PATIENT SATISFACTION WITH NON-PHARMACOLOGICAL PAIN MANAGEMENT DURING LABOUR AT PHOLA PARK CHC, EKURHULENI

by

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Declaration of Authorship

I, Dr. MC Mabathoana, declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Master of Medicine in the branch of Family Medicine at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

Dr. MC Mabathoana

7th day of June 2021 in Johannesburg.

Dedication

To the Almighty for giving me the strength to bring this research to fruition.

To my wife, Zanele, my rock, my inspiration, my soulmate and my much better half: for your infinite support, patience, advice, love and understanding throughout this journey.

To my three children. Lintle, my favourite first born daughter, Khabane, my favourite first born son and Leano, my favourite last born son. You are all the motivation a father needs.

To the loving and dedicated two daughters granted to me by the universe, Sizakele Serame and Ncebakazi Lutuli, with whose commitment and support this research was made possible.

Abstract

Background: Patient's satisfaction with delivery care is a key indicator of the quality of maternal health care.

Objectives: This study explored patients' satisfaction with their labour experience at Phola Park CHC by assessing the severity of pain experienced and determining the proportion of parturient satisfied with pain treatment administered during labour. It further determined the associations between socio-demographic features and patient satisfaction.

Methods: It was a descriptive, cross-sectional study that occurred between June 2017 and March 2019. The 311 participants were those attending check-up three days after a normal delivery. Convenience sampling and a validated questionnaire adapted from the American Pain Society Pain Outcome Questionnaire were used to sample participants and collect data respectively. Wald Chi-squared tests and logistic regression were used to test for association between variables.

Results: Participants' mean age was 26.9 years with 90.4% reporting being Black, IsiZulu speakers, mostly having two children and secondary education. Almost half (49.2%) experienced moderate pain in labour with over half (55.3%) having used traditional medicine or prayer water. Frequently used methods to relieve pain were deep breathing (26.2%), walking (22%), massage (21%), and prayer (14%). Over half (53.1%) experienced effective pain relief and 56.3% expressed satisfaction with their pain treatment. The only statistically significant predictor of dissatisfaction was the number of live births (p=0.003). One live birth compared to four live births (OR=11.5; 95% CI 1.4 – 97.2).

Conclusion: Most parturient reported being satisfied with the pain management but dissatisfaction was more likely among those with less parity.

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List of Acronyms

ANC – Antenatal Care

APS-POQ-R – American Pain Society Patient Outcome Questionnaire

BPI-SF – Brief Pain Inventory Short Form

BPS – British Pain Society

CHC – Community Health Centre

EHRC – Ekurhuleni Health Research Committee

GABA – Gamma-Aminobutyric Acid

HIV – Human Immuno-Deficiency Virus

HREC – Health Research Committee of the University of the Witwatersrand (M170608)

LMIC-Low- and Middle-Income Countries

MOU – Midwife Obstetric Units

NDOH – National Department of Health

NGO – Non-Governmental Organization

NRS – Numeric Rating Scale

PCALCL-R – Perception of Care Adjective Checklist

PQAS – Pain Quality Assessment Scale

QPP-I – Patient's Perspective Questionnaire

SF-MPQ – McGill Pain Questionnaire Short Form

SSQ – Six Simple Questions

TB – Tuberculosis

TENS – Transcutaneous Electrical Nerve Stimulation

VAS – Visual Analogue Scale

WBOTs – Ward-Based Outreach Teams

WHO – World Health Organization

CHAPTER 1: INTRODUCTION

1.1 Background

The Department of Health (DOH) in South Africa provides free medical services to all pregnant women at primary care levels and at hospitals, thus ensuring access to all pregnant women for safe delivery services.[1] The facilities that provide these services are community health centres (CHC) and are usually staffed by mid-wives and registered nurses with a doctor on site if the need for their services should arise.[1] The CHC's also have Midwife Obstetric Units (MOU), which means that they deliver basic obstetric services twenty-four hours a day.[1]

Even though the CHC's do not handle complicated cases, they are nonetheless responsible for the delivery of many babies in the Ekurhuleni district with Phola Park delivering 1623 babies in 2015. There are constant efforts to improve access and provision of maternity care but little is being done to address and improve the quality of maternity care in some countries.[2]

Patient satisfaction has generally been measured using validated and reliable tools such as the Intrapartal Specific Quality from the Patient's Perspective Questionnaire (QPP-I) and the Six Simple Questions (SSQ) or Perception of Care Adjective Checklist (PCACL-R) methods, to mention but a few.[3,4,5,6] Patient satisfaction is an important factor in a health system because it is also an indicator of the quality of health care provided by an instituition.[7] When labour pains are adequately controlled, new mothers are more likely to report a satisfactory labour experience but managing these pains requires a multifaceted approach.[7]

Labour pains are generally painful, but the intensity of the pain can differ greatly, with some patients experiencing severe pains whilst others claim to experience only mild pains.[2] It is important to remember that every woman in labour is an individual and that the method of pain relief should be tailor made to suit every woman's needs and wishes.[2] Pain relief should take into consideration the needs of the unborn baby as well and should not cause any harm to the baby. Some women in labour will ask the attending medical personnel for some form of pain relief and, when this is given, must be tailored to suit that individual patient. In some instances, some women may not even be aware of their right to pain relief or maybe afraid to request it for various reasons.[8] There are those patients who fear labour pain so much that they request elective caesarean sections to try and avoid the pain and this has led to a rise in the number of caesarean sections done for non-medical reasons.[9]

In labour, pain has been measured using the pain assessment scales, which are subjective measurements. These include the Visual Analogue Scale (VAS), the Numeric Rating Scale

(NRS), Wong-Baker FACES Pain Rating Scale (and revised version), Brief Pain Inventory-Short Form (BPI-SF), British Pain Society (BPS) pain rating scale, Pain Quality Assessment Scale (PQAS) and McGill Pain Questionnaire Short Form (SF-MPQ).[3,4,5,6]

Culture and ethnicity have also been found to play a role in the way people express pain or cope with it.[10] For example women of Italian origin were found to be very vocally expressive of their pain whilst Scandinavians were less vocal.[10] African American patients were found to be more likely to verbally exaggerate their pain in comparison to their European American counterparts.[10] A research project involving different ethnic groups measured how the groups responded to painful stimuli by measuring diffuse noxious inhibitory controls and found that African Americans had the least increase in noxious controls (suggesting a lower pain threshold).[10] A study done in Nigeria by Olayemi et al showed that women in labour in that country scored very low pain scores, which is contrary to the findings of the European studies.[11]

South East Asian women were found to manage very high levels of pain without even verbalising their discomfort and even declined analgesia when it was offered.[2] Different cultures may also use different words to express their levels of pain and this may be misinterpreted if the context is not understood.[2]

Another factor that may heighten the pain of childbirth is anxiety (due to the release of catecholamine and ultimately norepinephrine).[2] Excess amounts of these chemicals can lead to poor contractility of the uterus which is why anxiety coping mechanisms must be encouraged for the patients in labour.[2] Studies show that emotional and physical support and advocacy (and the use of doulas) for the patient are instrumental in lowering anxiety levels.[2] In some countries religion also plays a role in pain management as the spiritual belief positively affects the patient's ability to cope with anxiety and pain.[2]

1.2 Rationale

Whilst on duty at the clinic, the researcher noted that a considerable number of women were heard crying and moaning in obvious pain, brought on by labour. This led the researcher to offer them analgesia to alleviate their pain and to encourage the labour ward staff to always do the same. Analgesia was offered to all women in labour unless they expressly refused it, or the analgesia was contra-indicated for the mother or baby.

On further conversing with the midwives, it was found that the use of analgesia was not common practice in Phola Park CHC and was hardly ever offered to patients in labour. It therefore seems that there exist provider-attitude problems with regards to pain relief in

labour as colleagues on duty cannot provide genuine reasons as to why analgesia is not administered (or offered) to their patients with regularity.

There are several forms of non-pharmacological methods that could have been offered to patients in labour but judging by the way many patients were seen to be writhing in obvious pain, it was assumed that either the patients had forgotten about them or did not know about them. The researcher was particularly interested to know how they had coped and managed with birthing pains as most women consider labour pains to be excruciating.

The researcher established that several patients were unhappy with the way their deliveries had been conducted. The reasons varied, including un-empathetic medical personnel, cold delivery rooms, lack of information on the progress of labour, lack of hospital gowns and of privacy, but the most common theme was the absence of adequate pain relief in labour.

The researcher then decided to conduct a study to assess patient's satisfaction with regards to pain relief offered to patients in labour at Phola Park CHC. Once the research had been completed it could be used to give recommendations on how to improve patient satisfaction with regards to management of labour pain.

1.3 Aims

The aim of this research was to explore patient satisfaction regarding their labour pain management in the midwife obstetric unit at Phola Park CHC.

1.4 Objectives

- To describe the socio-demographic pattern of patients who delivered in the clinic during the study period.
- To assess the severity of pain experienced by patients in labour.
- To determine the proportion of patients who were satisfied with non-pharmacological pain treatment during labour.
- To describe patient satisfaction with the non-pharmacological pain treatment options received in the MOU
- To determine the association between socio-demographic characteristics and patient satisfaction with non-pharmacological pain management during labour

CHAPTER 2: LITERATURE REVIEW

In this chapter a review of the available literature on pain management for patients in labour will be discussed. The review will centre around the effects of socio-demographic factors, severity of pain, pain treatment options and satisfaction with available options for patients in labour. The main sources of literature were PubMed and Google scholar, with the key search words being “satisfaction”, “pain management” and “women in labour”.

2.1 Definition of Pain

In 2020 the International Association of the Study of Pain (IASP) defined pain as a “An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage”.[12] This replaces the old definition “An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage” that was coined in 1979.[12] The need for a re-evaluation of the definition was deemed necessary as there have been many advances made in the understanding of pain.[12]

“It is important to note the six key descriptors of pain that:

- Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.
- Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
- Through their life experiences, individuals learn the concept of pain.
- A person’s report of an experience as pain should be respected.
- Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being.
- Verbal description is only one of several behaviours to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experiences pain”.[12]

2.2 Nature of pain, neuronal pathways, and chemical mediators

Research is unanimous in concluding that pain is a "complex, subjective, multidimensional response to sensory stimuli".[10] The origin of pain can be nociceptive, inflammatory or pathological. Nociceptive pain is associated with feeling or touching something that is too cold, too hot or sharp.[13] It plays a protective role and when activated over rules other neuronal functions, initiating a reflex that causes withdrawal from the unpleasant stimulus and avoids tissue damage.[13]

Inflammatory pain also plays and adaptive and protective role. It develops as a result of the immune system responding to tissue damage or infection. The body becomes hypersensitive to pain and this can discourage movement and helps promote recovery.[13]

Pathological pain is maladaptive and occurs as a result of damage, disease or malfunction of the nervous system. Pathological pain is usually low threshold and the sensory signals are amplified when they reach the central nervous system.[13]

Pain from a peripheral stimulus moves along thinly myelinated Aδ (which transmit signals rapidly following a sharp pain) and unmyelinated C fibres (which transmit signals slower and produce deep aches) as electrochemical signals to the dorsal horn of the spinal cord. At this level, a second neuron is activated with the help of amino acids like glutamate. The second neuron in spinothalamic tract carries the signal to the Thalamus, Hypothalamus and Amygdala. From here the signal is carried by the third order neuron before eventually terminating in the somatosensory cortex (which involves the prefrontal cortex and limbic structures). The signal then descends via the locus coeruleus, raphe nuclei and medulla oblongata back to the spinal cord and an appropriate response to the pain is activated. The pain signal can be minimized by neurotransmitters such as encephalin, serotonin, gamma amino butyric acid which can be found in the descending fibres of the efferent pathways.[13,14]

