits of these methods involved having no side effects, way of relaxing the woman, labor progresses smoothly, fostering a good relationship between the nurse/midwife and they are cheap and are non-invasive. To conclude, nurses and midwives were familiar with some of the non-pharmacological labor pain management techniques and frequently use them in their practice, and they perceive these interventions as beneficial.

Knowing the benefits of non-pharmacological pain management is a crucial part of the midwives' knowledge about these methods. In addition to what the previous articles implied, an analytical descriptive cross-sectional study conducted by Almushait and Ghani (2014) at Abha Maternity Hospital of 88 midwives aimed to determine the perception and actual practices among health-care providers regarding non-pharmacological pain relief during labor using self-administered structured questionnaires and a one-to-one interview. Participants emphasized that the role and benefits of non-pharmacological methods of pain relief during labor cannot be ignored. These benefits included the absence of side effects (70, 79.5%), improved sense of patient self-control (78, 88.6%), postponed medication (59, 67%), building a trusting relationship, and being cost-effective (51, 58.0%). Besides, most of the participants reported that they knew

different types of non-pharmacological pain relief methods. Findings implied that most of the methods were known but not used, and the most widely known and used interventions were related to techniques that reduced painful stimuli and techniques of active birth such as movement and changes in position, counter pressure, breathing exercise, birth companion, and psychological support. On the other hand, the techniques that were not known and not used were related to peripheral sensory receptors activation techniques, for example acupuncture, aromatherapy, and transcutaneous electrical stimulation. This implied that health care providers are well oriented regarding different types of pain relief methods. Non-pharmacological pain management therapies have the potential to be extremely beneficial for labor pain management.

However, a study done by Ramasamy, Kwena, Emarah & Kangethe (2018) revealed that the midwives had low levels of knowledge regarding non-pharmacological pain management during labor and did not receive any training regarding non-pharmacological methods which may hinder their use. This study aimed to investigate the effectiveness of knowledge, attitude, practice, and barriers to the implementation of non-pharmacological pain management during labor employing a non-experimental cross-sectional descriptive survey design. The researchers used a structured questionnaire to collect data from a sample of the population accessible in two medical institutions in Kenya. The study showed that 42.40% of midwives had knowledge of overall non-pharmacological pain management during labor among the 266 participants they had knowledge of non–pharmacological pain, continuous labor support, music and audio analgesia, general information regarding labor, movement and positioning, hydrotherapy, massage, heat and cold, acupressure, aromatherapy and knowledge of breathing exercises. The percentages were shown respectively as (65.04%, 58.40%, 54.89%, 53.52%, 50.75%, 40.85%, 40.23%, 27.44%, 26.32%, 20.93% and 15.04%).   However, Health care

providers had a positive attitude towards non-pharmacological pain management during labor. Some are using massaging, breathing exercises, and encouraging different laboring positions during labor. Some of the participants mentioned that they didn't have any previous training regarding non-pharmacological pain management during labor while others had.

The attitude toward the practice of non-pharmacological pain management

The belief of labor as a normal life event encouraged the midwives' usage and practice of non-pharmacological pain methods as they are expected to have a positive attitude towards pregnant women during delivery. Labor pain management continues to be an important subject that requires much attention and the attitude of midwives toward non-pharmacological methods will influence their usage and practice (Mwakawanga et al., 2022). As a result, this section will focus on the attitude, experiences, and practices of midwives regarding non-pharmacological pain management methods.

A descriptive exploratory study conducted in Ghana by Aziato, Kyei, and Deku (2017), aimed to gain in-depth insight into midwives' experiences with pharmacological and non-pharmacological labor pain management methods adopted in a Ghanaian care setting. The study included 20 midwives working in maternity and labor wards, all the midwives had a minimum of 3 years of experience caring for women in labor. The study resulted in different pain control modalities the midwives employed in the management of labor pain, and they were divided into the use of opioids and non-opioids pharmacological agents, variations of a description of analgesics, fear of side effects of analgesics and experiences with local and epidural anesthesia. The non-pharmacological management of labor pain was described as psychological care in which they believed that reassuring and talking to the women to assume side-lying positions relieved labor pain, sacral massage to the sacral region relieved pain as well in which they taught

women to rub their back to relieve their labor pain and how to do deep breathing exercises; they admitted that during labor pain they encouraged the women to breathe in and out during contractions to supply more oxygen to the fetus and to avoid screaming to preserve the energy needed for pushing. So, midwives used different types of pain management including the use of pain-relieving drugs and non-drug methods, but the midwives did not give adequate pain killers because of their fear of side effects and increased workload. To conclude; the midwives were familiar with using some methods of non-pharmacological pain management and they have a positive attitude regarding them, these methods were including sacral massage and breathing exercises.

Moreover, a systematic literature review was performed by Vargens, et al. (2013) in Brazil to describe the non-invasive care technologies that nurse-midwives use most frequently to relieve pain during childbirth and to provide an analysis of the studies published by nurse-midwives regarding the use of non-invasive care technologies for pain relief in labor. The non-invasive care technologies that were most frequently employed were: breathing and relaxation stimulation; essential oil massage; promoting freedom of movement, walking, and upright positioning; use of showers and baths; and use of birth balls. The study analyzed twenty-one scientific articles all addressing non-invasive technologies used in midwifery practice to relieve childbirth pain. The researchers found from the literature they viewed that the most used methods were controlled breathing, verbal encouragement, freedom of movement, position changes which were associated with greater understanding and cooperation by women during labor, massage with essential oils which alleviated pain felt during labor, as well as showers and immersion tub baths associated with lumbar massage, in addition to that promoting their well-being and empowerment, vertical up-right delivery positions; were included because they not only helped alleviate pain but also aid in relaxing the pelvic muscles and consequently the

progression of labor. This revealed that Brazilian nurse-midwives have made efforts to focus care during labor on the delivering women and they have strengthened de-medicalized knowledge, based on scientific evidence and good outcomes in pain relief during labor (Vargens, Silva & Progianti, 2013).

To gain an in-depth insight into the midwives' religious beliefs and practices toward caring for women in labor, and their experiences and perceptions of labor pain a study done by Aziato, Ohemeng & Omenyo (2016).The study revealed that some Christian midwives believe that women experienced labor pain because of a curse from God as indicated in the Bible and prayed and sang for women in labor so God could deliver them safely with less pain, although some midwives believe that praying and singing did not relieve pain and there was no need for them. On the other hand, Muslim midwives in the study stated that there is a verse in the Holy Quran that specifies safe delivery and they used this verse to pray with the hope of safe childbirth. The midwives reiterated the need for spirituality to be added to the midwifery curriculum. In addition, all the midwives in this study observed that women prayed when in labor for safe childbirth and pain relief as religious practices. Some midwives prayed with women in labor when they requested to be prayed for. Some midwives allowed pastors to come into the labor ward to pray for the women while others did not allow them because of a lack of privacy on the ward and the noise associated with such prayers. Finally, religious artifacts are used in labor (items or objects used during labor to demonstrate religiosity).To conclude, it was evident that the midwives' faith and their experiences during their midwifery practice were closely interrelated. Midwives believed labor pain was natural and religious practices are important to prevent complications. And they shared their experiences on religious beliefs and practices.

Another study done by Samuels and her colleagues to explore more about the non-pharmacological pain management methods used in relieving pain, complementary and alternative medications (CAM) are considered viable ways to relieve pain and are important to be explored. A quantitative cross-sectional study conducted by Samuels and her colleagues, aimed to evaluate the use and attitudes of nurse-midwives in Israel toward complementary and alternative medicine (CAM). (Samuels et al., 2010). In CAM "is a category of medicine that includes a variety of treatment approaches that fall outside the realm of conventional medicine" (ICM, 2017). The study includes nurse-midwives who work in labor and delivery wards from five Israeli medical centers. Participants completed a CAM health belief questionnaire which is a validated tool examining data regarding personal health behavior, use of CAM therapies, and attitudes toward CAM. The study revealed that nearly 70% of respondents reported that they recommend CAM use, and nearly 50% would recommend or consider recommending CAM treatments to their patients, while 10% of the midwives didn't recommend the use of CAM. The most popular therapies used and recommended were massage followed by herbal medicine and then meditation/yoga/imagery and therapeutic touch. Also, the nurse-midwives had a great positive attitude toward the use of CAM while the other healthcare providers were unfamiliar with these methods. Most of those (87.3%) reported using CAM (67.1% massage, 48.6% herbal medicine, 42.2% meditation, 40.5% touch therapies, and 39.9% prayer) and agree with many fundamental tenets of CAM such as the existence of energy forces, self-healing, and integrating patients' health beliefs and values into their care. This implied that most nurse-midwives reported the usage of CAM, are recommending these methods to their patients and believed that CAM can complement conventional medical therapies. Healthcare providers could benefit from education concerning the efficacy and safety of CAM modalities during pregnancy and childbirth (Samuels et al., 2010).

In contrast, another study showed that most healthcare providers understand the role of non-pharmacological and pharmacological pain management in labor but the majority of them use pharmacological medication because of hospital-related factors and attitudes or beliefs of patients. This quantitative study was done to explore the different methods obstetricians and nurses, who conduct normal vaginal delivery, use to relieve pain and their perception of those methods in Egypt. Mousa, et al (2018) distributed a self-administered questionnaire to 306 health care providers in Minia maternity units. Results showed that 44.9% of the respondents used non-pharmacological methods in the first stage of labor. These methods included giving assurance or explaining the labor process (19.2%), followed by massaging and therapeutic touch (10.3%) and changing the maternal position or moving the mother around (8.5%), whereas 18.4% used pharmacological obstetric analgesia methods in the first stage. However, the majority (67.9%) used pharmacological methods (e.g., oral or intravenous (IV) Paracetamol or tramadol) or intramuscular opioids during the second stage of labor. Less than one-quarter (19.2%) had taken a continuing education course that focused on pain-relief methods. Moreover, the study showed that the majority (89.7%) of respondents expected women to feel pain in labor, and most expected that pain should be relieved (78.2%). A 42.3% of the respondents believed that the use of pharmacological methods might influence the progress of labor, and 84.6% thought that it increased women's comfort, while 69.2% agreed that all methods will increase the ability of mothers to cope with pain. (Mousa et al., 2018).

The associated factors of the using of non-pharmacological pain management

Managing labor using non-pharmacological methods is limited due to some barriers and challenges that hinder midwives from using non-pharmacological pain management. This section will review some of the barriers based on the literature

analyzed. By identifying the barriers, a plan can be created to overcome them so that mothers can deliver naturally while coping with their labor pain successfully.

