SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA

FACTORS INFLUENCING PATIENT SATISFACTION WITH PAIN MANAGEMENT AMONG POST CAESAREAN SECTION PATIENTS IN THE GREATER REGIONAL HOSPITAL, GHANA

BY

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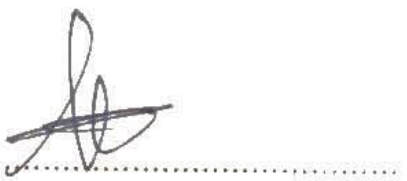
THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE.

JULY 2019

DECLARATION

I, Doreen Ohemeng Wiafe, do hereby declare that apart from references that have been acknowledged, this research is a result of my hard work under supervision. I take full responsibility for this work.



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.....

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23/10/19

Date

DEDICATION

This work is dedicated to the Almighty God for making it possible for me to successfully complete this study and then to my dedicated and committed family, Mr. Rexford Ntim-Ofosu, Stephanie Akua Biama Ntim-Ofosu, Mr /Mrs. Wiafe, Mrs. Anita Wiafe Asomani, Dorothy O. Wiafe, Kofi Boateng Boa-Amponsem, and Maame Afia Abrafi Boa-Amponsem.

ACKNOWLEDGMENTS

First, I am highly thankful to God for giving me knowledge, good health, favor, and guidance to develop and complete this dissertation. I wish to take this opportunity to express my sincere appreciation to my supervisor, Dr. Agnes M. Kotoh for her encouragement, concrete suggestions and corrections, show of concern and above all her in-depth knowledge and commitment provided me during this work. I also appreciate her valuable hours spent on me because of this work. May God bless and replenish her in hundred-fold whatever she has lost on me.

I am also grateful to my husband and daughter for their support at all times. To my parents and siblings, I say God bless you for your prayers. I am highly indebted to both management and staff of the Greater Accra Regional Hospital for the support in making this a reality especially Mr. Bismack Jampim Abrokwah. I further acknowledge the advice of other lecturers at Department of Population, Family, and Reproductive at the School of Public Health, University of Ghana Legon and the supporting staff for typing various introductory letters needed for data collection.

ABSTRACT

Background: The rate of cesarean sections is on the rise and being performed more frequently in recent times. Pain is a major problem in post-operation recovery and a known cause for acute pain in obstetrics; its relief and patient satisfaction are still inadequate in many cases.

Objective: This study examined factors influencing patient satisfaction with pain management post-cesarean delivery at the Greater Accra Regional Hospital.

Methods: A descriptive cross-sectional study design was employed and quantitative methods used to collect data. A semi structured close and an open-ended questionnaire were used to collect data on women who had undergone ceasearen section(c/s) at the Greater Accra Regional Hospital. STATA 15 was used to perform both descriptive and inferential statistical analysis.

Results: The study results show that the level of pain experienced within 24 hours post-ceasearan section was moderate 40.4% and severe 58.9% respectively. Slightly more than half 52.2% of patients had elective C/S and 47.8% had emergency C/S. Majority; 85.9 percent of the post-C/S patients were satisfied with the pain management given them. Determining factors that influenced patient's satisfaction with pain managements, this study results indicates that patients who have singletons are 2.81 times more likely to be satisfied with pain management as compared to those who had twin deliveries [AOR=2.81 (95% CI: 1.14-6.92); p=0.023]. Patients who were aged 30-39 were 70% less likely to be satisfied with pain management as compared to those aged <30 years [AOR=0.30 (95% CI: 0.10-0.92); p=0.032].

Conclusion: Most mothers, 99.3%, had moderate to severe pain 24hours after C/S. Also 85.9 percent of the post-C/S mothers were satisfied with the pain management given them. The findings of this study indicated that the age of the mother influenced their satisfaction with pain management. Mothers who had singletons were more likely to be satisfied with their pain management.

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LIST OF ABBREVIATION

APS	Acute Pain Services
APS	American Pain Society
ASA	American Association of Anaesthesiologists
CD	Cesarean Delivery
CDC	Centres for Disease Control and Prevention
C/S	Caesarean Section
CSEA	Combined Spinal–Epidural Anaesthesia
ED	Emergency Department
EDA	Epidural Analgesia
GHS	Ghana Health Service
LA	Local Anaesthesia
IASP	International Association for the Study of Pain
LOS	Length of Stay
MOH	Ministry of Health
NRS	Numerical Rating Scale
NSAID	Non-steroidal Anti-inflammatory Drug
PCA	Principal Component Analysis
PERI-OP	Peri-Operative
POST-OP	Post-Operative
PONV	Postoperative Nausea and Vomiting
PCA	Patient Controlled Analgesia
RA	Regional Anaesthesia
RWS	Red Wedge Scale
VAS	Visual Analogue Scale
VDS	Verbal Descriptor Scale
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

The rate of cesarean deliveries is on the rise and cesarean section(C/S) is performed more often in recent times. It is also, in most cases, the first visit to operating room by most women,with the associated anxieties, and apprehensions (Sujata & Hajoora, 2014). Today, C/S is usually done when8 vaginal delivery will jeopardize the health of the baby or mother (Becher & Stokke, 2013). It can also be performed for expectant mothers upon maternal request.

Increase in C/S deliveries can partly be attributed to the advancement of medicine and technology. During pregnancy and labour, it is now easy to identify prospective health risks for mother and child, increased maternal age, more females with prior C / S exposure and multiple births (Becher & Stokke, 2013). C/S is more common than other surgeries due to nearly 51% of the world's populations being (Abdo, 2008).

Data on C/S gives an indication of rising trends worldwide. Data from the United States of America indicates a rising trend from 21% in 1996 to 32% in 2011 (ACOG, 2014).). According to WHO reports, the C / S rate in China and in many Asian, European and Latin American nations has increased to 46% (Sujata et al., 2014). There are substantial variations across Europe between nations: in Italy, the rate is 40%, in the Nordic nations around 17-20% (Silver *et al.*, 2006).

The situation is not different in Africa; the prevalence of C/S in Ghana has increased from 4% in 1998 to 9.6% in 2015 (WHO, 2015). Many deliveries are carried out in facilities with inadequate infrastructure and equipment; making it almost impossible to provide adequate pain management post-surgery.

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The situation is not different in Africa; the prevalence of C/S in Ghana has increased from 4% in 1998 to 9.6% in 2015 (WHO, 2015). Many deliveries are carried out in facilities with inadequate infrastructure and equipment; making it almost impossible to provide adequate pain management post-surgery.

Pain is a significant issue in surgery, including C /S. It is a prevalent cause of acute pain in obstetricians because in most instances its relief is insufficient (CDC, 2005). There are many inter-individual variations in the pain threshold and how pain is experienced reflects the emotional, motivational, cognitive, social and cultural circumstances of the individual (Sujata & Hajoora, 2014). Pain inadequately controlled after operation may cause the development of chronic pain (Dahlgren, 1997). According to a study conducted by Nikolajsen et al. (2004), reported by Sujata & Hajoora (2014), 12.3% of the pain experienced by patients was sufficiently serious to impact childcare six months after C / S and 6% of the incidence of constant daily pain one year after C / S.

Appropriate and effective pain management plays an important role in modern surgical practice and patient outcome (Arumugam, Lau, & Chamberlain, 2016). Adequate postoperative pain management reduces patient suffering, reduces morbidity, promotes quick recovery and early hospital discharge, thus reducing costs.Good peri and post-operative pain management enables and guarantee patients' best result. According to the Regional Anaesthesia and Pain Therapy European Society (2012), effective and suitable pain management aims at improving patient quality of life, facilitating fast recovery, returning to complete functionality, reducing morbidity and allowing early hospital discharge. On the other hand, poor management of post-operative pain has been related to lower quality of life and inhibits physical therapy (Kuhnet, 2004). Unrelieved pain has a damaging impact on the general outcome of patients; it leads to difficulty in breathing and inadequate post-operative rest for most patients (Abdo, 2008). It is also a significant cause of postoperative patients ' physical stress, anxiety, fear, and hopelessness.The Uniuted States surveys show that a high percentage of patients receive insufficient postoperative analgesia. Pain management is regarded as a significant aspect of patient care (Campbell, 1995).

WHO reports indicate that inadequate pain management in the post-operative period is a world-leading cause of acute pain (WHO, 2003). Depending on pain threshold and pain management, pain intensity differs from patient to patient. Having a baby is considered a pleasant event, but can lead to depression, stress, and frustration when treating pain after childbirth is inadequate (Bloomfield, 2004). Pain relief post-C / S should be cost-effective, safe for the mother, requiring minimal monitoring and use of drugs that is not secreted in breast milk. It should not be a sedative that prohibits the mother from being mobile and taking care of the baby (Sujata et al., 2014).

A global element of health care management has become measuring patient satisfaction (Mukhtar, 2013). Myburgh (2005) states that a basic indicator of the quality of care is patient satisfaction. In order to fully understand the satisfaction of post C/S pain management, it is imperative to identify factors influencing satisfaction with pain management among mothers. Wagna & Bear (2009) in using the Cox International Model of Client Health Behaviour analyzed the level of patient satisfaction with an emphasis on nursing care. They categorized various attributes that lead to patient's satisfaction with health care. The attributes were classified under effective support, decisional control, professional and technical competence. The study observed that the patient's satisfaction was largely influenced by the basic competencies of healthcare professionals and compliance to healthcare regimes. Govere (2016) explained that the patient's satisfaction is highly associated with the training of healthcare providers. Govere (2016) maintained that the type of training healthcare providers obtain can significantly affect the rate in pain management leading to patient satisfaction.

The purpose of this study, therefore, is to explore factors that influence patient satisfaction with pain management among post C/S in the Greater Accra Regional Hospital. The objective of this study was to determined the pain level of patients within 48-hours post-C/S using visual analog and numeric pain intensity scales (Breivik et al. 2000,).

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1.1. Problem Statement

Pain is a complex biopsychic-social phenomenon that occurs among various groups of post-C /S patients. It is the primary sensation that protects the human body against further damage from external and internal occurrences.. (Kingdom & Kizior, 2002). It is estimated that insufficient pain relief is given to 50%-75% of patients (Johnson, 2002). Adequate pain relief post-C/S leads to improvement in maternal satisfaction; ameliorate recovery to facilitate nourishment of their newborns. It also reduces risk of thromboembolic disease and infections (Gilbert, 2007). Pain post-C/S is generally understudied; relatively few studies have investigated the different modalities of pain relief post-delivery in recent years (Bick & Macarthur, 2002).