Pain severity depends on factors such as the quantity of nociceptors involved, how long the pain stimulus lasts and the quantity of mediators activated.[15] The augmentation of pain can be through the release of mediators such as prostaglandins, histamines, serotonins, bradykinins and arachidonic acid.[15]

In recent years there has been a paradigm shift to being pre-emptive in the management of acute pain, which has been found to respond well to opioid treatment.[15] The opioids work by blocking opioid receptors that are found mainly in the central nervous system and spinal cord and preventing the release of substance P, which is a key transmitter of peripheral pain signals.[15] In labour, pain can be classified as visceral (associated with distension of the lower

segment and cervical dilatation and described as being dull or cramping) or somatic (associated with distension of the vagina and pelvic floor).[15] Understanding and choosing the right pain relief management in labour can therefore positively affect satisfaction with the labour process.[15]

A study of 288 Swedish women revealed that 41% of them considered labour pains to be the worst pain that they had ever felt.[16] The nature of labour pain can be described in terms of severity, type of pain and feelings associated with labour pain.[16] Labour pains have been known to induce negative emotions in some mothers, with some describing the pain as "indescribable and unbearable", whereas others elicited positive feelings, stating that the pain was hard to endure, but nonetheless "sweet".[16] The way in which a mother approaches her labour pains paves the way for a positive or negative birthing experience.[16]

2.3 Pain measurement tools

If a method of measuring the labour pain experience can be devised that will suit all expectant mothers, then it is believed that maternal satisfaction, obstetric decisions (and interventions) and the appropriate use of analgesics could be greatly improved.[17] Currently analogue pain scales are used to measure pain intensity, but they do not take into consideration that pain is dynamic and may increase or even decrease during the course of labour.[17] A major flaw of the analogue pain scales is their inability to account for the overall pain burden as they do not measure the duration of the pain.[17] A multidimensional pain management tool that will encompass maternal, psychological, foetal, social, pharmacological, non-pharmacological, birth provider and other support services is yet to be developed.[17]

A Jordanian study by Shaban et al in 2014 developed an instrument that they claim to be reliable and valid in the Jordanian setting which claims to test satisfaction with intrapartum care.[18] The Jordanian tool explored fourteen elements and was found to have good content and construct validity. Reliability of the tool was also high ($\alpha = .88$).[18] The tool has yet to be tested internationally to receive worldwide accreditation.[18] An interesting observation by some studies has been the finding of the poor correlation between maternal satisfaction and pain scores.[19] It was noted that if neonatal outcomes were good, then irrespective of the analgesia provided or the elevated pain scores, patient satisfaction was higher.[19]

2.4 Treatment options in labour

Factors that can influence patient satisfaction with regards to pain management in labour hinge around the methods of pain relief offered to labouring mothers.[2] Methods of pain relief in labour can be grouped in two distinct groups, non-pharmacological and pharmacological methods.[2] Non-pharmacological methods of pain relief have been found to help manage labour pains, whereas pharmacological methods (analgesia) help to actually relieve the pain.[2] Pharmacological methods have proven to be more effective in relieving pain but have the unwanted possibility of side effects on the mother or baby which can lead to greater chances of assisted obstetric deliveries.[2]

Patients are supposed to be taught non-pharmacological means of pain relief during ANC visits as these methods are thought to assist with involving the mothers in making decisions about their care during the birthing process. This non-medical method is believed to be most effective during the first stage of labour but loses its efficacy in the second stage of labour.[2] Patients therefore have a choice to use either or both methods depending on personal preference.[2]

2.4.1 Non-pharmacological pain relief

Nonpharmacological pain relief can be in the form of relaxation and patterned breathing techniques, water immersion (or hydrotherapy), acupuncture and acupressure, use of birthing balls, counter-pressure, effleurage, massage, movement, walking and position change, focus and distraction, hypnosis, prayer, transcutaneous electrical nerve stimulation (TENS), superficial application of heat and cold, music and audio-analgesia, aromatherapy, staying well hydrated and emptying the bladder.[2]

a) Deep breathing

Patterned breathing is a complementary, but nonetheless essential component of managing labour pain and must be done correctly to be effective.[2,20] Breathing techniques are the most widely used and possibly the most effective of the non-pharmacological methods.[20] Soft , gentle breaths assist with relaxation in between contractions; blissful belly breaths are used for pain relief during labour and require breathing in through the nose and forcefully expelling air through the mouth; cleansing calming breaths are done immediately after a contraction which involves holding your breath for a short while before expelling it through your mouth; gentle birthing breath is used in assisting to expel the baby by inhaling quickly and exhaling forcefully for longer than inhalation.[2,20]

Patients who did not master the art of breathing deeply when the labour pains were most intense and then resting when the pains had subsided were most likely to be dissatisfied with the labour process.[2,20] The use of the Valsalva Manoeuvre as a breathing technique is discouraged in labour (used during the expulsion of the foetus and suspected to deprive the body of oxygen) due to its negative effects on the foetus plus it increases maternal fatigue, increases the duration of the second stage and over stretches and damages the woman's pelvic floor and bladder.[20] Patients who had someone to support them during labour were more likely to benefit from someone reminding them on how to breathe during and after contractions.[21]

b) Massage

Massage can be done by the patient herself or by the person supporting her in labour.[21] Massage during labour is very popular and is done by manipulating the body's soft tissues.[22] Massage is the only method that allows for actual contact with the patient by someone else and is believed to relax tense muscles and has been found to have soothing effects in labour (by promoting relaxation and decreasing emotional stress), especially if done over the lumbosacral area.[22] By massaging it is believed that a decrease in cortisol and norepinephrine levels occurs and an increase in the release of natural endorphins happens with resultant increased excretion of toxic substances via the lymphatic system then follows.[22]

Massage also seems effective in decreasing the intensity of labour pains, decreasing anxiety levels and lowering depressive moods during labour. Those patients who did not receive back massage were most likely to become dissatisfied with their labour management.[2,22] Effleurage is another form of massage that focuses on gently massaging the abdomen during labour and it is also believed to relax the muscles whilst simultaneously improving uterine circulation and activation of the stimulation of the body's natural oxytocin levels, which effectively promotes shorter labour.[22]

Massage is a form of therapeutic touch used in managing labour pain, but a study by Tournaire showed that the positivity of the effect of touch in relieving pain was dependant on who was doing the touching.[23] The greatest number of patients responded positively when touched by someone closely related to them, followed by a husband, then a nurse and lastly by a physician.[23] This may explain why massage done by the patient's partner is more likely to elicit a more soothing and pain-relieving response and backs up the need for the presence of a partner during labour. A randomised trial by Gallo et al suggests that the effect of massage may also have a placebo effect although this is difficult to disprove.[22]

c) Heat

The application of heat can be superficial and uses the application of infra-red devices or hot water bottles, or it can be deep heat which uses ultrasound or diathermy.[24] Heat applied to the sacrum, abdomen and perineum has been found to be a popular method that women use to alleviate the pain and suffering associated with labour pains.[24] Heat is known to increase vasodilatation and blood flow thus reducing the activation of nociceptors associated with pain perception.[24] Heat is also believed to stimulate the release of the body's natural endogenous opiates leading to a naturally relaxed state of mind.[24] Heat applied to the perineum is believed to increase the blood supply to the area and facilitate gentle stretching of the perineum which in turn may lessen the possibility of third and fourth degree perineal tears at the time of delivery.[25]

d)Walking in labour

Women in labour are allowed to choose any position that they prefer as long as it is comfortable for them.[26] Staying active by walking is believed to take advantage of the natural gravitational pull which leads the baby to descend into the pelvis.[26] The presence of a partner or doula can therefore encourage the patient to remain ambulant and reassured that everything will be alright eventually.[27] A very early study by Melzak found that women who were ambulant or upright believed that they experienced less intense labour pains in the early stages of labour than those who endured labour lying down.[28] A Cochrane review by Lawrence et al concurs with Melzak's assertions that walking whilst in labour results in a quicker descent of the baby's head into the pelvis, enables the baby's head to achieve a good fit and a results in a shorter labour period.[29] This shortened labour is also attributed to the stretching effect of the baby's head on the dilating cervix and lessening of compression of the uterine vessels (leading to improved perfusion of the uterus).[29] Walking whilst in labour is supposed to ease labour pains and earlier studies by Mamede et al found that women who walked around whilst in labour had a reduced duration of the actual labour but however, registered the higher pain scores of the group.[30]

d) Prayer in labour

A majority of people believe in the presence of a higher being and as such the need for prayer (done alone or as a group) becomes a way of dealing with unpleasant experiences and warding off evil spirits.[31] For some people, prayer has been found to bring about calmness and sense of control, both of which assist in relaxing the body and easing the intensity of labour pains.[31] Religious beliefs and practices are common across the African continent (and worldwide) and religion has been woven into the holistic care of patients in many countries

across the world.[31] The goal of prayer and worship is to prevent negative outcomes in the health of the mother or baby and to assist in minimizing the intensity of the labour pains and to avoid the need for surgical delivery.[31]

A Ghanaian study by Aziato et al found that women who believed in the use of prayer water, blessed oils or religious artefacts (such as rosaries or personal items that have been blessed by a priest or religious leader) felt that these items were beneficial in helping them through the labour process.[31] A Polish study by Kulesza-Bronczyk found a statistically significant relationship between prayer and labour pains, in which the intensity of the latter was found to be decreased by the former.[32]

e) Immersion, acupuncture, relaxation, yoga, hypnosis, aromatherapy

Other non-pharmacological methods, such as immersion in water, acupuncture, point specific massage (acupressure) and relaxation techniques (such as listening to music, yoga and relaxation, breathing techniques-which are also called psychoprophylaxis-distractions such as watching TV, imagery or visualization) were found to relieve pain during labour and ultimately resulted in more favourable satisfaction scores with regards to the labour process as evidenced by a systematic review by Jones et al.[2]

Water immersion has gained popularity in westernized countries as it is believed to be very effective at relieving labour pain throughout all the stages of labour.[2] The effects of water immersion has been attributed to increased uterine perfusion and lower blood pressure, which in turn lead to the release of the body's natural endorphins and a more relaxed state and increased satisfaction with the labour process.[2] The relaxed maternal state results in an increased release of oxytocin and increased placental perfusion which in turn equates to better foetal outcomes.[2]

Evidence from Jones' study in 2012 showed that there was insufficient data on other complimentary forms of pain relief such as hypnosis, TENS and aromatherapy to make a conclusive judgement about their efficacy as effective pain relief methods.[2] A systematic review by Tabatabaeichehr and Mortazavi and meta-analysis by Liao et al, done after the Jones' study, found that aromatherapy (which can be administered by massaging, inhalation, foot spa's and compression) did however relieve anxiety and pain for women in labour and did ultimately improve the element of satisfaction.[33,34]

Hypnosis, which can be self-induced by the patient, and whose main objective is alleviating tension and fear, is believed to reduce labour pains by inhibiting how the body interprets painful sensations.[2] Self-induced hypnosis conditions the patient to remain in full control during the labour whilst still being totally aware of her surrounding environment, unlike

hypnosis induced by another person that does away with a subject's control.[2] These forms of complementary medicine were the least commonly used by the patients in our study. This may be because these techniques require a specific type of teaching or training which may not be known to the midwives who provide antenatal classes to expectant mothers.