A study was conducted by Almushait & Ghani (2014) at Abha maternity hospital aimed to determine the perception, actual practices and barriers among healthcare providers regarding non-pharmacological pain relief during labor found that the most prevalent barriers to using non-pharmacological methods for pain relief during labor were barriers within the healthcare system. These barriers include lack of time, policies, inadequate nursing staff numbers, and lack of equipment. In addition to barriers related to health care providers such as lack of knowledge, difficulty in applying, and the unwillingness of team members. Moreover, there were some barriers that are related to patients such as patients' unwillingness to try the non-pharmacological methods and their strong beliefs in analgesia and the severity of pain.

In line with the previous article, another descriptive phenomenological study by Boateng, Kumi, & Diji, (2019) in Ghana that explored the participant's experiences with using non-pharmacological intervention in labor revealed some barriers that prevent the use of non-pharmacological pain management. These barriers were clinician-related perceptions and beliefs of midwives which hindered their frequent utilization of non-pharmacological methods. A number of midwives believe that non-pharmacological interventions don't relieve labor pain, but they believe in the effectiveness of pharmacological interventions. The health system-related barriers, in which they included factors related to the structure of the healthcare system as well as the physical design of the labor wards, also, the inadequate staff per shift may hinder their use. Finally, client-centered barriers described the preferences of clients that hindered the use of non-pharmacological methods in managing labor pain. Midwives may want to administer some of these interventions but the client may decide against them for various reasons

such as the client's beliefs and some misconceptions about the use of non-pharmacological.

Moreover, another study that aimed to investigate the knowledge and attitudes of healthcare providers regarding the provision of pain relief options found similar results regarding barriers related to the health system such as lack of staff, hospital structure equipment, and protocols. Moreover, this study found that limited education and the opportunity to practice non- pharmacological pain relief methods are considered important barriers. Finally, the negative beliefs, fears, and malpractice hinder the use of non-pharmacological pain management. (McCauley et al., 2018)

From anoth er perspective, a study conducted by Klomp et al., (2016), used a qualitative study in the Netherlands. This study aimed to explore midwives' perceptions of supporting women in dealing with pain during labor. The results of this study highlighted that barriers that affected the role of midwives in labor pain management were time constraints, discontinuity of care, the role played by the partner, and cultural influences that influenced their perception of their professional role in helping women with labor pain.

2.3 Conceptual Definitions

Midwife

A midwife is a" person who has successfully completed a midwifery education program that is based on the International Confederation of midwives' (ICM. 2017); Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education and is recognized in the country where it is located; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery" (ICM, 2019).

Knowledge

Knowledge is defined as "Information or facts that a person has in mind about something." (Oxford learners' dictionaries, 2019). Another definition of knowledge is "A fund of information that enables an individual or a group to have a confidence of a subject with the ability to use it for a specific purpose." (ICM, 2017).

Attitude

Attitude is defined as "A person's views, values, beliefs, and feelings about a thing, process, or person that often leads to a positive or negative reaction." (ICM, 2017).

Non-pharmacological pain management

Non-pharmacological pain management "Is the management of pain without medications. This method utilizes ways to alter thoughts and focus concentration to better manage and reduce pain." (Stanford health care, 2019).

Pain management:

It is defined as "Pain management covers a number of methods to prevent, reduce, or stop pain sensations. These include the use of pharmacological methods and non-pharmacological methods" (Encyclopedia of health, 2020). Or "Is a branch of medicine employing an interdisciplinary approach for easing the suffering and improving the quality of life of those who complain of severe pain" (American college of obstetrics and gynecology, 2019)

.Labor pain

Labour pain is defined as "The pain resulted from contractions of the muscles of the uterus and by pressure on the cervix. it is strong cramping in the abdomen, groin, and back, as well as an achy feeling." (Encyclopedia of health, 2020).

Non-pharmacological labor pain management

It is defined as "Comfort measures that provide natural pain relief can be very effective during labor and childbirth. Birthing techniques such as hydrotherapy, hypnobirthing, patterned breathing, relaxation, and visualization can increase the production of endogenous endorphins that bind to receptors in the brain for pain relief (Newton-Wellesley Hospital, 2014).

Socio-demographic characteristics

Socio-demographics refer to a combination of social and demographic factors that define people in a specific group or population. (Marine Aubagna, 2020).

Health care system

It refers to the organization of the people, institutions and resources that deliver health care services to meet the health needs of the clients. (WHO. 2009).

Associated Factors

It is a fact or situation that influences and connects to the result, if one thing is associated with another; the two things are connected with each other. (Cambridge English Dictionary. 2022).

2.4 Operational Definition

Knowledge

- Adequate knowledge: nurses who had scored median 14 and above on the knowledge-related questions were considered as having adequate knowledge.

- Inadequate knowledge: those nurses who scored below the median on the knowledge questions were considered as having inadequate knowledge.

Attitudes

- Favorable attitude: midwives who had scored median 77.5 and above on the attitude-related questions were considered as having a positive attitude

- Unfavorable attitude: midwives who had scored below the median on the attitude-related questions were considered as having a negative attitude.

Socio-demographic characteristics

Socio-demographic characteristics: is measured by age, level of education, and years of experience.

Associated Factors

The associated factors in this research were related to system or facility related factors, and woman related factors.

2.5 Conceptual framework

This study's conceptual framework was based on Bloom's taxonomy of educational objectives. A modified knowledge, and attitude from (KAP) model of Bloom's taxonomy, a conceptual framework for non-pharmacological pain management during labour and its associated factors was developed by the researcher after reviewing the various literature. In addition to the knowledge and attitude in (KAP) model; a literature review of associated factors to non-pharmacological pain management during labor reveals the relationship between knowledge, and attitude, of NPPM during labor, used to guide. There are two aspects to the cognitive domain: knowledge and the cognitive process (Anderson & Krathwohl, 2001). The cognitive process refers to the mechanism by which such different levels of knowledge are reached. In this study, under the cognitive domain, researchers will include general information about work, massage, respiratory exercise, continuous labor support, exercise and positioning. It has various aspects such as non-pharmacological pain management. Attitude can be defined as human perception and

cognitive response to a state or event. In this study, the researcher will categorize under attitude: adherence to and expectation of results of non-pharmacological pain management during work, motivation for non-pharmacological pain management, and perceived self for development, (Houghton, 2002). In this study, researchers will focus primarily on two associated factors: system- associated factors and pregnant woman - associated factors. These are primarily the knowledge, and attitudes of midwives. The management of non-pharmacological pain during treatment to perform it affects work. Therefore, in this study, knowledge and attitude were key concepts representing non-pharmacological pain management by midwives during labor. According to the KAP model (Launiala, 2009), there is an interrelationship between knowledge and attitudes. Certain knowledge can affect a person's ability to act. Attitude affects people to practice. Knowledge and attitude lead to changes in human behavior. Therefore, in this study, knowledge and attitude, and associated factors are key concepts representing non-pharmacological pain management by healthcare providers during labor.
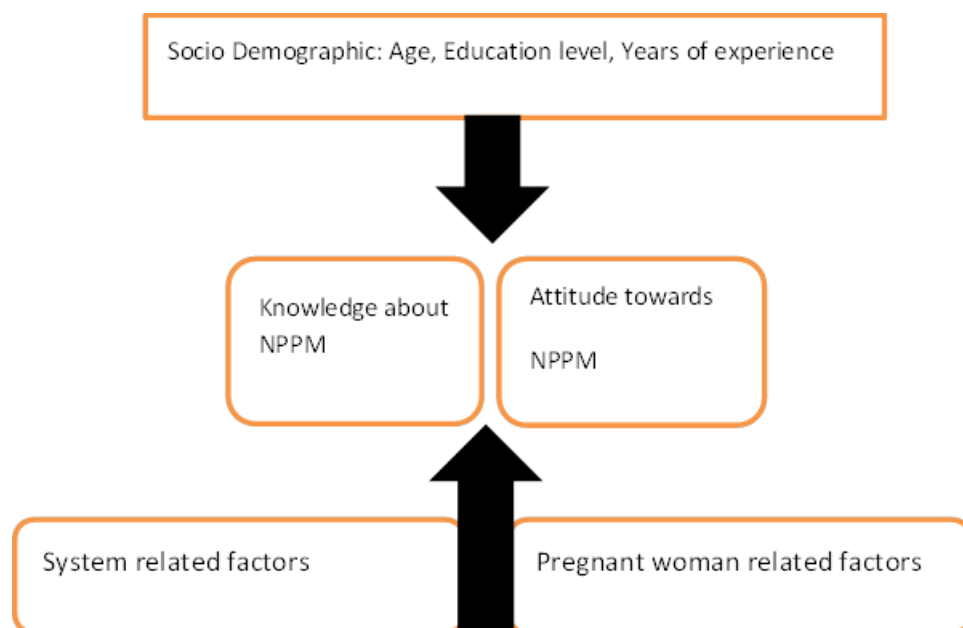
Figure 2.1. Conceptual framework of knowledge and attitude towards NPPM and associated factors among midwives in Palestinian hospital.

Chapter Three

Methodology

This chapter will explain the research methodology, including study design, population, and sampling, ethical considerations, instrumentation and methods of data collection, and methods of data analysis.

3.2 Study settings:

This study was carried out at conveniently selected hospitals from Sothern West Bank and east Jerusalem hospitals, Jerusalem, Bethlehem and Hebron that had labor departments as a part of Palestinian hospitals. From Jerusalem hospitals; Al-Makassed Hospital, Palestinian Red Crescent Hospital and Saint-Joseph Hospital were selected. From Hebron Hospitals; Al-Ahli Hospital, Alia Governmental Hospital and Palestinian Red Crescent Hospital, Al-Mizzan Hospital and Yata Hospital were selected. From Bethlehem hospitals, Beit-Jala Governmental Hospital was selected.

Al-Makassed Hospital. Al Makassed Hospital is a Palestinian hospital in East Jerusalem run by the Makassed Islamic Charitable Society.

Saint-Joseph Hospital: Joseph French Hospital in Jerusalem is one of the important hospitals in the city, a maternity department aimed to provide services to the residents of East Jerusalem in the field of childbirth, and it has been equipped with modern equipment at the highest level.

Palestinian Red Crescent Hospitals: Red Crescent Hospitals in Hebron and Jerusalem are a part of The Palestine Red Crescent Society that is a national society with an

independent, officially recognized legal personality, and it is one of the components of the International Movement of the Red Cross and Red Crescent.