Inadequate pain control during post-operative period leads to the development of chronic pain. Highlighting the effect of poor pain control on healthcare systems, a survey in the United States (Chee et al.2003), supported that chronic pain is associated with seeking medical care, with frequent visits to physicians and use of multiple medications. Also, a survey in Europe reported that ineffective pain management leads to high costs and economic impact. Chronic pain leads to lost employee productivity (Dukes, McDermott, Rowbotham, Schaefer, & Toelle, 2006). In a survey of women with C / S, 5.9% of women reported pain of at least mild intensity that remained 18 months after surgery. Those respondents who did not report pain frequently described unpleasant sensations at the incision site after 10.2 months of follow-up (Jensen, Kehlet, Nikolajsen, & Sørensen, 2004).

Pain management remains a problem in the developed and developing world. The general incidence of moderate to severe pain ranged from 17% to 40%. A survey showing an incidence of up to 60% from the parental unit of Aga Khan University Hospital,Kenya in the first 24 hours post-C/ S (Pavlin, Chen, Penaloza, Buckley, 2004). Uncontrolled pain post-C/S delivery causes undue suffering and compromises the care of the newborn and leads to

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postpartum depression, decreased quality of life, and less productivity (Jacox, Carr, Payne, et al., 1994). The unbearable experience of pain post-C/S may result in poor maternal satisfaction regarding pain management models used by health facilities.

The Greater Accra Regional Hospital is a higher-level healthcare facility that serves a large population inside and outside the region. Being a referral center the hospital performs a large number of C/S daily. However, no study has been carried out on the effectiveness of pain management and patients' satisfaction. There is also limited literature on patients' satisfaction with pain management post-C/S in Africa and Ghana, in particular. The focus of this study is to determine factors influencing satisfaction with pain management among post-C/S mothers.

1.2. Justification of the Study

The results of this work provide information regarding factors influencing satisfaction with pain management among post-C/S mothers, contribute to the existing body of knowledge on pain management. Customer service in terms of post C/S pain management is crucial for the survival of the health facility as dissatisfied patients may have reason to change their healthcare provider (Hasannuzzaman & Haque, 2016), causing financial loss to the facility. The study results will inform the hospital on satisfaction with pain management post-C/S. It seeks to inform the development of targeted strategies, promoting factors that have a positive influence on patients' satisfaction with pain management and improve services delivery.

Findings from the study will inform health professionals on how patients perceive pain management services rendered to them. Recommendations from the study will also help to give insight into how the authorities or health policymakers could put in place strategies to improve on the quality of the pain management post-C/S.

1.3. Research Questions

1. What are the pain levels of patients who have undergone C/S after 24 and 48-hours postoperative?

2. How do patient-related factors influence patients' satisfaction with pain management among post-C/S patients?

3. What are the factors that affect patient's satisfaction with pain management post-C/S?

1.3.1. General Objective

The general objective of this study is to explore factors influencing patients' satisfaction with pain management post-C/S at the Greater Accra Regional Hospital of Ghana.

1.3.2. Specific Objectives

The specific objectives of the study have been outlined as follows:

1. To assess the pain levels of patients who have undergone C/S 24 and 48-hours postoperative.
2. To assess the levels of self-reported satisfaction with pain management among post-C/S patients
3. To assess factors that influence patient's satisfaction with pain management post-C/S.

1.4. Conceptual Framework for the Study

According to the Donabedian (1980), patient's satisfaction and health outcome are largely influenced by the structures and processes existing in the health facility. Their health care services influence the overall perception of patients regarding whether or not they are satisfied with the health care provider (Wachter, Foster, & Dudley, 2008). Health care provider-related factors, such as physicians' and nurses' communication, the

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attitude of staff, the hospital environment (infrastructure and basic facilities), waiting for time and cost of investigative tests influence patient's satisfaction (Duffy & Hoskins, 2003).

However, perceived satisfaction of patients may vary across socio-demographic characteristics (age, sex, educational level, occupation, marital status, and income level) of patients who visit the facility (Shou-Hisa, Ming-Chin, & Tung-uang, 2003). Figure 1.1 gives a snapshot of the factors assessed in the study.

It is observed that both health-provider related factors and patient socio-demographic factors are likely determinants of patient's satisfaction with pain management post-C/S (Duffy & Hoskins, 2002 and Postema, 2005). Young mothers (patients) are more receptive to pains due to their physiological features and thus may experience pain recovery quickly than older patients(Tourangeau et. al., 2006; Blegen, Vaughn & Goode, 2001). It is, therefore, more likely that patients in the younger ages have a higher level of satisfaction compared to older patients. Also, patients who have a previous history of C/S are able to endure pain thus may have a varying satisfaction level compared to patients who have no previous exposure. Pain varies from one individual to another depending on the pain threshold of individuals; patients who respond quickly to treatment are more likely to be satisfied than those who do not.

Additionally, cultural background and ethnicity of the patients are also related to how patients respond to pain. For instance, in Ghana, it is a known fact that some cultural or ethnic groups are able to endure pains due to cultural practices(Danso et al.,2001) Example, female genital mutilation which is still practiced among certain ethnic groups in Ghana and some parts of Africa. It has been observed that women from the northern part of Ghana are known to be more receptive to pain than their southern

counterparts(Danso 2001). It is therefore common that mothers from different ethnic background may experience different satisfaction level with pain management. Other demographic factors such as educational level, employment status, marital status and income earned are also associated with patients' satisfaction with pain management. Patients with a high-income level are believed to have the financial strength to afford the best treatment compared to those from the lower economic background (Oktay et al. 2008).

Furthermore, health provider factors are associated with patients' satisfaction with pain management. Patients who receive good physician and nurse communication regarding treatment are better off than those who do not reveive it. Patients treated with respect and dignity by health workers will have a good perception of their care provider and may influence their satisfaction with pain management. A health facility with all needed infrastructure and facilities are better equipped to management pain compared to those who lack basic facilities.