Relaxation techniques (such as focused yoga, music and aromatherapy) which are a form of complementary therapy, are considered safe and can be done by the patient without assistance in many instances.[35] Complementary therapies are thought to deflect the bodies thoughts from the labour pain by encouraging the body to release endorphins and decreasing all thoughts that may exacerbate pain.[35] The stretching and posturing done in yoga classes is thought to keep the joints flexible and the muscles well-toned in preparation for delivery of the baby.[35] While these methods may be effective, labour can be a very stressful period for patients and information that was gleaned during antenatal classes can be forgotten when it needs to be applied.[35]

f) Support and partner/doula

Another element in the delivery process that was found to increase maternal satisfaction with labour was the presence of a partner or anyone from the patient's own social network (life partner, friend, relative or doula) during the birthing process.[21,36] Support for the mother can be either emotional (by offering soothing words of encouragement throughout the process), or physical (involving assistance with massage and providing heat packs or assistance with walking around the labour ward). [21,36]

All this support has been found to reduce the negative effects of catecholamines that are brought about by stress (overproduction of catecholamines can lead to painful, prolonged labour).[21,36] The support also assists in protecting and advocating for the mother's dignity and privacy during the birthing process and has been found to lessen the need for unwarranted obstetrical interventions (such as caesarean sections) and the need for increased analgesia, thus allowing for positive birthing outcomes.[21,36]

A systematic review by Hodnett et al confirmed that mothers who had such support were more likely to have spontaneous deliveries and increased satisfaction with the whole delivery process.[37]

Another systematic review by Bohren et al suggests that the supporter may provide comforting measures, such as assisting with massage, reminding the patient to employ breathing techniques, assisting with keeping the patient rehydrated, advising the patient to mobilise and providing an advocating voice for the patient with the medical staff.[27] The availability of support is thought to mitigate the presence of being surrounded by unfamiliar

medical personnel, decrease the rate of obstetric interventions, increasing the feeling of confidence with the maternity staff and decrease the risk of postpartum depression by increasing satisfaction with the delivery process.[27]

The study by Khresheh also supports this theory on the positive role of support structures.[38] Women's support has been shown to be highly beneficial and cost effective in resource constrained facilities as it does not require additional government funding.[38]

When the women are encouraged, they feel more in control of their pain and interpret the labour pains to mean that labour is nearing the end and the arrival of their baby is imminent.[39] When left to their own devices, women can perceive labour pains as catastrophic which in turn can negatively affect the pain experience to a point of dissatisfaction.[39]

2.4.2 Pharmacological methods

Sir James Simpson, who first introduced the Simpson forceps, still used today in obstructed deliveries, was the first person to introduce Chloroform as a form of anaesthesia for women in labour in 1847.[40] Sir James believed, contrary to popular belief at the time, that it was not God's will to allow women to suffer during labour and that women need not suffer such pains during childbirth.[40] Since then, pharmacological methods of pain relief available to women in labour have evolved and these methods can be invasive or non-invasive.

Methods such as inhalation with nitrous oxide (Entonox), non-opioid drugs that include non-steroidal anti-inflammatories, paracetamol, anti-histamines, antispasmodics and sedatives, local anaesthetic nerve blocks, para-cervical blocks, pudendal blocks, epidurals, opioids such as pethidine, morphine, fentanyl and tramadol are now commonly used in modern day labour management.[41] In South Africa, the maternal guidelines only allow provision for the use of Pethidine, Phenergan and Entonox for patients as the pharmacological agents available for use in labour.[42]

2.5 Factors influencing patient satisfaction.

Expectant mothers come to the clinic with the hope of memorable deliveries and as studies have shown, several factors can influence this experience.[43] Patients' satisfaction can be influenced by a number of factors such as client's expectations and the degree to which these expectations are fulfilled.[44] This is why the WHO recommended the humanization of maternity care, by placing the woman who is about to deliver in the centre and allowing her to be actively involved in all elements of the birthing process.[2] This process also involves incorporating a woman's personal beliefs, feelings and autonomy into the whole birthing process.[45]

Prior experience of satisfaction and technical competence of the health provider can also be influential factors during a delivery.[46] The number of previous live births was of significant importance in how patients perceived their pain management, with studies showing that women who had more deliveries were more satisfied with how their pains were managed.[7,18] Choice of service provider, with paid-for services being rated higher than free services also influenced patient satisfaction.[47]

Age can also play a role on levels of satisfaction, with older patients expressing more satisfaction with existing general medical services.[48] Age did not however, influence how patients rated their levels of satisfaction with labour pain management in particular.[10,20] Ethnicity (which is intertwined with home language) and socio-economic status, on the other hand, had a direct bearing on how satisfaction with services was perceived.[49,50,51] Patient's levels of education was believed to influence how patients judge delivery services, with patients having secondary and higher levels being more likely to be dissatisfied with maternity services as evidenced by separate studies by Melese, Kigenyi and other scholars.[48,49] This may be due to higher expectations from this group of patients and a better knowledge and understanding of what standards should be available to patients during delivery.[48] Patients with lesser levels of education were thought to have lower expectations and were therefore easier to please even if conditions during labour were not optimal.[48]

In a six-country cohort by Ryding, a common finding that emerged was that married women were more likely to report a pleasant birth and satisfaction with labour pain management.[9] It is believed that since married women have the support of a partner, they benefit from both the support and hands-on participation of a partner during the birth.[9] In previous years, African male partners did not actively participate or provide support to their spouses during the labour process, but this phenomenon is changing, and nowadays, the number of supportive spouses is increasing.[41] The absence of men during labour may be attributed to cultural beliefs and roles in African society that are very gender based and believe that pregnancy and birthing are strictly the domain of the women and do not require the interference or participation of men.[41] A Nigerian study by Emelonye has shown that indeed, the presence of a spouse or relative during labour was beneficial and contributed to the patient's perception of decreased labour pains.[52]

Alleviation and reduction of pain in labour is an integral part of the labour process for personnel involved in deliveries, as shown by an Irish study, that found that the most important aspect of the delivery was the management, by way of pain relief, of the labour pains, followed by the relationship and support with the midwifery staff.[19]

Protecting the perineum during delivery is paramount during childbirth, but sometimes mitigation of perineal tears is done by performing episiotomies (common in low-income countries). Unfortunately, this practice leads to unsatisfactory outcomes and is a leading cause for dissatisfaction with the birthing process.[23]

2.6 Summary of Literature Review

There is paucity in the available literature around patient satisfaction with pain management in labour in South Africa. Studies are usually generalised and directed towards satisfaction of labour in general. The most used methods for pain management in labour are non-pharmacological, in both the developing and developed worlds.

However pharmacological methods are used with more frequency in developed nations, probably due to easy availability and better patient knowledge about analgesic options available to them. The few available studies on patient satisfaction in labour agree that measuring patient satisfaction is not easy. Measurement of pain itself has been confined to a variety of pain assessment scales whereas measuring tools for satisfaction with pain relief has been rather elusive.

CHAPTER 3: METHODOLOGY

This chapter details the methodology used in this study and sheds light on the study area, selection of participants, data collection and data capture.

3.1 Study Design

A cross-sectional descriptive design was used for this research.

3.2 Site of Study

The research was carried out in the Ekurhuleni Metropolitan Municipality, which has a resident population of approximately 3.2 million people. Ekurhuleni is one of three metropolitan municipalities in Gauteng province and is divided into South, East and Northern regions.[1] Black Africans make up about 79% of the population with whites making up about 16% and other race groups about 6%.[1] For the year 2012/2013, females in the reproductive ages 10-19 years were estimated at 227457(7.1%), between ages 20-29 years at 285427(8.9%), between ages 30-39 years at 283580(8.9) and 40-49 years at 192643(6%).[1]

The research took place between June 2017 and March 2019. The site of study was Phola Park CHC, situated in the east of Ekurhuleni. It is a primary health care facility that provides free health care to children and pregnant women. The CHC provides services to the mainly black and coloured communities of Eden Park, Greenfields, Palmridge and Thokoza. It also provides preventive, curative and rehabilitative services to the predominantly black community and renders services to the public twenty-four hours a day. The CHC has a Midwife Obstetric Unit (MOU) that provides basic obstetric care at all hours. The MOU delivers only uncomplicated obstetric cases, and the complicated or high-risk cases are referred to hospital for further management.

The CHC has nine post-delivery beds, three delivery beds in the assessment room and a staff compliment of four doctors twenty midwives that work on a rotational shift basis. On average the MOU delivers about one hundred and thirty-five babies per month.

3.3 Study Population

All women of reproductive age who delivered by normal vaginal delivery and utilised the obstetric services provided at Phola Park MOU over the period of the study.

3.4 Sample Size

Phola Park on average delivered 1623 per annum. To have a 95% confidence interval with a margin of error of 5% and 50% variability a minimal sample size of 311 was needed. This sample size was calculated using Raosoft an on-line software application.[53]

3.5 Selection of Participants

Patients of all ages, but above eighteen, had at least one live birth, were of any nationality, had delivered by normal vaginal delivery at Phola Park CHC and were attending their three-day postpartum check-up at the clinic, were invited to participate in the study on that day. Complicated and high-risk patients who were successfully delivered at Phola Park before they could be referred to hospital were also selected for the study.

3.6 Inclusion Criteria

- All mothers who delivered live babies by normal vaginal delivery at Phola Park CHC during the period of the study.
- All mothers who agreed to be a part of the study and signed the consent form.

3.7 Exclusion Criteria

- Mothers who refuse to participate in the study
- Mothers who are unable, by law, to sign consent forms (those that needed a guardian's consent or had intellectual disability)
- Mothers who delivered soon after arrival at the MOU and whose progression was not monitored by MOU staff

3.8 Sampling Technique

For this study, convenience sampling was used. The researcher invited all women attending the 3rd day post-natal check-up after a normal delivery at Phola Park to participate in the study. Patients were given information about the study including information as to why and how the study was being done. This information was given to all patients who were waiting to be seen in the post-natal waiting room. They were then all invited to participate in the study and informed that participation was voluntary and would not harm them or their babies in any way. Patients were informed that should they decline to participate in the study then their refusal would not in any way influence the quality of care that they would get. Once a patient had completed answering the questions they were thanked and asked to leave the room and another patient was invited to enter the room and the same process was repeated. The researcher used the same technique until a total of 311 participants had been achieved.

3.9 Data Collection Tool

Data collection tools were in the form of a validated questionnaire used in previous studies (adapted from the American Pain Society Patient Outcome Questionnaire, APS-POQ-R, for the purpose of our research) and the universal pain assessment tool.[54,55] Only the sociodemographic information on the questionnaire was modified and this was done to add value to the questionnaire. The questionnaire was administered to the participants by the researcher. The first part of the questionnaire collected demographic information: patient reference number; date; gender; age; race; marital status; number of live births; highest level of education; home language. Information pertaining to the use of pain medication, traditional medication (or prayer water) and support during labour was also collected.

The second part of the questionnaire used the eleven-point rating scale to further enquire about: least and worst pain; pain over twenty-four hours; how pain interfered with activities in and out of bed; how pain affected the sleep; how pain affected the mood and emotions; side effects from pain treatment; pain relief received; participation in pain treatment; satisfaction with results of treatment and information about treatment options. The last two sections of the questionnaire asked about the use of non-medical methods of pain relief (self-administered by the parturient) and how often patients were encouraged to use them.