Al-Ahli Hospital: it is non-governmental, non-profit, non-politicized charitable**.** Its strategic objective is to raise the level of services health care in Hebron governorate in particular.

Alia Governmental Hospital: also known as Hebron Governmental Hospital, or Princess Alia Governmental Hospital, is a public hospital in Hebron, Palestine's West Bank.

 Al-Mizzan Hospital: it was established in 1996 in Hebron. It is a private hospital.

Yata Hospital: it's a governmental hospital. Martyr Abu Al-Hassan Al-Qasim Governmental Hospital is one of the Palestinian governmental hospitals operating in the city of Yata, south of Hebron Governorate, in the West Bank

Al-Hussein Governmental Hospital, also known as Beit Jala Governmental Hospital, is a public hospital in Beit Jala, Palestine's West Bank (Wikipedia, 2022).

3.3 Study population:

The population for the study consisted of all midwives employed at the aforementioned hospitals in Jerusalem, Bethlehem and Hebron.

3.4 The inclusion criteria:

All midwives were eligible for participation in the study if they were currently employed at one of the hospitals mentioned in the study.

1. Midwives who at least had a one-year experience in the labor room.

2. Midwives whose age was 20 years or more.

3. Midwives from all levels of education (Diploma, Bachelor, Master or more).

3.5 The exclusion criteria

1. Midwives who were on part-time contract. This category of (Part-time midwife) works in more than one hospital, therefore, including them in the study sample does not give accurate results, as the policy of each hospital may be different.

2. Midwives who were not available during the data collection period.

3.6 Sampling method:

Participants were recruited to the study employing the convenience sampling method. Midwives who met the inclusion criteria and were at work during the data collection period were invited to participate in the study and those who volunteered to fill in the questionnaire composed the study sample.

3.7 Sample size

The sample size of this convenience study was collected upon Raosoft calculator with margin of error 5% and confidence level 95%, the minimum participants' number required to analyze the study is 132 (Raosoft, 2007). The total number of midwives working in the labour ward in the mentioned hospitals was 200. A total of 170 respondents completed the questionnaires, representing 85% of the study population.

3.8 Data Collection Instruments

Data was collected using a structured and pre-tested self-administered questionnaire adapted from previously validated tools of the Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP) questionnaire (Ferrell, & McCaffery, 2014), and modified from a similar study (Jira, 2017).

Part one of the questionnaire contained items assessing the socio-demographic characteristics of the participants including their age, years of experience, level of education, and their primary source of information about NPPM.

Part two: Midwives' knowledge assessment questionnaire for non-pharmacological pain management included 20 true / false items, where "true" was scored "1" and "false was scored "0". According to the scoring system of the original tool, midwives who scored 14 or more were considered to have adequate knowledge, while who scored less than 14have been considered to have inadequate knowledge.

Part three: Midwives' attitude evaluation questionnaire: This questionnaire covers 19 attitude-related items, including favorable statements about the use of non-pharmacological pain management modalities. Scoring of the measure's items was on five-point Likert scale, where 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly. The total score of the measure was induced by summation of all items' scores. The total score was classified as favorable or unfavorable. According to the scoring system of the original tool, midwives who scored more than the median, which is 77.5 were considered to have favorable attitudes, while who scored 77.5 or less have been considered to have unfavorable attitude.

Part four: System-related factors that are associated with midwives' knowledge and attitudes toward non-pharmacological pain management. (Jira et al., 2021).

Part five: Pregnant women-related factors associated knowledge and attitude of non-pharmacological pain management among midwives; it was measured by frequency and percentage. (Jira et al., 2021).

3.9 Pilot study

Pilot studies are mini versions of larger studies, as well as the specialized pre-testing of a specific research instrument, such as a questionnaire or interview schedule. Pilot studies are an essential component of a solid study design. Pilot studies accomplish a variety of vital purposes and can provide valuable insights to other researchers. (van

Teijlingen, & Hundley, 2002). For the purposes of preparing the pilot study, the researcher distributed the questionnaire to a sample outside the study population. The pilot study was conducted on 15 midwives who were selected from The Holy Family hospital in Bethlehem and were not included in the sample population to test the feasibility of tools and time required to be applied. Cronbach's Alpha for knowledge was 81% and for attitude was 87%, the time required to fill the questionnaire was about ten minutes, and no modification was done.

3.10 Validity and Reliability of the questions

The questionnaire was adapted from a previously validated (NKASRP) questionnaire and modified from a similar study. The questionnaire was prepared in English and consisted of five sections of closed-ended questions, (Jira et al., 2021), then was translated to Arabic and back-translated into English. Back translation is a common validation technique in worldwide research contexts. (Tyupa, 2011). The researcher sought opinion from supervisor and the translation was reviewed. Moreover, the researcher verified the validity of the study tool through feedback from the pilot study, where the participants in the pilot study showed their interaction in answering the study questions and there was no problem for them in understanding the questions.

Reliability is described as the consistency of the measurement or the degree to which an instrument measures the same way each time in similar situations and on similar subjects, Cronbach Alpha is often used to test the internal consistency of the variables measuring the construct in scale (Hair et al., 2006). Where the result is statistically acceptable if the values of (Cronbach Alpha) is greater than (60%) or more this indicates higher degrees of Reliability for the study tool (Sekaran & Bougie, 2012).

Table 1 shows the reliability coefficients of the attitude items. Overall, Cronbach's Alpha for the attitude items was 0.855.

Table 1

Correlation coefficients

Variable	No. of item	Cronbach's Alpha
Attitude	19	.855
Knowledge	20	.877

3.10 Data collection

The data were collected from eligible midwives working in Palestinian governmental and non-governmental Palestinian hospital.

The questionnaire created for this purpose was used to compile the study sample. Before analysis, the data was cleaned and validated for accuracy and completeness, after receiving ethical approval from the hospital administrations and the Scientific Research Committee at Al-Quds University. All midwives at the eight hospitals who met the eligibility requirements were asked to complete the study questionnaire and given a permission form with all the study's details. It was optional to take part in the study. During the data collection procedure, no names or other forms of identification or personal documentation were included. The agreement of midwives to take part in the study has been regarded as consent for participation. The study's goal was stated on the consent form. The questionnaires were given to the participants directly from the researcher and explanation was done for the purpose of the study, and they filled questionnaire alone.

3.11 Data Analysis

The collected data was analyzed by the Statistical Package for Social Sciences (SPSS) Version (28). Data entry was double-checked for outliers or errors. Data were tested for normality using the Kolmogorov-Smirnov and Shapiro-Wilk tests. The Kolmogorov-Smirnov and Shapiro-Wilk test showed that the data was not normally distributed for both the knowledge and the attitude scores (p=<0.005).

Data analysis of descriptive and inferential statistics was conducted. Regarding descriptive statistics, frequency, percentages, median and IQR, mean score and Standard Deviation (SD) were used to describe the study variables. Regarding inferential statistics, because the dependent variable was not normally distributed, the non-parametric test included Spearman correlation was used to assess the relationships between variables.

3.11 Variables of the study

3.11.1 Dependent variable:

Knowledge of midwives towards NPPM.

Attitude of midwives towards NPPM.

3.11.2 Independent variables:

Socio demographic factors: Age, working experience, NPPM educational course, and level of education.

System related factors: midwife to patient ratio, NPPM guidelines, lack of pain management equipment, training on NPPM, working unit, and working hours.

Patient related factor: strong beliefs in drug, Pregnant woman/ family intention using drugs, and mother un-willing to use NPPM.

3.11 Ethical consideration

Ethical approval was obtained from the Research Ethics Committee at Al-Quds University. Administrative permissions from hospitals were granted, and participants' confidentiality was ensured by coding the questionnaires and keeping them in a locked cabinet. All respondents were assured that the data would not have any negative consequence on any aspects of their life, and midwives' right for refusal to participate was respected. Moreover, all participants received an explanation about the purpose of research via a written consent form. Participants were assured that all responses would be anonymous and would not be linked to their identity. Also, every participant had the right to self-determination by voluntarily participating without penalty or prejudice or harm and was informed that they had the right to withdraw from participation anytime they felt the need to withdraw from participation.

Chapter Four

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Results

This chapter presented the findings of the study which included the frequency and percentages of the midwife's characteristics, the level of knowledge and attitude toward non-pharmacological pain management among the Palestinian midwives, system or facility related factors, and patient-related factors.

Frequency and percentages of the demographic characteristics of the midwives

Data entry was performed and double-checked for outliers or errors. Out of 200 distributed questionnaires, 170 questionnaires (85%) were included in data analysis. Table 1 illustrates the socio-demographic characteristics of the midwives. Out of 170, 99 midwives (58.2%) were less than 30 years old, 49 (28.8%) were between 30-40 years old and 22 (12.9%) were more than 40 years old. 75 (44.1%) of midwives had less than six years of experience. More than two-thirds of midwives have bachelor's Degree and their primary source of non-pharmacological treatment was from universities (Table 1).

Table 1

Socio-demographic characteristics of the midwives (n=170)

Socio-demographic characteristics		N	%
Age group	<30 years old	99	58.2
	30-40 years old	49	28.8
	>40 years old	22	12.9
Experience	<6 years	75	44.1
	6-10 years	53	31.2

	11-15 years	21	12.4
	>15 years	21	12.4
Level of education	Diploma	30	17.6
	Bachelor's Degree	120	70.6
	Master or PhD	20	11.8
Primary Source of your knowledge	University	105	61.8
	Experience	52	30.6
	Workshops and conferences	5	2.9
	Internet	8	4.7

Knowledge about Non-Pharmacological Pain Management Practices During Childbirth Among Palestinian Midwives.

According to the scoring system of the original tool, midwives who scored 14 or more were considered to have adequate knowledge, while who scored less than 14 have been considered to have inadequate knowledge. The median score toward the knowledge was 14 and the Interquartile Range (IQR) was 3 with the minimum score 5 and the maximum score 18. In addition, the statistical value regarding the skewness was -0.686 (negative skew) and the kurtosis was 1.419.

Figure 1 presents the knowledge toward non-pharmacological pain management during childbirth among Palestinian midwives. 107 (62.9 %) of midwives have shown adequate knowledge toward non-pharmacological pain management during childbirth. However, 63 (37.1 %) have shown inadequate knowledge.