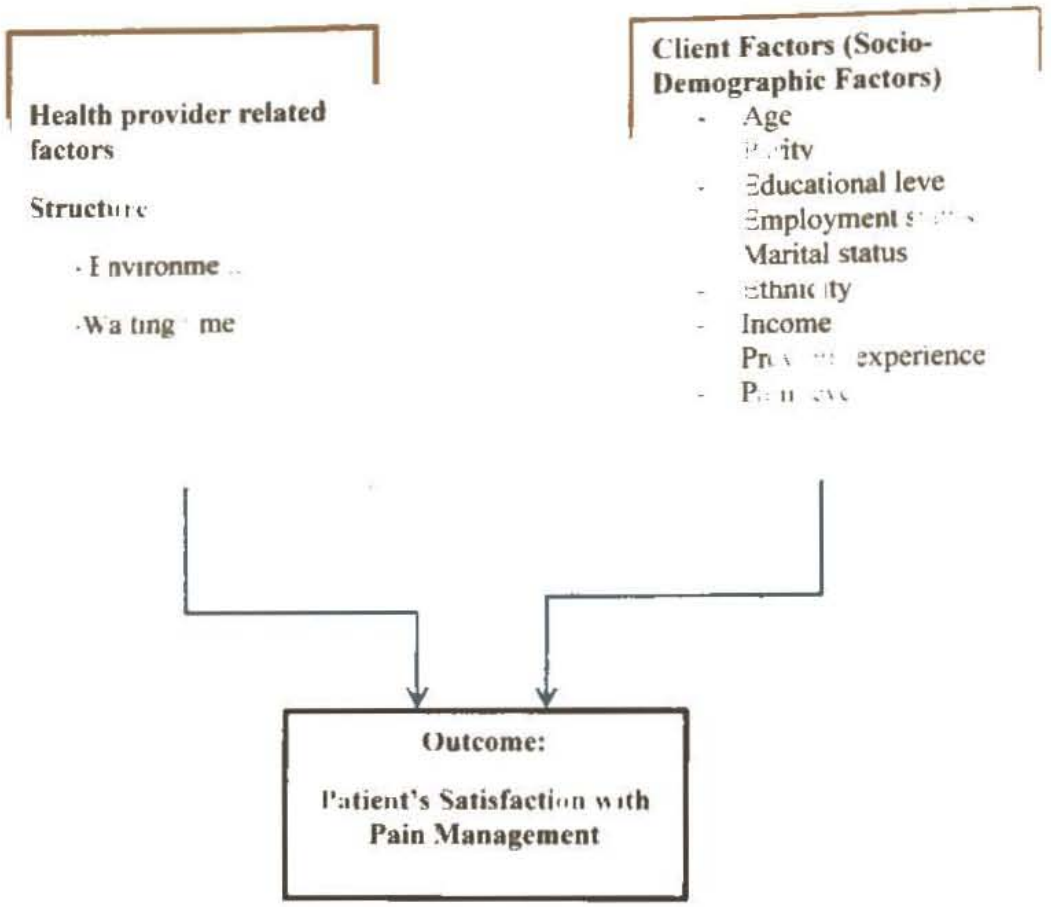

Figure 1.1: Conceptual Framework for Patient Satisfaction with Pain Management

Source: Adaption of the Donabedian (1980) model

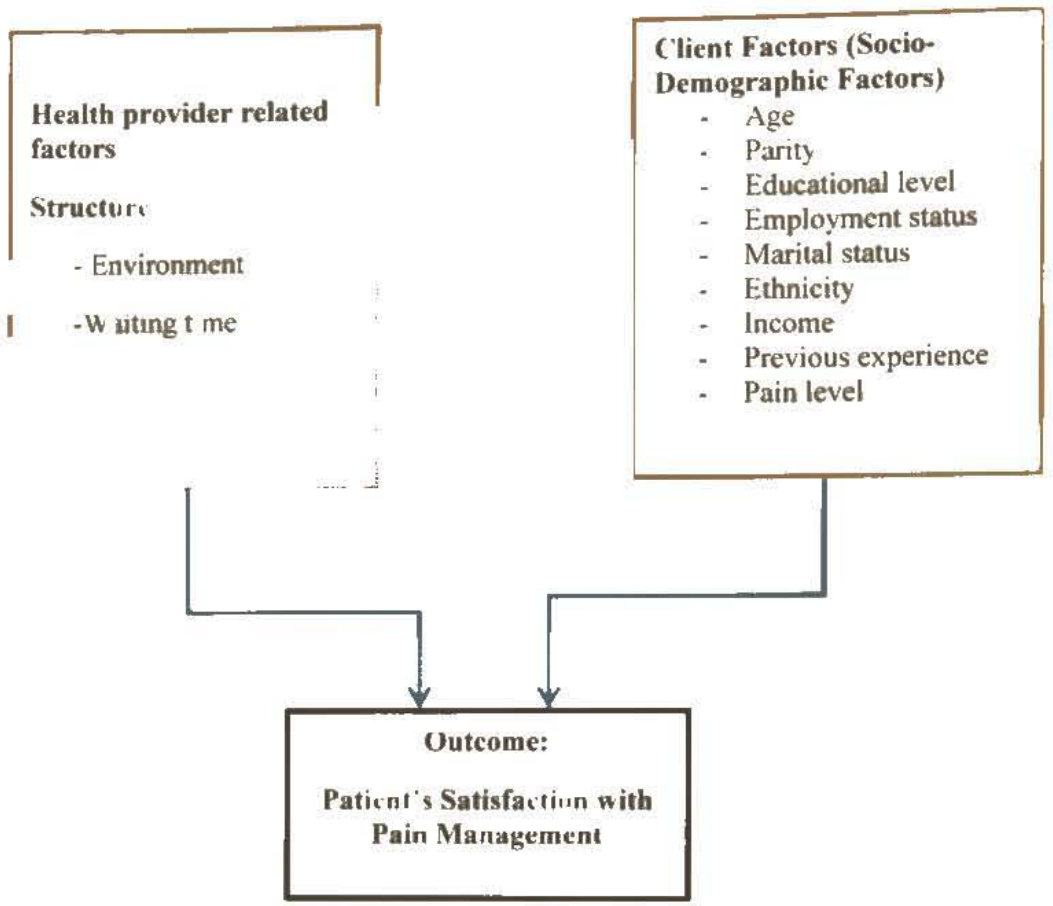

Figure 1.1: Conceptual Framework for Patient Satisfaction with Pain Management

Source: Adaption of the Donabedian (1980) model

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses literature on this study. It sets out the foundation of the study and is intended to present and assess existing evidence regarding this topic. Its purpose is to identify what is known and unknown about the research subject 8(Boswell & Cannon 2011).

2.1 Phenomenon of pain

Pain is complicated and is multidimensional 8(i.e., physiological, psychological8 and experiential)8 and8 universal. It is one of the most widely8 experienced and expressed phenomena in the practice of curative health (Davidhizar & Giger 2004).

2.1.1 Definition and classification of pain

A physiological8 reaction 8that is subjective 8and unique8 with unpleasant8 and emotional tissue-related experiences International Association for the Study of Pain (IASP, Montes-Sandoval 1999). It is8 dependant on prior individual 8experiences8 and perceptions8 of pain8 (Davidhizar & Giger 2004, Devor 2008, Jensen & Gebhart 2008, Loeser & Treede 2008). Pain is 8evaluated8 by individual8 behavior that is culturally 8linked 8so that the concept of pain, life philosophy and cultural 8background8 of an individual has an impact8 on the significance of pain (Finnstrom & Soderhamn 2006, Im et. al. 2007, Reyes-Gibby et al. 2007). Medicine stresses the significance of knowing the expression of pain by individuals(Pesut & McDonald 2007) and identifying individual who are incapable of verbal communication(Herr et al. 2006). Individuals in distinct cultures and ethnic groups have unique8 perceptions 8of pain. Example in Ghana people8 from the 8northern part of the country are perceived to tolerate and endure pain

more than their counterparts from the south(Danso2001). Due to 8emotional8 and psychological conditions, memories8 of previous painful experiences and values and beliefs, variations in the pain threshold happen. The individual8 may express pain differently at 8different times8 (Bonham 2001, Kalso 2002b).

Pain is classified into healthy ordinary pain and disease pain. It can also be categorized by symptom stabilization or8 length and mechanism of origin(Herd2006). It is8 possible to differentiate acute and chronic pain. Acute8 pain is an indication of tissue damage, swelling, or illness process does not leave lasting damage and is brief in duration . (Cleland2009). Chronic pain, on the other hand, lasts longer than the temporary course of natural healing associated with a particular form of injury or disease process. Pain is categorized as neuropathic, idiopathic, and nociceptive based on the pain source and mechanism. Neuropathic pain is triggered by illness or trauma in the nervous system itself. 8The healing process is slow. It creates8 changes in the nervous system's structure and function that can cause continuous and long-term change. Neuropathic8 pain consists of peripheral neuropathic pain caused by nerve damage and neuropathic core8 pain8 affected by spinal cord, brain or brain damage. 8The pain is categorized as idiopathic if its cause has. It can be grouped as psychogenic, The pain is8 classified as8idiopathic if it is of unknown origin (Vainio 2002b).

2.1.2 Pain mechanisms

Transduction,8 transmissions, modulation, and perception are the primary elements of the pain system. The harm to human8 tissue8 during 8transduction, which 8happens in the periphery. Creates8 nociceptive 8stimulations that activate nerve8 endings. The viscera has two types of nerve endings. Visceral mechanoreceptors are in the omentum, the membranes, intestines and smooth muscle tissue of the inner bodies. Visceral

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nociceptors are found in the intestines, heart, and genitals. (Kalso 2002b.) indicates the actual components of pain mechanisms.

Using divers separate chemical signals, neurons interact among themselves. 8The factor of nerve development plays a major role in nociception, as its manufacture when inflammation occurs augments. 8It promotes the release of Calcitonin peptide-related peptides. Calcitonin-related gene peptide brings about vasodilation and neurogenic inflammation (Kalso 2002). Transmits tissue harm data from peripheral receptors to the central nervous system for transformation into pain sensation.8 It also includes neurogenic inflammation and triggers vasodilation and vessel permeability, 8For example, histamine causes vessel dilatation and exudation which inflict on congestion and pain

A-delta – fibers and C-fibers are afferent pain-receptive nerves that carry signals to the brain (Kalso 2002b, Weng et al. 2006, Kawasaki et al. 2008, 8Youn et al. 2008). 8They cause the muscle tone to rise and the autonomic nervous system to activate (Kalso, 2002b, Salanterä et al. 2006, Kawasaki et al. 2008.) 8The dorsal column system transmits sensation of contact and feeling of temperature, pain, itch, and crude touch.

The two originate from the spinal cord and the thalamus with information about the neuronal cell constituting the spinothalamic tract. 8These neurons are derived from sensory fibers that prevent skin and internal organs (Salanterä et al. 2006, Bird et al. 2006).

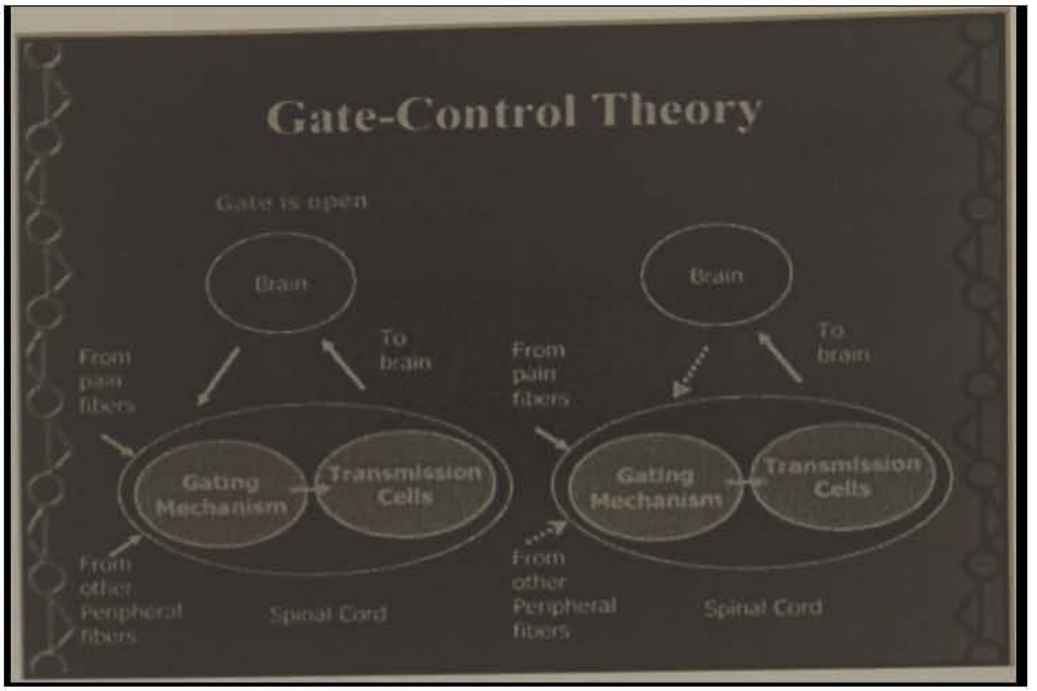
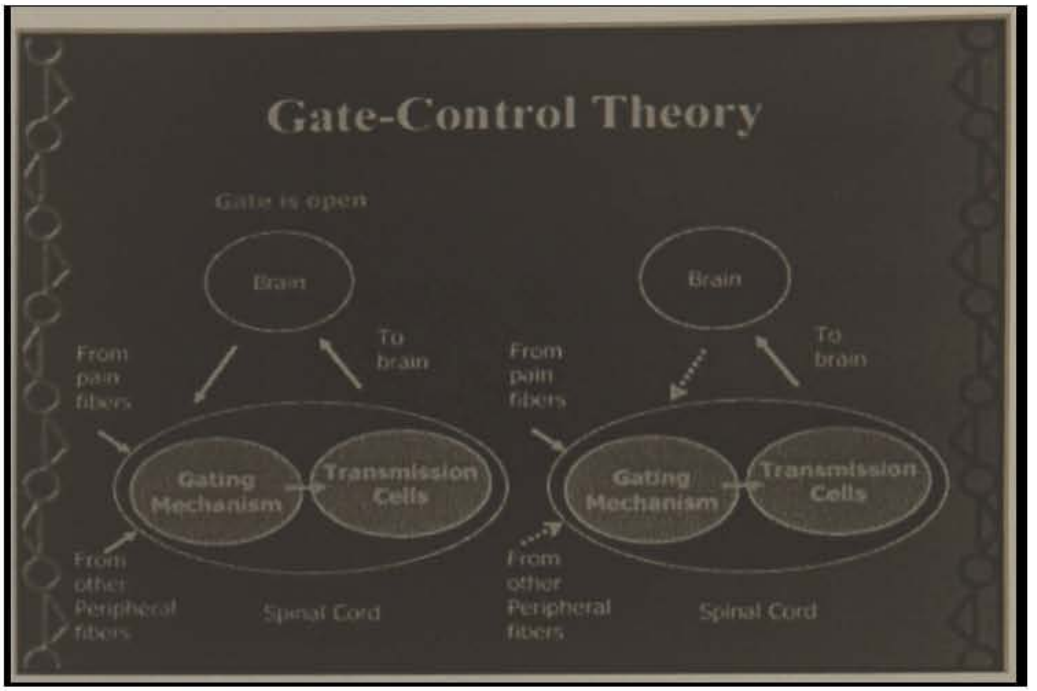


Figure 2.1: Gate – Control Theory

When a wounded region is rubbed, due to the activation of these non-nociceptive fibers, the pain seems to be lessened. 8The "door" enables the pain signal to move forward, modulate or inhibit the signal to the central nervous system. 8The brain regulates the extent of pain received as interfering with afferent pathways. The brain regulates the sensation of pain and determines which stimuli to ignore and can be trained to deactivate unnecessary kinds of pain8 (Weng et al. 2006, Salanterä et al. 2006, Kawasaki et al. 2008, Price et al. 2009).