For those patients who did not speak English, the researcher sourced the assistance of a proficient interpreter to formulate the questions into Sotho and Zulu and back into English, therefore ensuring accuracy of translation. All the respondents answered the same questionnaire which was written in English.

3.10 Pilot Study

A pilot study was carried out to adjust the questions and determine the average time it took to complete one questionnaire. The pilot study was carried out at a neighbouring MOU (Ramokonopi CHC) and involved ten patients. The parturient of the pilot study were not included as part of the actual research. The researcher used a validated questionnaire that had been adapted from the American Pain Society Patient Outcome Questionnaire (APS-POQ-R).[54]

3.11 Data Collection

Parturient who presented to the clinic for their third day postpartum visit were asked where they had delivered and only those who had delivered at Phola Park were invited to be part of the study. Patients were seen in the post-natal department of the clinic and interviewed individually in a side ward for privacy and confidentiality. Interviewing the patients

separately also allowed patients to feel comfortable so that they could answer truthfully and without knowing how other patients answered.

The data collection started with gathering of the patient's demographic data, personal details, age and parity and mode of delivery (to confirm inclusion criteria for the study). They were also given an information form to sign as well as a global consent form. The patients then answered questions from the structured questionnaire that was administered by the researcher. Pain is a subjective feeling and some patients may struggle to rate it, that's why a Universal Pain Assessment Chart with a numeric scale and Wong-Baker faces was used in assisting patients to rate their pain.[55] Participants were asked to verbally describe their pain experience, then to rate it using the pain scale.

Once a patient had completed answering the questions they were thanked and asked to leave the room and another patient was invited to enter the room and the same process was repeated.

The patient's delivery notes were also reviewed during the third day of the antenatal check-up to see if they were given any medication during labour (as some patients may not have been aware or understood what medication, if any, was administered whilst they were in labour).

The answered questionnaires were kept safely by the researcher in a locked office after the interviews had been conducted. The electronic copies of the raw data, collected daily from the questionnaires, were saved on a laptop that had a code that could only be accessed by the researcher. Back-up of the data was stored on an external hard drive that could only be accessed by a code known only to the researcher.

3.12 Data Analysis

A meeting was arranged with a statistician who advised on the statistical methods required for the study. The discussion centred around how the information was to be collated and analysed using the appropriate statistical software. All the raw data was collected and stored by the researcher before being presented to the statistician and supervisor. A Likert scale was used throughout the questionnaire to rate patient satisfaction and the data was assigned to frequency tables. The categorical data was reported in terms of percentages, whereas the whereas the numerical data was reported as means and standard deviations. The categories used for the levels of satisfaction were rated as follows: 0=Extremely dissatisfied, 1-2=Very dissatisfied, 3-4=Dissatisfied, 5-6=Satisfied, 7-8=Very satisfied, 9-10=Extremely satisfied. Wherever the 11-point rating scales were used, the categories for pain assessment were guided by the pain scale assessment chart, where 0=No pain, 1-2=Mild pain, 3-4=Moderate

pain, 5-6=Severe pain, 7-8=Very severe pain, 9-10=Worst pain possible. In the cases where percentages were used, 1-2 represents 10-20%, 3-4 represents 30-40%, 5-6 represents 50-60%, 7-8 represents 70-80% and 9-10 represents 90-100%.

To test for any significant relationships between demographic characteristics and satisfaction with pain management, a logistic regression analysis was performed with pain satisfaction (dissatisfied/satisfied) as a dependent variable and age, race, marital status, number of live births, education and home language as independent / predictor variables. The p values of the Wald chi-squared test were summarised in a table and statistical significance set at $p<0.05$. The results were depicted in tables and a pie chart.

3.13 Ethical Considerations

A formal letter was written to the clinic manager requesting permission to carry out the study at the facility before the process of data collection began. Written submissions to carry out the study were approved by the Ekurhuleni Health Research Committee (GP_201711_002) and Health Research and Ethics Committee (HREC) of the University of the Witwatersrand (M170608). Participation of patients in the research was voluntary. Patients were supplied with information sheets that were also explained to them and a voluntary, signed consent was obtained before any of the participants could proceed with answering the questionnaire. All the participants were assured of confidentiality and anonymity of their responses and the questionnaires were answered with each patient individually and the results kept safely by the researcher.

CHAPTER 4: RESULTS

This chapter describes the results of the study on the experience of postnatal women at Phola Park Clinic. The sociodemographic aspects of the study participants included–age, race, marital status, number of live births, educational background and home language. Pain severity and proportion of patients who were satisfied with their pain treatment are also included. The chapter also shows patient satisfaction with the different pain management options and association thereof between patient satisfaction and socio-demographic features.

4.1 Socio-demographic characteristics

Table 1: Demographic characteristics

CHARACTERISTIC	FREQUENCY, % (n=311)
Age, years	
Mean (±SD)	26.9 (±6.04)
Median (IQR)	27 (21 – 31)
Minimum / Maximum	16 / 44
Race	
Black	281 (90.4%)
Coloured	30 (9.6%)
Marital status	
Married	116 (37.3%)
Single	118 (37.9%)
Separated	6 (1.9%)
Cohabiting	71 (22.8%)
Education	
Primary education	65 (20.9%)
Secondary education	188 (60.5%)
Post-secondary education	48 (15.4%)
University	10 (3.2%)
Home language	
IsiZulu	121 (38.9%)
South Sotho	78 (25.1%)
IsiXhosa	49 (15.8%)
Afrikaans	15 (4.8%
English	12 (3.9%)
Other (<4.0% each) *	36(11.5%)
Total	**311 (100%)**

* Other includes XiTsonga (8), North Sotho (6), Setswana (5), TshiVenda (5), Shona (5), Chichewa (2), IsiNdebele (2), IsiSwati (1), Kalanga (1)

Table 1 shows a mean age of 26.9; the majority of participants were Black; equal number of married and single participants; most had secondary education and spoke Zulu.

4.2 Number of live births

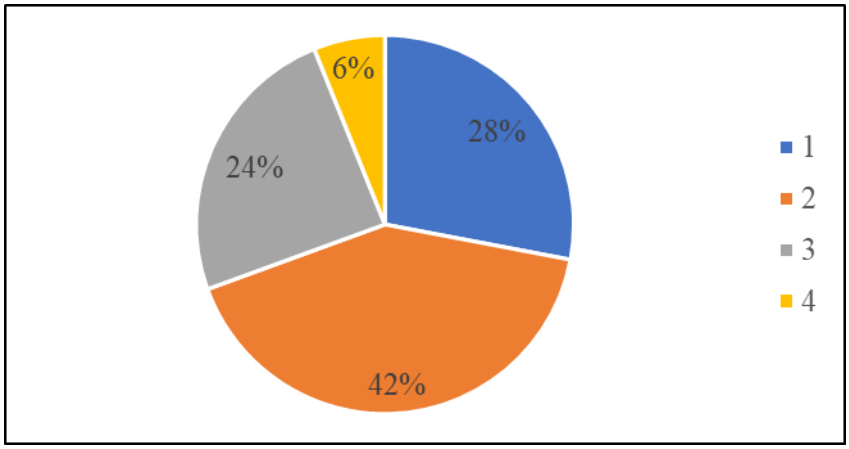

Figure 1: Number of live births

Figure 1 shows most participants had two live births and a minority had four or more births.

4.3 Severity of Pain experienced by Patients in labour

Table 2: Pain experienced by patients

2(a)

Least Pain Experienced	
Pain Experience	**Frequency (%) n=311**
No pain	3 (1.0)
Mild pain	71 (22.8)
Moderate pain	153 (49.2)
Severe pain	73 (23.5)
Very severe pain	9 (2.9)
Worst possible pain	2 (0.6)
Total	**311 (100)**

2(b)

Worst pain Experienced	
Pain Experience	**Frequency (%) n=311**
Moderate pain	1 (0.3)
Severe pain	45 (14.5)
Very severe pain	136 (43.7)
Worst possible pain	129 (41.5)
Total	**311 (100)**

Table 2(a) shows that almost half (49.2%) of the patients felt that the least pain they experienced was nonetheless moderate in nature, whereas table 2(b) the worst pain they had was very severe (43.7%).

Table 3: Pain interference with different activities and sleep

INTERFERENCE	FREQUENCY (%) n=311	INTERFERENCE	FREQUENCY (%) n=311	INTERFERENCE	FREQUENCY (%) n=311	INTERFERENCE	FREQUENCY (%) n=311
Pain interfered with activities in bed		**Pain interfered with activities out of bed**		**Pain interfered with falling asleep**		**Pain interfered with staying asleep**	
Did not interfere	2 (0.6)	Mildly interfered	11 (3.5)	Mildly interfered	11 (3.5)	Mildly interfered	2 (0.6)
Mildly interfered	17 (5.5)	Moderately interfered	96 (30.9)	Moderately interfered	27 (8.7)	Moderately interfered	8 (2.6)
Moderately interfered	112 (36.0)	Considerable interfered	102 (32.8)	Considerable interfered	43 (13.8)	Considerable interfered	38 (12.2)
Considerable interfered	94 (30.2)	Substantially interfered	73 (23.5)	Substantially interfered	81 (26.1)	Substantially interfered	100 (32.2)
Substantially interfered	72 (23.2)	Completely interfered	29 (9.3)	Completely interfered	149 (47.9)	Completely interfered	163 (52.4)
Completely interfered	14 (4.5)						
Total	**311 (100)**	**Total**	**311 (100)**	**Total**	**311 (100)**	**Total**	**311 (100)**

Table 3 shows that most participants felt that pain interfered with their activities both in (36%) and out of bed (32.8%) whilst only a minority felt that the pains affected their activities to a lesser degree (0.6% and 3.5% respectively). Close to half (47.9%) felt that they were unable to fall asleep due to pain and over half the number (52.4%) felt that they failed to stay asleep when the pains started. Some (3.5%) felt that pain only mildly interfered with their falling asleep, whereas 0.6% felt that the pain only mildly interfered with their staying asleep.

Table 4: Effect of pain on mood

PAIN EFFECT ON MOOD AND EMOTIONS	**FREQUENCY (%) n=311**	**PAIN EFFECT ON MOOD AND EMOTIONS**	**FREQUENCY (%) n=311**	**PAIN EFFECT ON MOOD AND EMOTIONS**	**FREQUENCY (%) n=311**	**PAIN EFFECT ON MOOD AND EMOTIONS**	**FREQUENCY (%) n=311**
Anxious mood		**Depressed mood**		**Frightened**		**Helpless**	
Not at all	69 (22.2)	Not at all	206 (66.2)	Not at all	76 (24.4)	Not at all	206 (66.2)
Mildly anxious	66 (21.2)	Mildly Depressed	58 (18.7)	Mildly Frightened	64 (20.6)	Mildly helpless	50 (16.1)
Moderately anxious	63 (20.3)	Moderately depressed	18 (5.8)	Moderately Frightened	75 (24.1)	Moderately helpless	21 (6.8)
Considerably anxious	57 (18.3)	Considerably depressed	20 (6.4)	Considerably frightened	66 (21.2)	Considerably helpless	18 (5.8)
Very anxious	52 (16.7)	Very depressed	8 (2.6)	Very frightened	27 (8.7)	Very helpless	14 (4.5)
Extremely anxious	4 (1.3)	Extremely depressed	1 (0.3)	Extremely frightened	3 (1.0)	Extremely helpless	2 (0.6)
Total	**311 (100)**	**Total**	**311 (100)**	**Total**	**311 (100)**	**Total**	**311 (100)**

Table 4 depicts that 22.2% of participants felt that labour pains did not make them anxious, whereas a small minority (1.3%) felt extreme anxiety. Labour pains did not induce a depressive mood on a large number (66.2%) of participants, with only 0.3% experiencing extreme depression. Most patients (24.4%) did not feel frightened and only 1.0% felt extremely frightened. A sense of hopelessness was not felt by 66.2%, with only 0.6% claiming to have felt extremely helpless.