Knowledge Toward Non-Pharmacological Pain Management Practices During Childbirth
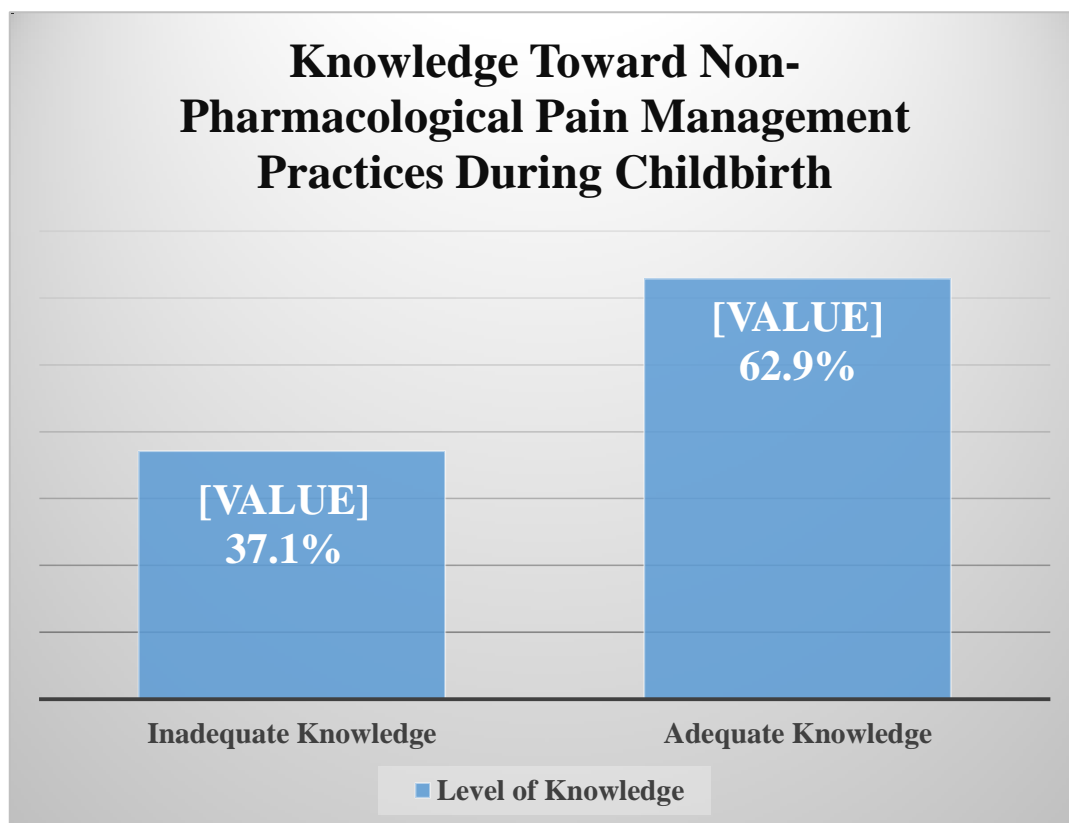
Figure 1. Knowledge about Non-Pharmacological Pain Management Practices During Childbirth (n=170*)*

Table 2 illustrates the frequency and percentages of correct and incorrect answers for each item toward non-pharmacological pain management practices during childbirth. The vast majority of midwives have answered correctly about the most accurate judge of the intensity of the pregnant woman's pain, while only 5 (2.9%) have answered incorrectly. In addition, 163 (95.9%) of midwives answered correctly that minimizing noise can alleviate pain compared with 7 (4.1%) were answered incorrectly. On the other hand, more than two-thirds of midwives have answered incorrectly the following items; non drug interventions (e.g. heat, music, imagery etc.) are effective only for mild pain control and vital signs are always reliable indicators of the intensity of a pregnant woman's pain. More details are shown in table 2.

Table 2

Midwives' knowledge about non-pharmacological pain management during labor

Item	Correct Answer		Incorrect Answer	
	N	%	n	%
1. The most accurate judge of the intensity of the pregnant woman's pain is the pregnant woman.	165	97.1	5	2.9
2. Provide a suitable room temperature and good air condition can alleviate pain.	158	92.9	12	7.1
3. Provide the pregnant woman with a possibility to rest by minimizing noise can alleviate pain.	163	95.9	7	4.1
4. Including family members in the pain management regimen can increase pregnant woman's ability to manage pain.	149	87.6	21	12.4
5. Use of non-pharmacological pain management therapies has no value to the pregnant woman.	125	73.5	45	26.5
6. Encouraging the pregnant woman to relax different parts of her body can alleviate the sensation of pain.	158	92.9	12	7.1
7. Try to focus a pregnant woman's thoughts/ attention away from pain can decrease pain.	133	78.2	37	21.8
8. Vital signs are always reliable indicators of the intensity of a pregnant woman's pain.	66	38.8	104	61.2
9. Asking the pregnant woman to suggest ways to relive her pain can increase pregnant woman's ability to manage pain.	145	85.3	25	14.7
10. Pregnant women who can be distracted from pain usually do not have severe pain.	118	69.4	52	30.6
11. Non drug interventions (e.g. heat, music, imagery etc.) are effective only for mild pain control.	52	30.6	118	69.4
12. The pregnant woman's pain can alleviate by position changes.	154	90.6	16	9.4
13. The benefit of non-pharmacological pain management is only fewer side effects than Medication.	93	54.7	77	45.3
14. Pregnant woman who can be distracted from pain usually do not have pain.	96	56.5	74	43.5
15. Distraction for example by the use of music or relaxation can decrease the perception of pain.	146	85.9	24	14.1
16. Pregnant women with chronic pain should receive pain medications with non-pharmacological at regular intervals with or without the presence of discomfort.	144	84.7	26	15.3

17. The pregnant woman should be advised to use non-pharmacological means alone rather than use pain medications.	75	44.1	95	55.9
18. Non-pharmacological methods of pain relief have no applications for neonates.	110	64.7	60	35.3
19. Non-pharmacological pain management is only includes massage distraction heat/Cold & relaxation.	92	54.1	78	45.9
20. It may often be useful to give a placebo to a pregnant woman in pain to assess whether she is genuinely in pain.	80	47.1	90	52.9

Attitude Toward Non-Pharmacological Pain Management Practices During Childbirth Among Palestinian Midwives.

According to the scoring system of the original tool, midwives who scored more than the median, which is 77.5 were considered favorable attitude, while who scored 77.5 or less had unfavorable attitude. The median score toward the attitude was 77.5 and the IQR was 10.25 with the minimum score 49 and the maximum score 95. In addition, the statistical value regarding the skewness was -0.457 (negative skew) and the kurtosis was 0.721.

Figure 2 presents the attitude toward non-pharmacological pain management during childbirth among Palestinian midwives. 85 (50 %) of midwives have shown favorable attitude toward non-pharmacological pain management practices during childbirth compared with 85 (50 %) unfavorable attitudes.
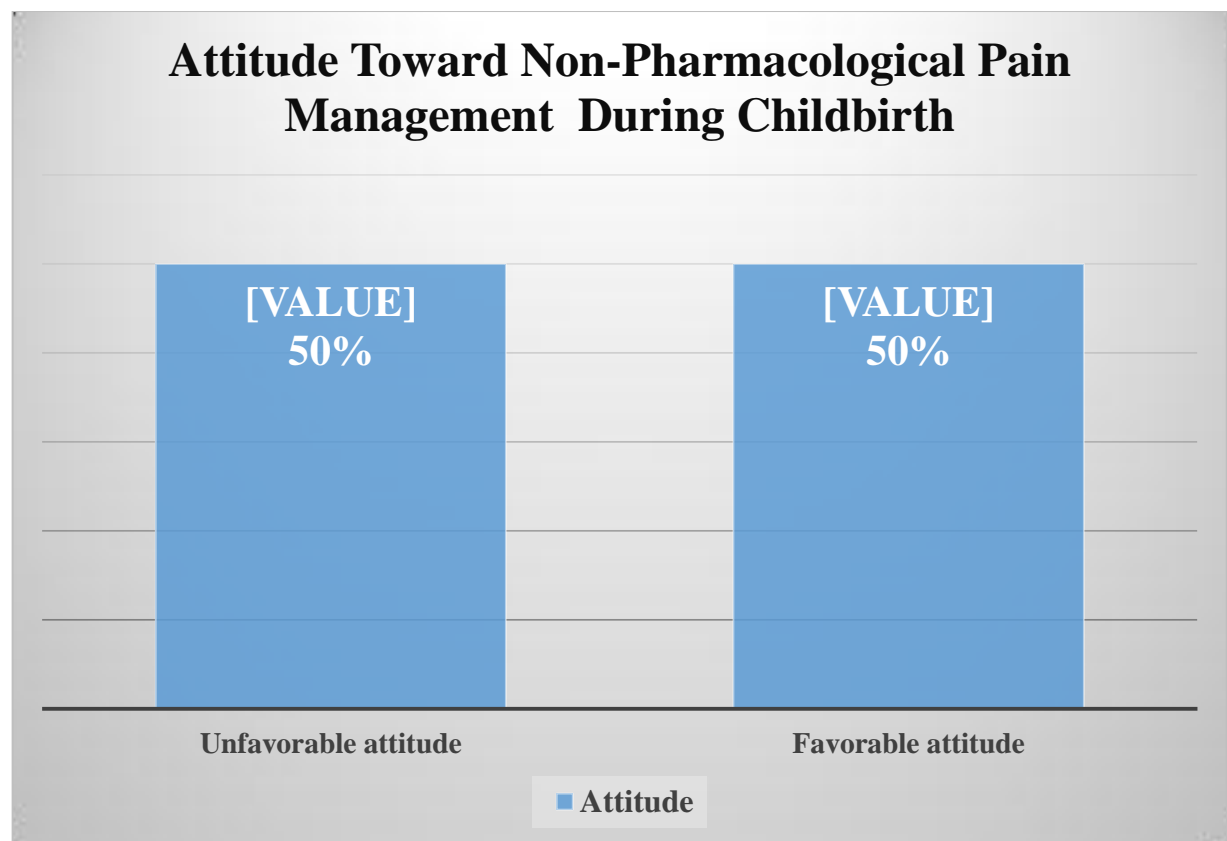
Figure 2. Attitude Toward Non-Pharmacological Pain Management Practices During Childbirth (n=170)

Table 3 shows the frequency and percentages for each item toward the attitude of non-pharmacological pain management practices during childbirth. The highest favorable attitude among midwives was in encouraging patient by rewarding her verbally can alleviate her pain as well as teaching the patient, the correct breathing technique can alleviate her pain. In addition to that, midwives are willing to provide information on issues related to non- pharmacological methods to sick people. However, the lowest unfavorable attitude was that using pain assessment tools does not consume time for other ward activities. More details are shown in table 3.

Table 3

Percentages of the responses for each item about the attitude toward non-pharmacological

pain management practices during childbirth (n=170)

Item	SD	D	N	A	SA	Mean ±
1. Pain is seen in the pregnant women's behavior.	0.6%	2.9%	5.9%	51.2%	39.4%	4.26 ±.748
2. Non-pharmacological therapies should be given to sick people.	1.2%	4.1%	15.3%	59.4%	20.0%	3.93 ±.789
3. Distraction reduces pain intensity.	0.0%	5.3%	16.5%	62.9%	15.3%	3.88 ±.720
4. Non-pharmacological interventions are very effective for mild, moderate and severe pain.	2.4%	11.8%	20.0%	48.8%	17.1%	3.66 ±.973
5. Using pain assessment tools usually not makes nursing more complicated.	1.2%	8.8%	27.1%	49.4%	13.5%	3.65 ±.865
6. Using pain assessment tools not consumes time for other ward activities.	1.2%	12.4%	24.1%	49.4%	12.9%	3.61 ±.906
7. Midwives are best judges of the patient's pain intensity because they spend 24 hours with the patient	1.8%	4.1%	15.3%	44.1%	34.7%	4.06 ±.908
8. Non-pharmacological Pain management education received during midwives' training is not adequate for effective pain management.	1.2%	10.6%	24.7%	42.9%	20.6%	3.71 ±.951
9. The midwife s' role during non-pharmacology pain management is not only flow doctors' order.	0.6%	6.5%	8.8%	58.2%	25.9%	4.02 ±.814
10. I am willing to provide information on issues related to non- pharmacological methods to sick mothers?	0.0%	2.9%	7.1%	45.9%	44.1%	4.31 ±.732
11. I am willing to provide non-pharmacological methods to people who have pain.	0.0%	2.4%	7.6%	54.7%	35.3%	4.23 ±.688
12. I am willing with that patient should be advised to use non-pharmacological means with pain medications?	0.0%	1.8%	9.4%	53.5%	35.3%	4.22 ±.686

	SD	D	N	A	SA	Mean ± SD
13. Preparing a pregnant woman carefully for a procedure by telling her about what will be done, can decrease pain.	0.6%	1.8%	8.8%	53.5%	35.3%	4.21 ±.723
14. I am willing to encourage the pregnant woman to think about / imagine pleasant and positive matters when she feels pain	0.0%	1.8%	11.8%	48.2%	38.2%	4.23 ±.722
15. Teaching the pregnant woman, the correct breathing technique can alleviate her pain.	0.0%	1.2%	7.1%	43.5%	48.2%	4.39 ±.672
16. Encouraging patient by rewarding her verbally can alleviate her pain.	0.0%	0.6%	3.5%	45.9%	50.0%	4.45 ±.596
17. Encouraging the pregnant woman to relax different parts of her body can alleviate the sensation of pain.	0.6%	1.2%	10.0%	45.9%	42.4%	4.28 ±.740
18. Interior decoration of the unit (colors, lighting, furniture…) affects pregnant woman's ability to manage pain.	1.8%	2.9%	15.9%	47.6%	31.8%	4.05 ±.869
19. Encouraging family members to bring some of the pregnant woman's belongs to the unit (pictures, pillows…) can relief pain.	4.7%	1.8%	20.6%	42.9%	30.0%	3.92 ±1.00

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

System related factors

Table 4 presents the frequency and percentages of the system related factor. More than two-thirds of midwives have currently serving in patients, while the rest were in out-patients and emergency unite. The midwife to pregnant mother ratio were as follow; 56 (32.9%) were 1:2, 64 (37.6%) were 1:4, 36 (21.2%) were 1:>6 and 14 (8.2%) were 1:6. In addition, more than two-thirds of midwives revealed lack of non-pharmacological pain management equipment's as well as no pain management guideline available for managing patient's pain in the unites. More than two-thirds of midwives have not

received any training regarding non-pharmacological pain management. More details are shown in table 4.

Table 4

Frequency and percentages of the system related factor (n=170)

Item	N	%
Which area of unit are you currently serving		
In patient	124	72.9
Out patient	30	17.6
Emergency unit	13	7.6
Other	3	1.8
In your setting what is the midwife to pregnant woman ratio?		
1:2	56	32.9
1:4	64	37.6
1:6	14	8.2
1:>6	36	21.2
In your facility is there lack of non-pharmacological pain management equipment		
Yes	117	68.8
No	53	31.2
How many hours do you work per day?		
8 hours	65	38.2
8-12 hours	63	37.1
>12 hours	42	24.7
Is there a pain management guideline available for managing pregnant woman's pain on your unit?		
Yes	47	27.6
No	123	72.4
When is your working hour?		
Morning	29	17.1
Evening	22	12.9
Night	13	7.6
Other (Both morning and evening)	106	62.4
Is there a pain assessment tool available for evaluating pregnant woman's pain on your unit?		
Yes	117	68.8
No	53	31.2
Do you have any training on non- pharmacological pain management?		
Yes	45	26.5
No	125	73.6

Pregnant woman related factors

Table 5 presents the frequency and percentages of the patients related factor. The highest factors that affect using non-pharmacological management is pregnant woman valuing pharmacological management and pregnant woman /family intention to use drug with 82.9% and 80% respectively. In addition, strong beliefs in drug and pregnant woman uncooperative were the factor to use non-pharmacological management.

Table 5

Frequency and percentages of the pregnant women related factor (n=170)

Item	Yes		No	
	N	%	N	%
Pregnant woman /Family intention to use drug	136	80.0	34	20.0
Strong beliefs in drug	133	78.2	37	21.8
Pregnant women are un cooperatives	133	78.2	37	21.8
Pregnant woman valuing pharmacological management	141	82.9	29	17.1
Other (husband believe in drugs)	23	13.5	147	86.5

Correlation between knowledge score, attitude score and other variables

Table 6 presents the Spearman's Correlation between variables. Regarding knowledge variable, there are no significant associations between knowledge and attitude among midwives (r=.004, p=.960), knowledge and age (r=.105, p= .173), knowledge and experience (r= .036, p= .642) and knowledge and working hours per day (r= -.062, p=.424). However, a significant positive small relationship was found between knowledge score and level of education (r=.181, p=.018). This means when level of education increases knowledge will increase. Furthermore, a significant positive medium relationship was found between knowledge score and midwife to pregnant woman ratio

(r=.306, p= <0.001). This means when midwife to pregnant woman's ratio increases, knowledge will decrease.

Regarding attitude variable, there are no significant associations between attitude and age (r=.129, p= .093), attitude and experience (r= .047, p= .540), attitude and level of education (r= -.034, p=.661), attitude and midwife to pregnant woman ratio (r=-.092, p=.234) and attitude and working hours' day (r=.062, p=.419).

Table 6

Spearman's Correlation between variables (n=170)

Variables		Knowledge score	Attitude score	Age	Experience	Level of education	Midwife to pregnant ratio	Working hours per day
Knowledge score	R	1.000						
	p-value	.						
Attitude score	R	.004	1.000					
	p-value	.960	.					
Age	R	.105	.129	1.000				
	p-value	.173	.093	.				
Experience	R	.036	.047	.819	1.000			
	p-value	.642	.540	<.001*	.			
Level of education	R	**.181**	-.034	.036	.033	1.000		
	p-value	**.018***	.661	.638	.669	.		
Nurse to patient ratio	R	**-.306**	-.092	.028	.003	-.274	1.000	
	p-value	**<0.001***	.234	.718	.974	.000	.	
Working hours/day	R	-.062	.062	-.155	-.190	-.121	.147	1.000
	p-value	.424	.419	.043	.013	.117	.055	.

*Significant relationship at p=<0.05

r= Correlation coefficient

Differences between variables in terms of knowledge score

Table 7 presents the differences between variables in terms of knowledge score. The Kruskal Wallis H test and Mann-Whitney U test indicated that there are no significant differences between source of your knowledge (p=0.145), area of serving (p=0.608), lack of non-pharmacological pain management equipment (p=0.821), availability of pain management guideline (p=0.539), working hour (p=0.677), availability of pain assessment tool (p=0.341), have any training on non- pharmacological pain management (p=0.800), pregnant woman /Family intention to use drug (p=0.068), strong beliefs in drug (p=0.213) and pregnant woman uncooperative (p=0.272) in terms of knowledge score.

However, a significant difference was found between the pregnant women valuing pharmacological management factor, midwives who stated that pregnant women valuing pharmacological management have more knowledge score than who did not state that pregnant women value pharmacological management (U=1506, p= 0.024).

Table 7

Differences between variables in terms of knowledge score (n=170)

Variable		N	Mean Ranks	Statistical values	P-value
Primary Source of your knowledge	University	105	90.88	H= 5.401 df= 3	.145
	Experience	52	77.88		
	Workshops and conferences	5	48.90		
	Internet	8	87.38		
Area of unit are you currently serving	In patient	124	86.88	H= 1.831 df= 3	.608
	Out patient	30	78.15		
	Emergency unit	13	94.38		
	Other	3	63.50		
lack of non-pharmacological pain management equipment	Yes	117	86.07	U= 3034 Z= -.226	.821
	No	53	84.25		
Availability of pain management guideline	Yes	47	89.21	U= 2716 Z=-.615	.539
	No	123	84.08		
Working hour	Morning	29	79.83	H= 1.525	.677

	Evening	22	81.11	df= 3	
	Night	13	76.96		
	Other (Both morning and evening)	106	89.01		
Availability of pain assessment tool	Yes	117	83.11	U= 2820.5 Z= -.953	.341
	No	53	90.78		
Have any training on non-pharmacological pain management	Yes	45	87.08	U= 2741.5 Z=-.254	.800
	No	125	84.93		
Pregnant woman /Family intention to use drug	No	34	71.90	U= 1849.5 Z= -1.823	.068
	Yes	136	88.90		
Strong beliefs in drug	No	37	76.69	U= 2134.5 Z= -1.245	.213
	Yes	133	87.95		
Pregnant women are un cooperatives	No	37	77.73	U= 2173 Z= -1.098	.272
	Yes	133	87.66		
Pregnant women valuing pharmacological management	No	29	66.93	U= 1506 Z= -2.257	.024*
	Yes	141	89.32		

*Significant at p=<0.005
H: Kruskal Wallis H test; U: Mann-Whitney U test

Differences between variables in terms of attitude score

Table 8 presents the differences between variables in terms of attitude score. The Kruskal

Wallis H test and Mann-Whitney U test indicated that there are no significant differences

between source of your knowledge (p=0.196), heard about non-pain management

(p=0.724), area of serving (p=0.115), lack of non-pharmacological pain management

equipment (p=0.182), availability of pain management guideline (p=0.391), working hour

(p=0.649), availability of pain assessment tool (p=0.471), have any training on non-

pharmacological pain management (p=0.893), pregnant woman /Family intention to use

drug (p=0.163), strong beliefs in drug (p=0.109), pregnant woman uncooperative

(p=0.362) and pregnant woman valuing pharmacological management (p=0.735) in terms

of attitude score.

Table 8

Differences between variables in terms of attitude score (n=170)

Variable		n	Mean Ranks	Statistical values	P-value
Primary Source of your knowledge	University	105	82.11	H= 4.694 df= 3	.196
	Experience	52	95.25		
	Workshops and conferences	5	53.30		
	Internet	8	86.75		
Area of unit are you currently serving	In patient	124	86.15	H= 5.930 df= 3	.115
	Out patient	30	79.98		
	Emergency unit	13	104.46		
	Other	3	31.67		
lack of non-pharmacological pain management equipment	Yes	117	88.89	U= 2704 Z= -1.335	.182
	No	53	78.02		
Availability of pain management guideline	Yes	47	90.73	U= 2644.5 Z= -.858	.391
	No	123	83.50		
Working hour	Morning	29	83.24	H= 1.646 df =3	.649
	Evening	22	79.20		
	Night	13	73.85		
	Other (Both morning and evening)	106	88.85		
Availability of pain assessment tool	Yes	47	90.73	U= 2886.5 Z= -.721	.471
	No	123	83.50		
Have any training on non-pharmacological pain management	Yes	45	86.34	U= 2774.5 Z=-.134	.893
	No	125	85.20		
Pregnant woman /Family intention to use drug	No	34	74.97	U= 1954 Z= -1.396	.163
	Yes	136	88.13		
Strong beliefs in drug	No	37	74.03	U= 2036 Z=-1.605	.109
	Yes	133	88.69		
Pregnant woman are un cooperatives	No	37	78.99	U= 2219.5 Z= -.911	.362
	Yes	133	87.31		
Pregnant women valuing pharmacological management	No	29	88.31	U= 1963 Z= -.338	.735
	Yes	141	84.92		

*Significant at p=<0.005

H: Kruskal Wallis H test; U: Mann-Whitney U test

Chapter Five

Discussion

Overview

The findings of this study are discussed in this chapter. The study's results have been evaluated and compared to the findings of other related studies. In Palestine, Studies have been limited to assessing nurses' knowledge and attitudes toward pain management (Nimer & Ghrayeb, 2017), thereby, the goal of this study was to assess midwives'knowledge and attitudes toward non-pharmacological pain management, as well as associated factors.

Summary of the study

This study delves into the clinical aspects of midwives' knowledge and attitudes, regarding non-pharmacological pain treatment. The study aimed to assess midwives' level of knowledge, attitudes, and associated factors to non-pharmacological pain management during childbirth at Palestinian hospitals.

The current study's findings revealed that the most common age group among the study participants was less than 30 years (58.2%), and 44.1% of midwives have less than six years of experience. More than two-thirds of midwives have bachelor's degree (70.6%) and their primary source of knowledge about non-pharmacological treatment was from universities. These findings were consistent with the results of a study done in

Palestine, which revealed that 77.2% of nurses are less than35 years old, 48.8% experience less than 5 years and 73% had Bachelor degree, (Salameh, 2018).Furthermore, in an earlier study (Elcigil et al., 2011), researchers found that the demographic characteristics of the participating midwives included a majority of those under the age of 30, and 44% of the study sample had less than 6 years of experience. Researchers also found that universities were the primary source of knowledge for 61.8% of those who responded to the survey. Moreover, it was similar with the study done in Saudi Arabia; a study showed that the average age of the sample under study was between 20 and 30 years old (73.3%). In addition, almost half of nurses (45%) reported having a baccalaureate degree, and just a small percentage of nurses had a master's degree.(Ali, et al., 2013).

Knowledge about non-Pharmacological pain management during childbirth among Palestinian midwives.

The result of this study shows that 62.9 % of midwives had adequate knowledge of non-pharmacological pain management; with the median score toward the knowledge was 14. Midwives' levels of knowledge about NPPM varied among different international study samples. Moreover, the current study's finding is similar for adequate knowledge when compared with the studies done in Zimbabwe 64.5%, (Woldehaimanot et al., 2014), and the southern part of Ethiopia 78.1% (Moceri & Drevdahl, 2014), United States 76% (Samarkandi, 2018). But it was higher compared with study conducted in Turkey 39.7% (Yava, 2013), China 38.9% (Yu & Petrini, 2007).Ethiopia 54.2% (Tekletsadik, Desta, & Workneh, 2021). The variation may result from varied midwifery curricula for non-pharmacological pain, information sources, continuous training programs, and technical development.

Attitude toward non-pharmacological pain management during childbirth among Palestinian midwives.

Concerning attitudes, this study revealed that 50% of midwives have shown favorable attitude toward NPPM during childbirth. This study's findings were low when compared to those in Saudi Arabia 85% (Asadi-Noghabi et al., 2014), and Sweden 84%, (Enskär et al., 2007). However, in Ethiopia, only 28.3% of healthcare providers have favorable attitudes toward labor pain management. (Tekletsadik, Desta & Workneh, 2021). While a study done in Palestine revealed that staff nurses had deficit in knowledge and negative attitudes toward pain assessment and management. (Nimer & Ghrayeb, 2017).

Al Qadire discovered a considerable improvement in nurses' knowledge and attitude after a six-hour instructional course on pain evaluation and management (Qadire, 2014). This study clarifies that there are no courses focusing on NPPM throughout midwifery education at university, or that midwives are too busy to ask about NPPM. Midwives, too, had misconceptions about NPPM. These discrepancies may be the result of the study participants' attitudes of NPPM, differing from one another, or the difference in the scores' cutoff points for the attitude-related instrument may be the reason for the potential rationale.

System or facility-related factors

The pregnant woman to ratio was as follow; 32.9% were 1:2, 37.6%, 1:4, 21.2% were 1 :> 6 and 8.2% were 1:6. In addition, more than two-thirds of midwives revealed lack of non-pharmacological pain management equipment as well as no pain management guideline available for managing patient's pain in the units. More than two-thirds of midwives have not received any training regarding non-pharmacological pain. This was

consistent with a study done in Eritrea revealed that heavy work load (87.7%), lack of time (84.4%), limited resources (82.5%), deficit in pain management guidelines (77.3%), patient's uncooperative behavior (57.1%), nurse's lack of knowledge (50%), and experience (40.3%) were identified as associated factors for NPPM. (Kidanemariam et al., 2020).

Similar study was done in Ethiopia revealed that about 72.8% of nurses reported that the insufficient number of nurses per patient ratio as barriers for practice of non - pharmacology pain management, (Zeleke, Kassaw, & Eshetie, 2021). Also, this study discovered that 72.4% of the studied sample does not use pain assessment tools, while 27.6% do. This finding was consistent with a recent study in Ireland done by Vickers (2011); found that the incorporation of a pain assessment tool was used in less than 9% of the cases where nurses assessed pain.

This study's findings revealed that the most significant associated factor of non-pharmacological methods was a lack of time. This was consistent with a study done in Cameroon, reported that midwives identified time as one of the enabling factors. Non-pharmacological therapies take a long time to implement, which discourages most nurses from using them. Because these therapies are not considered standard practice, their use is not prioritized. Although the nurse may be supportive of the use of non-pharmacological therapies, the nurse's use of these therapies is limited by perceived time constraints. (Morgan, 2012).

Pregnant woman-related factors

The highest associated factors that affect NPPM are pregnant women valuing pharmacological management and pregnant woman /family intention to drug with 82.9% and 80% respectively. In addition, strong beliefs in drug and pregnant women are uncooperative were the factor to NPPM. Many studies were relevant to this study in

assess pregnant woman- related factors that influence mothers decision regarding non-pharmacological pain management; a study was done in Cameroon showed that the main patient associated factor was patient's strong believe in analgesics (50.0%) followed by uncooperative nature of some patients (30.0%) (Kimbi, et, al. 2016). Furthermore, women's attitudes or cultural beliefs about childbirth can influence how they experience the birth process (Haines 2012; Gutteridge 2013). These attitudes are influenced by birth culture; for example, risk adverse to medical models tend to influence women's decisions about interventions during childbirth and whether they take an active or passive role during childbirth (Haines 2012). In general, a cultural shift in women's attitudes toward birth has been observed, coinciding with the increased of medical interventions such as induction of labor and epidural use, which has resulted in women losing confidence in their ability to give birth and cope with labor pain (Green 2003; Haines 2012). There has also been a shift in women's birth expectations. Another study which was one of large systematic review showed that many factors influence a woman's desire for and choice of pain relief during labor, including personal expectations, the amount of support from health care providers HCP, the quality of the relationship between the woman and the HCP, and the woman's involvement in decision making (Williams et al, 2013). The majority of the studies included in this review were conducted in High Income Countries (HIC) and demonstrated that the influences of HCP attitudes and behaviors can be as important as the influences of pain, pain relief, and intra-partum interventions on women's labor satisfaction scores (Williams et al, 2013).

Correlation between knowledge score, attitude score and other variables

Regarding knowledge score and level of education, a significant positive relationship was found (r=.181, p=.018). This means when level of education increases knowledge will increase. It was similar with the study done in Addis Ababa (Sisay,

Sewunet, 2017), Jordan (Knapp, 2015), Cairo (Kizza, 2012), and Saudi Arabia (Ali, Ibrahim & Mohamed, 2013). They found that it was obvious that healthcare professionals with higher education levels are more likely to be knowledgeable about pain and to use techniques. This might be that midwives with a high educational degree have higher chance to be updating with new information, accessing and checking different literatures. And more opportunities to acquire and review various types of literature and obtain current information.

However a significant association was found between knowledge score and midwife to pregnant women ratio (r=.-306, p= <0.001). This means when midwife to pregnant woman's ratio increases, knowledge will decrease. The world's foremost expert on nurse-to-patient ratio research Aiken and her colleagues (2002) observed that in every additional patient over four patients per nurse has a direct impact on a patient's recovery and the risk of serious complications and/or death. (Aiken et al., 2002). The likely explanation for this could be that when there is a greater midwife-to-pregnant woman ratio, midwives might have a workload and midwife-to-patient interactions would become highly limited, which makes midwives underestimate the mother's pain, and they might not receive enough opportunity to refresh their knowledge.

Regarding attitude variable, there are no significant associations between attitude and age (r=.129, p= .093), attitude and experience (r= .047, p= .540), attitude and level of education (r= -.034, p=.661), attitude and nurse to patient's ratio (r=-.092, p=.234) and attitude and working hours' day (r=.062, p=.419). In contrast to previous study done in Jordan revealed that academic experience and clinical experience should reinforce each other, with academic experience providing opportunities to expand a nurse's knowledge base and clinical experience allowing them to consolidate academic learning and establish links between theory and practice (El-Rahman et al., 2013). The gap from earlier study

findings creates a gray area for future research into the impact of these variables on midwives knowledge and attitude.

Differences between variables in terms of knowledge score

According to one of the study's findings, education had no deference on knowledge and attitudes toward pain management. However, a significant difference was found between the Patients valuing pharmacological management factor, midwives who stated that patients valuing pharmacological management have more knowledge score than who were not stated that that patients valuing pharmacological management (U=1506, p= 0.024). This could be that these midwives had more knowledge about pain management in general. The result was similar to a study done in Jordan revealed that the Kurskal-Wallis test had no difference in the mean total score between working area (H (5) = 8.87, P=.12) and education level (H = 7.67, degree of freedom (df) = 2, P =0.14). Additionally, the Spearman's rho test was used to examine the relationship between participant ages, years of experience. Age and years of experience did not significantly correlate with each other, according to the results (r = 0.279, P=.07). (Al Qadire, 2014). Also this finding was not similar to a study done in Turkey that revealed a statistically significant difference existed. (p< 0.05) between midwives' knowledge and attitude toward pain management. (Yava. at el., 2013). This could be due to insufficient preparation in nursing school and continued education.

The results was interesting but disappointing, which may have been due to the fact that it takes longer than anticipated to change people's attitudes and beliefs. Another possibility is that midwives aren't using the knowledge they gained from the course to alter their views, which might be seen as a type of change resistance.

Strengths of the study

➢ There is a lack in previous studies about this essential topic in Palestinians hospital it gives important information on midwives' knowledge and attitudes on non-pharmacological pain management, and it will serve as a baseline for future studies.

➢ The studies conducted at the different level in eight hospitals (governmental & private) were included in the study to make it representative.

Limitations of the study

➢ The findings from this study may not accurately reflect the attitudes of midwives and may have been impacted by midwives' answer bias due to the self-reporting nature of the questions and different protocols in these hospitals.

➢ Employing convenience sampling constrains the researcher's ability to generalize the findings to the general population of Palestinian midwives.

➢ Limited similar studies in Palestine to compare the results.

➢ The cross-sectional study design and the fact that some midwives might not have responded to the survey.

Conclusion

.Despite Palestinian midwives adequate levels of knowledge 62.9% about NPPM, their attitudes towards the use of NPPM were not adequately favorable 50%. Since there is a relationship between midwives' knowledge and their levels of education, there is a need for upgrading the levels of midwives' education. Furthermore, lessening midwife to patient ratio may give better chances for the midwives to develop their knowledge and attitudes towards NPPM.

Recommendation

➢ A similar study may be done on midwives in large samples for wider generalization.

- Provide in-service pain management training and education for midwives.

- A training program to encourage midwives to educate patients about the benefits of non-pharmacological pain relief methods so that they will accept them.

- More research should be done to gain more information on the level of knowledge and practice of non-pharmacological pain management methods.

- Efforts to improve the use of non-drug interventions should concentrate on innovative educational strategies, problem solving to gain support, and the development and testing of new delivery methods that require less time from busy staff midwives.

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Appendix A

Al-Quds University

Deanship of Scientific Research

Dear midwife

After Greetings,

I am Dalal Hourani, a master's student in Maternal and Child Health Nursing at Al-Quds University. I am doing a cross-sectional study as a graduation requirement entitled:

Factors Associated with Palestinian Midwives' Knowledge and Attitudes about Non-Pharmacological Pain Management

This study aims to study Palestinian midwives and credits, including assessing the midwives' levels of knowledge, attitude toward NPPM.

Dear midwife

Your participation in this research project is completely voluntary, you may withdraw from the study at any time you choose, and your participation will not in any way affect your personal or professional life. Your responses will remain confidential and anonymous; no one other than the researchers will know your individual answers to this questionnaire. The data received from this research will be kept in a locked location. If you agree to participate in this project, please provide your answers to the survey items to represent your own views. It takes approximately 10 minutes to complete the survey.

If you have any questions about this topic in connection with the study, or about your rights as a participant in the study, please feel free to email dalalraji00@gmail.com or through the phone number 0597532888.

Part I: Socio-demographic characteristics

1. Age:

1. Less than 30 years old	2. 30-40 years old	3. More than 40 years old

2. Years of experience as a midwife:

1. 5 years and less	2. 6-10 years	3. 11-15 years	4. More than 15 years

3. Educational level:

1. Diploma	2. Bachelor's degree	3. Master's degree and above

4. What is your primary source of information?

1. University	2. Work Experience	3. Seminars/Workshops	4. Internet

Part Two: Knowledge Test Questions

	Questions	Response		
		True	False	Remark
1	The most accurate judge of the intensity of pain is the pregnant woman.			
2	Provide a suitable room temperature and good air condition can alleviate pain.			
3	Provide the pregnant woman with a possibility to rest by minimizing noise can alleviate pain.			
4	Including family members in the pain management regimen can increase pregnant woman's ability to manage pain.			
5	Use of non-pharmacological pain management therapies has no value to pregnant woman.			
6	Encouraging the pregnant woman to relax different parts of her body can alleviate the sensation of pain.			
7	Try to focus a pregnant woman's thoughts/ attention away from pain can decrease pain.			
8	Vital signs are always reliable indicators of the intensity of a pregnant woman's pain.			
9	Asking the pregnant woman to suggest ways to relive her pain can increase pregnant woman ability to manage pain.			

10	Pregnant woman who can be distracted from pain usually do not have Severe pain.			
11	Non drug interventions (e.g. heat, music, imagery etc.) are effective only for mild pain control.			
12	The pregnant woman's pain can alleviate by position changes.			
13	The benefit of non-pharmacological pain management is only fewer side effects than Medication.			
14	Pregnant woman who can be distracted from pain usually do not have pain.			
15	Distraction for example by the use of music or relaxation can decrease the perception of pain.			
16	Pregnant women with chronic pain should receive pain medications with non-pharmacological at regular intervals with or without the presence of discomfort.			
17	The pregnant woman should be advised to use non-pharmacological means alone rather than use pain medications.			
18	Non-pharmacological methods of pain relief have no applications for neonates.			
19	Non-pharmacological pain management is only includes massage distraction, heat/Cold & relaxation.			
20	It may often be useful to give a placebo to a pregnant woman in pain to assess whether she is genuinely in pain.			

Please read each statement carefully and tick "√" in the corresponding column that most likely reflects your answer to the following question.

Part 3: Attitude Test Questions

Please read each statement carefully and tick the mark sign"√" in the corresponding column that most likely reflects your answer to the following questions. Use number: 5 for "strongly agree", 4 for "agree", 3 for "neither agree nor disagree", 2 for "Disagree", and 1 for "strongly disagree."

No.	Question	5	4	3	2	1
1	Pain is seen in the pregnant woman's behavior.					
2	Non-pharmacological therapies should be given to sick people.					
3	Distraction reduces pain intensity.					
4	Non-pharmacological interventions are very effective for mild, moderate and severe pain.					
5	Using pain assessment tools usually not makes nursing more complicated.					
6	Using pain assessment tools not consumes time for other ward activities.					
7	Midwives are best judges of the pregnant woman's pain intensity because they spend 24 hours with her.					
8	Non-pharmacological Pain management education received during midwifery training is not adequate for effective pain management.					
9	The midwife s' role during non-pharmacology pain management					

	is not only flow doctors' order.					
10	I am willing to provide information on issues related to non-pharmacological methods to pregnant woman?					
11	I am willing to provide non-pharmacological methods to pregnant woman who have pain.					
12	I am willing with that pregnant woman should be advised to use non-pharmacological means with pain medications?					
13	Preparing a pregnant woman carefully for a procedure by telling her about what will be done, can decrease pain.					
14	I am willing to encourage the pregnant woman to think about / imagine pleasant and positive matters when she feels pain					
15	Teaching her the correct breathing technique can alleviate her pain.					
16	Encouraging pregnant woman by rewarding her verbally can alleviate her pain.					
17	Encouraging the pregnant woman to relax different parts of her body can alleviate the sensation of pain.					
18	Interior decoration of the unit (colors, lighting, furniture…) affects pregnant woman's ability to manage pain.					
19	Encouraging family members to bring some of the pregnant woman's belongs to the unit (pictures, pillows…) can relief pain.					

Factors associated with knowledge and Attitude of midwives towards non-pharmacological pain management.

Part 4: system or facility related factors

Instruction: Please circle the number in front of the option you choose.

1. Which area of unit are you currently serving?

1. in patient

2. out patient

3. Emergency unit

2. In your setting what is the midwife to pregnant woman ratio?

A. 1:2   B. 1:4   C.1: 6   D. > 6

3. In your facility is there lack of non-pharmacological pain management   equipment

    1. Yes   2. No

4. How many hours do you work per day?

    A. 8hrs   B. 8-12   C. >12 hours

5. Is there a pain management guideline available for managing pregnant woman's pain on your unit?

     1. Yes   2. No

6. When is your working hour?

    a.   Evening

    b.   Night

    c.   Day time

7. Is there a pain assessment tool available for evaluating mother's pain on your unit?

Yes_____ No _____

8. Do you have any training on non- pharmacological pain management?

Yes_____ No _____

Part V: Pregnant woman related factors with knowledge and attitude of non-pharmacological pain management.

Instruction: Please put the tick mark "√"in the corresponding column

No	Question	Response		
		Yes	No	Remark
1	Pregnant woman /Family intention to use drug			
2	Strong beliefs in drug			
3	Pregnant woman un cooperatives			
4	Pregnant woman valuing pharmacological management			
5	Other factors			

Thank you

عزيزتي القابلة

تحية طيبة وبعد،

أنا دلال حوراني طالبة ماجستير تمريض صحة الام والطفل جامعة القدس, أقوم بدراسة مقطعية كمتطلب للتخرج بعنوان: العوامل المرتبطة بمعرفة القابلات الفلسطينيات ومواقفهن حول إدارة الألم غير الدوائية

Factors Associated with Palestinian Midwives' Knowledge and Attitudes about Non-Pharmacological Pain Management

تستهدف هذه الدراسة القابلات الفلسطينيات والغرض منها هو تقييم مستويات معرفة القابلات والسلوكيات حول استراتيجيات ادارة الالم غير الدوائية أثناء الولادة.

عزيزتي القابلة

مشاركتك في هذا المشروع البحثي تطوعية تمامًا ، ويمكنك الانسحاب من الدراسة في أي وقت تختاره، ولن تؤثر مشاركتك بأي شكل من الأشكال على حياتك الشخصية أو المهنية. ستبقى ردودك سرية ومجهولة الهوية ؛لن يعرف أي شخص آخر غير الباحثين إجاباتك الفردية على هذا الاستبيان. سيتم الاحتفاظ بالبيانات الواردة من هذا البحث في مكان مغلق. إذا كنت توافق على المشاركة في هذا المشروع ، فيرجى تقديم إجاباتك على عناصر الاستبيان لتمثيل وجهات نظرك الخاصة، يستغرق إكمال الاستبيان حوالي 10 دقائق.

إذا كان لديك أي أسئلة حول هذا الموضوع فيما يتعلق بالدراسة ، أو حول حقوقك كمشارك في الدراسة ، فلا تتردد عبر البريد الإلكتروني dalalraji00@gmail.com أو من خلال رقم الهاتف 0597532888.

المشرفة: د. ميساء الأسطة

الجزء الأول: الخصائص الاجتماعية والديموغرافية

1. العمر:

   1. 20-30 سنة   2. 31-45 سنة   3. 46 سنة فما فوق

2. سنوات الخبرة كقابلة:

   1. 5 سنوات فأقل   2. 6-10 سنوات   3. 11-20 سنة   4. أكثر من 21 سنة

3. المستوى التعليمي:

   1. دبلوم   2. بكالوريوس   3. ماجستير فأعلى

4. ما هو المصدر الأولي لمعلوماتك؟

   1. الجامعة   2. ندوات / ورش عمل   3. الخبرة العملية

الجزء الثاني: أسئلة اختبار المعرفة

يرجى قراءة كل عبارة بعناية ووضع علامة "√" في العمود المقابل الذي يعكس على الأرجح إجابتك على الأسئلة التالية.

ما هو مستوى معرفة القابلات باستراتيجيات إدارة الألم غير الدوائية أثناء الولادة؟

	خطأ	صح	الاسئلة	رقم السؤال
1.			السيدة نفسها هي أدق من يحكم على شدة ألم .	
2.			توفير درجة حرارة مناسبة للغرفة وتهوية جيدة من الممكن أن يخفف الألم .	
3.			توفير إمكانية الراحة للسيدة الحامل عن طريق تقليل الضوضاء يمكن أن يخفف الألم.	
4.			اشتراك أفراد الأسرة في نظام السيطرة على الألم يؤثر على زيادة قدرة السيدة على التحكم بالألم.	
5.			استخدام الطرق غير الدوائية ليس له قيمة بالنسبة للسيدة الحامل.	
6.			إن تشجيع السيدة الحامل على استرخاء أجزاء مختلفة من جسده يمكن أن يخفف من الإحساس بالألم.	
7.			محاولة تركيز أفكار السيدة او انتباهها بعيدًا عن الألم يمكن أن يقلل من حدة الألم.	
8.			تعتبر العلامات الحيوية دائمًا مؤشرات موثوقة على شدة ألم السيدة.	
9.			إن مطالبة السيدة باقتراح طرق لتخفيف آلامها يمكن أن يزيد من قدرتها على السيطرة على الألم.	
10			السيدات اللواتي يتشتيت انتباههن عن الألم عادة لا يعانين من ألم شديد	
11			تعتبر التدخلات غير الدوائية (مثل الحرارة والموسيقى والصور وما إلى ذلك) فعالة للسيطرة على الآلام الخفيفه فقط	
12			يخفف ألم السيدة عن طريق تغيير الوضعيه.	
13			أن فائدة السيطرة على الآلام بطرق غير دوائية هي ان لها آثار جانبيه أقل من الادويه فقط.	
14			السيدات اللواتي يتشتيت انتباههن عن الألم لا يعانين عادة من الألم.	
15			يؤدي تشتيت الانتباه على سبيل المثال عن طريق استخدام الموسيقى أو الاسترخاء إلى تقليل الإحساس بالألم	
16			يجب على السيدات اللواتي يعانين من الآلام المزمنة استخدام الطرق غير الدوائية على حد سواء عند وجود الالم او عدم وجوده .	
17			يجب نصح السيدة باستخدام الوسائل غير الدوائية وحدها بدلاً من استخدام المسكنات.	
18			لا تستخدم الطرق غير الدوائية لتسكين آلام المواليد الجدد (الخداج).	
19			تشمل إدارة الألم غير الدوائية فقط الإلهاء بالتدليك والحرارة / البرودة والاسترخاء.	
20			يكون من المفيد في كثير من الأحيان إعطاء دواء وهمي لسيدة تعاني من الألم لتقييم ما إذا كانت تشعر بالألم حقًا.	

الجزء الثالث: اسئلة اختبار السلوك

يرجى قراءة كل عبارة بعناية ووضع علامة "√" في العمود المقابل الذي يعكس على الأرجح إجابتك على

الأسئلة التالية.

لااوافـــــق بشدة	غيـــــر موافق	لااوافـــق/ لا اعارض	اوا فق	اوافـــــق بشدة	الاسئلة	رقـــم السـؤا ل
					يظهر الألم في تصرفات السيدة.	1.
					يجـب أن تعطـى العلاجـات غيـر الدوائيـة للسيدات.	2.
					الإلهاء يقلل من شدة الألم.	3.
					تعتبـر التـدخلات غيـر الدوائيـة فعالـة جـدًا فـي حــالات الآلام الخفيفـة والمتوسـطة والشديدة.	4.
					عـادةً لا يـؤدي اسـتخدام أدوات تقيـيم الألـم إلى جعل التمريض أكثر تعقيدًا.	5.
					لا يسـتهلك اسـتخدام أدوات تقيـيم الألـم وقتًـا لأنشطة أخرى في القسم.	6.
					القابلات هن أفضـل مـن يحكمـون علـى شـدة آلام السيدة لأنهن يقضين 24 ساعة معها.	7.
					تعلـيم الطـرق الغيـر الدوائيـة للألـم أثنــاء تـدريب القـابلات غيـر كـافٍ للـتحكم بـالألم بشكل فعال.	8.
					دور القابلـــة فــي اسـتخدام الطـرق الغيـر دوائية لا يتنافى مع أوامر الطبيب.	9.
					أرغـب فـي تقـديم معلومـات حـول القضـايا المتعلقة بالطرق غير الدوائية للسيدات؟	10
					أرغـب فــي تقـديم طـرق غيـر دوائيـة للسيدات اللواتي يعانين من آلام الولادة؟.	11
					أرغـب فـي نصـح السـيدة باسـتخدام وسـائل غير دوائية مع أدوية تسكين الألم؟	12

						شـرح مـا سـيتم اجـراءه للسـيدة مـن الممكـن ان يخفف من ألم السيدة؟	13
						أنــا علــى اسـتعداد لتشـجيع السـيدة علــى التفكيــر / تخيـل الأمـور السـارة والإيجابيــة عندما تشعر بالألم.	14
						لتعلـيم السـيدة أسـلوب التـنفس الصـحيح أن يخفف من آلامها.	15
						الدعم النفسي للسيدة من الممكن ان يخفف	16
						يـؤدي تشـجيع السـيدة علـى إرخـاء أجـزاء مختلفـة مـن جسـمها إلـى تخفيـف الإحسـاس بالألم	17
						الـديكور الـداخلي للغرفـة (ألـوان ، إضـاءة ، أثـاث ...) يـؤثر علـى قـدرة السـيدة علـى التحكم بالألم.	18
						احضـار بعـض مـن مقتنيـات السـيدة (صـور ، وسائد ...) إلى تخفيف الألم	19

العوامل المرتبطة بمعرفة وسلوك القابلات تجاه التحكم بالألم بالطرق الغير الدوائية.
الجزء الرابع: العوامل المتعلقة بالنظام أو القسم
تعليمات: يرجى وضع دائرة حول الرقم الموجود أمام الخيار الذي تختاره.
1. في أي قسم تخدم حاليا؟
A. قسم الولادة

B. . عيادات

C. . وحدة الطوارئ

2. في قسمك ما هي نسبة القابلات إلى السيدات الحوامل؟
A. 1: 4

B. 1: 8

C. أكثر من 8

D. غير محدد

3. يوجد في قسمك نقص في معدات التحكم بالألم غير الدوائية؟
A. نعم
B. لا

4. كم ساعة تعمل في اليوم؟
A. ٨ ساعات باليوم

B. ٨-١٢ ساعه

C. اقل من ١٢ ساعه

5. هل يوجد دليل إرشادي لإدارة الألم متاح للتعامل مع آلام السيدات في قسمك؟
A. نعم
B. لا

6. ما هي ساعة عملك؟
A. اخر النهار

B. ليل

C. النهار

5. هل هناك أداة لتقييم الألم في قسمك ؟

A. لا يوجد

B. نعم يوجد

8. هل لديك أي تدريب على وسائل التحكم بالألم غير الدوائية؟
A. نعم

B. لا

الجزء الخامس: العوامل المتعلقة بالسيدات الحوامل مع معرفة وسلوك إدارة الألم غير الدوائية.

تعليمات: يرجى وضع علامة التجزئة "√" في العمود المقابل

ملاحظات	لا	نعم	الاسئلة	الرقم
		الاجابة		
		معرفة السيدة الحامل او اهلها بالادويه المتعلقه بالالام (مسكنات الآلام)	.1
			مفعول المسكنات و الادويه اقوى من الطرق الغير دوائيه	.2
			عدم تعاون السيدات الحوامل	.3
			السيدات اللواتي يفضلن الادوية	.4
			عوامل اخرى	.5

ولكم جزيل الشكر لمشاركتكم في تعبئة هذه الاستبانه

List of Abbreviations

ABBREVIATION	Definition
TENS	Transcutaneous Electrical Nerve Stimulation
NPPM	Non-pharmacological Pain Management
HCP	Health Care Provider
SPSS	Statistical Package for Social Sciences
PMC	PubMed Central
CAM	Complementary and Alternative Medicine
NKAS	Nurses' Knowledge and Attitudes Survey Regarding Pain

List of Tables