The sensation of pain is a neurophysiological process that can be differentiated when the neurons carry pain and evoke a subjective response to heat or touch sensation, the emotional reaction to perception8 (e.g. depression, fear, anxiety, pain).8 And the painful conduct in response to these emotions and perceptions causes the viewer to believe the individual has pain i.e. talking about pain, grimacing or moaning.8 (Loeser 2000, Kalso



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2002b.). 8Pain receptors are linked to regions of the brain controlled by emotion. Pain is perceived as uncomfortable and damaging (Kalso 2002a.).

2.2. Post Cesarean Section Pain

Post C/S pain in obstetrics is a prevalent cause of acute pain. 8There are presently various analgesic techniques in use. However, in many instances, there is still a lack of pain relief and patient satisfaction. 8This may be linked to insufficient analgesia owing to problems in pain evaluation, gaps between patients and medical employees in pain severity estimation and variability of perceived pain between distinct patients owing to the physiological and psychological variables. Several studies have highlighted the significance of appropriate post-operative analgesia on well-being, mobilization, rehabilitation, and reducing hospital stay duration.

2.2.1 Pain assessment tools in patients post-cesarean section

The aim of pain assessment is to create a thorough image of the pain experience of patients.8 It involves pain measurement and place identification, intensity, event, and also the individual's significance of pain. 8The aim is to identify factors that relieve or aggravate pain and its impact (Turk & Melzack 2001).8The sensation of pain not directly measurable because pain is a distinctive private experience that can only be correctly described and assessed by the patient.8 As a result, a number of instruments for pain assessment have been developed to assist evaluate the patient perception of pain.

Visual Analogue Scales (VAS)

The VAS8comprises of a 10cm continuous8linear line,8 the left8side indicates8no pain and the right side 8indicates8severe pain.8 To8 know8the level8of pain, the8patient 8is asked to8indicate8 the8corresponding8 level of panicked8on the horizontal8 line 8upon the assessor's 8verbalizations8 or a sliding8marker is used. The severity of pain is

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measured as the range 8between 8the zero8 marks8 and 8the8 marked spot. (Bijur et al. 2001.)

The Numeric Rating Scale

With this where8 patients are requested to give a figure to their pain on a scale from zero to 10 at the present moment when the pain is at its worst and when the pain is at its best when the pain is at its worst, and when8 the8 pain is at its finest. Patients8 are also asked to offer a number to an 8acceptable8 rate8 of8 pain.. 1.8 (Breivik et al. 2000, Coll et al. 2004, Skovlund et al. 2005.)

Verbal Rating Scale

It has descriptions that8 represent8 pain of progressive intensity8 (e.g: 0 = no pain at all, 1=mild pain, 2 = moderate pain and 3= extreme pain).8To8complete it and indicate the pain intensity the patient selects one of the descriptors. 8It is valid8 and8 reliable8 in elderly 8patients as well as post-operative8 adult8 patients8 (Breivik et al. 2000, Gagliese

et al. 2005, Hadjistavropoulos et al. 2007, Pesonen et al.2008).

The Visual Analogue Scale

It is considered reliable, valid and suitable for clinical research purposes (Breivik et al. 2000, Bijur et al. 2001, Coll et al. 2004, Williamson &Hoggart 2005,8 Skovlund et al. 2005). The Verbal Rating Scale is supposed to be more sensitive than the Visual Analogue Scale, which is also considered to be more sensitive than the Numeric Rating Scale8 (Briggs & Closs 1999, Clark et al. 2003, Lund et al. 2005).

- **The Verbal Descriptor Scale (VDS)**

- Makes8 use of adjectives which corresponds to increasing levels of pain intensity e.g. the six-level pain rating scale: none, very mild,8 mild,8 moderate, 8severe, and very severe. It is known to be best for young and old surgical patients and female (Peters et al. 2007.)

- The Red8 Wedge 8Scale (RWS) with8 a8 visual 50-cm red-colored8 horizontal8 wedge 8scale, 8it is made for the assessment of patients ' post-operative pain right after an intervention with surgical general anesthesia It has also been effectively used in demented surgical patients to assess postoperative pain (Pesonen et al. 2009).

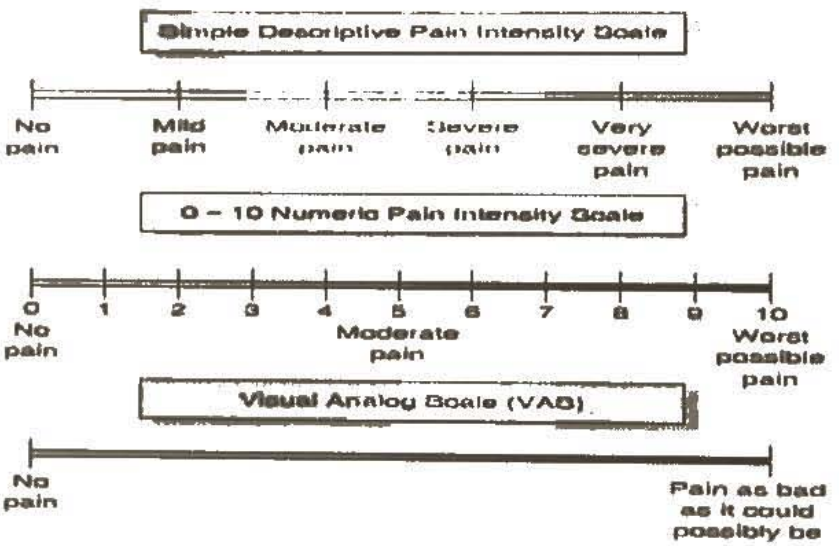

Figure 2.2: Scales for Measuring Postoperative Pain Intensity

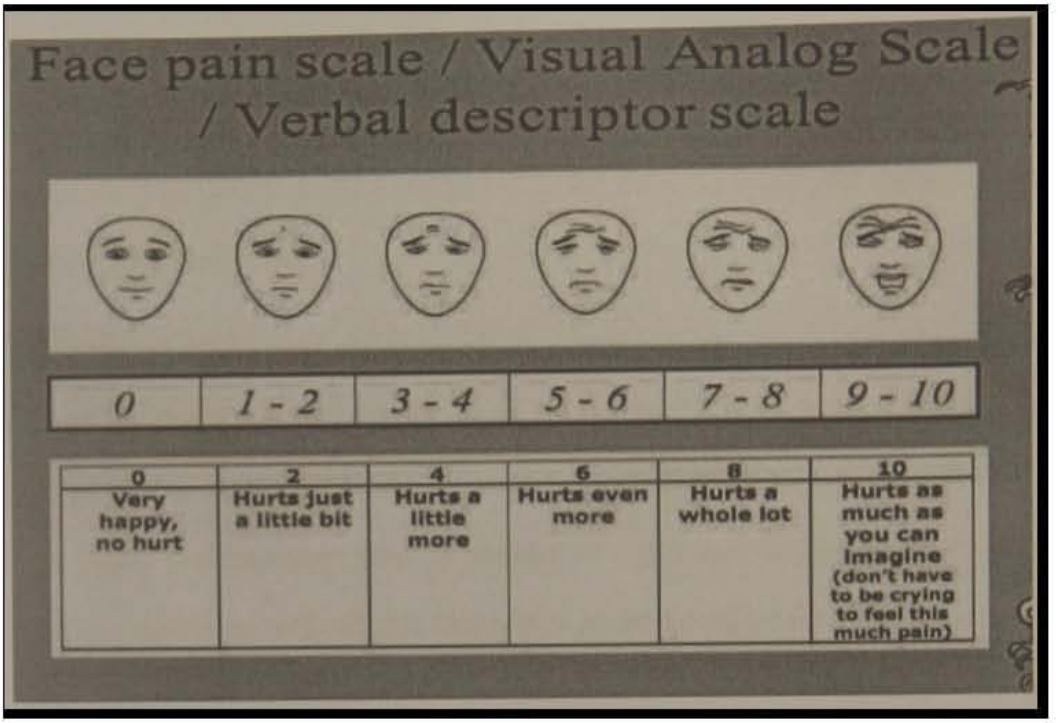

Figure 2.3: Verbal Descriptor Scale

2.3 Treatment of post-cesarean section pain

American Society of Anesthesiologists (ASA8) highlights the fact that education and training of personnel and patients are the keys to enhancing pain control and reducing adverse effects of post-C/S pain complications. Management of acute pain post-cesarean section has evolved tremendously over the past decade. Multimodal pain therapy includes the use of a powerful opioid regimen, such as patient-controlled analgesia or neuraxial opioids, in conjunction with other analgesic drug classes. Theoretically, the use of analgesic drugs in combination allows for additive or even synergistic effects in reducing pain while decreasing the side effects produced by each class of drug because smaller drug doses are required. Usual analgesic combinations include 8opioids; non-opioid analgesics, such as acetaminophen; and non- steroidal anti-inflammatory8 drugs, with the variable addition of local anesthetic techniques. 8In spite of current advances in

postoperative pain therapy, pain relief may still be inadequate for a huge number of women .This may be particularly true as they make the transition from relative dependency on potent opioid combination to full dependency on oral analgesics on the second postoperative day.

a. Patient-Controlled Analgesia

Patient monitored analgesia (PCA), which is used for the management of postoperative pain as well as chronic pain, allows patients to regulate the administration of their own drug within predetermined security boundaries. This method can be used with oral analgesic agents as well as with continuous infusions of opioid analgesic agents by intravenous, subcutaneous, or epidural routes. PCA can be used in the hospital or home setting.

b. Opioid Analgesic Agents

Various routes can be used to administer opioids, including oral, intravenous, subcutaneous, intraspinal, intranasal, rectal, and transdermal routes. The aim of Giving opioids is to relieve pain ameliorate the quality of life; therefore, the route of administration, dose, and frequency of administration are determined on an individual basis. With the administration of opioids by any route, side effects must be considered and anticipated.

c. Topical Application

Local anesthetic agents have been successful in decreasing pain associated with thoracic or upper abdominal surgery when injected by the surgeon intercostals.

d. Epidural Administration

Intermittent or continuous administration of local anesthetic agents through an epidural catheter has been used for years to produce anesthesia during surgery.

e. Nonsteroidal Anti-inflammatory Drugs (NSAIDs)

NSAIDs are believed to reduce pain by inhibiting cyclo-oxygenase(COX), the enzyme that limits the production of prostaglandin from traumatized or inflamed tissue. There are two types of COX: COX-1 and COX-2. COX-18 is involved with mediating prostaglandin formation which is involved in the maintenance of physiologic functions. Some of the physiologic functions include platelet aggregation through the provision Local anesthetic agents have been successful in reducing the pain associated with thoracic or upper abdominal surgery when injected by the surgeon during surgery.