4.4 Use of Pain Treatment and Support during labour

Table 5: Use of pain remedies.

PRIOR MEDICATION / SUPPORT	FREQUENCY % n=311	PRIOR MEDICATION/ SUPPORT	FREQUENCY % n=311	PRIOR MEDICATION/ SUPPORT	FREQUENCY % n=311
Did you take any medication for pain before coming to the clinic		**Did you take any traditional medicine or prayer water for pain before coming to the clinic**		**Were you supported by anyone who is not a clinic staff member during delivery**	
Yes	89 (28.6%)	Yes	139 (44.7%)	Partner	31 (10.0)
No	222 (71.4%)	No	172 (55.3%)	Relative	83 (26.7%)
				Friend	22 (7.1%)
				None	175 (56.2%)
Total	**311 (100%)**	**Total**	**311 (100%)**	**Total**	**311 (100%)**

As shown in Table 5, most patients (71.4%) did not take pain medication before coming to the clinic and the majority (55.3%) denied taking traditional medicine. Patients who were supported by a relative during labour made up the most numbers (26.7%).

Table 6: Responses to pain relief

PAIN RELIEF	PERCENTAGE RELIEF (%) n=311
Pain relief	
No relief	2 (0.6)
Mild relief	11 (3.5)
Moderate relief	52 (16.7)
A lot of relief	78 (25.1)
Very much relief	165 (53.1)
Complete relief	3 (1.0)
Total	**311 (100)**

Table 6 show that most (53.1%) of the participants experienced very much pain relief from the available methods whereas only 0.6% claimed to have not had any relief.

Table 7: Satisfaction with results of pain management options

SATISFACTION	NUMBER (%) n=311
Satisfaction	
Extremely dissatisfied	7 (2.2)
Very dissatisfied	13 (4.2)
Dissatisfied	41 (13.2)
Satisfied	70 (22.5)
Very satisfied	175 (56.3)
Extremely satisfied	5 (1.6)
Total	**311 (100)**
SUMMARY	
Dissatisfied Satisfied	61 (19.6) 250 (80.4)

As noted in Table 7, most of the patients (80.4%) were satisfied with the results of their pain management in the MOU.

4.5 Non-medical methods to relieve pain.

Table 8: Non-medical methods used

METHOD	FREQUENCY OF USE, (%) n= 311
Deep breathing	291 (26.2)
Walking	244 (22.0)
Massage	233 (21.0)
Prayer	157 (14.1)
Heat	111 (10.0)
Listen to music	32 (2.9)
Relaxation	19 (1.7)
Distraction (e.g., watching TV, reading)	13 (1.2)
Cold pack	8 (0.7)
Imagery or visualisation	2 (0.2)
Total number of times methods were reported	**1110 (100%)**

Table 8 depicts the most frequently used non-medical pain relief methods, with deep breathing (26.2%), walking (22.0%) and massage (21.0%) being the most popular.

Table 9: Encouragement to use non-medical pain relief methods

ENCOURAGEMENT	FREQUENCY OF USE (%)
Sometimes	150 (48.2)
Never	86 (27.7)
Often	75 (24.1)
Total	**311 (21.0)**

Table 9 shows 48.2% of participants felt that they were sometimes encouraged by the staff and 27.7% felt that nothing was done to encourage them.

4.6 Participation in decision-making

Table 10: Patient participation in decisions of pain management

PARTICIPATION ALLOWED	NUMBER (%) n=311
Participation	
Not at all	12 (3.9)
Not much	29 (9.3)
Occasionally	44 (14.1)
Quite regularly	50 (16.1)
Quite a lot	166 (53.4)
Very much so	10 (3.2)
Total	**311 (100)**

Table 10 shows that most patients (53.4%) felt that they could participate in decision-making, whereas only a few (3.9%) felt that they were excluded from the process.

Table 11: Measuring the helpfulness of pain information

HELPFUL INFORMATION	FREQUENCY (%) n= 311
Helpful	
Not at all helpful	3 (1.0)
A little helpful	16 (5.6)
Quite helpful	47 (16.5)
Considerably helpful	69 (24.2)
Very helpful	145 (50.9)
Extremely helpful	5 (1.8)
Total	**285 (100)**

Table 11 shows that most (50.9%) found the information they had received on pain management to be helpful and only three people (1.0%) thought the information was not helpful at all.

4.7 Patient satisfaction and socio-demographic factors

4.7.1 Logistic regression

To test for any significant relationships of the demographic characteristics of Table 1 with pain satisfaction (Table 7) a univariate logistic regression analysis was performed with pain satisfaction (dissatisfied/satisfied) as dependent variable and age, race, marital status, number of live births, education and home language as predictor variables for dissatisfaction. The p values of the Wald chi-squared test are summarised in the following table.

Table 12: *P values of the Wald chi-squared test*

FACTOR	p-value
Age	0.311
Race	0.276
Marital status	0.268
Number of live births	0.003
Education	0.479
Home language	0.084

The number of live births was found to be the only statistically significant predictor of dissatisfaction (p=0.003).

4.8 Significant findings on test of association

Table 13: Odds Ratios and Confidence Intervals as a significant predictor of dissatisfaction

Number of live births	OR*	CI (95%)
1	11.5	1.4 – 97.2
2	3.8	0.5 – 30.4
3	2.4	0.3 – 17.3

***As compared to four live births**

- Patients with 1 live birth were 11.5 time more likely to be dissatisfied compared to patients with 4 live births (OR=11.5; 95% CI 1.4 – 97.2).
- Patients with 2 live births were 3.8 time more likely to be dissatisfied compared to patients with 4 live births (OR=3.8; 95% CI 0.5 – 30.4).
- Patients with 3 live birth were 2.4 time more likely to be dissatisfied compared to patients with 4 live births (OR=2.4; 95% CI 0.3 – 17.3).

Table 13 shows that the less the parity, the more likely the dissatisfaction amongst the participants.

CHAPTER 5: DISCUSSION

This section will discuss the study results. Patients' satisfaction with their labour experience was specific to Phola Park as the study did not include other clinics. It is also where the researcher was based. A total of 311 women who had at least one live birth were selected as participants in the study. The participants had to have delivered by normal vaginal birth in the facility and were asked to participate in answering the questionnaire when they came for their normal three-day post-delivery check-up. The aim of this research was to explore patients' satisfaction with their pain management in the maternity obstetric unit (MOU) at Phola Park CHC. A Pain Satisfaction Questionnaire (adapted from the American Pain Society Pain Outcome Questionnaire APS-POQ-R) was used.[54] The adaptation of the questionnaire led to the recategorization of questions into themes which were-guided by the study objectives.

5.1 Socio-demographic pattern of the participants

5.1.1 Age

The World Health Organization refers to all females between the ages of 15-49 as women of reproductive age.[56] Age is a relevant factor in our study because it has been found that women between the age groups of 19 to 24 are more likely to have greater control of pain than women over the age of 30.[57] This ability to manage pain amongst the younger age groups is due to their physical endurance and their general physique.[57]

A study by Kigenyi did not find age to be a statistically significant finding in relation to how patients rated their pain satisfaction outcomes.[49] Our study, also did not find age to be a statistically significant factor with respect to satisfaction with pain management (p=0.311). These findings could be because the body is programmed to feel pain as a response to an unwanted stimulus, therefore being young or old is irrelevant, as pain will elicit a response at any age.

5.1.2 Race and home language

Of the 311 study participants, most were black (90.4%), and this can be attributed to the fact that the clinic is situated in a location that serves a mainly black population. Most of the studies that have been done on pain management in labour were conducted outside the borders of South Africa and may not be truly representative of South Africa. Studies done in Nigeria and Ghana showed that some of their participants felt that pain was the path that every woman endured as a rite of passage.[58,51] These studies also corroborated the belief amongst some Nigerians that showing one was in pain during labour was a sign of weakness

as labour pain was meant to be endured without any form of pharmacological pain relief.[51,41] The above studies are however in contrast to our study which shows that race was not a significant factor in patient satisfaction. Such approaches to managing labour pains maybe be attributed to ethnic and cultural beliefs but can also be due to naivety and ignorance of the available pain relief methods in their birth setting.[41]

As our study had an overwhelming number of black participants, it was not possible to use race as a distinguishing factor and this large majority limits the application of our findings. The results from our study pertaining to race and labour pain satisfaction were not statistically significant (p=0.276). Comparisons of race are difficult, probably due to the paucity of information regarding this study topic in the South African context. It is also possible that there are not enough studies done generally (comparing blacks and other races) due to ethical considerations of such studies plus the difficulty of doing such studies whilst providing a level playing field for all the study participants.

The home language was not a statistical predictor of dissatisfaction in our study (P=0.084). Although languages may be different, South African culture and beliefs are intertwined and share many major similarities which may explain the insignificance of language as a predictor of dissatisfaction. A study by Olayemi, which shows different results compared to our study, suggests that ethnicity may have a bearing on how patients perceive and deal with labour pain, with different ethnicities from the same race reacting differently to pain, which is different to our study findings.[11]

5.1.3 Marital status

An Australian study by Steele et al found that married patients were more likely to be satisfied with labour management because it allowed for the partner to play an active role in the birthing process and thus allowed the partner to be part of the support team (a factor which has shown to significantly influence satisfaction with labour).[59] Another study by Ryding concurs with that of Steele and states that married women were most likely to report positively on pain satisfaction.[8] Married women are thought to utilize non-pharmacological methods of pain control as their first choice as this allowed them to include their partners in the birthing process, a move that has been shown ease their pain even further.[9]

Our findings however, did not concur with the results of previous studies by Ryding, Emelonye and Steele that married women were more likely to report positive experience.[9,52,59] Despite being married and sometimes willing to take active part in the delivery process, the African male may still be hindered by societal norms and prejudices about a man's role during labour and that may deprive the woman of his presence and support

during labour.[52] This may explain why satisfaction levels were not statistically significant in our group of married, predominantly African participants (p=0.268).

5.1.4 Number of live births

Studies show that although multiparous women were less likely to request the use of pharmacological pain management in labour, they were more likely to report better satisfaction rates with pain management.[18,58] This may be attributed to the fact that these parturient have experienced labour before and they know what to expect and what methods of pain management worked for them during their previous deliveries. Multiparous parturient may have also witnessed resuscitations of babies whose mothers had received pharmacological pain relief. This might also explain the reluctance of these mothers to accept pharmacological pain relief. These findings are in line with our study which shows the number of lives births was a statistically significant predictor of dissatisfaction (p=0.003). The less the parity, the more likely they were to be dissatisfied with their pain management. Despite the finding being statistically significant, the confidence interval of the OR is very wide, which indicates poor precision of the estimate.

5.1.5 Level of education

In our study, the level of education was not a statistical predictor of dissatisfaction, (P=0.479). 10.2% of our study population had a university qualification, which is quite high for most Low- and Middle-Income Countries (LMIC). This may be attributed to educated women having a better understanding of the side effects of medications and therefore opting not to accept any pharmacological treatment for fear of its possible effects on the baby. Educated women may have also read up on the progress of labour and how labour pains develop in intensity, which in turns signifies different phases of the labour process. They may therefore be more knowledgeable in what to expect as opposed to their less educated counterparts who did not have access to better sources of information. Previously, women in labour may have relied only on what they had learned from their ANC visits, but with the advent of the internet knowledge about many things is easily accessible to all patients. Those with a higher education can also read about the available pain relief methods, as well as the benefits and side effects of different interventions.

Studies by Steele et al and Akadri have shown that respondents with a higher education levels were less likely to request or use pharmacological pain relief whilst in labour and despite not using different forms of medical relief were more likely to be satisfied with their overall management of pain in labour.[59,60] These studies found that a higher education may also be associated higher pain perception levels than those patients who were less educated.[59,60] This

could be due to perceptions that patients with higher education were more knowledgeable on the possible negative effects of medical agents on the unborn baby and therefore chose to manage their pains differently. The findings from these studies are in line with our study.

5.2 Severity of pain experienced by patients in labour.

5.2.1 Pain intensity

Pain intensity has been found to be a major factor with regards to pain management in labour.[47] When questioned about pain intensity, namely, the least pain they had experienced, the results showed that almost half (49.2%) of the participants felt that the pains were at best, still moderate. These findings show us that despite the use of different non-pharmacological interventions patients are still experiencing moderate pains. It may therefore be prudent to introduce combinations of non-pharmacological and pharmacological pain management plans at clinic level to those parturient who are willing to try out both methods. Another alternative would be to introduce a combination measures, such as non-opioids deep breathing, massage and heat together. These measures would, however, require the presence of Doulas or additional staff in the MOU. Our study findings are in line with findings by Akadri who also found the most of their study participants rated their labour pains as moderate or severe.[60] As for the worst pain experienced, 43.7% of the participants felt that they were in severe pain most of the time.

5.2.2. Pain and function

Pain is a very subjective feeling and can affect how a person carries out certain functions that they would normally do without any effort. That most participants reported that labour pain, at least considerably affected in /out of bed, and falling/ keeping asleep activities is an indication that treatments other than non-pharmacological methods may be needed to optimize the quality of life during labour. Our study findings, are similar in part, to a study by Lawrence[29] that attempted to encourage women to be ambulant and assume different positions, in and out of bed. These instructions could, however, not be enforced as women in labour advised to assume any position that is comfortable for them during labour.[29] It is possible that to successfully carry out such a study, researchers would be required to strictly enforce different scenarios in different patients throughout their labour and that would be ethically unacceptable and totally inhumane.

5.2.3 Mood and emotions

Pain has also been shown to affect a person's mood and emotions with people becoming either anxious, depressed, frightened or left feeling helpless in response to painful stimuli.[61] The low number of participants in this study displaying signs of anxiety could have been due to adequate preparation given to participants during the ANC visits of what to expect and possibly, the faith that patients already had in the delivery staff. Considering that our study population was predominantly black, a higher number of parturient was expected to report higher levels of anxiety. These lower levels may be due patients not understanding the signs and symptoms of anxiety. More campaigns are therefore probably needed to teach the general population about anxiety and other mental health problems.

Bohren et al showed that anxiety led to higher levels of epinephrine which caused decreased uterine contractility, prolonged labour, poor Apgar scores with possibility of increased morbidity and mortality for the baby and obvious decreased satisfaction with the birthing process.[27] Anxiety was however shown to be relieved by a reassuring touch from a supportive friend or relative.[23] Our findings differ from studies by Henderson and Redshaw that found that Black women and other ethnic minorities were more likely to be worried about all the possible outcomes associated with the birthing process and thus had elevated their anxiety levels.[47]

5.2.4 Depression

Just over 66 % of our patients did not believe that the pain made them feel depressed at the time labour. It is suspected that depression in labour develops due to elevated cortisol levels associated with the increased stress of labour.[57,60] It could also be that women in labour go through a myriad of feelings before delivery and may not recognise or interpret symptoms of depression correctly. Patients may also not want to admit to mental health conditions for fear of stigmatization. There is inadequate information about depression during labour but a study by Martinez-Galiano et al found that primiparas women were more likely to suffer from post-partum depression, anxiety and sadness than their multiparous counterparts (which put primiparas at heightened risk of depression).[62]

A study by Lonstein found that immediate close contact with the new-born attenuates the release of gamma-aminobutyric acid (GABA) and neuropeptide oxytocin, both of which cause suppression of anxiety and depression related behaviour post -partum.[63] This finding further justifies why skin-to-skin contact immediately post-delivery (and Kangaroo mother care) is a crucial for the new mother. Post-partum anxiety and depression are common post-delivery but are often missed because screening for these illnesses is often not done.[62]

5.2.5 Pain and fright

A little under 25% of our parturient felt frightened during labour. These low numbers of patients in our study could possibly be due to the calming reassurance received during delivery in the clinic. This is reassuring as the fear of impending childbirth has been shown to increase the perception of labour pains during labour in women expecting a vaginal delivery.[46] Our study findings on pain and fright are in line with studies by Sheen and Slade that show that women who were less frightened during labour had a higher probability of being satisfied with the management of the whole labour process.[64] Fear has been shown to affect women in labour, especially those who have never delivered, because they doubt if they will be able to deal with the paint when in labour.[64] Fear has also been shown to increase the duration of labour and with it the length of time that a woman must endure pain and ultimately dissatisfaction with how the pain could have been managed.[65]

5.3 Satisfaction with pain treatment during labour

The pharmacological methods available in clinics, as per the South African maternal guidelines, provide for the administration of pethidine, Phenergan, or Entonox as a form of pain relief.[59]

In Phola Park Clinic, only Pethidine and Phenergan were available for the patients. Pethidine is one of the most commonly used opioids in the management of pain and is used in most countries throughout the world.[44] Pethidine is relatively inexpensive and is easy to administer (and can be prescribed and administered by a midwife), which is why it's use is so widespread in obstetric units.[44] Smith et al found that satisfaction with pain relief (from Pethidine) in labouring mothers was moderate and it caused side effects such as itching, vomiting or nausea.[44]

5.3.1 Pain and medication

None of our study participants received pethidine during labour but the omission of this opioid did not seem to have influenced the general feeling of our participants. This could explain why most patients still experienced moderate pains, despite using different non-pharmacological pain management methods. The parturient might also have been unaware that they could ask for Pethidine to be administered. During antenatal classes, patients are advised not to take any pain medications not prescribed by a health practitioner, which may explain why many participants (71.4%), claimed not to have taken any pain medication prior to arriving at the clinic. Another reason for not taking pain medication may be due to lack of

knowledge about which pain medications are safe to use in labour, especially in low-income settings such as ours, as evidenced by Nabukenya et al.[66]

5.3.2 Prayer water and traditional medicine

About 45% of the participants agreed to have taken prayer water or traditional medicine before presenting to the clinic and this is quite a substantial number, thus showing patients' propensity to believing in the use of non-conventional pain relief methods. This might be because parturient may be from households where traditional medicine is used regularly. The use of prayer water might stem from the fact South Africa is a predominantly Christian country and substances such as prayer water may be considered as harmless to the mother and child. It may therefore be prudent to improve parturient knowledge on the available pain management options in the clinics and risks associated with traditional medicine usage. Our study findings are similar to those by Kulesza-Bronczyk and Aziato that show religion was integral with how many women managed their labour process.[31,32] Women in labour used prayer to calm them and ultimately relax them and this combination of factors led to a more satisfaction with the labour process.[32] The women also believed that prayer would help them successfully manage the labour pains and help them to avoid surgical and obstetric interventions and lead to a normal vaginal delivery with a healthy baby at birth.[32]

Dika's study on the use of herbal medicines concurs with our study findings that show such practices to be a common occurrence throughout labour, especially on the African continent.[67] Patients believe that the use of traditional medicine is unlikely to be harmful for the mother and child as the ingredients used are herbal and therefore natural.[67] The use of herbal medication is widespread across most African, Asian and developed countries and the objective is the same; as a way of shortening the duration of labour, expediting delivery and avoiding the possibility of a caesarean section.[67]

5.3.3 Support mechanisms

The presence of a supportive partner was however not the case for most of our participants, as 56.2% claimed not to have had any support from a partner, relative or friend during their labour. Despite the absence of support during labour, most patients (56.3%) still reported a positive overall satisfaction with the way their pain was managed throughout the labour. This could be due to patients already being psychologically prepared to face the labour process alone, without a partner or Doula on the day of delivery. Although the MOUs are supposed to allow partners to be with patients during labour, the reality is that this never happens in Phola Park. Our study therefore goes against the findings of Melese et al, Fathi et al and Bohren et al that state that women who received support during labour were more likely to be satisfied

with the pain management process.[21,27,48] The absence of support could be due to the timing of the onset of labour which might not always be in sync with the availability of the support person. Although the health system in South Africa allows for the presence of partners or doulas during labour, this practice is not common, probably due to the lack of privacy to allow additional persons in our birthing facilities that are concurrently shared with other women in the birthing process. South Africa follows the Better Birth Initiative advocated by the WHO that seeks to promote the presence of a birth partner as a way of helping to improve maternal and infant health.[27] In most countries the presence of someone supporting a labouring woman (and chosen by the patient) throughout the birthing process has become the exception rather than the norm.[27]

Support structures, such as doulas, relatives or friends have been shown to assist patients in having a more manageable and memorable labour experience.[27] Patients with such support structures were found to have an increased number of spontaneous vaginal deliveries and were unlikely to request analgesia during labour.[39] Studies show the necessity of a spouse, companion or relative to be present during labour because this presence improves the way the patient manages the labour pain and the birthing process.[52,55] Continuous support has been found to lower stress levels and decrease the perception of pain intensity.[38] Support has also been found to decrease the need or caesarean sections, reduce the need for additional analgesia and sometimes shorten the labour process. [27,52,57] The presence of doulas has shown to significantly influence the perceptions of pain and in turn influence the possibility of feelings of satisfaction with the birthing process.[38,52] The role of the supporter is to provide not only emotional support but also informational support, such as how the labour seems to be progressing.[27]

5.4 Non-pharmacological pain relief methods

5.4.1 Deep breathing

Our study findings show that 291 (26.2%) of our participants favoured the breathing technique which is indicative of the effectiveness of the method (and which is backed up by a study by Yuksel) that shows that breathing exercises are an effective way to reduce labour pains and significantly minimize the duration of labour.[68] A reason for the increased popularity of breathing techniques could be due to its ease in carrying it out and because it is repeatedly popularized by television and print media whenever a woman in labour is portrayed.

Another study by Nattah also corroborates our findings.[20] The study recorded women's pain scores (using the visual analogue scale -VAS) whilst in labour against breathing techniques and found that those who used the breathing technique correctly recorded the lowest pain scores (breathing techniques are associated with providing more circulatory oxygen, relaxation of the muscles and calming capabilities).[20]

5.4.2 Walking

The usefulness of walking around when in labour was a common and popular feature of our participants, with 244 (22.0%) citing improvement of the pains when walking. Our patients could have used walking as a way of distracting themselves from the labour pains and to move away from other parturient who are moaning in pain. Walking is also believed to give the patient a sense of control over her labour pains and works as way of distracting her from the labour pains and decreasing the needs for pharmacological inerventions.[45]

Ondeck's study supports the need the walk to around whilst in labour and concurs with the findings of other studies by Melzak and Lawrence that demonstrate walking results in shorter labour periods and increased satisfaction with the labour process.[26,28,29] The use of walking in labour could have been even higher at our clinic but might have been hampered by institutional routines that don't always encourage labouring patients to walk about, lest they deliver whilst walking and out of sight of medical personnel.