2.4 Health Provider Related Factors

A study by Rothschild in 2017 indicated that poor nursing communication negatively affected the pain satisfaction level of patients (Rothschild et al, 2017). This was alluded to the fact that where nurses do not communicate properly to patients on how to take their medication there is a lower rate of pain management hence the reduced satisfaction. In addition, communication also improves education on how patients can prevent and control pain. Overall, the patient feels that the nurse is relating to his or her situation and this could improve satisfaction. The same study indicates that low nurse staffing could reduce the patient satisfaction with pain management. This is because each patient expects maximum attention and care when they seek for medical treatment. Where the number of staff attending to them is low, there is a lack of proper care. In pain management, the staff should be adequate to provide assistance to enable the patient to go about their daily activities (Shindul-Rothschild et al, 2017). Improved patient-health provider relationshi,p improves outcome of management. This results in an improved satisfaction of care(pain management) of patients.

The physical environment of a hospital, is a constituent to patient satisfaction method. providing a conducive place for patients to get well again is integral in ensuring that

patients would leave the hospital with a positive outlook. Research on how the physical environment affects health outcomes began in the 1980s (Johnston, B. 2013). To help improve patient satisfaction, hospital and health system leaders should ensure they are taking a holistic, team approach that uses their organization's available resources—including the health care physical environment and the professionals who manage those spaces. When an environment is too noisy, patients may have a hard time getting sleep or being comfortable, inhibiting their abilities to recover (Kutney-Lee et al., 2009). In addition, where the hospital environment is not disable friendly and departments are difficult to access, more especially when patients with some form of pain would have to go through enormous pain to move around the hospital, it makes pain management a daunting task and reduces patient satisfaction.

2.5 Clients Related Factors

Several factors are presumed to affect patient satisfaction with pain management post operative. Such factors are the patients' religion, ethnicity (Hawthorn & Redmond, 1999) and age (Helme& Gibson, 2001), parity, previous surgical experience ,patients' pain coping (Bartley & Fillingim, 2013) and emotional factors such as anxiety (Craven et al. 2013) may be presumed to affect the patient's satisfcation with pain management.Age differences in nociception may also have an effect on patients satisfaction with pain management , with older women expressing more clinical and experimental pain than younger women (Pieretti et al., 2016). The extent to which all of these factors affect the patients'satisfaction is not well established, but Craven et al. (2013) report that 74.3% of patients post operative present some form of anxiety. They also found that higher anxiety scores were related to higher pain scores in those with low income or un employed . Similar findings have been reported by Oktay et al. (2008) and Tanasale et al. (2013).

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Inadequate pain management that cause a delay in administering analgesia may lead to increased suffering, fear and anxiety, and this may theoretically lead to increased pain. In addition, inadequate or suboptimal pain management may result in patient frustration and aggression. In acute pain, the release of stress hormones that occurs can lead to circulatory and respiratory complications (Macleod et al., 2002). Providing the patient with analgesics reduces the stress and the risk seen in these complications (Werner, 2010). It is emphasized that acute pain and stress associated with previous surgical experience may cause increased mortality and morbidity and, considering this, regardless of which factors patients' presents, pain should be treated to reduce the individual's suffering (Miclescu, 2014).

Since pain is a complex phenomenon, a disabling accompaniment of many different medical conditions, and is affected by both neural mechanisms and the patient's age and emotional experiences, it is therefore essential to assess the patients' pain before treatment and/or alleviation of the pain.

CHAPTER THREE

METHODS

3.1. Introduction

This chapter presents the methods used to conduct the study. It covers the study design, study area and population, sample and sampling techniques, data sources and data collection instruments, data processing and analysis and ethical considerations.

3.2. Study Design

. The study employed cross-sectional design using quantitative data collection tools to assess factors influencing patient satisfaction with pain management among post-cesarean patients in the Greater Accra Regional Hospital of Ghana.

3.3. Study Areas

This study was conducted at maternity ward at the Greater Accra Regional Hospital, formerly known as Ridge Hospital. The hospital is located at North Ridge, Accra, Ghana. It was built in 1929 to provide healthcare for British nationals during the pre-colonial era. Currently, it has a 600-bed capacity with ultra-modern facilities to improve quality of care and expand access to health care delivery in the region. The hospital has staff strength of 1184 which includes 280 medical officers, 572 nursing officers and the rest are non-medical staff (administrators, accounts officers, human resources officers, stores and procurement among others) who operate in the different departments.

The hospital has many departments mainly, Public Health, Ophthalmology, Anaesthesia, Obstetrics and Gynaecology, Child Health, Environmental, Security, Hospitality Services, Social work, Birth and Death departments, Ear, Nose and Throat, Nutrition unit, Disease Control, etc. A total of 3552 C/S were done in 2016 with roughly 296 cases every month.

3.4. Study Population

The study population consisted of all women who went through C/S at the Greater Accra Regional Hospital from 1st January to 30th April 2019.

Inclusion criteria were patients who had undergone C/S within 24 to 48 hours and were 18 years and above. Under the exclusion criteria, the following category of patients was excluded from the study.

- Patients who are deaf
- Had vaginal delivery
- Unconscious patients
- have a mental health condition,
- and minors (below the age of 18)
- Patients transferred to the intensive care unit post-C/S.

3.5. Sampling Technique and Size

A consecutive sampling technique was used in selecting study participants. This sampling technique was selected due to the low prevalence of C/S in Ghana. Consecutive sampling technique was used to obtain the required participants for the study. Thus, participants were recruited daily as and when they under went C/S and agree to participate (Bajpai, 2010).

The sample size was determined using the Cochran's (1977), formula. It is a standard formula used for calculating sample size for cross-sectional surveys. The variables in the formula include the standard normal deviation (z-score) set at 1.96 (95% confidence level), the prevalence of C/S (p)-in Ghana was estimated to be 9.6%, and (q) the difference between 1 and the prevalence (p) denoting the failure. And finally, the degree

of freedom or precision (e) set at 5%. It was therefore assumed that all the variables remain constant in the course of the study and all other conditions fairly stable.

$$N_o = \frac{z^2 pq}{e^2}$$

N_o = minimum sample size

z = standard normal deviation (1.96)

p = 9.6% prevalence of C/S in Ghana

q = 1-0.096= 0.904

e = degree of precision, set at 5% = 0.05

Substituting, $N = \frac{(1.96)^2 \times 0.096 \times 0.904}{0.05 \times 0.05}$

$$= \frac{3.8416 \times 0.096 \times 0.904}{0.05 \times 0.05}$$

$$= 134$$

The study, therefore, assumed a 5% non-response rate so in total the sample size used was **141** patients.

3.6. Study Variables

The variables measured in the study were categorised into dependent and independent variables.

The dependent variable in the study was patients' satisfaction with pain management. This variable was assessed as acomposite variable using four items with the question: "Please rate your satisfaction level with the way your doctor/health worker managed your pain post-C/S"? the dependent variable was categorised as ,(Very satisfied, satisfied, slightly satisfied, dissatisfied, and very dissatisfied). Also the level of pain of the mothers were assessed using the Numeric Rating Scale. Where patients are asked to give a number to their pain on a scale from zero to 10 indicating when pain is at its worst

when and best; 0 – 3=Low Pain, Moderate Pain= 4-6and Severe Pain=7-10 (Breivik et al. 2000, Gagliese et al. 2005, Hadjistavropoulos et al. 2007, Pesonen et al.2008). The scale is known to be suitable for young and old surgical patients.

The independent variables included:

1. Sociodemographic characteristics (sex, age, educational level, marital status, occupation, income).

2. Health provider related factors: physicians and nurses communication, the attitude of staff, waiting time).

3.7. Data Collection Methods

This study adopted the American Pain Society Satisfaction Survey Questionnaire. This tool was modified to suit the current study and the research questions. The questionnaires were self-administered and interviewer-administered.after approval was sought from the heads of the departments,The number of beds were obtained. each bed was assigned a particular number and using an online random number generator , the 141 beds needed were selected.Each bed was approached,mothers were educated on what the study was about,their consent was sort after. For participants who could read, they answered the questionnaires themselves. For participants who could not read, translaters were available to translate into three commonly spoken language (Twi, Ewe, and Hausa), third party translators translated it back to English and I looked out for consistency in translation before the questionnaire was adopted. and administered to them, questionnaires were administered for between 20 and 40 minutes.

3.8. Pretesting

The questionnaire was pre-tested at the Madina Polyclinic using 20 conveniently sampled patients with similar characteristics. It was used to ensure an understanding of

the concepts and clarity of question. The main source of data was the primary data. Data was collected through the use of a structured questionnaire.

3.9. Analysis of data

Data was entered into Microsoft Excel 2016; the data was cleaned and exported to STATA 15 for statistical analysis. The analysis was done using STATA 15. Preliminary analysis was carried out to summarize the data on socio-demographic characteristics of respondents, health provider factors (medical staff, equipment, and attitudes and practices towards patients). The analysis was performed at three stages mainly univariate, bivariate and multivariate.

.**Univariate analysis.** Use percentages, tables, and figures. The univariate analysis was conducted for the purpose of describing the background characteristics of the study participants. Tabulation of each independent variable resulted in an output of frequencies and percentages of the characteristic of the mothers in the study area.

Bivariate analysis. The bivariate analysis was the second level of analysis which was performed to determine the relationship between the independent variable and the study outcomes (patient's satisfaction with pain management). This indicated the extent to which each variable was associated or correlated with the outcome. Pearson Chi-square test with 5% significant level indicates the nature of association or correlation between each independent variable and dependent variables.

Multivariate analysis: The third stage of the analysis was multivariate logistic regression test. The model first looked at the effects of each independent variable on the dependent variable. The final model included all the independent variables against the dependent variable. This was done to determine the extent to which all the background variables (such as age, educational level, income, resident, occupation) have an effect on

the dependent variable (patient satisfaction with pain management post C/S)that is, crude or unadjusted analysis and the multivariate regression stage where confounding effect were adjusted.

Ethical Consideration

Approval for the conduct of the study was granted by the Ghana Health Service Ethics Review Committee (GHS-ERC). Following this, permission was sought from the hospital authorities of the health facility before data was collected.

Participant consent

Respondents were approached to give consent prior to participation. Before the administration of the questionnaire, participants were given a consent form to read and sign. For individuals who could not read, the purpose of the study, issues of privacy, the right to decline to participate were explained to them and those who accepted to partake, their thumbprints were taken.

Privacy and Confidentiality

All respondents were given assurance that any information provided will be used solely for academic purposes and their confidentiality was assured. Participants did not provide names so as to prevent easy identification of individuals on a particular questionnaire.

Risk and Benefits

Respondents were assured that the research will not come to them at any risk or cost except their precious time that they used to fill the questionnaire.

Compensation:

Respondents were not given any reward/compensation for participation in the study.

Declaration of Conflict of Interest:

There was no conflict of interest in this study.

Protocol Funding:

The funding of this study was the sole responsibility of the principal investigator.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the results obtained from the field. The purpose of the study was to determine the factors influencing patients' satisfaction with pain management among post-C/S patient in the Greater Accra Regional Hospital of Ghana. The results are presented in tables and graphs.

4.2 Demographic Characteristics of Patients

Table 4.1 presents the demographic characteristics of post-cesarean patients in the Greater Accra Regional Hospital of Ghana. A total number of 141 post-cesarean patients were sampled with a mean age of 29.9±5.41 years. Less than half (40.4%) of the patients were aged between 30-39 years, followed by <30 years (51.1%) and then 40-49 years (8.5%). The majority (73.1%) of the patients were Christians. The majority (74.5%) of them were married and only 2.1% were divorced, 35.5% of them had attained tertiary education and 5.7% had no formal education. Concerning monthly income, 30.5% earned 500-1000 Ghana Cedis and 36.9% earned less than 500 Ghana Cedis. Most (89.4%) of the patients were resident in the Greater Accra Region and only 10.6% were outside the Greater Accra Region. Slightly more than half (53.2%) had a history of surgical operation.

Table 4.1: Demographic Profile of Patients

Variable	Frequency N= [141]	Percentage (%)
Age		
<30	72	51.1
30-39	57	40.4
40-49	12	8.5
Religion		
No religion	3	2.1
Muslim	35	24.8
Christian	103	73.1
Marital status		
Single	32	22.7
Married	105	74.5
Divorced	3	2.8
Educational level		
No formal education	8	5.7
Primary level	39	27.6
Secondary	44	31.2
Tertiary	50	35.5
Monthly income GHS		
Less than 500	52	36.9
500 – 1000	43	30.5
More than 1000	46	32.6
History of surgical operation		
Yes	75	53.2
No	66	46.8

4.3 Profile of Patients

Table 4.2 presents the clinical profile of patients. Slightly more than half (52.2%) of the patients had elective C/S and the rest had an emergency C/S. A quarter of the patients had one previous pregnancy and 33.3%, 19.2%, and 21.3 % had 2, 3 and 4 pregnancies respectively. 34.0% of the patients had 2 children, 30.5% had one child and 1.4% had no children prior to the C/S that was done during the study. The majority (88.7%) of the patients experienced no C/S with tubal ligation. Th61.7%) of the patients had not

experienced repeated C/S. A greater number (95.7%) of the patients had not experienced stillbirth and twin delivery. Most (82.3%) of the patients had normal birth weight babies.

Table 4.2: Clinical features of Patients

Clinical features	Frequency N=[141]	Percentage (%)
Nature of C/S		
Emergency	67	47.8
Elective	74	52.2
Gravida		
1	37	26.2
2	47	33.3
3	27	19.2
4	30	21.3
Number of living children		
0	2	1.4
1	43	30.5
2	48	34
3	24	17
4	24	17
C/S with tubal ligation		
Yes	16	11.3
No	125	88.7
Repeated C-section		
Yes	54	38.3
No	87	61.7
Stillbirth		
Yes	6	4.3
No	135	95.7
Twins		
Yes	6	4.3
No	135	95.7
Birthweight		
Low	25	17.7
Normal	116	82.3

4.4 Pain experienced within 48 hours post-Caesarean section

Out of the 141 post C/S patients surveyed, 48.2% experienced severe pain and 51.1% moderate pain within 48 hours post-C/S (Figure 4.3)

Table 4.3: Level of Pain Intensity

Levels of Pain (in Likert scale)		Frequency N=[141]	Percentage (%)
Scale	Definition		
0 - 3	Low Pain	1	0.71
4 – 6	Moderate Pain	72	51.1%
7 - 10	Severe Pain	68	48.2%

The Numeric Rating Scale was used to measure pain, where patients are asked to give a number to their pain on a scale from zero to 10 indicating when pain is at its worst when and best; 0 – 3=Low Pain, Moderate Pain= 4-6 and Severe Pain=7-10 (Breivik et al. 2000, Gagliese et al. 2005, Hadjistavropoulos et al. 2007, Pesonen et al.2008).

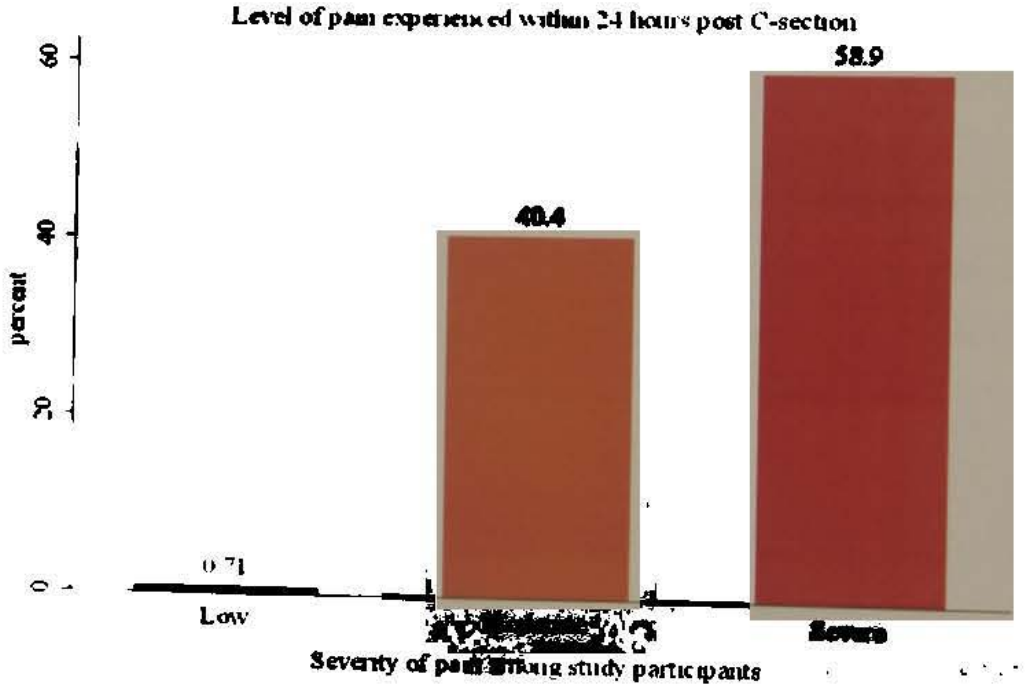

Figure 4.1: Overall of Pain Experienced within 24 Hours

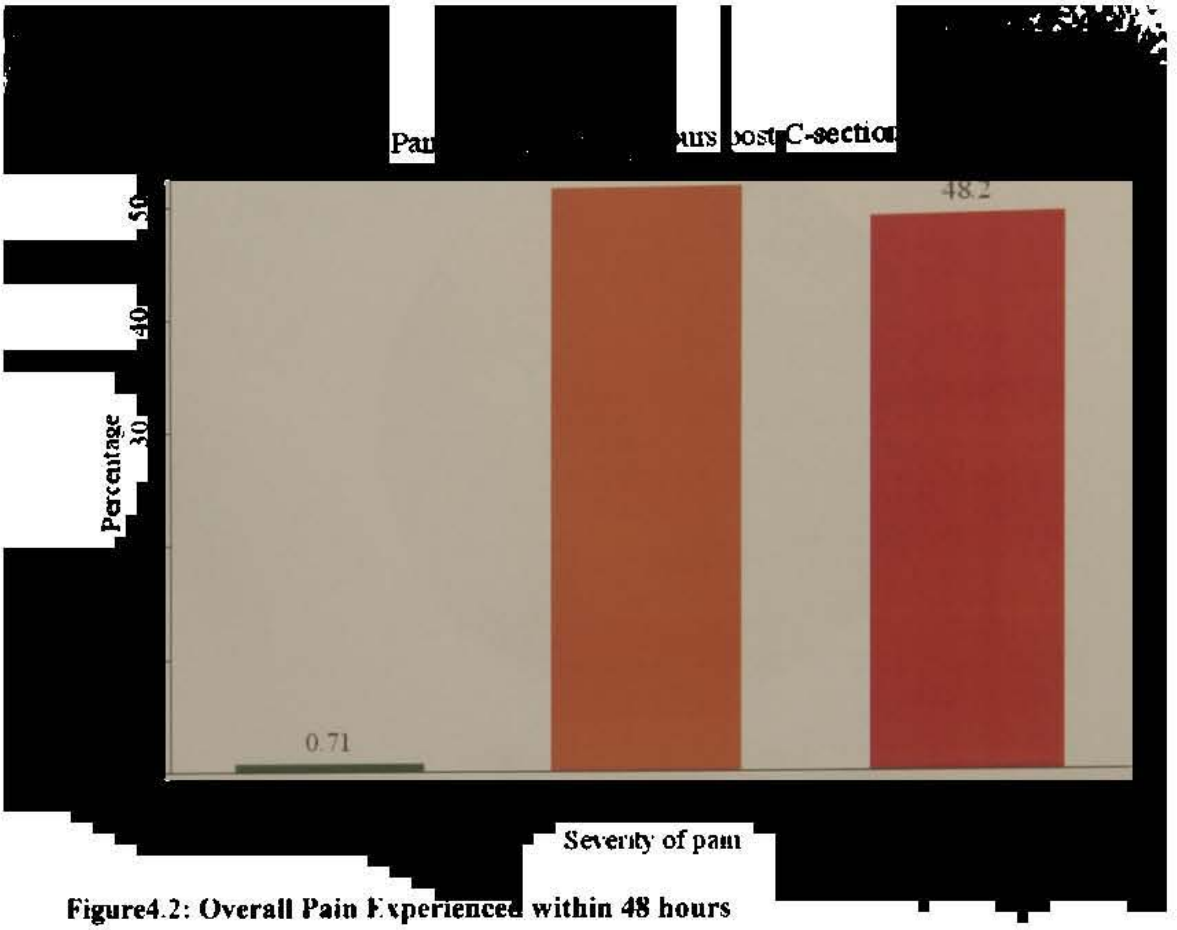

Figure4.2: Overall Pain Experienced within 48 hours

A small number of patients (0.71%) experienced no pain for both 24 and 48. Regarding the level of pain experienced within 24 hours, moderate and severe pain was 40.4% and 58.9.% respectively whiles 48 hours level of pain experienced was moderate 51.1% and 48.2% high pain (Figure 4.2).

4.5 Self-reported of pain management among post cesarean patients

A total of 85.9% of the post C/S patients were satisfied with the pain management given them.

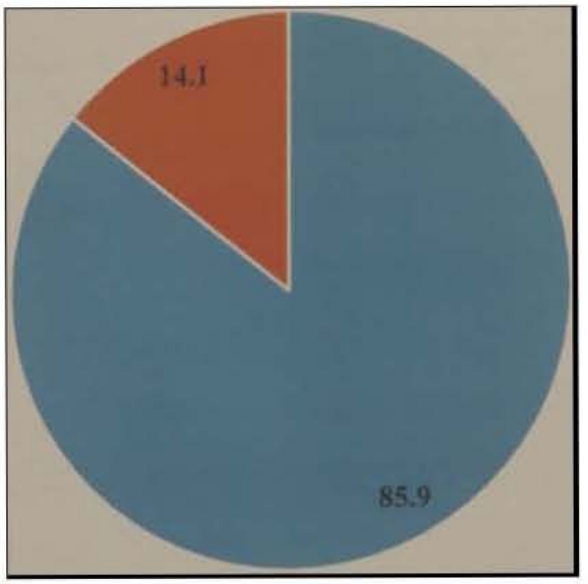

Figure 4.3: Self-reported Satisfaction

4.6 Bivariate Analysis to test association between self-reported satisfaction and background characteristics

There was a significant association between age and self-reported satisfaction with pain management (χ^2 =6.95, p=0.031). There was a significant association between stillbirth and self-reported satisfaction with pain management (χ^2 14.12, p=0.041). There was however no significant association between religion, marital status, educational level, monthly income, place of residence, history of surgical operation, nature of cesarean section, gravida, parity, stillbirth, twins and self-reported satisfaction with pain management (Table 4.3).

Table 4.4: Association between self-reported satisfaction and background of self reported satisfaction.

Variable	Not satisfied N = [26]	Satisfied N = [115]	χ^2	P-Value
Age				
<30	11 (15.3)	61(84.7)	**5.54**	**0.063**
30-39	15 (26.3)	42 (73.7)		
40-49	0 (0.0)	12(100.0)		
Religion			0.73	0.90
No religion	0 (0.0)	3(100.0)		
Muslim	7(20.0)	28 (80.0)		
Christian	19 (18.4)	84 (81.6)		
Marital status			3.38	0.27
Single	9 (28.1)	23 (71.9)		
Married	16 (15.2)	89 (84.8)		
Divorced	1 (25.0)	3 (75.0)		
Educational level			4.94	0.22
No formal education	0 (0.0)	8 (100.0)		
Primary level	11 (28.2)	28(71.8)		
Secondary	8 (18.2)	36(81.8)		
Tertiary	7 (14.0)	43 (86.0)		
Monthly income (GHS)			2.38	0.30
Less than 500	13(25.0)	39 (75.0)		
500 – 1000	6(14.0)	37 (86.0)		
More than 1000	7 (30.0)	39 (84.8)		
History of surgical operation			0.01	0.94
Yes	14 (18.7)	61(81.3)		
No	12(18.2)	54 (81.8)		
Nature of C-Section			2.75	0.10
Emergency	18 (23.4)	59 (76.6)		
Elective	8(12.5)	56(87.5)		
Gravida			6.96	0.07
1	5 (13.5)	32 (86.5)		
2	5 (10.6)	42 (89.4)		
3	9 (33.3)	18(66.7)		
4	7 (23.3)	23 (76.7)		
Number of Children Living			5.93	0.21
0	0 (0.0)	2 (100.0)		
1	5(11.6)	38 (88.4)		
2	7(14.6)	41 (85.4)		
3	7 (29.2)	19 (70.8)		
4	7(29.2)	17 (70.8)		
Stillbirth			0.01	0.91
Yes	1 (16.7)	5 (83.3)		
No	25 (18.5)	110 (81.5)		
Twins			4.15	0.08
Yes	3 (50.0)	3(50.0)		
No	23(17.0)	112 (83.0)		

4.7 Bivariate Analysis to test association between self-reported satisfaction and health providers related factors

Using the bivariate analysis it was shown that the environment of the ward was associated with satisfaction with pain management post-C/S (59.55, p<0.01)

Table 4.5: Association between self-reported satisfaction and health providers related factors.

Variables	Not Satisfied	Satisfied	X2	P-Value
Environment			**59.55**	**<0.01**
Good	5(5.0%)	95(95.0%)		
Bad	9(100.0%)	0(0.0%)		
Don't Know	12(37.5%)	20(62.5%)		
Waiting Time			**0.53**	**0.47**
Less than 1 hour	5(14.3%)	30(85.7%)		
Within 1 hour	21(19.8%)	85(80.2%)		

4.8 Factors influencing self-reported satisfaction of pain management

Patients who were aged 30-39 were 70% less likely to be satisfied with pain management as compared to those aged <30 years [AOR=0.30 (95% CI: 0.10-0.92); p=0.032]. In addition, those aged 40-49 years were 87% less likely to be satisfied with pain management as compared to those aged <30 years [AOR=0.13(95% CI: 0.12-4.32); p=0.231] but was however not statistically significant after adjusting. Patients who have no twins are 2.81 times more likely to be satisfied with pain management as compared to those who had twin deliveries [AOR=2.81 (95% CI: 0.23-1.12); p=0.023] (Table 4.4)

Table 4.6: Factors associated with self-reported satisfaction of pain management

Variable	COR (95% CI)	P-value	AOR (95% CI)	P-value
Age				
<30	1		1	
30-39	0.31 (0.10-0.91)	0.033	0.30 (0.10-0.92)	0.032*
40-49	0.23 (0.12-1.34)	0.045	0.13 (0.12-4.32)	0.231
Religion				
No religion	1		1	
Muslim	1.06 (0.35-3.18)	0.905	0.77 (0.44, 1.34)	0.334
Christian	2.23 (0.35-4.12)	0.231	0.69 (0.35, 1.38)	0.612
Marital status				
Single	1		1	
Married	1.71 (0.55-5.30)	0.349	1 81 (0.47, 6.86)	0.223
Divorced	1.50 (0.14-15.46)	0.733	0.98 (0.59-1.63)	0.123
Educational level				
No formal education	1		1	
Primary level	0.90 (0.6-3.04)	0.872	1.51 (1.23-5.12)	0.150
Secondary	0.60 (0.192-1.92)	0.396	1.08 (0.12-3.07)	0.980
Tertiary	1.20 (1.10-4.56)	0.334	6.10 (3.01-9.89)	0.440
Monthly Income GHS				
Less than 500	1		1	
500 – 1000	2.23 (0.69-7.25)	0.179	0.37 (0.17, 0.81)	0.251
More than 1000	1.58 (0.51-4.87)	0.425	0.25 (0.10, 0.59)	0.861
History of surgical operation				
Yes	1		1	
No	1.27 (0.48-3.33)	0.623	1.30 (0.64-2.63)	0.341
Nature of C/S				
Emergency	1		1	
Elective	1.10 (0.42-2.84)	0.838	0.94 (0.32-2.78)	0.911
Gravida				
1	1		1	
2	1 28 (0.29-5.52)	0.740	0.51 (0.23-1.12)	0.950
3	0.50 (0.12-1.97)	0.322	1.08 (0.32-3.07)	0.880
4	0.52 (0.13-2.05)	0.350	0.10 (0.01-0 89)	0.440
No. of Children Living				
0	1		1	
1	2.59 (0.65-10.19)	0.178	0.66 (0.38-1.15)	0.231
2	2.23 (0.61-6.16)	0.233	0.42 (0.24-0.74)	0.221
3	1.04 (0.27-3.94)	0.958	0.40 (0.16-0.99)	0.081
4	1.23 (0.20-5.45)	0.342	0.29 (0.09-0.96)	0.045
Stillbirth				
Yes	1		1	
No	1.01 (0.11-8.92)	0.987	1.81 (0.47, 6.86)	0.271
Twins				
Yes	1		1	
No	3.01 (0.91-8.92)	0.007	2.81 (1.14-6.92)	0.023*

*Fishers exact

4.9 Health provider related factors of participants

The majority 100 (70.9%) of the participants said the hospital environment was good, 9 (6.4%), of them, though it is bad while 32 (22.7%) of them said they do not know whether the hospital environment was good or bad. About a fourth, 35 (24.8%), of the study, received pain medication less than an hour post-C/S. The majority, 106 (75.2%), of them, however, were served the pain medications within an hour post-C/S.

Table 4.7: Factors associated with the health provider

Variables	Categories	Frequencies(n)	Percentages
Environment			
	Good	100	70.9
	Bad	9	6.4
	Don't know	32	22.7
Waiting time			
	Less than 1 hour	35	24.8
	Within 1 hour	106	75.2

CHAPTER FIVE

DISCUSSIONS

5.0 Introduction

This study sought to determine factors influencing patients' satisfaction with pain management among post C/S patients at the Greater Accra Regional Hospital of Ghana. The chapter discusses the findings of the study in three sections.

5.1 Pain level of patients who have undergone cesarean section 24 and 48 hours postoperative

Inadequate pain management post-operative period is a leading cause of acute pain. This study revealed that about half of post-C/S patient's experienced severe pain at both 24 and 48 hours post-op and a little over half reported moderate pain. However, patients' ability to buy effective pain medication affects the level of pain experienced. Philip & Schroeder (2007) also found pain levels ranging from 50% to 75% among their respondents which is consistent with the findings of the current study. Other studies that were conducted across the globe, however, reported a significantly lower prevalence of pain among the study participants (Mwaka & Mung'ayi, 2013; Wang, Wei, Xiao, Chang, & Zhang, 2018). The differences in the severity of pain among these patients who had undergone almost similar surgical procedures may be attributed to differences in the types and dosages of analgesics that were used. The differences in severity of pain could also stem from the fact that some of the study participants had previous exposure to some forms of analgesics in similar surgeries, as such; they are more likely to be less receptive to the analgesics compared to those who had no previous experience. Individual differences also play a key role in the perception and management of pain (Sujata & Hajoora, 2014).

5.2 Level of self-reported satisfaction with pain management post-C/S

The satisfaction of patients concerning pain management post-C/S is very important in health care delivery and utilization. This study shows that 85.9% of the post C/S patients were satisfied with their pain management which is higher compared to the findings of the study carried out by Kinta &Adullai, (2019) in Mulago hospital, Uganda. Their study revealed that 68% of participants reported that they were satisfied with their pain management because only 42% (123/290) of participants received their analgesics as prescribed. Also, a cross-sectional study carried out on patient's satisfaction with pain management after C/S revealed that 52.2% of the patients were satisfied (Ida, Enomoto, Yamamoto, Onodera, & Kawaguchi, 2018). The result regarding satisfaction of pain management as found in this study could be due to the fact that Nara Medical University Hospital was offering combined spinal-epidural anesthesia which required more Specialists.

5.3 Factors that affect patients' satisfaction with pain management post-C/S.

The results of the study showed that patients aged 30-39 were 70% less likely to be satisfied with pain management as compared to those who were below 30 years of age. This could be attributed to the fact that those in the older age group may have had previous experience with C/S and other medical conditions. The number of C/S done also influences one's satisfaction with pain management. Mothers who experienced single births were 2.8times more likely to be satisfied with pain management as compared to those who had multiple births. This is largely because the first time mothers did not have previous experience with analgesics resulting from cesarean section compared to the women with multiparous women with previous experience of C/S. Those who had previously undergone a C/S are more likely to require a higher dose of multimodal analgesics compared to those who are undergoing the C/S for the first time.

This is observation is consistent with a study that was conducted in the Stanford school of medicine, CA, USA (Carvalho & Habib, 2019).

The findings of a study showed that increasing availability of analgesic drugs may contribute to improved treatment of postoperative pain with better pain scores (Kintu et al., 2019). The use of non-medical pain management was significantly associated with decreased odds of medical pain management. This can, however, be introduced in pain management (Kozhimannil et al., 2013). The study concluded with effective and adequate pain management through epidural analgesia and Patient-controlled analgesia is imperative for better outcome of both mother and child (Govere et al 2016).

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

From the discussions in the previous chapter, this chapter presents the conclusion drawn with some recommendations.

6.1 Conclusion

This study sought to determine the satisfaction of mother on their pain management after undergoing C/S The study revealed that nearly all, that is 99.3%, patients who had undergone C/S experienced moderate to severe pain at both 24 and 48 hours post-op. The majority of the post-C/S patients were satisfied with the pain management. Factors that influenced patient's satisfaction with pain managements are having singletons. They were 2.8 times more likely to be satisfied with pain management as compared to those who had twin deliveries. Patients who were aged 30-39 were less likely to be satisfied with pain management as compared to those less than 30 years.

6.2 Recommendations

Assessment of level of pain management satisfaction is key to the improvement of pain management post-op. The following recommendations are therefore proposed;

National level

1. The Ministry of Health (MoH) and Ghana Health Service (GHS) should offer courses to health teams about pain management and how to deal with post operative patients.

2. The MoH and GHS should improve services regarding pain management by acquiring more effective drugs and supplies that reduce the pain patients experience.

3. The MoH and GHS should invest in development of Acute Pain Services (APS) by hospital management in each hospital is needed to ensure the service providers give attention to pain in hospitals.

District level

1. The District Health Directorate and the hospital heads should improve their service delivery by acquiring more effective drugs and supplies to support pain management. As proposed by Vermelis et al (2010), epidural analgesia can be used to support pain management.

2. The District Health Directorate should intensify monitoring and evaluation in the health facilities to ensure compliance with the standard protocol regarding pain management.

4. The district health directorate should intensify regular in-service training for health personnel on post-op pain management.

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APPENDICES

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Appendix A: INFORMED CONSENT FORM

Title: FACTORS INFLUENCING PATIENT SATISFACTION WITH PAIN MANAGEMENT AMONG POST CAESAREAN SECTION PATIENTS IN THE GREATER ACCRA REGION

My name is Doreen Ohemeng Wiafe. I am a graduate student from the University of Ghana, School of Public Health undertaking a research on Factors Influencing Patient Satisfaction with pain management among post caesarean section patients at the Greater Accra Regional Hospital. Some research assistants will be assisting in the study. The study seeks to find out the various factors that influence patient's satisfaction with pain management among post C-Section.

Personal information that will make you identifiable will not be included in the questionnaire. Questionnaire clients will respond to will be anonymous (will not bear names of participants) so you will not be identified. You are free to be part of the study and decide to leave at any point you want. No one will be upset if you decide not to partake in the study. However, be assured that your privacy and confidentiality will be respected. Be assured that the research come at no risk and no cost except the precious time that they will used to fill the questionnaire. You can choose a place of convenience to answer the questions.

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title "FACTORS INFLUENCING PATIENT SATISFACTION WITH PAIN MANAGEMENT AMONG POST CAESAREAN SECTION PATIENTS IN THE GREATER ACCRA EEGIONAL HOSPITAL" has been explained to me.

I have read or have had someone read all of the above, asked questions, received answers regarding participation in this study, and am willing to give consent to participate in this study as a volunteer.

Date _____ Name and Signature or mark of volunteer _____

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the nature and purpose of this study were read to the volunteer. All questions asked were answered satisfactorily regarding participation in this study, and volunteer gave consent to participate in this study.

Date _____ Name and Signature or mark of witness _____

I certify that the nature and purpose in this research have been duly explained to the above individual.

Date _____ Name and Signature of Person Who Obtained Consent _____

Name of Principal Investigator DOREEN OHEMENG WIAFE:

Address:

Tel. No0245355985

Email address: doreenwiafe7@gmail.com

In case of any concern you can contact the Ethics Administrator, Ms. Hannah Frimpong, GHS/ERC on 024-599-7061.

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QUESTIONNAIRE No..... Date...../...../.....

QUESTIONNAIRE ON FACTORS INFLUENCING PATIENT SATISFACTION WITH PAIN MANAGEMENT AMONG POST CAESAREAN SECTION PATIENTS IN THE GREATER REGIONAL HOSPITAL, GHANA.	
This is a research on FACTORS INFLUENCING PATIENT SATISFACTION WITH PAIN MANAGEMENT AMONG POST CAESAREAN PATIENT IN THE GREATER REGIONAL HOSPITAL, GHANA. The study tries to find out the various factors that influence patient's satisfaction with pain management post C-section. You are required to share your experience by responding to the following questions.	
Card Number.....	Ward.....

	QUESTIONS	CODING CATEGORIES	SKIP TO	CODES
	A. SOCIO-DEMOGRAPHIC FACTORS			
1.	Age (State your last birthday age)	.....		AGE
2.	Ethnicity	Akan.....1 Ga Adangbe .....2 Ewe.....3 Krobo.....4 Other, (specify)_____		
3.	Marital status	Single .....1 Married.....2 Cohabitation.....3		MSTAT

		Widowed 4		
4.	Education level	No formal education .....1 Primary .....2 Secondary.....3 Tertiary.....4		EDUC
5.	Occupation	Unemployed .....0 Trader.....1 Causal laborer .....2 Students Apprentice.....3 Civil servant.....4 Other (state)..... 5		OCCP
6.	Income	State your monthly income from the job you do		INCOME
7	Resident	Greater Accra.....1 Outside Greater Accra.....2		RES
8	History of surgical operation (CS or others)	.....1 .....2 .....3 4		SUR_HIST

----------C-Section ----------

9. Nature of C-section: 1. Emergency ☐ 2. Elective ☐

10. Number of Pregnancy: (_____)

11. Parity: (_____)

12. Preeclampsia: 1. No ☐ 2. Yes ☐

13. Indication (reasons) for C-section: _____

14. C-section with tubal ligation: 1. No ☐ 2. Yes ☐

15 Repeat C-section: 1. No ☐ 2. Yes ☐

16. Still birth: 1. No ☐ 2. Yes ☐

17 Twins / Multiples: 1. No 2. Yes

18. Weight of newborn(s): ____ g

B. Pain levels of patients who have undergone Caesarean-section postoperative.

19. How many days have you stayed in the hospital after surgery? _____ . . _____

20. Did you have any prior chronic Pain?

Yes ☐ No ☐

21. Are you feeling any pain now?

Yes ☐ No ☐

22. Please rate your pain by circling the one number that tells how much pain you have RIGHT NOW.

0 1 2 3 4 5

No Pain **Pain as bad as you can imagine**

23. Where do you feel the pain? Is it on the surgical site?

Yes ☐ Other place _____

24. Have you been given pain medication post C-section?

Yes ☐ No ☐

25. What pain medication were you given'

Paracetamol ☐ Pethidine ☐ Others (specify).....

26. If yes to question No 24, how long did it take to be given pain medication?

1. Less than 1 hour ☐ 2. Within 1 hour ☐ 3. More than 1 hour ☐

C Levels of self-reported satisfaction with pain management among post caesarean patients

26. Are you satisfied with how your post C-section pains have been managed?

1. Yes ☐ 2. No ☐

27. Please rate your level satisfaction with pain management post C-section your pain?

1-Very Satisfied ☐ 2-Satisfied ☐ 3-Neutral ☐

4- Dissatisfied ☐ 5-Very Dissatisfied ☐

28. Please state your reason(s) for your satisfaction or dissatisfaction regarding how you pain was treated. _____

C. Provider-related factors influencing patients' satisfaction with pain management among post caesarean patients

29. Type of surgeon: 1. General Surgeon ☐ 2. Specialist ☐

3. Physician Assistant ☐ 4. House officer ☐ 5.Other, specify_____

30. Did you physician communicate regularly with you concerning pain management post C-section?

1. Yes ☐ 2. No ☐

31. How will you describe the attitude of the health workers regarding your pain management?

1. Very good ☐ 2. Good ☐ 3. Poor ☐ 4. Very poor ☐

Thank you for your time