5.4.3 Massage

Massage was a popular form of pain relief in our study participants, with 233 (21.0%) agreeing that they had self-administered it as a way of easing the pain whilst in labour. This method may have proved to be popular with our participants due to its ease of application and possible effectiveness in reducing the perception of labour pains.

Levett writes that massage can be used to assist with pain relief and can be done gently in between contractions (for release of endorphins and relaxation) or by applying stronger pressure on the buttocks (which is believed to interrupt the transfer of pain during contractions and to relieve the actual pain).[35]

5.4.4 Prayer

One hundred and fifty-seven (14.1%) of our study participants admitted to praying for themselves to help them through the labour pains, which confirms the findings of previous studies that prayer is a commonly used tool for women in labour.

Prayer and artefacts associated with God are commonly encountered amongst a lot of patients in labour.[32,50] Studies by Azziato and Kulesza-Bronczyk show that patients have the

belief of being under the protection of a higher being that will assist in easing the labour pain and resulting in an uneventful delivery.[32,50]

5.4.5 Heat

One hundred and eleven (10.0%) of our study participants attributed the easing of labour pains to the use of heat which is in line with previous studies on the effectiveness of heat on labour pain. Only 8 (0.2%) of our study persons felt that cold packs provided a form of pain relief for them. The use of heat on the lower back, abdomen and perineum has been found to be a cost effective, low risk and easy to use method of reducing labour pains as evidenced by Taavoni's study.[24] Taavoni's study showed that women who used heat packs in labour were found to report much lower pain scores, had a much shorter labour period and had better labour satisfaction outcomes than patients who did not use heat.[24]Our study findings are in line with Taavoni et al, Kaur et al and Lee et al that show that a large number of patients in labour found that self-application of heat packs on the lower back effectively decreased the intensity of labour pains.[43,69,70] A study by Ganji went further to assess the effect of intermittent heat and cold on the labour process and found that the method also led to decreased labour times and decreased labour pains, leading to increased satisfaction amongst the participants.[71]

5.4.6 Encouragement

It is therefore important to constantly encourage patients to use non-medical methods for pain management. Almost half of our patients felt that healthcare personnel came by to give them encouragement only some of the time whilst 27.7% believed that they never came all. Having an encouraging midwife coming by the labour rooms regularly, may give the patients the belief that the staff cares about their well-being. These figures are in line with a study done by Maputle in Limpopo which showed that delivery staff did not come often enough to provide labouring mothers with encouragement or support, but rather came when they thought that assistance was needed with the actual delivery.[72]

5.4.7 Participation in pain treatment decisions

When asked about how much they could participate in decision making about their pain management, most of the patients (53.4%) felt that they were given that opportunity to choose their pain management options, with only a minority who felt that they were excluded from participating. Their options were, however, based on their knowledge of non-pharmacological pain management methods. Patients were not forced to use a particular method but were, rather, given free rein to use whatever method worked better for them.

Our findings are however in line with findings by Kifle et al who found that allowing patients to play a more active role in making decisions regarding their birthing process can lead to improved satisfaction rates.[73] Our findings give the impression that there may have been a negotiated approach between the patient and health care provider as to how the pain could be appropriately managed (in the best interests of the mother and baby).

5.4.8 Information on pain treatment options

Most the respondents (50.9%) found the information they had learned to be very helpful in managing their labour pains with only 3% finding the information to be unhelpful. Information relating to the different pain management methods is supposed to be given to patients who attend antenatal classes throughout the course of their pregnancy. The information is meant to be re-enforced again when the patients go into labour. If the lessons have been successful, that knowledge is then applied during labour. Not having adequate information about what to expect during labour can exacerbate the fear of the unknown and thus negatively affect satisfaction with birthing process.[64]

5.5 Association between sociodemographic features and patient satisfaction

Our study did not reveal any significant relationship between the demographic features (age, race, marital status, education, and home language) except for number of live births. Age, race, marital status, education, and home language were therefore less likely to be significant predictors of dissatisfaction. The number of live births was the only significant finding as a predictor of dissatisfaction ($p=0.003$). Our results show that the less the parity of our participants, the more likely they were to be dissatisfied with their pain management. However, for those participants with one live birth, a wide confidence interval (OR=11.5; CI 1.4-97.2) gives the impression that these results should be approached with caution. For participants with three live births the confidence interval is narrower (OR=2.4; CI 0.3-17.3) and these results can therefore be reviewed more favourably.

5.6 Bias and limitations

The study might have been affected by social desirability bias in which participants might have answered in a manner that might have over-estimated or even under estimated their satisfaction with the pain management provided to try and conform to what is considered a more socially acceptable answer.[74] To try and circumvent this the researcher tried to convince the respondents to answer truthfully and without fear as their answers would be anonymous and would in no way affect the manner in which they would be treated in the future when attending the clinic. The patients were told that truthful answers would assist in improving

management for all patients in labour in the future. Although mothers were asked to answer truthfully to these questions and the researcher was not judgemental, it is still possible that not all answers were truthful, thus leading to social desirability bias.

Convenience sampling was used and our study population (with certain age groups, multiparous women, affluent women and other races not adequately represented in the study) was selected from only one clinic which may result in the findings not being truly representative of the general population. Those parturient who delivered at the clinic but did not come back for their postpartum review would also have been excluded, more especially if they were dissatisfied with the care that they had received. This exclusion may result in an overestimation of satisfaction levels or underestimation of dissatisfaction level.

A limitation of the study can be attributed to the rating of pain perceptions in individuals because of the subjectivity of pain and absence of a better and more objective pain perception tool. The current tool is still the best-known way of objectifying the rating.

Another limitation was that most patients might not have been aware that doulas (or similar) were allowed in the clinic and our patients were not offered pharmacological pain relief even though it was available in the clinic.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Study findings suggest that non-pharmacological pain management interventions are effective and have a role to play during labour. However, that a significant proportion of participants still experienced at least moderate pain may signify the need for additional pharmacological treatments. In addition, the provision of information to parturient appears effective in improving clinician-parturient relationship and fosters participation and collaboration regarding decision making for pain management in labour. While sociodemographic characteristics appear not to influence parturient satisfaction, the finding that women with lower parity were more likely to be dissatisfied with their pain management during labour warrants further studies.

6.2 Recommendations

The research findings need to be discussed with the MOU staff as a way of encouraging them to improve their services, despite the positive study findings. Any recommendations will require the buy-in of the MOU staff to be of major significance and usefulness going forward.

6.2.1 Patient level

Interventions at this level include teaching and advising patients on negotiated delivery plans; educating patients on the available pharmacological methods available at clinic level and better health education programmes that are targeted at those with less parity in the ANC. When patients arrive in labour, they should be given information on available medical pain relief options. Pethidine is not being offered to patients and this should be done.

6.2.2 Facility level

Interventions suggested at this level should include creating awareness amongst MOU staff about the need to offer patients pharmacological pain relief options as routine when patients are first assessed on arrival in MOU. Re-enforce the use of maternal guidelines. To assist with conformity, pain relief protocols should be devised and adhered to. Improving levels of communication, respecting patients' right to autonomy, empathy and frequent encouragement should become the mainstay of the MOU. The MOU staff should be upskilled in the ordering, use and knowledge of appropriate doses of Pethidine for patients in labour. Staff can choose pethidine and Phenergan only as that is what is available. The facilitation of doula or partner friendly birthing units should be encouraged whilst still ensuring privacy and dignity for all patients. Heat packs, birthing balls and calming music should be made available in MOU's and all patients should be encouraged to fill out suggestions/ recommendations on discharge.

6.2.3 Community level

Interventions at this level should aim at the use of radio, television, print and social media (and mom-connect), and the Ward Based Outreach Teams (WBOT) to create awareness on the different methods of pain relief available. Another option would be to request the assistance of Non-Governmental Organizations, churches, and other independent organizations to include health education messages on pain management during labour in their interactions with the community.

6.2.4 District level

Midwives and doctors should be upskilled in screening and recognising patients at risk of mental health problems in pregnancy and labour. The teaching of different relaxation techniques during ANC visits should be encouraged. The provision of awards, recognition and accolades should be done annually for the best-performing MOUs.

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ANNEXURES

Annexure 1 - Pain satisfaction questionnaire[30]

Socio-demographic factors

Reference Number:
Date:
Gender: ☐ Male ☐ Female
Age:
Race: ☐ Black ☐ Coloured ☐ White ☐ Asian ☐ Other
Marital Status: ☐ Single ☐ Married ☐Cohabiting ☐ Separated ☐ Divorced ☐ Widowed
Number of live births: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ≤
Highest level of education: ☐ No schooling ☐ Primary education ☐ Secondary education ☐ Post-Secondary education ☐ University ☐ Other

Home language: ☐ Afrikaans ☐ English ☐ South Sotho ☐ Zulu ☐ Xhoza ☐North Sotho ☐ Tsonga ☐ Venda ☐ Tswana ☐ Swati ☐ Ndebele
Did you take any medication for pain before coming to the clinic? ☐ YES ☐ NO
Did you take any traditional medicine or prayer water before coming the clinic? ☐ YES ☐ NO
Were you supported by anyone during your delivery who is not a clinic staff member? ☐Partner ☐ Relative ☐ Friend ☐ Doula ☐ None

QUESTIONNAIRE

Adopted from the American Pain Society Patient Outcome Questionnaire (APS-POQ-R)[30]

The following questions are about pain you experienced during the first 24 hours in hospital:											
P1: On this scale, please indicate the least pain you had in the first 24 hours Where: 0 - no pain 10 - worst pain possible	0	1	2	3	4	5	6	7	8	9	10
P2: On this scale, please indicate the worst pain you had in the first 24 hours Where: 0 - no pain 10 - worst pain possible	0	1	2	3	4	5	6	7	8	9	10
P3. How often were you in severe pain in the first 24 hours? Where: 0% - Never in severe pain 100% - Always in severe pain	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
P4. Circle the one number below that best describes how much pain interfered or prevented you from: Where: 0 – does not interfere 10 – completely interferes											
a. Doing activities in bed, such as turning, sitting up, repositioning:	0	1	2	3	4	5	6	7	8	9	10

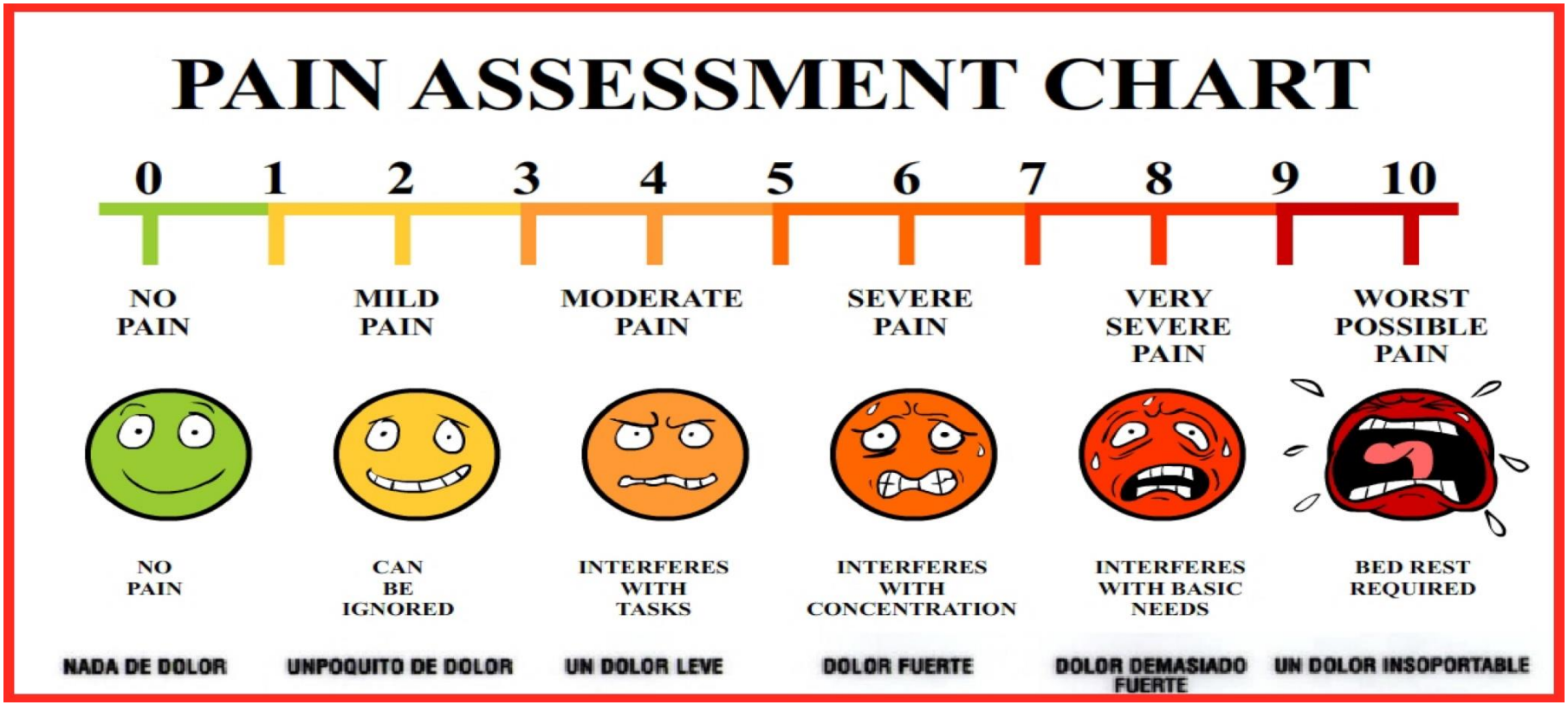
b. Doing activities out of bed, such as walking, sitting in a chair, standing at the sink	0	1	2	3	4	5	6	7	8	9	10
c. Falling asleep	0	1	2	3	4	5	6	7	8	9	10
d. Staying asleep	0	1	2	3	4	5	6	7	8	9	10
P5. Pain can affect our mood and emotions. On this scale, please circle the one number that best shows how much the pain caused you to feel: Where: 0 – Not all 10 - Extremely	0	1	2	3	4	5	6	7	8	9	10
a. Anxious	0	1	2	3	4	5	6	7	8	9	10
b. Depressed	0	1	2	3	4	5	6	7	8	9	10
c. Frightened	0	1	2	3	4	5	6	7	8	9	10
d. Helpless	0	1	2	3	4	5	6	7	8	9	10
P6. Have you had any of the following side effects from pain treatment you received? Please circle “0” if No: If “Yes” circle the one number that best shows the severity of each. Where 0 – None 10 – Severe											
a. Nausea	0	1	2	3	4	5	6	7	8	9	10
b. Drowsiness	0	1	2	3	4	5	6	7	8	9	10
c. Itching	0	1	2	3	4	5	6	7	8	9	10
d. Dizziness	0	1	2	3	4	5	6	7	8	9	10

P7. In the first 24 hours, how much pain relief have you received? Please circle the one percentage that best show how much relief you have received from all your pain treatments combined (medicine and non-medicine treatment). Where: 0% - No relief 100% - Complete relief	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
P8. Were you allowed to participate in decisions about your pain treatment as much as you wanted to? Where: 0 – Not at all 10 – Very much so	0	1	2	3	4	5	6	7	8	9	10
P9. Circle the one number that best shows how satisfied you are with the results of your pain treatment while in the MOU. Where: 0 – Extremely dissatisfied 10 – Extremely satisfied	0	1	2	3	4	5	6	7	8	9	10
P10. Did you receive any information about your pain treatment options? …….. No, ……. Yes a. If yes, please circle the number that best shows how helpful the information was. Where: 0 – Not at all helpful 10 – Extremely helpful	0	1	2	3	4	5	6	7	8	9	10
P11. Did you use any non-medicine method to relieve your pain?											

…….. No, ……. Yes a. If yes, check all that apply: …… Cold pack …… Deep breathing …… Distraction (such as watching TV, reading) …… Heat …… Imagery or visualization …… Massage …… Meditation …… Listen to music …… Prayer …… Relaxation …… Walking …… Other (please describe)
P12. How often did a nurse or doctor encourage you to use non-medicine methods to relieve your pain? …….. Never ..…….. Sometimes …… Often
Thank you for your time and feedback.
P13. Tick here if the patient received help in filling-in the questionnaire

Researcher's signature: _____

Annexure 2: Universal Pain Assessment Tool



Annexure 3: Permission letter to conduct a research project at Phola Park CHC

2 June 2016

The Unit Manager

Phola Park CHC

Katlehong

Dear Madam

Request for permission to conduct a research project at Phola Park CHC

My name is Dr Makafane Mabathoana, a second year Registrar in the Department of Family Medicine at University of the Witwatersrand.

As part of the MMED studies, the Department of Family Medicine requires that I undertake a research project at a health centre. The title of the project is "Assessing patient satisfaction with pain management for patients in labour at Phola Park CHC."

The objectives of the study are:

- To describe socio-demographic pattern of patients who delivered in the clinic during the study period
- To identify the nature of pain control measures offered to women in labour
- To determine the proportion of patients who were satisfied with pain control measures
- To describe patient satisfaction with their labour experience in the MOU
- To determine the associations between socio-demographic features and patient satisfaction

I would like to request permission to conduct this research project at Phola Park CHC. The study will involve the administration of a validated questionnaire, that will be adapted for the purpose of this study, to participants attending the three-day post-natal check-up at Phola Park CHC.

I look forward to your positive response.

Regards

_____

Dr M.C. Mabathoana

Registrar

Ekurhuleni District

Annexure 4: Global Consent Form

Consent Form: Use of Clinical Information for Research

Dear Patient,

You are currently being seen at Phola Park CHC for your third day post-natal visit after having a normal vaginal delivery at our Maternal Obstetric Unit. Phola Park CHC not only renders treatment but is also actively involved in conducting research aimed at improving the quality of care that we deliver. From time to time such research involves the use of patient records from which information is extracted. Conducting research may also involve asking patients to answer a questionnaire. The use of such information is subject to the following:

1. Approval from the Human Research Ethics Committee (Medical) of the University of the Witwatersrand.
2. Identity of a patient from whose file information is extracted is never revealed to anyone but the researcher unless specific consent is obtained to do so. The information gathered does not contain the name of the patient but only a coded number so as to maintain anonymity.

We would like to obtain your consent to include you as one of the participants who will answer a questionnaire for the purpose of research, subject to the aforementioned conditions. If you choose not to give consent, this will not compromise your treatment in any way. If at any time you choose to withdraw consent you are free to do so and will not be prejudiced in any way.

Should you wish to contact us at any stage regarding consent, con**tact Dr Makafane Mabathoana at 011 385 1983**.

A. Consent Given

I_____ hereby give consent to be one of the participants who will answer the questionnaire as per the above-mentioned conditions for the purposes of research:

PATIENT: _____ DATE: _____

B. Consent Not Given

I _____ do not give consent to be a participant and do not wish to answer the questionnaire:

PATIENT: _____DATE: _____

Annexure 5: Participant information sheet

Title of study: Patient satisfaction with pain management in labour at Phola Park CHC.

Good day. My name is Dr Makafane Mabathoana and I am a second-year registrar in the Department of Family Medicine at the University of the Witwatersrand. I am currently conducting a research study to explore patient satisfaction with pain management for patients in labour at Phola Park CHC. Research is just the process to learn the answer to a question. In this study I would like to explore the ages, ethnicity and social backgrounds of patients who delivered at Phola Park, the nature of pain control measures offered at the clinic, the proportion of patients who were satisfied with the pain control measures and how their experience in the MOU was.

I would like to invite you to participate in the following study that will seek to assess if patients who delivered at Phola Park CHC were satisfied with the effectiveness with which their pain was managed during labour.

Participants in the study will be asked to answer a questionnaire administered by the researcher in either Sotho, IsiZulu, IsiXhosa or English. The information gathered from the questionnaire will then be compiled and used for the study. The study is expected to continue for three months and participants will be expected to answer the questionnaire only once during this period. The participants will be encouraged to answer the questionnaire truthfully so that a meaningful interpretation of patient satisfaction in labour can be achieved from the study.

There are no obvious risks in participating in the study, however, the participants could feel uncomfortable with the interview process. The study recommendations will improve pain management for patients in labour at Phola Park CHC.

Participation in the study is voluntary and participants will not be forced to join. The participant may choose to withdraw from the study at no risk, penalty or loss of benefit or care to which the participant is otherwise entitled to. The participant may choose to withdraw from the study without giving reasons at any point throughout the study. There will be no payment for participating and nor will the participant be expected to pay for anything either.

Confidentiality of your information will be maintained at all times, but absolute confidentiality cannot always be maintained if information is required to be disclosed

for legal reasons. Patients' names will be replaced with codes and anonymity will be ensured. Only the researcher, the supervisor and Human Ethics Research Committee may have access to any data and information collected during the study.

The participant can contact the researcher regarding queries or complaints relating to the study on 011 3851983 or email: makafane@yahoo.com. The supervisor can be contacted on 011 0898500 or email: abodiunaro10@gmail.com. If a participant wishes to direct queries, complaints or concerns regarding the ethical activities surrounding the study please contact the HREC Chair/Administrator for participants: Prof P Cleaton Jones, Tel 011 717 2301, email peter.cleaton-jones1@wits.ac.za or Ms Z Ndlovu/ Mr Rhulani Mkansi/ Mr Lebo Moeng Administrative Officers 011 7172700/2656/1234/1252

zanele.ndlovu@wits.ac.za; Rhulani.mkansi@wits.ac.za;and lebo.moeng@wits.ac.za

R14/49 Dr M Mabathoana

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M170608

NAME: (Principal Investigator)	Dr M Mabathoana
DEPARTMENT:	School of Clinical Medicine Division of Family Medicine Medical School
PROJECT TITLE:	Assessing patient satisfaction with pain management for patients in labour at Phola Park CHC
DATE CONSIDERED:	30/06/2017
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Dr A Aro
APPROVED BY:	Professor CB Penny, Co-Chairperson, HREC (Medical)
DATE OF APPROVAL:	07/09/2017

UNIVERSITY OF THE WITWATERSRAND
TROY CLEMENT PENNY
HREC (MEDICAL) AND BEC
- 7 SEP 2017
JOHANNESBURG

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. I agree to submit a yearly progress report. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. in this case, the study was initially reviewed in June and will therefore be due in the month of June each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES