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COLLEGE OF HEALTH SCIENCES

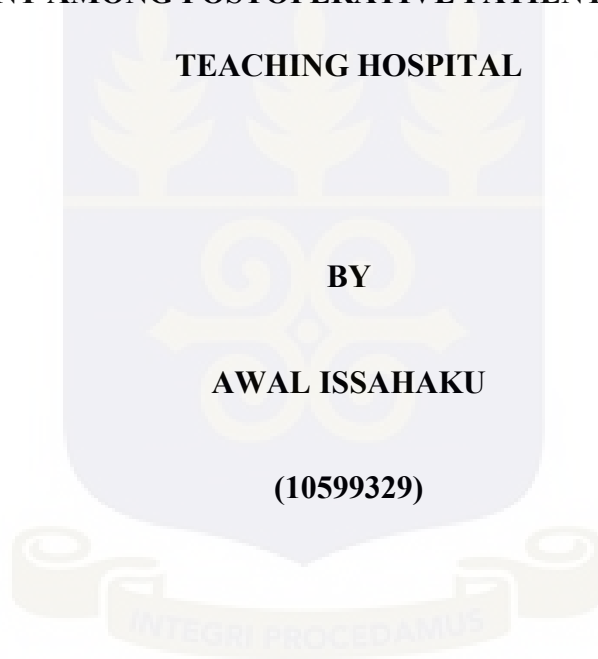
UNIVERSITY OF GHANA

**EXPLORING FACTORS INFLUENCING PAIN EXPRESSION AND
MANAGEMENT AMONG POSTOPERATIVE PATIENTS AT THE TAMALE
TEACHING HOSPITAL**

BY

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Influences of Postoperative Pain Expression and Management

DECLARATION

I, Awal Issahaku do hereby declare that this thesis is the result of my original research work under the supervision of Prof. Lydia Aziato and Dr Gladys Dzansi all of the School of Nursing and Midwifery, University of Ghana. This thesis has not been presented either in whole or part in this university or elsewhere for any degree or certificate. Authors and publishers whose works have been cited in this study have been duly acknowledged in the text and in the references list.

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Influences of Postoperative Pain Expression and Management

ABSTRACT

The expression and management of postoperative pain (POP) is influenced by multiple factors. The purpose of this study was to explore factors influencing pain expression and management among postoperative patients at the Tamale Teaching Hospital. The study employed a qualitative explorative descriptive design and it was guided by the Social Communication Model of Pain. Purposive sampling technique was used to recruit participants into the study. Data saturation was attained after interviewing the fourteenth participant. All the interviews were audio-taped and transcribed verbatim. Data were analysed using thematic content approach and five themes were generated. These were; influence of pain experience on pain expression, modes of pain expression, sociocultural influences on pain expression and management, patient's perspective on pain management and spiritual influence on pain expression and management. Past experience of pain, thoughts, feelings and sensations were identified to influence pain expression among postoperative patients. Postoperative patients expressed their pain through varied ways based on subjective reasons. Majority of the study participants indicated that their pain expression and management was mostly influenced by their sociocultural orientation. Nurses, as frontline caregivers in perioperative settings, need to lead the way in demonstrating sensitivity to the sociocultural disparities of surgical patients in order to ensure competency in care delivery. The study underscored the need for the introduction of guidelines for culturally competent care in order to reduce discrepancies and improve the provision of context appropriate pain care to postoperative patients.

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DEDICATION

I dedicate this work to the memory of my late grandmother HAJIA ABUKARI AMATU FARKA for laying a solid foundation for my life.

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I give thanks and praise to ALLAH the most high for His infinite mercies in my life particularly in the course of this work. I also wish to express my deep seated appreciation and sincere gratitude to all the participants of the study. Again, I am highly indebted to my supervisor, Prof. Lydia Aziato, for her priceless inputs and for going beyond the usual student-supervisor relationship in supervising this work. But for her support and insightful inputs, this work would not have been successful and may God's unending blessings forever be her company. Similar appreciation is extended to Dr Gladys Dzansi who also assisted as the second supervisor.

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LIST OF ABBREVIATIONS

CINAHL:	Cumulative Index to Nursing and Allied Health Literature
EBSCO:	Elton Bryson Stephens Company
IASP:	International Association for the Study of Pain
POP:	Postoperative Pain
PUBMED:	Public/Publisher MEDLINE
UK:	United Kingdom
USA:	United State of America
ORIF:	Open Reduction and Internal Fixation

CHAPTER ONE

INTRODUCTION

This chapter covers the background of the study, the statement of the problem, the purpose of the study, objectives, research questions, significance of the study as well as the definition of operational terms.

1.1 Background of the study

Every year, millions of surgeries are performed on patients worldwide for various reasons. Accompanying these surgeries are varying degrees of surgical pain as a result of actual or potential tissue damage (Famakinwa, Oyeniran, & Bello, 2014). Effective postoperative pain management is a serious challenge in health care. Previous research reports that, three out of four adult surgical patients report mild to severe surgical pain (Simpson & Bruckenthal, 2016). In the United States (U.S) for instance, about 100 million surgeries are conducted annually with up to 80% of patients experiencing pain after their surgery (Cullen, Hall, & Golosinskiy, 2009). A study in India revealed that, majority of patients experience mild to extreme pain within the postoperative period after abdominal operation (Singh, Saikia, & Lahakar, 2016).

In sub-Saharan Africa, reports on the occurrence of postoperative pain (POP) are with slight distinctions. In Tanzania, almost half of the patients at a centre had some form of pain 48hours after surgery (Masigati & Chilonga, 2014). In Ethiopia, the incidence of postoperative pain has been reported to be between 47–100% (Woldehaimanot, Eshetie, & Kerie, 2014). In Nigeria, one study by Ogboli-Nwasor, Sule S', and Yusufu (2012)

reported that majority of patients experienced some level of post surgery pain. Similar reports of surgical pain among patients in Ghana are reported by (Aziato & Adejumo, 2014). Therefore, it can be said that the experience of postoperative pain is widespread among surgical patients.

In spite of an enhanced appreciation of the anatomy and neurophysiology of pain as well as treatment improvements, evidence suggests that adequate pain management remains a challenge to many practitioners (Brown, Constance, Bédard, & Purden, 2013; Chou et al., 2016; Ogboli-Nwasor et al., 2012; Turk, 2017; Wu & Raja, 2011). Inadequately managed pain can lead to patient's dissatisfaction (Garimella & Cellini, 2013). It can also have negative consequence on patient's outcome (Aziato & Adejumo, 2014) or increase risk of readmission, delay recovery, prolong hospitalization and high cost of care (Barrington et al., 2014; Joshi et al., 2014; Khan et al., 2011). Comprehensive understanding of pain management cannot be accomplished without accurate pain assessment because pain assessment is widely regarded as the first step to pain management (Fainsinger & Nekolaichuk, 2008). The importance of pain assessment was recently reemphasized in the conclusions of systematic review which indicated that inadequate pain assessment would lead to deficient pain management which would have negative impacts on the clients' outcome and wellbeing (Jin, 2017).

A number of studies (Aziato & Adejumo, 2015; Coghill, 2010; Nielsen, Staud, & Price, 2009; Pasero, 2009; Younger, McCue, & Mackey, 2009) have reaffirmed the subjectivity of pain experience giving meaning to the definition of pain by the International Association for the Study of Pain (IASP) as "an unpleasant sensory and

emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (Brand & Court, 2010, p. 214). This definition is widely cited in most pain studies (Doleys, 2017;Kumar & Elavarasi, 2016; Treede, 2018). The subjectivity of pain experience as posited in this universally accepted definition by the IASP means that it is imperative for the sufferer to properly communicate his or her experience (Briggs, 2010) for observers to make inferences about the pain (Martel, Thibault, & Sullivan, 2011). The observer or onlooker who is either a friend, family member or health care professional cannot be acquainted with the suffering of the person in pain unless the person in pain demonstrate apparent manifestations of the pain (Craig, 2009).

It can also be inferred that pain is not just a sensory development but an affective experience that is regulated by physiological processes as well as various psychosocial events (Bernatzky, Presch, Anderson, & Panksepp, 2011; Tegeder & Lotsch, 2009). This therefore, makes effective pain communication through expression a crucial phase of assessment which is inherent in adequate pain management. Pain is expressed through a number of ways such as verbal (Speech), nonverbal (bodily movements) or even a combination (Rowbotham, Wardy, Lloyd, Wearden, & Holler, 2014). Behaviour employed to express pain nonverbally include rubbing of the pain site, sighing, position shifts and movement restrictions (Ersek, Polissar, & Neradilek, 2011) among others. The conventional efforts to describe pain and understand pain expression has focused on self-report or verbal and nonverbal expression (Craig, 2009).

People are cultural beings and so everyone is largely influenced by their ethnic, religious, geographical or socioeconomic group (Narayan, 2010). Culture therefore, is said to regulate pain (Aziato & Adejumo, 2014a) by instilling in its members general and specific behavioural expectations (Narayan, 2010) including how to respond to and manage pain (Peacock & Patel, 2008). Factors such as attitudes, acculturation, social roles and expectations, beliefs, language, expressiveness, gender, spirituality, socialization and socioeconomic status may perhaps influence pain sensation and experience (Green & Hart-Johnson, 2010). These factors specifically influence how each individual experience and respond to pain, (Czarnecki et al., 2011; Nortjé & Albertyn, 2015) including when and how to ask for treatment (Peacock & Patel, 2008).

Findings of studies reviewed by Pillay, Zyl, and Blackbeard (2014) suggest that, there are culture-related individual variations in pain expressiveness. Those from cultures that place significance on stoicism have the tendency to refrain from verbalizing pain presence with moans or screams. To avoid been tagged or perceived as weak, they will not admit or show the presence of pain even when asked. They may have learned to cope with their pain devoid of asking for help or care hence, will prefer to be left alone (Kelley, Tripp-Reimer, Choi, & Enslein, 2009). Moreover, several other people think that refraining from complaining makes one a good patient (Clark et al., 2010).

In Africa, traditional beliefs, customs, and stories of past great ancestors are used frequently to prepare children in order for them to endure pain in a more tolerating and stoical approach (Nortjé & Albertyn, 2015). For example in Malawi, Walters (2009) observed that a culture of silence and cooperation is place on African children at the early

stages of their lives. Such children tend to avoid exhibiting pain in conformity to their cultural norms' expectations even when their clinical state is suggesting severe pain. This kind of socialization has influenced the management of pain among members from such societies because pain management in places such as Nigeria, Kenya, South Africa, Uganda and many others depended on the medical staff's familiarity but not always in line with recommendations from standardized guidelines (Dekker, Amon, le Roux, & Gaunt, 2012; Selman et al., 2013; Vijayan, 2011). Hence postoperative pain medications are prescribed on an as-needed basis, requiring patients to request pain medication and interventions (Vijayan, 2011).

On the contrary, Narayan (2010) posited that other cultural groups embrace pain expressive behaviour. Members of such cultural groups are taught from infancy that, it is appropriate to moan or even cry when one is in pain. For a fact some groups consider moaning or loudly crying as the best way to cope with pain whiles, other groups encourage members in pain to seek attention and support from care givers. Members from these groups will perhaps prefer never to be left alone when they are in pain (Kelley et al., 2009). Also, culture influences choice of a suitable treatment type for pain. According to Western biomedical culture, medications are the first line of intervention, whereas, Eastern culture is inclined towards herbs, touch as well as other therapies like acupuncture and yoga (Carroll, 2007;Cherniack et al., 2008). Other cultural groups consider spiritual rituals or other acts as the primary intervention for pain management (Cherniack et al., 2008; Unruh, 2007). Even though this study was conducted among

adult postoperative patients, cultural behaviours associated with pain from childhood experiences or cultural expectations may influence pain response in adulthood.

Most of the studies cited above were conducted in high income countries in the western and other parts of the world, however literature to illuminate the dynamics and complexities of postoperative pain expression and management lacks in Africa and for that matter Ghana. It is in this regard that this qualitative study was conducted to provide rich and detailed information on the factors influencing pain expression and management from the perspective of Ghanaian postoperative patients. Qualitative research is primarily naturalistic, interpretative, and inductive which allows the study of naturally occurring phenomena without manipulation (Green & Thorogood, 2018). It focuses on learning the meaning that participants hold about the phenomenon and not the meaning that the researchers bring to the research or writers from the literature (Creswell, 2007). The use of a qualitative approach in this study afforded postoperative patients the opportunity to disclose the experiences they went through relative to surgical pain experience, expression and management.

1.2 Statement of the Problem

The management of pain including postoperative pain has gained momentum in world health policy. For example, the World Health Organization has developed guidelines for the prevention and treatment of postoperative pain (Kumar, 2007; WHO, 2003). In view of this, research attention in most high income areas particularly in America and Europe, a lot has been devoted to postoperative pain leading to the availability of adequate empirical literature (Robleda, Sillero-Sillero, Puig, Gich, &

Baños, 2014; Schreiber et al., 2013; Simon, 2012; Simpson & Bruckenthal, 2016; Werner & Kongsgaard, 2014). Despite these interventions, postoperative pain remains a major clinical problem with serious consequences (Argoff, 2014). Pain is still undertreated, particularly in low income countries (Murthy, Antwi-Kusi, & Ofori-Amanfo, 2013). Literature relative to the Ghanaian surgical patients' preoperative experience is lacking. This surmises that the preoperative issues specific to the Ghanaian context may not have been sufficiently explored (Aziato & Adejumo, 2014b). Also, it is documented that every individual's experience of pain is influenced by the dynamic interaction of physical (physiological), psychological and social factors (Gatchel, 2013). Yet studies are marginal in exploring the factors that influence pain expression and management especially in the Ghanaian context. The available few studies on surgical pain delved in other domains (Aziato & Adejumo, 2015; Aziato & Adejumo, 2014b; Aziato, Dedey, Marfo, Asamani, & Clegg-Lampsey, 2015). Hence, every endeavour seeking to find the appropriate remedy to deal with the distressing challenges of insufficient surgical pain management should not be spared. To contribute to a comprehensive model of pain management, it is prudent to draw attention to the explicit elements that influence the expression and management of pain.

The Tamale Teaching Hospital (TTH) is one of three tertiary hospitals in Ghana. It serves as a medical referral centre for the Northern, Upper East and Upper West Regions, the northern parts of the Brong Ahafo Region and the neighbouring countries of La Cote D'ivoire, Burkina Faso and Togo. The hospital has in its mandate to undertake research into health issues for the purpose of improving health care. Yet no single study

on postoperative pain expression and management has been retrieved from the Hospital. This study therefore, sought to provide a foundation or add to the efforts directed at enhancing postoperative pain assessment and management at the Tamale Teaching Hospital and beyond.

1.3 Purpose of the Study

The purpose of this study was to explore the factors influencing pain expression and management among postoperative patients at the Tamale Teaching Hospital.

1.4 Objectives of the study

- 1) To investigate the influence of pain experience on expression among postoperative patients.
- 2) To explore the ways in which postoperative patients express pain.
- 3) To describe sociocultural factors affecting postoperative patients' pain expression and management.
- 4) To explain postoperative patients' perspectives on pain management.

1.5 Research questions

1. How does past and present pain experience influence expression of pain among postoperative patients?
2. What are the ways in which postoperative patients express pain?
3. How do sociocultural factors affect pain expression and management among postoperative patients?

4. What are the perspectives of postoperative patients in the management of their pain?

1.6 Significance of the study

Apart from leading to the discovery of knowledge, research is usually undertaken to discover new knowledge, to execute change in practice and sometimes to appraise the efficiency of changes in practice (Bell & Duffy, 2009). Hence, this study may be significant in a number of ways. It may contribute to available literature on the understanding of pain and serve as a reference material in surgical pain management by health care professionals particularly, nurses. The study might also be useful and beneficial to the Ministry of Health (MOH) and for that matter Tamale Teaching Hospital. It can form the basis for further research towards the development of context appropriate guidelines and protocols for surgical pain management in Ghana. In the end, it is anticipated that pain assessment and management may possibly be enhanced hence, making patients the huge beneficiaries of this study.

1.7 Definition of Operational Terms

Pain: This is a sensory and emotional experience. (The emotional component thus varies from person to person and in the same person from time to time).

Pain Expression: It is any behaviour or action used to convey pain presence

Pain Management: This includes pharmacological, non-pharmacological, and other approaches to prevent, lessen, or stop pain sensations.

Pain assessment: It is the evaluations done on the patient to ascertain pain presence, its intensity and duration by the health-care providers to provide basis for intervention.

Postoperative Patient: This is a patient who has undergone a surgical operation.

Sociocultural Factors: These are lifestyles, values and customs associated with society or group.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter consists of a discussion of the conceptual framework used as guide for the study as well as the rationale for its utilization. It also reviewed related literature by providing an overview of earlier research works on factors influencing pain expression and management. This is done to scale out the key data collection requirements for the study and in line with recent research design procedure (Denscombe, 2014).

A number of online databases such as ScienceDirect, CINAHL, MEDLINE, EBSCOhost, SciVerse Scopus among others subscribed in the University of Ghana online catalogue were used to search for relevant information regarding the study problem. Also Google Scholar was used as one of the search engine to aid retrieval of relevant articles. Key terms used in all searches included among others; “factors influencing pain”, “pain expression”, “pain management”, “postoperative pain expression” “postoperative pain management” “pain communication” among others.

2.1 Conceptual Framework

Traditionally, nurse theorists have asserted that the outcome of research does not really advance nursing science if they are not guided by models and theories (Ortiz, 2015). In view of this, several conceptual models such as the biopsychosocial model of pain (Gatchel & Turk, 1999), the social communication model of pain (Craig, 2009), and the communal coping model (CCM) of pain catastrophizing (Sullivan et al., 2001) were

identified and considered initially for the study. However, after a careful examination of these theoretical frameworks, it came out clearly that the social communication model of pain was best fit for the study due to the following reasons:

The biopsychosocial model of pain views illness as the complex interaction of biological, psychological, and social factors (Gatchel, 2005). This model has been particularly useful in the area of chronic pain since it is widely accepted as the most heuristic approach to chronic pain (Gatchel, Peng, Peters, Fuchs, & Turk, 2007). Because postoperative pain is largely seen to be acute pain, the suitability of the model for the study became problematic. Again, Gatchel et al. (2007) in proposing the model indicated that utilizing the model requires a review of the basic neuroscience processes of pain. This point overemphasized the importance of the biological components of the model yet a qualitative exploration of postoperative pain may not permit laboratory examination of the biological elements. Therefore, the biopsychosocial model could not have been used for the present study.

The communal coping model (CCM) of pain catastrophizing (Sullivan et al., 2001) was proposed as a heuristic to encourage exploration of the interpersonal and social contextual factors associated with pain experience (Thorn, Ward, Sullivan, & Boothby, 2003). The model suggests that pain reduction may not always be the primary goal of coping, and that for some individuals, interpersonal goals may characterize many of their coping efforts (Sullivan et al., 2001). This model is inclined towards the coping elements of pain from interpersonal or social dimension without encompassing the

multifaceted viewpoint of pain experience. In view of this, the model was not found appropriate for this study.

However, the social communication model of pain was used for this study because it appeared more suitable since the study was seeking to explore factors influencing the complex dynamics of pain in an intrapersonal and interpersonal context (Hadjistavropoulos et al., 2011). The model was therefore, adopted as the conceptual framework that guided the study. The framework was first proposed and published by Craig, (2009) and later reviewed by same person in 2015.

The social communication model of pain specifies the necessary domains to be attended to in the education of researchers and practitioners (Carr & Bradshaw, 2014; von Baeyer et al., 2014). The model provides an all-inclusive framework for organizing and considering factors that influence pain and their relationships (Craig, 2009). Understanding any incident of pain whether acute or chronic requires grasping the broad picture and details at biological, psychological, and social levels of analysis (Craig, 2015). Even though earliest biological system provided for pain prevention (Craig, 2009), recent developments in clinical, cognitive, behavioural as well as in social neuroscience can provide fresh perspectives on our understanding of different forms of pain expression (Craig, Versloot, Goubert, Vervoort, & Crombez, 2010).

The social communication model is put forward to provide a broader framework for organising our understanding of the multiple intra- and interpersonal factors influencing pain and pain management (Craig, 2009). According to Karos (2017) the model asserts that each step of the pain communication process is regulated by biological,

psychological, and social influences. In describing the model, Craig (2009) explained that the model is in line with the usual sequence of stages of the communication process under which the primary phase of tissue damage such as dental trauma (Versloot & Craig, 2009) provoke the experience and expression of pain. Pain experience is determined by the experiencing patient's thoughts, feelings and sensation leading to the expression or show of the pain in verbal, nonverbal or physiological forms. The experience and expression of pain are said to be both further regulated by intrapersonal factors including personal history, biological make up and by interpersonal factors like the setting. The intrapersonal factors include the biophysical and/or psychological factors within the individual self and mind while interpersonal factors are the factors on the individual's relationship with his or her environment (Craig, 2009).

The second stage of the model is assessment of pain by an onlooker represented by the caregiver who may be a healthcare professional, a family member or any person who is in a position to influence the suffering person's pain. The assessment relies on interpersonal elements like responsiveness, knowledge of the observer and also the relationship between the person in pain and the observer (Craig, 2009).

The third stage of the model is pain management based on how the reaction of the person in pain is decoded. This is in turn influenced by intrapersonal factors such as personal judgment, orientation and the type of environment. Each stage of the model involved multifaceted changing processes and feedback loops that have both intra and interpersonal influences (Craig, 2009). According to Hadjistavropoulos, Craig, Duck, Cano, Goubert, Jackson, Mogil, Rainville, Sullivan, Williams, et al. (2011), the leading

model describing the complex dynamics of pain in an interpersonal context is the social communication model of pain. The more inclusive and comprehensive social communication model of pain (Craig, 2009) as described above is therefore, illustrated and below.

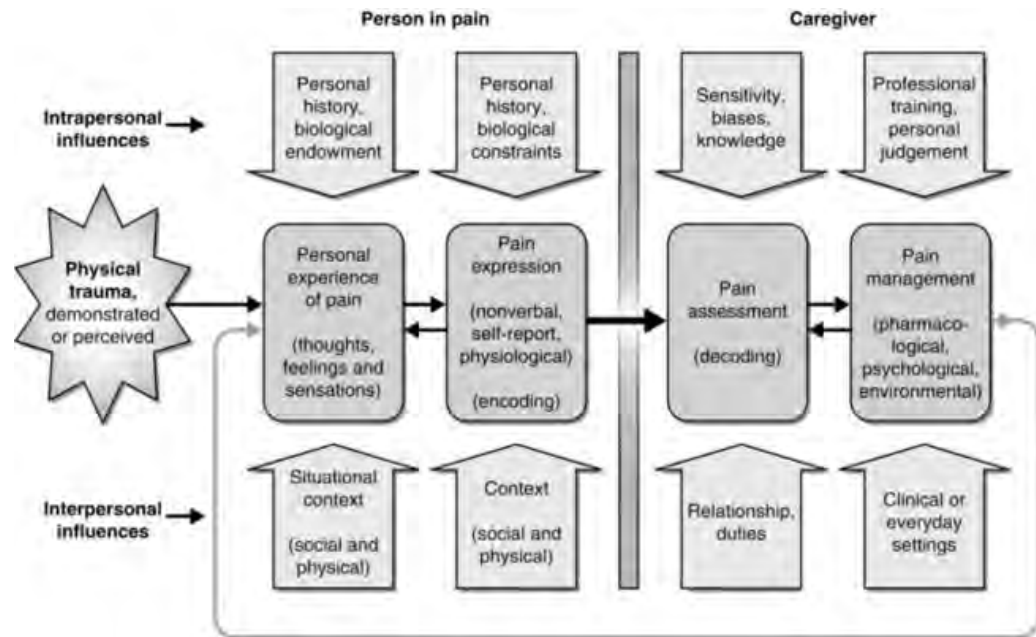


Figure 2.1 The Social Communication Model of Pain (Craig, 2009).

Even though the social communication model was proposed by Craig, (2009) and subsequently reviewed by Craig (2015), it has not been extensively utilized in many studies except in some few instances. For example, Quinn (2016) used the model for an interdisciplinary integration of models and theories to nursing research. Again, Versloot and Craig (2009) after reviewing the model used it in understanding the acute pain experience among children in dentistry, with attention directed to improving the process of pain assessment. A recent study to investigate how social parameters influence the manner in which pain is expressed by Gallant and Hadjistavropoulos (2017) also made

use of the social communication model. However, in applying the model to the present study, only some of the constructs of the model were considered and utilized because the focus of the study was on exploring factors influencing pain expression and management from the perspective of the person in pain without including the caregiver. For this reason, constructs under the caregiver as stipulated in the model were not utilized in the present study. The first objective of the present study was conceived out of the leading construct of the model on personal experience of pain. The second objective of the study on exploring ways of pain expression among postoperative patients originated from the second in sequence of constructs of the model regarding pain expression formed. However, the third objective of the study combined two minor constructs of the model on the situational and contextual influences to formulate the third objective of the study on sociocultural factors affecting pain expression and management among postoperative patients.

In view of this, review of related literature was therefore, done in line with objectives of the study premised on the constructs of the model. Examination of related publications was focused on these specific areas thus; influence of pain experience on expression, modes of pain expression and sociocultural influences on expression and management of pain.

2.2 Physical trauma as cause of pain

It is usually taken for granted that pain as a symptom of tissue damage or stress arising from injury or disease processes. Yet events such as lacerations, contusions, and sprains or even severe fractures and burns, are well-known to many people as the source

of pain and this makes all of us vulnerable to painful diseases (Craig, 2009). Surgical procedures create tissue damage and inflammation resulting in acute post-operative pain (Al-Hashimi, Scott, Griffin-Teall, & Thompson, 2015). Consequent to tissue injury and inflammation is the release of a variety of mediators that encourage ongoing pain or pain reaction to mechanical, thermal or chemical stimulant (Amaya, Izumi, Matsuda, & Sasaki, 2013). The open wound from tissue damage becomes an obvious cue to the presence of pain (Steinkopf, 2016). Borgeat and Blumenthal (2008) have posited that the risk of persistent pain depends on the extent of tissues damage caused by surgery. This means that tissue damage has a bearing on the expression of pain since people are inclined to respond in variable ways when in pain through biological dispositions such as fear of pain and catastrophising (Schiavenato & Craig, 2010), life experience and current social context (Craig, 2009).

The common forms of pain are typically characterised as “nociceptive pain” since the source of pain in tissue damage is somewhat easy to identify (Craig, 2009). Another form of pain is “neuropathic” originating from damage or stress to the nervous system but this is less known and difficult to identify (Moulin et al., 2014). The above therefore, illustrates that tissue damage is the main source of pain particularly, among surgical patients.

2.3 Influence of pain experience on pain expression

Pain experience as sensory event is extremely subjective and so varies significantly from one person to another (Garland, 2012). A great deal of the variation may emanate from the manner in which past experience and future predictions about a

stimulus are used to interpret afferent information (Wiech, 2016). This is especially so because individual carries within them their personal history of experiences which impact on their expectations (Aksoy et al., 2016) and so when encountering pain, they bring along a range of potential reactions controlled by inherited dispositions and influenced by past history (Craig, 2009). The influence of past experience on an individual's reaction to pain is widely acknowledged in literature (Linton & Shaw, 2011). For example, study that examined the influence of children's pain memories on their expectations and experience of subsequent pain revealed that memories of past pain have significant influence on subsequent pain experience (Noel, Chambers, McGrath, Klein, & Stewart, 2012). The Integrated Pain Adaptation model by Peck, Murray, and Gerzina (2008) also emphasized the individuality of reaction to pain. In a study using an ethnographic design to explore the experiences of Ghanaian general surgical patients, Aziato and Adejumo (2014a), reported that evaluation of patients' prior surgical healthcare experiences helps in their pre and postoperative care. Similar reports have been sighted in studies conducted in other parts of the world such as the United States (Pozek, De Ruyter, & Khan, 2018) and India (Kumar & Srivastava, 2011).

The experience and expression of postoperative pain can be influenced by a variety of psychological factors (Hinrichs-Rocker et al., 2009; Khan et al., 2011; Neil & Macrae, 2009) compared to physical or biomedical factors (Main, Sullivan, & Watson, 2008). Hence, the shift from biomedical perspective of illness to a more encompassing approach underscores the imperativeness of psychological factors (Hirsch, 2012). According to Craig, (2009) qualitative studies using phenomenological methods demonstrated the remarkable complexity of thoughts, feelings, and sensations during

episodes of pain. In terms of thoughts, a review of findings regarding expectancy effects on brain markers of nociception and how expectations lead to changes in subjective pain, Atlas and Wager (2012) identified role of expectation in modulating (enhanced or inhibited) pain response. Again other studies (Coghill, 2010; Kortessluoma, Nikkonen, & Serlo, 2008) have reported similar discoveries regarding expectations and postoperative outcomes. In a systematic review by Gunaratne et al. (2017), it was found that patients were dissatisfied when their preoperative expectations regarding postoperative pain experience were not met. However, an exploration of patients' expectation and satisfaction with surgical outcome using randomised controlled trial provided contrary evidence that satisfaction levels remained same despite unmet expectations (McGregor, Doré, & Morris, 2013). The expectations of patients can be shaped when they have adequate information and well educated through preoperative teachings which are identified to hold a potential in enhancing the knowledge of patients regarding pain experience and preventing negative surgical outcomes (Best et al., 2017; O'Donnell, 2018). Meaning when expectations are well grounded they may not affect pain expression.

According to Linton and Shaw (2011), emotional distress is one of the most disrupting characteristics of pain. Classical emotional reaction to pain includes anxiety, fear, anger, guilt, frustration, and depression. Studies have specifically identified fear (Leeuw et al., 2007; Vlaeyen & Linton, 2012), and anxiety (Asmundson, Abramowitz, Richter, & Whedon, 2010; Asmundson & Katz, 2009) to be among the modulating factors of pain behaviour. Consequently fear and anxiety have been identified to have a

relationship with pain severity and sensitivity. For example, a meta-analysis which synthesized the results from studies examining the association between fear-avoidance and pain intensity among individuals with chronic pain by Kroska (2016) reported that those with increased fear-avoidance had higher pain intensity, and those with higher pain intensity have increased fear-avoidance. The generalizability of this may however, be constrained by the restricted nature of the inclusion criteria for studies considered and the cultural characteristics of the participants. Similarly, a systematic review that examined the role of psychological factors in the perpetuation of pain intensity revealed that such psychological factors may influence the perpetuation of pain intensity (Martinez-Calderon et al., 2018).

Impending surgical procedures are associated with psycho-physiological stress leading to fear and anxiety due to the anticipation of pain (Aziato & Adejumo, 2014b; Bernatzky et al., 2011). Psychological transformation of nociception and pain related processes may alter behaviour resulting from pain (Simons, Elman, & Borsook, 2014) and in view of this, Lumley et al. (2011) asserted that pain to some extent is an emotional experience. In a study to establish the connection involving preoperative psychological status and postoperative pain experience among Caribbean patients, Bradshaw, Hariharan, and Chen (2016) concluded that preoperative anxiety and depression could considerably influence pain after surgery. Such surgically induced stress and anxiety exacerbates the experience of pain (Bernatzky et al., 2011). It is also reported in literature that fear or anxiety predicts higher pain intensity and severity (Kreddig & Hasenbring, 2017; Masselin-Dubois et al., 2013).

Additionally, a number of studies have reported the influence of preoperative psychological status on postoperative outcomes such as pain (Chieng et al., 2013; Fortier, Martin, MacLaren Chorney, Mayes, & Kain, 2011; Peters et al., 2007; Podeszwa, Richard, Nguyen, De La Rocha, & Shapiro, 2015). Some findings specifically showed that preoperative fear of surgery (Peters et al., 2007; Sommer et al., 2010), long hours of operation (Bruce & Quinlan, 2011; Peters et al., 2007) are responsible for increasing pain intensity. Other studies have also reported of factors such as anxiety, extroversion, depression, catastrophising, can all influence outcomes after surgery (Gramke et al., 2009; Kinjo, Sands, Lim, Paul, & Leung, 2012; Pavlin, Sommer et al., 2010). However, across observational study in Madrid by Anguita-Palacios et al. (2016) contradicted these findings with counter evidence that indicated that fear and anxiety among others has no positive correlation with acute postoperative pain experience. Addressing these psychological factors may reduce pain before it gets worsen (Bernatzky et al., 2011). For instance, Guo, East, and Arthur (2012) posited that adequate preoperative education and orientation can reduce anxiety and enhance recovery after surgery. This is further concurred by other studies that revealed that educational interventions which are carried out in the preoperative period are effective in reducing anxiety after surgery (Alanazi, 2014; Guo, East, & Arthur, 2012). However, a randomized control study by Kalogianni et al. (2016) revealed that though preoperative education carried out by nurses-led preoperative education reduced anxiety and postoperative complications among cardiac surgery patients, it was not helpful in reducing readmissions or length of stay.

In a large sample quantitative study among surgical inpatients in the Netherlands, Sommer et al. (2008) discovered variations in postoperative pain severity among patients

after abdominal, back/spinal and extremity surgeries. Similarly, another cross-sectional study among day old surgical patients also in the Netherlands revealed that operations of the nose, pharynx, abdomen and orthopaedic were considered to be more painful in terms of severity compared to operations involving other parts of the body (Gramke et al., 2007). Furtherance to these, specific anatomic regions such as the anorectal area was identified in a prospective observational study to be associated with persistent severe postoperative pain after a doppler-guided hemorrhoidal artery ligation (Faucheron, Poncet, Voirin, Badic, & Gangner, 2011). It can be inferred from the findings of these studies that the site of surgical incision may significantly contribute to postoperative pain severity and intensity. However, this dimension of the phenomenon may require further exploration using different designs with samples from multicultural settings.

2.4 Modes of Pain Expression

According to Prkachin (2009), pain expressions can be defined as prominent behaviours, in any modality that go along with and are specific to pain and appear to be adapted to function in interpersonal contexts. This definition in the views of Gallant and Hadjistavropoulos (2017) encompassed all forms of behaviour thus, self report or verbal and non-verbal used to express pain. Due to its subjectivity, pain should be properly manifested by the experiencing person (Briggs, 2010) for those observing to make valid deduction about it (Martel et al., 2011). Pain expression is particularly important because the onlooker irrespective of their relationship with the person in pain cannot know another person's suffering unless there are observable manifestations (Craig, 2009).

Pain experience is regularly communicated through a number of ways such as verbal (Speech), nonverbal (bodily movements) or even a combination of both (Rowbotham et al., 2014).

Verbalization or vocalization of pain presence among patients in acute pain situation such as postoperative state are reported in studies to include asking for help, complaining, crying, and shouting among others (Booker & Haedtke, 2016; Dobbs, Baker, Carrion, Vongxaiburana, & Hyer, 2014; Horgas, Elliott, & Marsiske, 2009). Verbal or self reported pain is considered very essential to pain assessment because of its desirable features such as providing useful retrospective accounts of events and experiences, methodologically convenient, validates patient experience, encourages patient-centred care because it compels social interaction with patients among others (Craig, 2009; Turk & Melzack, 2011). In view of these, self report of pain is said to be the most accurate and reliable means of assessing pain reality and intensity (Horgas, 2017;). Thus, clinicians are often reminded to seek self-report as McCaffery (1968) defined pain to be what the experiencing person says it is and exists whenever the person says it does exists.

Notwithstanding the above, verbal or self report pain is associated with certain limitations and so when it is not recognised and addressed the gold standard of pain assessment which is often link to verbal pain report will be compromised (Craig, 2009). Even in clinical settings where caregivers and patients speak the same language, the different meanings they attach to words become a potential source of complicating their communication (Gélinas et al., 2008). Pain is said to be a highly multifaceted experience

with attributes that are very difficult to translate in plain language (Craig, 2009). It is therefore, very complicated to adequately describe the pain experience in manifestly clear terms and a more representative manner by people such as children (Narayan, 2010), those with all forms of cognitive and expressive impairments as well as people who do not share language commonality with the caregiver ((Herr, Coyne, McCaffery, Manworren, & Merkel, 2011). The significance of nonverbal pain expression among such category of people is acknowledged in an attached note to the IASP's definition of pain, referenced in the previous chapter of the present study, to the effect that failure to self report pain or vocalize its presence does not negates possibility that an individual is experiencing pain and hence, require appropriate pain relieving treatment (Craig, 2009). Therefore, a Hierarchy of Pain Assessment Technique has been recommended by Pasero and McCaffery (2010) to serve as a framework that guide pain assessment approaches and is applicable for patients with compromised capacity to verbally express their pain. Again, limitations still exist even for those with intact cognitive abilities and language competence because speech is not wholly an "expression" of subjective experience. It confuses painful experience with the need to influence those attending to what the person says (Craig, 2009).

A lot more information is accessible to sensitive observers of pain than what is attained by means of verbal communication channels such as self pain report (Craig, 2009). Behaviour employed to express pain nonverbally include use of gestures, turning in bed, facial expression, pointing at the direction of the pain, groaning, clenching the teeth together, rubbing of the pain site, sighing, position shifts and movement restrictions

among others (Booker & Haedtke, 2016; Ersek et al., 2011; Rowbotham et al., 2014; Stanley & Chinwe, 2016). Very important supplementary information about pain experience can be acquired by attending to these paralinguistic vocalizations of pain presence (Craig, 2009). While self report of pain presence is recognised to be entailing more personal reflection and deliberation, nonverbal mode of pain expression is typically regarded as spontaneous reaction though there is some ability to willingly control it (Craig, 2009).

Among the several modes of pain expression, facial expression as a nonverbal form of expression is deemed to provide the most responsive and definite information (Craig, Prkachin, & Grunau, 2011) because of the easy accessible of the human face and so, a great deal of information can be shown (Craig, 2009; Lints-Martindale, Hadjistavropoulos, Barber, & Gibson, 2007). The facial grimace exhibited during painful experiences demonstrates a distinct and conventional structure that shows a relationship with observer's universal judgment of pain (Craig et al., 2011; Prkachin & Solomon, 2008). Consequently, facial expression is used normally to assess pain in non-communicative patients' especially those who are critically ill (Rahu et al., 2013). Several studies have adduced evidence supporting the validity of facial expression (Pasero & McCaffery, 2010; Rahu et al., 2013; Sheu, Versloot, Nader, Kerr, & Craig, 2011). Even beyond the domain of human participant research, specific facial grimace following noxious stimulation have been identified in rabbits (Keating, Thomas, Flecknell, & Leach, 2012), cats (Holden et al., 2014), horses (Dalla Costa et al., 2014), rats (Sotocinal et al., 2011) and mice (Langford et al., 2010).

However, the individual differences in terms of facial shape variation and differences in facial and scalp hair can affect accuracy of facial expression (Wilmer, Germine, & Nakayama, 2014). For example, Asians, Americans and Europeans are said to share remarkable differences in term of their eye opening and contrast between iris and sclera and this may perhaps affect the robustness of eye tracking and facial feature analysis. Such personality variations in appearance may have significant consequence for facial assessment (Christofolleti, Oliveira, & Siqueira, 2018). Aside the individual differences in appearance, there are also individual differences in quality of facial expressiveness which has to do with the extent of facial smoothness, frequency of strong expression, and overall rate of expression (Arif-Rahu & Grap, 2010). A perfect exemplification of the unevenness in expressiveness manifests in individuals with schizophrenia (Uono, Sato, & Toichi, 2015) and critically ill patients (Arif-Rahu & Grap, 2010).

Aside facial expression of pain, several channels of nonverbal communication are mentioned in reports of pain investigations to include; rubbing the painful area, sighing and position shifts; restricted movement produced during pain descriptions (Sullivan et al., 2006), squeezing of fists and clenching of teeth (O Dedeli, Fadiloglu, & Uyer, 2008). Whilst these pain behaviours are said to be produced with varying levels of consciousness and unconsciousness (Cano & Williams, 2010), they may either be serving protective function or communicative function (Craig, 2009). In addition, studies on pain expression or communication (Rowbotham, Holler, Lloyd, & Wearden, 2012; Rowbotham, Wearden, Lloyd, & Holler, 2013) have revealed another dimension of pain expression known as co-speech gestures. These are defined as the spontaneous movement

of the arms, hands as well as other body parts currently with speech (Rowbotham et al., 2012). They are generally classified into representational and non-representational gestures. Representational gestures carry semantic information associated with the speech content and non-representational gestures serve practical functions like making delivery of the information or structuring the discussion (Rowbotham et al., 2012). Within the perspective of pain communication, these gestures usually convey specific additional information unique to aspects of the pain experience but missing in the accompanying speech and also offer detailed visual information about various aspects of pain message such as location, size, sensation, location (Rowbotham et al., 2012; Rowbotham et al., 2013).

In addition to verbal and non-verbal forms of pain communication, pain sometimes manifests latently physiological and Booker and Haedtke (2016) identified some physiological changes to be associated with pain presence. In the acute care setting, vital signs are often considered physiologic indicators of pain (Horgas, 2017). According to Wells, Pasero, and McCaffery (2008) the cardiovascular system activates the sympathetic nervous system leading to a number of unwanted effects such as increase in blood pressure, heart rate, cardiac output and oxygen requirement in postoperative period. Specific physiological changes that may indicate the presence of acute postoperative pain are identified to include; increased blood pressure (Kaplow, 2015; Sacco et al., 2013) , increased heart rate (Kaplow, 2015), increased cardiac work load, and tissue oxygen demand (Wells et al., 2008). According to Şimşek, Şimşek, and Cantürk (2014), physiologic response to events like surgical trauma includes endocrine, metabolic and

immunological changes. Hormones which are released due to this mechanism lead to catabolism (destruction) of fat, protein and carbohydrate, reduced glucose uptake as well as other harmful effects. This reaction combined with inflammatory processes can produce weight loss, tachycardia, increased respiratory rate, fever, and shock among others. However, some contrary evidence suggests that changes in these vital parameters may not be a reliable gauge of pain presence though they can serve as the basis for further pain assessment (Herr, Coyne, et al., 2006; Herr, Coyne, McCaffery, Manworren, & Merkel, 2011).

In view of the above, valid inferences regarding pain experiences of patients can only be made by health care professionals when they attend to the information conveyed by patients about their pain presence across different modalities or modes of expressions such as verbal, nonverbal or co-speech gestures (Briggs, 2010; Rowbotham et al., 2014) or even physiological forms. Therefore, conducting a multidimensional pain assessment including all the elements of pain expression or communication means that coherent and well informed decisions can be made about the most effective pain relief strategies for patients (Briggs, 2010). However, the complex nature and multimodal forms of pain communication is influenced by other factors among which social and cultural context is identified (Craig, 2009; Hadjistavropoulos, Craig, Duck, Cano, Goubert, Jackson, Mogil, Rainville, Sullivan, et al., 2011).

2.5 Sociocultural influences on pain expression and management

Multiple sociocultural factors could affect pain sensitivity, including beliefs and attitudes, expressiveness, medication practices and beliefs, spirituality, social roles and

expectations, cultural group membership, socialization of pain expression, perceived discrimination, socioeconomic status, acculturation, age, and environmental factors (Gagliese, 2007; Green & Hart-Johnson, 2010). Several decades ago, Zborowski (1952) postulated that knowledge of a group attitude towards pain is highly imperative for understanding individual reactions because members in different cultures may assume attitudes towards a variety of pain. Expression of pain is frequently enhanced or suppressed with substantial sensitivity to the audience and social milieu (Craig, Versloot, Goubert, Vervoort, & Crombez, 2010; Krahe, Springer, Weinman, & Fotopoulou, 2013; Mogil, 2015; Sambo, Howard, Kopelman, Williams, & Fotopoulou, 2010; Vervoort et al., 2011; Vlaeyen et al., 2009; Whitburn, Jones, Davey, & Small, 2017; Wilson & Ruben, 2011). Therefore, the perception of pain and behaviours associated with pain are influenced by the sociocultural contexts of the person in pain (Vigil, Torres, Wolff, & Hughes, 2014). This assertion corresponds with conclusion of some previous quantitative studies (Gallant & Hadjistavropoulos, 2017; Karmann, Lautenbacher, Bauer, & Kunz, 2014; Vigil et al., 2014) which indicated that while presence of a stranger leads to decrease in pain expression, the presence of an intimate partner leads to pain expressive behaviour through facial communication. According to Craig (2009), even infants display sensitivity to context. For instance, decrease pain expressivity is noted among infants whose mother exhibits dismissive attitude towards their demands (Pillai Riddell, Stevens, Cohen, Flora, & Greenberg, 2007).

The presence of social relations is identified as an influence of pain behaviour by diminishing response to pain (Sambo et al., 2010; Vlaeyen et al., 2009). According to a

randomised experimental study (McClelland & McCubbin, 2008) in the USA which examined effects of social influence on acute pain response showed that presence of social relations amplified acute pain report. Similar to this is conclusion of another experimental study (Karmann et al., 2014) in Germany which examined the impact of varied communicative relations from being alone to being with an intimate and with a stranger which indicated that facial communication of pain is openly displayed in the midst of a close relation whereas, it is inhibited in the presence of unfamiliar persons. Also similar finding has been made by De Rossi (2013) that the company of a family member amplify nonverbal pain expressiveness while the outcome of the presence of an unfamiliar person dwindles self-report of pain presence. However, a recent study by Karos, Meulders, Goubert, and Vlaeyen (2018) which sought to explore the effects of a threatening social context reported contradictory findings to the effect that social context had no influence on painful facial expression. Perhaps future qualitative exploration may provide further and better perspectives in illuminating the phenomenon.

Social interaction is identified to provide a better source of coping and tolerating pain through diversion from pain experience and this is reported in a number of studies (Jackson, Huang, Chen, & Phillips, 2009; Younger, Aron, Parke, Chatterjee, & Mackey, 2010). Additionally, social support is identified to produce an analgesic effect that enhances pain management (Che, Cash, Fitzgerald, & Fitzgibbon, 2018). The scope of the benefits of social support is even beyond pain management as discovered in other health care related studies (Prang, Berecki-Gisolf, & Newnam, 2016; Reblin & Uchino, 2008; Siv, Ove, Ulla, & Eystein, 2012; Visvalingam, Dhillon, & Gunasekaran, 2017).

Perhaps an enhanced appreciation of these social factors will provide more light on the challenges patients encounter and compensate for them in the course of treatment (Kodjo, 2009).

According to Berry (2015), there is a growing body of literature which discusses the effect of ethnicity and culture on pain. Similarly, several recent studies such as Al-Hashimi et al.,(2015), Brown et al., (2016), Campbell and Edwards (2012), Kim et al., (2017), Liao, Henceroth, Lu, and LeRoy (2016), Rahim-Williams, Riley III, Williams and Fillingim (2012) have tried to provide insights into the influence of culture and ethnicity to complexity of pain particularly, in the post postoperative context. Most studies on racial/ethnic group differences have contrasted African-Americans with non-Hispanic white individuals, but occasionally incorporate other racial/ethnic groups in ample numbers to allow comparisons (Ostrom et al., 2017). In spite of the fact that a lot of researchers consented to the claim of ethnic influences on pain and group differences in discriminating painful stimuli, some studies point to the contrary. For instance, in a study to investigate correlation between patients' ethnicity and disparities of early postoperative pain perception/management, Al-Hashimi et al. (2015) found out that there were no differences in the reporting and management of acute post-operative pain between South Asian and White British female patients following abdominal hysterectomy. These contrary findings could serve as a source of the continued debate on the influence of ethnicity on pain expression and sensitivity hence, making relevant for continued research in this area.

The occurrence and expression of pain are said to be modulated by gender and sex (Keogh, 2014; Melchior, Poisbeau, Gaumond, & Marchand, 2016). A recent study by Cai et al. (2017) affirmed the influence of gender or sex on postoperative pain. For example, females have been identified to display more pain expressive behaviour both verbally and non-verbally compared to males (Bartley & Fillingim, 2013; Fillingim, King, Ribeiro-Dasilva, Rahim-Williams, & Riley, 2009; Paller, Campbell, Edwards, & Dobs, 2009). This is exemplified in findings of a study by Karmann et al. (2014) which revealed increased pain expressiveness in the presence of a partner among women only. Stoical attitude towards pain is socioculturally predetermined among men in Somalia (Berit & Olle, 2006) and also among northern Ghanaian women in labour (Aziato, Acheampong, & Umoar, 2017). Gender and sex are highly essential elements of personalised medicine (Melchior et al., 2016). However, a qualitative systemic review provided contradictory evidence that indicated that gender was not a significant predictor of postoperative pain as previously assumed (Abrishami, Peng, Wong, & Chung, 2009). In contrast, some cultural groups encourage glaring pain expressiveness as it is viewed as the best way to cope and to attract attention to pain (Bourke, 2014; Kelley et al., 2009).

Research that continues to make clear mechanisms underlying ethnic dimensions of pain will strengthen our knowledge and science, with the ultimate translational goal of reducing disparities and improving pain management for all individuals (Rahim-Williams et al., 2012). Therefore, there is the need for more studies regarding how contextual factors of both the person in pain and the observer influence pain. This will provide the basis for creating standardized methods for assessing patients' pain reports in clinical

settings (Vigil et al., 2014). While all studies included in this analysis reported the race/ethnicity of participants, the majority of studies did not provide specific information as to how “race” or “ethnicity” was assessed. Previous studies have shown that nurses need to advance their communication with patients, as this is crucial to determine cultural sensitivities and to provide nursing care based on the individual’s distinct values, beliefs, and traditions in a healthcare setting (Mohamed, Ahamed, & Mahmoud, 2013; Zoëga et al., 2015). How persons conceptualise the source of their pain, time span and outcomes of their pain provides a basis for coping with and comprehending their conditions (Wong, Williams, Mak, & Fielding, 2011).

Furthermore, ethnic variations in pain coping behaviour had been shown to be influenced by the educational level of each ethnic group. Lower educated groups had reported higher pain levels (Jimenez, Dansie, Buchwald, & Goldberg, 2013). Therefore, to provide the highest possible best care to patients’ cultural competence should be granted premium in clinical settings (Kodjo, 2009). As this will guarantee a more flexible perspective that contains different sociocultural values in applying it in today’s increasingly multilingual- and-cultural society (Rathor, Shah, & Hasmoni, 2016). Signalling pain could attract predators or signal vulnerability to antagonists (Craig, 2009).

2.6 Perspectives on Postoperative Pain Management

Postoperative pain management is still a clinical dilemma despite the advances in understanding the problem as well the development of multiple strategies in ensuring pain relief (Brown et al., 2013; Chou et al., 2016; Ogboli-Nwasor et al., 2012; Turk,

2017; Wu & Raja, 2011). According Pogatzki-Zahn, Segelcke, and Schug (2017), the essence of understanding the fundamental mechanisms of postoperative pain is to identify efficient treatment approaches may advance patients' successful outcome after surgery. The present clinical practice guideline for management of postoperative pain by the American Pain Society (Chou et al., 2016) recommends the use of multimodal pain therapy approaches in terms of forms of management and choice of analgesics. These recommendations are in line with the requirement of international human right law which enjoins signatory countries to provide pain treatment medications as part of their core responsibility under the right of citizens to health (Lohman, Schleifer, & Amon, 2010). Even though, studies have proven that there exist a gap between theory and practice in embarrassing proportions (Chang, Maney, Mehta, & Langford, 2010; Todd et al., 2007), randomized trials on multimodal pain management suggest that using combined medications in varied route proved to be better in pain relief than single medication through one route (McDaid et al., 2010).

The dependence on multiple medications and therapies contained in multimodal approach also might be a source of solution to problems associated with individual patient disparities in analgesic pharmacogenetics (Manworren, 2015). In view of this, proponents of personalized medicine proposed multimodal analgesia as an individualized pain management treatment plan that eventually may be based on each patient's genetic coding for metabolism of analgesics and pain sensitivity (Manworren, 2015). Other benefits of multimodal analgesia use in surgical patients have been identified and enumerated in a study by Michelson, Addante and Charlson (2013) to include among

others a reduction in the length of a stay for patients undergoing major hind foot or ankle fusion surgery, regardless of surgical complexity. In multimodal analgesic plans, nonsteroidal anti-inflammatory medicines such as ketorolac, ibuprofen, acetaminophen, local and regional anesthetic injections, and pain infusions are all said to be effective at controlling postoperative pain (Apfel, Turan, Souza, Pergolizzi, & Hornuss, 2013; Kehlet, 2012). For example, a combination of Tramadol and Paracetamol are commonly used in pain management for human patients (Emir, 2010; Park et al., 2015). In some postoperative situations, ketamine infusion is included as an adjunct pain treatment in the multimodal pain management plan for some kinds of surgery due to the sensitivity of resected body part, the invasive and broad nature of some surgeries, and the strong desire to prevent chronic post surgical pain (Stuit, 2017).

In measuring effectiveness of three different pain management regimens for post-caesarean section women in the UK through an exploratory study by Snell and Hicks (2006) it emerged that oral pain medications was preferred and intramuscular did not prove to be a better option to other routes. Some other study findings also proved that intravenous opioids administration is not a better option for the management of postoperative pain compared with oral administration (Ruetzler et al., 2014; Snell & Hicks, 2006). In view of this, oral analgesics are considered as the obvious choice for management of pain among postoperative patients most especially, those who are fit and can tolerate it (Chou et al., 2016). So challenges have been identified to be associated with home management of postoperative pain after discharged (Chan, Blyth, Nairn, & Fransen, 2013). In view of this, studies seeking to develop goal oriented and patient

centred post discharge analgesic prescription practice which will encourage medicine safety practice after surgery are needed (Bartels et al., 2016).

Challenges occur in the implementation of multimodal analgesic pain therapeutic approaches. For instance, results of a study by Selaković et al. (2016) showed that clinician in prescribing pain medication for postoperative patients underestimate the importance of the necessity to manage acute postoperative pain beyond discharge. Yet it is posited that the adaptive value of pain lies in the actions it motivates (Wiech & Tracey, 2013) Actions of the caregiver or observer of pain such as, assistance, care, and treatment (Steinkopf, 2016) are very imperative to pain management. Another dimension of the challenges of postoperative pain management is in patients with a history of chronic opioid use as this can be demanding for the clinician, who must balance responsible pain management with patient satisfaction (Simpson & Bruckenthal, 2016). For instance, a clinician under pressure to meet performance benchmarks may write a prescription for a particular opioid requested by a patient who is suffering from chronic pain and uninterested in nonopioid or other options, without taking the time to discuss whether opioid therapy is appropriate or to review the risk benefit profile, as recommended in the current practice guidelines for prescribing opioids for chronic pain (Dowell, Haegerich, & Chou, 2016; Zgierska, Miller, & Rabago, 2012). Therefore, patient's history of opioid use, particularly, the dose should be established to inform management plan such a choice of analgesia (Devin et al., 2014). However, Cooney (2015) add that some patients may not deliver the right information regarding their medication history, especially if nonmedical or illicit drug use is involved.

Some aspects of multimodal approaches recommended in the clinical practice guidelines for surgical pain management by the American Pain Society (Chou et al., 2016) include non-pharmacological strategies employed to ease their pain. These non-pharmacological strategies which have proven to be valuable for reducing postsurgical pain include techniques such as reducing patient anxiety and fear, preoperative education, family support, relaxation techniques, music therapy, and acupuncture (Kalinowski et al., 2015; Kehlet, 2012). According to Wells et al. (2008), in the event of acute pain patients rely on these previously employed approaches. In a study aimed at enhancing pain management in modern medicine, Bernatzky et al. (2011) concluded that, music holds considerable promise in supplementing pain therapy before, during and after painful surgical procedures or possibly replacing pharmaceutical interventions in mild cases. Similarly, Phipps, Carroll, and Tsiantoulas (2010) have revealed that music can significantly soothe stress effects on physiological parameters, as well as pain among neuroscience patients.

Also, other non-pharmacological pain management strategies such as cold therapy have demonstrated the therapeutic benefits to patients with postoperative pain (Gorji, Nesami, Ayyasi, Ghafari, & Yazdani, 2014; Nurcan & Saadet, 2012). Chailier, Ellis, Stolarik, and Woodend (2010) in their study found cold therapy to be useful in managing sternal incisional pain for post cardiac-surgery patients. There are other constraints that may indirectly influence pain management. For example studies have found environmental constraints such as noise in the hospital that exceeds recommended levels can increase complications in patients (Choiniere, 2010). Also, negative patient outcomes

such as decreased satisfaction, sleep disturbance, and higher incidence of rehospitalisation are associated with patients staying in areas with higher noise levels (Hill & LaVela, 2015). From the findings above, it is clear that there are varied perspectives on postoperative pain management among postoperative patients.

2.7 Spiritual Influence on pain expression and management

According to Gyekye (2009) religion and science will continue to be bedfellows in the twenty first century and beyond. Studies regarding the connection between religion and medicine have a long history dating back to the days of ancient civilization (Koenig & Koenig, 2008). The inevitable relationship between religion or spirituality and health care is very much emphasised in the work of Turner (2009) which was based on his lived experiences in the practice of neuroscience medicine. In exploring undeniable evidence on the connection between health and a range of spiritual beliefs and practices such as prayer, attending religious services, meditation and faith in God, Levin (2010) systematically and vividly affirmed that belief or faith matters in the healing process and that prayer in public or private is associated with better health among others other desirable outcomes.

The practice of using religion as a means to cope with illnesses is common in the western world. In the USA for instance, virtually up to half of hospitalised patients demonstrates that their religious beliefs and practices are the most important source of hope and coping with illness and changes in their lives due to illness (Koenig & Koenig, 2008). Similarly, in Africa and other low income jurisdictions where medical facilities are facing difficulties in giving convincing explanations to afflictions coupled with

pervasive admiration for spirituality, people will solicit divine interventions in fulfilling their health needs (Azongo, 2014).

In full view of empirical foundation supporting the link between religion and medicine, some highly revered organizations such as the World Health Organization (WHO, 1998) and emphasized the imperativeness attending to religious or spirituality issues in clinical settings many years ago. A proposed guideline for palliative care of pain, dyspnoea, and depression at the end of life by the American College of Physicians declared that addressing patients' spiritual concerns is an essential part of care (Qaseem, Snow, Shekelle, & et al., 2008). A systematic review of literature about culture and pain revealed that most cultures viewed pain from a religious/spiritual perspective (Ogala-Echejoh & Schofield, 2010). In a review of studies focusing on religion and spirituality effect on pain, findings suggested that people who are self efficacious and more religiously and spiritually open and active are more able to tolerate pain (Amy & Carol, 2011). Again, studies have demonstrated how religiousness and spirituality was crucial in the way patients cope with pain in conditions such as cancer (Mystakidou et al., 2007) chronic pancreatitis (Basiński, Stefaniak, Stadnyk, Sheikh, & Vingerhoets, 2013)

A systematic review on available evidence about the impact religiosity and spirituality among patients with fibromyalgia by Moreira-Almeida and Koenig (2008) revealed that religious coping is among the most common strategies used to deal with pain. Specific religious coping strategies like prayers have been identified to gained prominence in a national survey (Wachholtz & Sambamoorthi, 2011). Prayer is said to be the common strategy used to seek divine intervention for pain relief (Moreira-Almeida &

Koenig, 2008). Prayer is a universal practice that may take forms such as confession, intercessory prayer, or silent communion but it does not involve direct physical contact such as giving or doing anything (Ozden Dedeli & Kaptan, 2013). A study in Nigeria revealed that patients combined religious interventions such as prayers with medical care (Agbiji & Landman, 2014). Similarly, a Ghanaian qualitative study on labour pain experiences and perception among post-partum women revealed that prayer was used to seek God's intercession for pain relief (Aziato et al., 2017).

Other religiosity and spirituality based pain interventions such as yoga has been found to be effective in for patients with chronic pain (Cramer et al., 2013). Meditation is said to be another spiritual/religious strategy that possesses some therapeutic value in pain alleviation among postoperative caesarean women (Beiranvand, Noparast, Eslamizade, & Saeedikia, 2014) and cardiac surgery patients (Ikedo, Gangahar, Quader, & Smith, 2007). Also, reading or recitation of religious materials has been found to be a source of pain relief. For example a descriptive qualitative study involving Somalians revealed that nearly half of the participants cited the recitation of the Holy Quran as first line if remedy to all health problems including pain (Clarkson-Freeman, Penney, Bettmann, & Lecy, 2013). Similarly, mothers looking after their hospitalised sick children in Turkey sought divine intervention for recovery through reading of the Islamic sacred text thus Quran (Sülü, 2006). Again, Wiech et al. (2008) in a study measuring analgesia enhanced by religious activities, discovered that reaped chanting of religious phrases whiles viewing a picture of Virgin Mary evoked some positive feeling such as comfort which had useful effect on their pain.

In view of the solid foundation that spirituality holds within the broader scope of medicine and specifically the increasing evidence for its relevance and benefit for people with pain, Siddall, Lovell, and MacLeod (2015) concluded that it is increasingly evident to support the inclusion of spiritual factors as an integral component in pain assessment and management. This conclusion highlighted the imperativeness of the biopsychosocial-spiritual model which seeks to determine the role religiosity and spirituality play in the evaluation process, the increase of hope, optimism, self value, and the ability to tolerate and accept pain and disease (Amy & Carol, 2011). However, notwithstanding the huge evidence demonstrating the possible benefits of giving attention to these religious processes in advancing treatment outcome (Wiech et al., 2008), some studies have been shown that negative spiritually based cognitions (e.g. God is abandoning me) is related to greater pain sensitivity (Wachholtz & Pearce, 2010). Better still these studies have showed an increasing recognition of the significant links between spirituality/religion and health especially pain and pain related issues hence the need for health professionals to understand their patients' spiritual/religious beliefs and practices. Therefore, it is appropriate to conduct further high-quality studies in this area.

2.8 Summary and Analysis of Literature

In summary, it has emerged from the literature review that though pain is a subjective experience, everything about it including its expression and management is modulated by multiple factors. The review specifically revealed interpersonal and intrapersonal factors spanning from the physical through psychological to sociocultural factor influencing the experience, expression and management of pain. Though a lot of

the studies focused on participants' perspectives relative to the experience and expression of pain, they failed to allow participants the latitude to give in-depth explanation of their experience because majority of them were qualitatively conducted. It is also important to note that, almost all the studies reviewed were conducted in high income settings either than Ghana or for that matter outside Africa. Again, not all these studies were conducted in the postoperative context of pain. Globally, there appear to be an existing gap regarding knowledge on the specific factors influencing pain expression and management. Even though some studies in Ghana have delved into postoperative pain, there is paucity of literature. This study therefore sought to explore on the factors influencing pain expression and management among postoperative patients. The following chapter described the methodology used for the study.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the processes that were employed in conducting the study. The aim is to explain the research design and methods utilized in the study. Since the guiding question for the study was to explore factors influencing pain expression and management among postoperative patients, the chapter included a description of the research design, the research setting, the target population, inclusion and exclusion criteria, sample size and sampling technique, data collection tool and procedure as well as data analysis. Finally the chapter concluded with methodological rigor and ethical considerations of the study

3.1 Study Design

The study was a qualitative research design which specifically employed an exploratory descriptive design. According to Moen and Middelthon (2015), exploratory descriptive design flexibility helped to discover the perspectives of participants about a phenomenon. This design is used when the aim is to determine the meaning of a phenomenon through description. It aims to develop concepts that aid in the understanding of a natural phenomenon with emphasis on the meaning, experiences and views of participants (Al-Busaidi, 2008). Also, the design helps in drawing together adequate data which is useful to the researcher (Leppink, 2017). According to Rosenthal (2016), researchers also used this method to enable them gain understanding on the

rationale for people's behaviour. The researcher therefore, used the design in exploring and describing the factors influencing pain expression and management among postoperative patients at the Tamale Teaching Hospital. This design helped the researcher to get an in-depth knowledge about the phenomenon under study.

3.2 Setting

The study was conducted at the Tamale Teaching Hospital in the Northern Region of Ghana. Formerly known as the Tamale Regional Hospital, the Tamale Teaching Hospital was commissioned on February 2, 1974 by Lt. Col. I. K. Acheampong, the then Head of State of Ghana. The Hospital is located in the Eastern part of the Tamale Metropolis with a total land surface area of 490,000 square metres, out of which 122,500 square meters has been developed.

In 2005, the Northern Regional Coordinating Council decided to partner the Ghana Health Service to upgrade the hospital to the status of a Teaching Hospital. The upgrade made the hospital the third teaching hospital in the country. The upgrade was to help with the training of health professionals from the University for Development Studies.

As the third largest hospital in the country and the only tertiary health institution within the three Northern Regions of Ghana, the hospital has a current bed capacity of 400 with an ongoing second phase expansion project aimed at increasing the bed capacity to 800. The hospital is also located in a catchment area with a population of approximately 2.5 million (Ghana Statistical Service, 2010). It was established to serve as

a medical referral centre for the Northern, Upper East and Upper West Regions, the northern parts of the Brong Ahafo Region and the neighbouring countries of La Cote D'ivoire, Burkina Faso and Togo. The hospital has both clinical and non-clinical directorates including the medical directorate, the surgical directorate, the nursing directorate, the obstetrics and gynecology directorate, the pediatrics and the pharmacy directorate. The non-clinical directorates include the following: Domestic Services, Security, Supply Chain Management and Technical Services.

With over 190 bed capacities, the surgical department of the hospital has units such as general surgery unit, neurosurgical unit, thoracic, oncology and plastic units as well as ear nose and throat unit. These units are manned by specialised and general practitioners. Minor and major surgical operations are carried out at these units of the surgical department.

3.3 Target Population

According to Martínez-Mesa (2016) the target population of a study is the group of people whose characteristics are of interest to the researcher. The target population for the study were all adult postoperative patients at the surgical department of the Tamale Teaching Hospital –Ghana.

3.3.1 Inclusion Criteria

The inclusion criteria for the study were all patients aged 18 years and above who were admitted at the hospital, operated and discharged after 3 -6 months. These were patients who could express themselves very well in either English or Dagbani (major

local dialect in the area) since these are languages the researcher is fluent and could communicate effectively with the study participants.

3.3.2 Exclusion Criteria

The exclusion criteria for the study were postoperative patients who were on admission receiving treatment and those who were seriously or terminally ill.

3.4 Sample Size and Sampling Method

The sample size for the study was determined by the researcher getting enough data on the objectives of the study. The researcher continued to interview the participants of the study until the data got saturated after interviewing the fourteenth (14th) participant. According to literature, saturation in qualitative research is achieved when new emerging themes are not forthcoming and when researcher does not get any new thoughts or ideas after repetitively interviewing study participants (Houghton, Casey, Shaw & Murphy, 2013; Trotter, 2012)

The researcher used a purposive sampling technique to select the sample for the study and this enabled the researcher to recruit participants who were able to provide in-depth information on factors influencing their pain expression and management. According to Creswell (2007), purposive sampling entails the researcher selecting participants and sites that can purposefully inform an understanding of the research problem. The surgical department of the hospital was the outlet for recruitment hence, permission was sought from the hospital authorities to conduct the study and an authorization letter (appendix B) was issued by the hospital's research department to

allow the researcher access to the recruitment sites. The researcher visited all the units under the surgical department of the hospital where he established rapport with, and solicited the support of nursing colleagues of the various units in recruiting the sample.

The researcher also interacted with the “link nurses” to specify the purpose of the study and to clarify the inclusion and exclusion criteria to them. This helped the “link nurses” to assist in recruiting appropriate participants that best met the inclusion criteria for the study. Prospective participants who met the inclusion criteria per the information in their medical records were initially contacted for rapport building then subsequently enrolled into the study after obtaining their informed consent. The consent information forms (appendix C) were given to the participants ahead of data collection to allow them sufficient time to consider their participation and so those who agreed to participate were then requested to sign a voluntary agreement form (appendix D) and enrolled into the study.

3.5 Data Collection Tool and Procedure

Data for the study were gathered through semi-structured interviews and this was to enable the researcher administer the interview in an organized and more comprehensive manner (Al-Busaidi, 2008; Hyland, 2016). In view of this, a semi-structured interview guide (appendix E) was therefore, formulated taking into consideration the objectives of the study. The guide consisted of two sections thus, A and B. Section A was about the demographic data of the participants while section B entailed the main interview questions. Participants were encouraged to answer the questions as they desired without any compulsion. They were also made to understand at the

beginning that they were free to quit the study at anytime. Again they were informed about their rights not to respond to questions they considered sensitive enough to unearth unpleasant memories during the interview session.

The interviews were conducted in English or Dagbani (local dialect) because these are languages that both the researcher and participants understand and could speak fluently. Where necessary, the researcher ensured that the interview guide was transliterated in to Dagbani (local dialect) during the interview session.

The transliteration of the interview guide was done by an expert who was not part of the study to ensure accuracy. The interviews involved face to face interaction between the researcher and the participants and it lasted between 33 to 80 minutes under audio recording with the tacit permission of the participants. The rationale for tape recording the interviews was to allow the capturing of every detail of participants responses to guarantee accurate and rich data for analysis. Most of the interviews were conducted in participant's home after discharge.

Each interview was started with broad-spectrum and less sensitive questions before more sensitive ones were then asked. Also, more flexible open ended questions and on purpose silence during the interviews were used to allow participants the latitude to freely express their thoughts. Participants were at all times encouraged to freely express themselves and each of them was allowed to mirror on his/her postoperative pain experiences particularly, regarding pain expression and management. Responses of participants were further probed or redirected where necessary, during the interview to ensure that adequate and detailed responses were elicited from participants. The

researcher also took field notes of all non-verbal communications during the data collection process to further enhance understanding of the data and to help in analysis.

3.6 Piloting of the Instrument

Pilot interviews were conducted with three (3) presumed participants to mimic the actual interviewing process and to determine whether or not there were flaws with the interview guide. It was also to allow for the necessary modifications effected before the actual data collection commenced. Again, this was done to sharpen the interviewing skills of the researcher and make way for revision of some of the questions in the guide (Rosenthal, 2016). Few modifications were done on some of the questions in the instrument after the piloting was done.

3.7 Data Management

According to Knafl, Webster, Benoliel, and Morse (1988) data management are the conversion of data into smaller and more manageable units for easy retrieval and usage. In this regard, the researcher manually managed the data and each participant was assigned with a code in order of their recruitment and prefixed it with the acronym POP which denote postoperative patient (POP001, POP002, POP003...). Also, all interviews conducted in the local language (Dagbani) were transcribed verbatim in to English language by the researcher. The interviewed materials (tapes and transcripts) were kept separate from the demographic information sheets of participants and under the researcher's custody with limited access to it by only the researcher and the supervisors. The hardcopy materials would be stored for a minimum of five years following

completion of the study and where needed for further analysis, ethical clearance will be sought.

3.8 Analysis of Data

According to Hanson, Balmer, and Giardino (2011) qualitative data analysis is the act of making sense of data by immersing oneself into it through an iterative process. In qualitative research, data analysis must occur simultaneously with data collection (Green et al., 2007) to allow the researcher some latitude to make adjustments along the way and to test emerging concepts, themes and categories against succeeding data (Lewis, 2015). To this end, data from the study was analysed concurrently with data collection using thematic content analysis. The researcher started examining the data with the first interview. At the end of each interview, the researcher manually transcribed verbatim, the audio-tape recording of the interview. The accuracy of the manual transcripts was verified by reading over and at the same time listening to the audio-tape recordings. After all audio-recordings had been manually transcribed, the transcripts were printed and the data was then analyzed using thematic content analysis. Thematic content analysis is a method of identifying, analyzing and reporting patterns/themes within data. It serves as a flexible and valuable research tool which can potentially provide a rich and detailed account of data though somewhat complex (Braun & Clarke, 2006). The intention behind content analysis is to describe the characteristics of the document's content by examining who says what, to whom, and with what effect (Braun & Clarke, 2006).

In line with prescriptions by Erlingsson and Brysiewicz (2013), the researcher read each printed transcript and reread many times to gain a sense of the whole and to be

familiarized with the content of the transcript. While the transcripts were read, the researcher searched for similar ideas, thoughts and words within the data and then grouped them into meaning units as codes. Each transcript was handled in this same manner, and new codes that emerged during the process were added until all the transcripts were coded. Following the coding, the relationships between the codes were analyzed and similar codes grouped into themes and sub-themes. The researcher further coded emerging themes and sub-themes through an iterative process and upon reviewing the themes; those that occurred several times from several participants, categories were formed. Two of the themes were collapsed because there was not enough data to support them.

3.9 Methodological Rigour

Rigour in qualitative research is the measures for the trustworthiness of data collection, analysis and interpretation which are often compared with reliability and validity in quantitative research (Prion & Adamson, 2014). Several concepts have been cited in qualitative literature as the most important criteria/strategies for establishing rigour (trustworthiness) in qualitative research. Lincoln and Guba (1985) have suggested the following as criteria for establishing trustworthiness of a qualitative study thus Credibility, transferability, dependability and confirmability.

Credibility is looking at how true the study is and the subsequent interpretation of the data (Prion & Adamson, 2014), In order to attain credibility in this study, the researcher ensured that only participants who met the inclusion criteria were recruited to participate in the study. Also, a field diary was maintained to keep track of all nonverbal

communications of participants as well as the researcher's experiences in the field. Adequate time (33 – 80 minutes) was also spent with the study participants by the researcher. This was done in order to establish rapport and give space for further probing to get participants detailed renditions on postoperative pain expression and management. During the study, member checking (Creswell, 2007) was applied where the researcher crosschecked with the participants to ascertain the veracity of claims attributed to them by the researcher and captured in the transcripts.

Transferability is the extent to which the findings of a study can be applied to similar settings or context (Cope, 2014; Houghton et al., 2013). The researcher therefore, achieved transferability by using thick descriptions (Creswell, 2007) to give comprehensive accounts of study context, methodology and data analysis in participant's own language to enable readers gain an insight of research participants' world. Also, the researcher further kept an audit trail (Creswell, 2007) of events which contributed to arriving at decisions regarding findings of the study.

Dependability is how consistent and reasonable the research can be when applied over time and can be called the research audit (Prion & Adamson, 2014). Dependability of the study was accomplished by the researcher's detailed description of the sample, setting, methodology and analysis. Every one of the interviews conducted was transcribed and analysed with same processes to arrive at themes and sub themes. Similarly dependability was further ensured through member checking (Creswell, 2007) where the researcher crosschecked with the participants to reconcile his claims of their accounts with what was documented.

Confirmability is how researchers prevent biases and remove assumptions (Murphy & Yelder, 2010). In the quest to attain confirmability of the study, the researcher sought for in depth experiences of postoperative patients regarding their pain expression and management. Furthermore to this, the researcher asked for clarification from participants on responses that were not too clear or ambiguous. Debriefing of participants on their responses was done and they confirmed what they said. Data was collected until it got saturated with no new ideas generated. Data analysis evolved around the information provided by the participants and devoid of the researcher's biases and feelings. These strategies as elaborated above helped the researcher to ensure trustworthiness of the study.

3.10 Ethical Considerations

The researcher obtained ethical clearance with number IRB 00001276 (appendix A) from the Institutional Review Board (IRB) of the University of Ghana at the Noguchi Memorial Institute for Medical Research. In addition to the above, an authorization was obtained from the Tamale Teaching Hospital through its Department of Research and Development to finally pave way for the commencement of the data collection process. Two weeks before the commencement of data collection, the researcher went round the study site and did self introduction as well as explanation of the aim, the benefits and the potential risks of the study in either Dagbani or English. Only participants who consented to participate were recruited in to the study.

The researcher ensured confidentiality of the study participants by assigning each participant with a code (POP001, POP002, POP003...) in order of their recruitment into

the study. The codes were prefixed with the acronym POP which denotes postoperative patient and this was used when quoting participants in the findings chapter or any publications. Participants were made aware all interview materials including; audiotapes, transcripts, and consent forms would be kept under the researcher's custody with limited access to it by only the researcher and his supervisors for a minimum of five year period. Moreover, participants' demographic characteristics were separated from these documents, and the soft copies of the transcriptions were kept in a pass-worded folder on researcher's hard drive to ensure that data was well protected and safe.

Participants of the study were educated on their right to withdraw from the study even after consenting without any consequences. They were also told to feel free in declining to answer questions they considered very sensitive or seek clarification about anything regarding the study. Participants in the recollection and reflection of their postoperative pain experience relative of expression and management did not provoke any distressing emotions hence, the researcher did not refer any of the participants to a counsellor or psychologist. Participants were reassured of anonymity during future publications of any aspect of the study.

CHAPTER FOUR

FINDINGS OF THE STUDY

4.0 Introduction

This chapter reports on the major findings generated from responses of the study participants. There were similarities and peculiarities in the responses of participants relative to postoperative pain expression and management. Using thematic content analysis, the findings of the study generated five (5) major themes and thirteen (15) subthemes after analysis of the data gathered. The findings are presented based on the objectives of the study and this is preceded by demographic characteristics of the study participants.

4.1 Demographic Characteristics of Respondents

The study sample was made up of 14 participants thus, 11 men and 3 women between the ages of 20 and 72 years. These were patients who have had different types of surgical operations such as herniorrhaphy, appendectomy, open reduction, internal fixation. Three (3) of the participants were in their early-twenties, 3 were in their thirties, 6 were in their forties, 1 in his fifties and another 1 was in his early seventies. Five (5) of the participants had tertiary education and three (3) had secondary education, only one 1 participant ended his education at the level of basic education. The remaining 5 had no formal education. Three (3) of the participants were Christians and the rest were Muslims. Two (2) out of the 14 participants were not married and the rest were married.

For those who were married, all of them had children ranging from one (1) child to ten (10) children.

Five of the participants were public servants, with 4 still on active service, 1 on retirement and 4 were self-employed while the remaining 5 were unemployed. The majority (7) of the participants belonged to the Dagomba ethnic group. The remaining seven (7) were from different tribes; Mamprusi (1), Bimoba (1), Gonja (2), Bulsa (1), Kassen (1) and Dagaare (1). Those who belonged to tribes other than Dagomba could either speak English or Dagbani aside their native languages. Participant's residential locations varied between urban and rural settlements in and around the Tamale Metropolis. The study participants were patients who underwent surgical procedures such as herniorrhaphy, amputation, laparotomy, appendectomy, open reduction and internal fixation. They shared their post-operative pain expression and management experiences ranging between 3 to 6 months after discharge from the hospital. A summary of participants' biographic data is found in Table 4.1 in appendix F.

4.2 Organisation of the Themes

Using thematic content analysis, five (5) major themes and thirteen (15) sub-themes emerged from the study. Three of the major themes were conceived from constructs of the social communication model of pain which guided the study. The study however used only constructs of the model under the "person in pain" since the focus of the study was solely on postoperative patients. The last two themes emerged from content analysis of the data. Details of the major themes and subthemes are presented in table 4.2

Table 4.2**Main Themes and Sub Themes**

Main Themes	Sub Themes
1. Influences of pain experience on pain expression	<ul style="list-style-type: none"> • Personal History • Thoughts • Feelings and sensations
2. Modes of pain expression	<ul style="list-style-type: none"> • Verbal pain expression • Non-verbal Pain expression • Physiological changes
3. Sociocultural influences on pain expression and management	<ul style="list-style-type: none"> • Social Interactions • Age variations • Gender differences
4. Patients perspectives on pain management	<ul style="list-style-type: none"> • Pharmacological management • Psychological remedies • Environmental control
5. Spiritual influence on pain expression and management	<ul style="list-style-type: none"> • Faith in God • Prayer • Reading/recitation

In search of an answer to the first research question; “How does past and present pain experience influence pain expression among postoperative patients?” one theme emerged as; influences of pain experience on pain expression with 4 sub-themes. These are presented below;

4.3 Influences of pain experience on pain expression

This theme described the past and present pain experiences of the study participants and how it impacted on their postoperative pain expression. It elaborated on participant’s perspective on how such experiences together with other associated factors contributed to participant’s postoperative pain expression. Participants who had previous surgical pain experience reported that their previous pain experiences influenced their current pain expression hence, they did not express pain in this current surgery. Some first time surgical participants also indicated that, they were in extreme fear and more anxious about the surgical pain hence, they were highly expressive of their postoperative pain. Participants also indicated that their emotional state, line of thinking as well as bodily perceptual reactions dictated their postoperative pain expression. The sub-themes which emerged under this major theme were personal history, thoughts, feelings and sensations. These are described with participant’s verbatim quotations.

4.3.1 Personal History

Participants with previous history of surgical operation who experienced pain before this current surgery indicated that they did not show pain presence during the postoperative period.

Influences of Postoperative Pain Expression and Management

“Let me say that because my leg was operated I have experienced surgical operation pain before that’s the reason why I just behaved normal without showing that I was in pain” (POP 004).

“Not at all, I was just ok afterwards like I said earlier, it has been the second operation in my life so I was taking things easy and no one around could tell if I was in pain” (POP 007).

On the contrary, a participant who successfully underwent appendectomy indicated that her previous pain experience after a breast surgery had no impact on her current pain experience and so she continued to cry in showing her pain.

“...whether I have experienced that kind of pain before or not when it comes to pain there is nothing you can do than to express it, like we are conversing right now when the pain comes I will just be crying out my tears and you will know that I’m in pain” (POP 010).

Participants who have undergone surgical operation for the first time reported that they were quick to draw attention to their pain through pain expressive behaviour such as calling for help.

“already the woman at the anaesthesia clinic told me about the pain and because this was my first time of going for surgery I kept calling for help from the nurses anytime I was in any sort of pain” (POP 012).

“...it was my first operation and so I will be shouting and wailing so that they know that the guy drug is finishing like that and put on me another drug for the pain”(POP 008).

A participant who also had abdominal surgery shared a similar view though in his case he did not verbally expressed his pain.

“In fact let me confess that I fear pain a lot and since this was my first surgical operation I will just be turning around in bed and clinching my teeth together in response to the pain...” (POP 014)

A participant who was operated for fasciocutaneous flap narrated that though he never experienced any kind of pain in his life or underwent any surgical operation, he still did not show pain presence.

“Yes, I was in pain but like I mentioned to you earlier this is first time I’m been hospitalised and let me even say that I have never experienced this kind of pain in my life yet it wasn’t something that could prevent me from sleeping so I did not do anything for anyone around to recognize that I was in pain”(POP 013).

4.3.2 Thoughts

Participants stated that because they were hopeful about the outcome of their surgical interventions and the hospitalization in general they did not see any reason to express their pain presence for people around to know that they were in pain.

“I think that my hope about the outcome of the surgery was very high and so because of that I was very unwilling to express my pain after the surgery for the nurses and other people around to know about it. The pain experience to me was temporal so I was very confident that everything will soon be over once the surgery was done” (POP 006).

“Despite my initial fears, I was having self-belief that at least my suffering will reduce after I return from the operating theatre and it really happened so because of that I was not exhibiting any behaviour that showed that I was in pain for anyone to detect it. I remember that just a day after my operation they stop giving me the pain injections and switched to the tablets as I was no longer expressing pain” (POP 007).

Participants in their expectations thought that their pain was going to fade away after the surgical operation was done and so they were surprised that the pain persisted beyond the surgical operation. This therefore, made them to continuously expressed pain presence in the postoperative period in order to get attention from the care givers.

Influences of Postoperative Pain Expression and Management

“Actually I was expecting that once the operation is done, my pain and all the suffering to go and I will free only to realize that it will take some time for everything to settle. So when I started feeling some pain few hours after the surgery, I was surprise hence I kept doing things that made them to detect that I was still in pain ”(POP 004).

“I thought there was not going to be any pain after the operation or at least it will not be that much. So because the pain persisted after the surgery, I had to keep expressing it for them to know that I was in pain...”
(POP 002)

A Participant who had undergone a surgical operation previously held a notion that her pain experience in the current operation was going to be same or even less. So when she discovered that her pain experience was higher compared to the previous experience, she continuously expressed pain presence for the nurses to know about her situation.

“Since I have had a successful surgery in my life before, I was thinking that this one too the pain will be same or even less painful. So when I realized that my pain experience was even more compared to the previous surgery, I had to keep expressing the pain presence for the nurses to know about what I was going through...” (POP 010).

To another participant, there was no need to express his pain since recovery in his view was preceded by pain and so he will prefer to endure the pain without showing it and get quick recovery.

“There was no need for me to let the people around know that I’m in pain I say this because I believe that before I will recover quickly, I have to go through some pain so it is better to keep quiet in pain and recover quickly than show my pain...” (POP 009)

Some other participants at some point felt that their pain experience was too much to bear hence they had to be more expressive of their pain in order to get the most efficient intervention for their pain.

“...so I was wondering what at all they did that the pain was not reducing despite the injections they gave me. So I thought that I had to be more expressive of the pain in order for them to be convinced about the strength of my pain and give me a more stronger medicine to completely stop the pain” (POP 002)

“Few hours after the surgery I realized that they were not doing enough to get rid of my pain so I had to communicate my pain to them in a stronger manner in order to convince them that my pain was unbearable. I started crying, turning around and trying to get up from the bed just to show to them that I was in serious pain so anyone around would have know that something was wrong with me at that time.” (POP 013)

4.3.3 Feelings and Sensations

It was observed from the analysis of the data that some of the participants had anxiety and fear hence they expressed their postoperative pain.

“... I got scared and anxious initially as I have never had an operation in my life so after the operation any little pain I will call on the attention of the nurses to it so that they could come and do something about it.” (POP 005)

“Yes once I was anxious, I had to let them know about the pain I was experiencing ...” (POP 001)

A participant narrated that she was in fear of the impending pain and so she had to keep expressing any little pain for the nurses to do something about it because of her past experience of very severe pain after undergoing myomectomy (fibroid operation).

“Yes, I was afraid because after my previous fibroid operation the pain was not easy so I had to let my pain experience show very well in order for

them to continue to give me pain medication so that this time round I will not feel much pain like after the previous surgery” (POP 003).

Another participant who underwent herniorrhaphy in recounting his experience reported that he was very much apprehensive hence had to cry in expressing his pain because he could not reckon the pain he was going through with what he was told in the preoperative period.

“When I returned to the ward and the pain started I was nervous and started crying because that was not exactly the kind of pain I was told about before the operation ...” (POP 012).

However, one of the participants rather attributed his worries to fear of addiction to the pain medication hence, he was unwilling to show his pain in order to avoid those perceived addictive pain injections.

“I’m aware some of these injections for pain once you take them for sometime then you have to depend on them for life whenever you feel any little pain so I was worried about the way they were injecting me after the operation therefore at a point I stop expressing pain in order to avoid the medicine” (POP 013).

Also, participants indicated that their decision to express their postoperative pain was as a result of its intensity and they did so by either crying or groaning.

“Yes the pain strength in my leg obviously is more than the hand because with the leg any part you touches it provoked pain. Also anytime they were to dress my wound and lift the leg up it will invoke a very strong pain sensation and then you will even see me murmuring in response to the pain” (POP 011)

“...essentially what I mean to say is that I may have not shown pain at all if it was a different problem rather than my leg because the pain there was too much to the extent I can even cry when I am in pain.” (POP 008)

Two participants indicated that the pain sensation was higher in the anal area compared to other body parts and so they expressed pain more for the nurses to know about it.

“Because the anal area also had some tears they operated there and the pain was too much to the extent that I couldn’t just do anything at all so I had to always let them know that pain there was too much by expressing it. But I believe may be things would have been different if it was to be another part of my body” (POP 005)

“I was crying because the pain I was feeling at the operation site was too severe for me. And I’m sure it was because the problem occurred around my anus...” (POP 010)

However, a participant indicated that to him, all kinds of pain come with same sensation hence, its intensity or severity had absolutely no influence on his pain expression.

“Pain is always pain irrespective of how and where it happens so the intensity and severity could not have influence how I expressed my pain. For example if your finger is hurt in a very small way and someone also gets a fracture you will both feel pain so you will be looking at your own and the person too will be looking at his or her own.” (POP 009).

In seeking for answers to the second research question; “What are the ways in which postoperative patients expresses their pain?” one major theme emerged as; modes of pain expression with three (3) sub-themes. These are presented below;

4.4. Modes of Pain Expression

Participants reported the various forms of pain expressive behaviour they used to draw attention to their postoperative pain. Participants stated that in responding to postoperative pain, they cried, reported pain presence or shouted for help. Some other

participants also indicated that for some reasons they could not verbally express their pain hence, they resorted to use of facial expression. They also use gestures, turning in bed, pointing at the direction of the pain or sometimes clenching the teeth together among other to express their pain nonverbally. In some instances, participants postoperative pain manifested latently in physiological forms such as elevation of blood pressure, increased body temperature and palpitations. The three sub-themes which emerged under this major theme were; verbal pain expression, non-verbal pain expression and physiological. These are elaborated with supportive verbatim quotations from participants.

4.4.1 Verbal Expression

Participants indicated they cried when they were in pain during the postoperative period because that was the best way to attract the attention of the health workers for intervention.

“Yes, I will just be crying out my tears. Yes, like we are sitting when I yelled you will know I am in pain” (POP 010)

“I will be shouting and wailing so that they know that the guy drug is finishing like that and put on me another one...” (POP 008).

Another participant who had herniorrhaphy done experienced dual pain from both the incision site and his abdomen hence, he had to cry out loud to the nurses to know about his situation.

“Ahh I was just crying because the pain was too much, I was actually enduring two different kinds of pain from the operation cut and from my stomach and at a point the stomach own became too severe...” (POP 012).

Participants also reported that they sometimes just reported verbally to the nurses and doctors that they were in pain.

“I can also just tell the doctor or the nurse that I have pain in this area or in that area of my body” (POP 003)

“...in the hospital when I can no longer bear the pain that am going through I may just tell the doctors and nurses who are around to know about it” (POP 004).

Other participants expressed their pain presence by directly asking for intervention from the health care staff.

“So I do tell them verbally that oh! This is how I’m feeling so is there anything that can be done” (POP 002)

“Immediately the drug subsides the pain will begin to come so I will then just tell the nurses to give me the drug again” (POP 008).

Some other participants also reported that they usually will inform other people on the ward about their pain aside the health care staff.

“And sometimes too I will start calling for help whoever is around because the nurses may be far from my bedside...” (POP 005)

“When someone is standing by me, I will tell the person that I’m in pain. It doesn’t matter whether or not the person is a nurse” (POP 001)

However, one of the participants indicated that she did not see any need to express her pain to any other person aside the nurses and doctors since, they were the only people who could do something about her pain relief.

“... but if I don’t identify you as a healthcare provider or a hospital staff I cannot just tell you about by pain presence because I don’t know you and more so you cannot do anything about it” (POP 010)

4.4.2 Non-verbal expression

Participants indicated that best way to express their pain was to be turning in bed in silence and anybody around will get to know they were in pain.

“I was not stable in bed, so I was just turning around, thinking a new position will bring me relief and comfort. So anyone around obviously will get to know that I was in pain” (POP 012).

“Some few hours after the operation, the pain started and I was struggling and since I can’t just open my mouth like that and be crying I was rather turning in bed and with that anyone around would have realize that I was in pain.” (POP 011)

Several other participants reported that they showed their postoperative pain presence by facial expression (frowning).

“What I’m saying is that apart from the other forms, it is how you put it up on your face. And so when I’m in pain, it will just show it in my face for anyone who observes very well to know that something is wrong with me”.(POP 003)

“It is particular clear to people who are already familiar with my normal facial expression. So they are able to notice any changes in my facial expression hence will probe further to know what is wrong with me” (POP 014).

“You know that when someone is in pain it can be shown in the face of the person and so when you look at my face at least the frown will make you to detect that I’m in pain and may need my help and so you attend to me” (POP 002)

Other participants indicated that they called for attention to their postoperative pain by employing gestures such as pointing in the direction of the pain.

“Sometimes too aside the crying when the pain is not too much for me to cry you will see me pointing at the direction of the pain which is in my leg so with such signal some people like the nurses will often come and

enquire more about what is worrying me and I will just tell them.” (POP 003)

“...also when they see me raising the finger they get to know that I’m in pain because it is their work and they know some of the ways people express their pain.” (POP 002)

To another participant in the extreme pain, he expressed his postoperative pain by clinching his teeth together and also kept squeezing his fingers without saying a word to anyone.

“.....you know I already told you that I don’t show my pain at all just that when the pain very severe for long time, I can just clench my teeth together and then be squeezing my fingers without uttering a word and with that one no one will know about my pain unless you are too observant to be able to detect it” (POP 013)

A participant indicated that he groaned to express his postoperative pain.

“When I am in pain, I will be groaning and making little noises. You know our people in Dagbon says a ‘man does not cry.’” (POP 011)

4.4.3 Physiological

Some participants indicated that their postoperative pain showed by elevated blood pressure as they were told by the health care staff (nurses) after checking their blood pressure.

“I already have high blood pressure so when I returned from the theatre later I told the nurses that I was experiencing pain around my neck where the operation was done they came and check my blood pressure and said that it was high.”(POP 003)

“....As they were trying to get me relieved of the pain after the operation, I heard them say something like my blood pressure was going high.” (POP 011)

A participant indicated that within the immediate postoperative period, his pain was preceded by a strange feeling in the chest making him to feel some rapid and irregular heartbeat (palpitations) as if something bad was about to happen to him.

“ After I returned to the ward for some time, I was not feeling the pain until at a point when I realised some strange feeling from my chest accompanied by rapid and irregular heartbeat like something very bad was about to happen to me at that moment”(POP 014).

A participants who had two separate surgeries done on him indicated that his postoperative pain was usually linked with warmness of his body hence he will ask his wife to soak a towel in water and give him tepid bath in bed.

“After they did the operation and before the pain will start my body will begin to feel hot to signal me about the pain and so I will let my wife to soak a towel in water and put it on my body particularly on my forehead and soon the pain will reduce then I will fall into to sleep just like that...” (POP 005)

A participant narrated that her pain was accompanied by nervousness and profuse sweating which the nurses interpreted as a sign of pain.

“Yes at time of the extreme pain I was very nervous and sweating profusely and so my husband had to inform the nurses about it and they indicated that it was sign of pain so they injected me with the pain medicine...” (POP 001)

In a quest to answer the third research question; “How do sociocultural factors affect pain expression and management among postoperative patients?” one (1) theme emerged as; sociocultural influences on pain expression and management with two (3) sub-themes. These are presented below;

4.5 Sociocultural influences on pain expression and management

Participants of the study reiterated how some sociocultural norms about pain had effect on their responses to postoperative pain in terms of expression and management. Several participants indicated that their interactions with other people on the ward either modulated their pain responsive behaviour or shaped the management of the pain. Some of the participants indicated that some socio-cultural outlook determined whether or not one should cry, frown, groan or remain mute in response to postoperative pain. They again reported that adults openly expressing pain by crying in the midst of other people could be viewed as a culturally unacceptable behaviour. Some of them also indicated gender was an influential factor to pain expression as women are more culturally allowed to show pain than men. The sub-themes identified under this major theme were social interactions, age variations and gender differences. These are described with verbatim quotations subsequently:

4.5.1 Social Interactions

Some participants reported that when they were surrounded by visiting relations or even hospital workers who continue to express sympathy for them, they were compelled to show pain presence by either frowning or crying even when there was no pain.

“Whenever my people surrounded me and be talking or sympathizing with me it will make me want to cry or frown my face to show the strength of my pain. Even when I was not feeling any pain at that time but just because of the sympathy they are showing towards me I had to do as if I’m really in pain.” (POP 001)

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“Like I said anytime they were going to dress me the way they watch me and feel sorry for me, I will also be doing things like frowning my face to show them that I’m in pain when in fact the pain isn’t that much to merit that.” (POP 006)

Some other participants reported that the presence of family members and social relations rather inhibited their pain expression hence, they did not express their postoperative pain in the presence of those relations even when they were in pain.

“...Oh yes like I told you that sometimes the pain will be too strong to the extent that you will have to let the people around know that you are in pain but I couldn’t have done that in the presence of my children so whenever they were around may be I try as much as possible not to show my pain at all until they leave the place” (POP 011)

“.....My wives were not staying in the hospital with me but use to only bring food and other things to visit me on the ward so the time the pain was too much after the operation when they come I will just try to endure it so that they wouldn’t know that I was suffering. Because if I let them see me suffering in pain when they go home it will be disturbing them and they will be thinking so much about it” (POP 007)

However, for this particular participant, he couldn’t suppress his pain expression in the presence of his siblings though he still covered his face with a cloth while crying to show his presence.

“Ahhhhhh a day after the surgery two of my sisters came at a time I was in serious pain and I was crying but I didn’t want them to know that I was crying so I used a cloth to cover my face. I was in severe pain just that I didn’t want them to see me crying though they could feel from my actions that I was in pain” (POP 012).

Participants indicated that conversations or other happenings on the ward sometimes diverted their attention from the postoperative pain hence, they did not express pain or even ask for medication.

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“.....not to say it wasn't painful but I believe that these long conversations we were always having served as a good source of diversion to many of us in the ward. Because once we a talking to each other everyone's mind will shift away from the pain and by 12am we will falling asleep one after the other. So you realise that the conversation was helping us to sleep without asking for medicine to stop the pain and make us sleep” (POP 013).

“Yeah yeah sometimes the pain is excruciating when maybe you are alone and does not have anything to occupy your mind and may be somebody comes in to engage you in a conversation slightly your mind shifts from the pain to the person and the kind of conversation you people are having and I can say that yes at least that one is a good source of managing the pain.” (POP 002).

Participants also reported that support and attention from their social relations and other people on the ward enhanced their postoperative pain management.

“Whenever the pain comes and last for several minutes, my body will begin to feel hot and so I will let my wife to soak a towel in water and put it on my body particularly on my forehead and soon the pain will reduce then I will fall into to sleep just like that so she was helping me to deal with the pain.....” (POP 005)

“Yes there were times I ask for assistance from the people around me, for instance I will ask them to turn in bed or to reposition me especially whenever my wife is not available” (POP 008).

“There was this lady around looking after another patient beside me whenever am in pain he will come and position me in a more comforting position. Oh yes I can say that the presence of this lady in particular was quite helpful in my pain management because the nurses are sometimes busy so she will go and call them to come and attend to me....” (POP 010).

However, a participant indicated that there was no support from his relations towards his postoperative pain management.

“Actually they could not do anything. They were just looking at me so at a point they just left and I suspect they did so because of the way I was suffering but you know some people are like that” (POP 012)

4.5.2 Age Variations

Most of the participants indicated that expression of pain either by crying, groaning or even shouting for help is culturally allowed only for some particular ages such as children hence, it is considered unacceptable when it is exhibited by a grown up or an adult.

“Yes absolutely there is something like that culturally, like if it was a small child I believe that the child would have been crying and wailing all over the place but certainly the same cannot be said of the adult like myself because that attitude will look odd and unacceptable to everyone around” (POP 002).

“As for showing of pain in our society it varies from person to person. Like if it is an adult it will be difficult for him/her to open the mouth and start crying for anyone to know. But as for children they will just start crying out loud and may be pointing at the affected body part to indicate the presence of pain”(POP 001).

“...for show of pain emmm I don’t know how to put it well. But like if it is an adult particularly male adult he may not want anyone around to know about it because our people see that to be normal. With regards to children showing of pain may not attract societal condemnation or they will not be seen as very weak people...” (POP 004)

Participants also indicated that turning around in bed or clinching one’s teeth together may be considered a normal pain expression among adults.

“Like if it is an adult it will be difficult for him/her to openly show it for anyone to know so the normal thing he may do is to be turning around in bed without saying a word. At least with that people around will get to know what is happening” (POP 014)

“...or an adult as I am, you certainly have to squeeze your face or may be clinched your teeth together in order to communicate with the people in charge that all is not well with you.” (POP 009)

A participant however, indicated that irrespective of her age she will express pain including crying to attract attention to her pain.

“...for me I sincerely have no consideration for my age because pain is pain and since I’m the one feeling it I must let people who can help you know about it especially in the hospital. So for me I used to cry, wail or even just tell them that I am in pain and they will immediately attend to me.” (POP 010)

4.5.3 Gender Differences

According to most of the participants, men are not supposed to cry according to their folklore hence, they will not cry even in a severe postoperative pain.

“... you know our people in Dagbon says a ‘man does not cry’ even in such a situation I couldn’t have just open my mouth and start crying” (POP 011)

“Yes! You know among us the Mamprusis and Dagombas, there is a common saying that ‘a man does not cry to show his pain’, or else they will say he is exhibiting a womanly behaviour so that is one of the reasons why I wouldn’t cry...” (POP 009)

“Because it is in the hospital but mostly at our local level they say if you are a man and you are in pain you shouldn’t show it for people to see” (POP 006).

Many other participants reported that a man is considered to be feminine if he openly expresses his pain by crying or shouting.

“I already said that for me I don’t show my pain for people to see and call me a woman or a child ...” (POP 004)

“Yes! You know among us the Mamprusis and Dagombas, there is a common saying that ‘a man does not cry to show his pain’, or else they will say he is exhibiting a womanly behaviour so that is one of the reasons why I wouldn’t cry...” (POP 009)

“Yes, yes, yes!!!! Like when there is an issue such as a dog bite and they are trying to manage it locally, if the affected person is a man they tell him

to calm down be like a man by enduring the pain silently and not a woman” (POP 008).

These other participants indicated that just like children, women in most instances do not attract cultural disapproval for openly showing their pain.

“...for show of pain emmm I don’t know how to put it well. But like if it is an adult particularly male adult he may not want anyone around to know about it because our people see that be normal. With regards to children showing of pain may not attract societal condemnation or they will not be seen as very weak people and same way in most cases women are not condemned too unlike adult men.” (POP 004)

“I will say that women in most cases are culturally authorized to express their pain any form just like children” (POP 011)

In the views of some other participants, their gender had no bearing on their response to pain so they expressed their pain as and when necessary.

“I believe that all human beings whether male, female or even children are created same with blood running through their system hence they all feel pain sensation. The only difference I know is the pain during child birth which is experienced by women alone but it does not mean that as a man when you are in pain you should keep it to yourself without letting people know” (POP 014).

“...I also hear a lot of people say that men don’t show their pain but I disagree because men and women are human beings. So long as I will get help nothing will prevent me from showing my pain” (POP 005).

4.6 Patient’s Perspectives on Pain Management

This was the first additional theme which emerged after analysis of the data from participants of the study. Participants of the study indicated their individual perspectives regarding their postoperative pain management. Almost all of the participants reported their reliance exclusively on pharmacological interventions for their pain management. This was either in the form of oral pain medications or injections. Others also gave their

perspective on complimenting what was done for them pharmacologically with psychological remedies which diverted their attention from the pain hence, serving as a coping mechanism for the postoperative pain. Some of the participants also reported that noise inhibited their pain management. The sub-themes identified under this major theme are pharmacological management, psychological remedies and environmental control. These are described in the ensuing paragraphs and supported by participants' verbatim quotations.

4.6.1 Pharmacological Management

Participants specifically mentioned injections for pain as the most efficient remedy for their postoperative pain.

“Even in the hospital, only the injection could bring down my pain. But there was pain again after the operation though ...” (POP 004)

“Because of the injection they gave me after I had come from the theatre I was not feeling the pain at all after the operation so it was better for some time until when the strength went down before it started coming again so the injection worked very well for me.”(POP 001)

“They gave me some injections thus about three of them and it put me to sleep for a long time and even when I woke up later and realised that my leg was tied and I wasn't feeling any pain.”(POP 005)

Some participants also reported that they took oral pain medication which was effective in relieving their postoperative pain.

“... You know some of the oral pain killers were quite helpful in dealing with my postoperative pain” (POO 002).

“Though at a point I got fed up with taking in the medicines but it helped a lot in relieving me of pain...” (POP 006).

For this participant he will ask for pain medication whenever he was in pain

“Yes I think as for you know medication I do ask, anytime that I am in some kind of pain I do seek advice from those in charge...” (POP 002)

Another participant indicated that he got fed up taking medication including the ones for pain.

“As for the pain only medication was the remedy to it even though at a point I got fed up with the medications” (POP 007)

Participants also indicated that after discharge they continued to take only prescribed pain medicine from the hospital

“In terms of the medicine for pain I usually will take only prescribed medicines from the hospital which was still available after my discharge but if it is not prescribed I will not take it at all” (POP 001).

“Yeah it does because just last two weeks all my medicines including the ones for pain got finished so I was just managing until last week when I went back to the hospital for review that they wrote some medications for me again. So for me I take only prescribed medicines for my pain.... ” (POP 005)

4.6.2 Psychological Remedies

Participants indicated that conversation was a source of therapy to their postoperative pain through diversion of their attention from the pain to focus on the conversation.

“....not to say it wasn't painful but I believe that these long conversations we were always having served as a good source of diversion to many of us in the ward. Because once we a talking to each other everyone's mind will shift away from the pain and by 12 to 1 am we will falling asleep one after the other. So you realise that the conversation was helping us to sleep without asking for medicine to stop the pain and make us sleep” (POP 013).

“Yeah, sometimes the pain is excruciating when maybe you are alone and does not have anything to occupy your mind and may be somebody comes in to engage you in a conversation slightly your mind shifts from the pain

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to the person and the kind of conversation you people are having and I can say that yes at least that one is the source of managing the pain.” (POP 002).

Some participants reported that reassurance and encouragement from their visiting relations in the hospital served as coping mechanisms to their postoperative pain.

“At least a lot of family members and friends visited me after the operation and whenever they came, the things they said encouraged me and boosted my morale. So those alone help me to cope well with the pain at the time” (POP 013).

“...the people will come in the morning and in the evening and whenever they come apart from praying for me they also encouraged and reassured me so that was a great source of hope that help me cope well with the pain” (POP 006).

Some other participants indicated that the pre-operational counselling they received before their operation helped them to cope well with the pain.

“you know before the operation one man took me through some form of counselling and he told me that after the operation when the drugs given in the theatre wears off I will begin to feel some pain but they will continue to monitor and give me more medicine for pain ...” (POP 007)

“So because I was pre informed of what was going to happen after the operation I took everything normal. I was not bothered in telling the nurses to do anything about pain since the postoperative pain experience was a temporal experience ...” (POP 011)

According to other participants the reassurance and professional diligence of some of the nurses and doctors contributed to his pain management.

“Just as I mentioned earlier there were times that I will be in pain and it will not be shown but some of the doctors and nurses who are very observant will get to know and even ask further about it. So in that situation I will have to just open up to them and they also give me medicine if only it is necessary or they will just reassure me that I will soon be free” (POP 004).

“When you complain or call for their attention they will come to see and even ask some further questions then check to see if your time for medicine is near in case the time for the medication is not closer they will ask you to exercise patience and wait a little longer and so you just have to manage until they finally come to do something about it. But when it becomes more critical they will have no option than to either give you the medicine or change another one for you.”(POP 005)

4.6.3 Environmental Control

According to some of the participants, sometimes their postoperative pain management was inhibited by noise on the ward as it sometime aggravated his pain.

“... emmm only sometime that when people are making noise in the ward it appears they are connected to my hand as the pain increases so even when you take medication it doesn't look like works again. It is only when you show that you are in pain that they will know that their noise is disturbing.” (POP 002)

“Yes, the noise sometimes activated my pain so even when you take medicine for pain and the noise continues it doesn't work well. However what one needs to do is to exercise patience about the situation because there was little you can do to control happenings that brought about the noise on the ward.”(POP 011)

“Your question is right because there are times someone will say the noise is triggering his or her pain...” (POP 013)

Participants also indicated the cold water was an enormous source of relief to their postoperative pain hence complementing the pharmacological management.

“Whenever the pain comes and last for several minutes, my body will begin to feel hot and so I will let my wife to soak a towel in water and put it on my body particularly on my forehead and soon I will fall into to sleep just like that.” (POP 005)

“...it is not always taking of pain killers because sometime you will see me placing my hand on a wet towel so I will say that something that is very cold brought me relief of the pain” (POP 002)

Other participants also indicated that though dressing was a source of relief to their postoperative pain, air blowing into their wound during dressing intensified their postoperative pain.

“once the wound is dressed you will sleep well because that day the pain will minimize but sometimes the dressing too invoke pain as they open it and air is blowing at it you will begin to experience so sharp pains there but one if not cover it quickly you cannot much about it because you don’t have any control of the air blowing” (POP 011)

“....except that there was a day I was close the fun and it was blowing air directly into by leg wound and making it very painful so I started shouting and groaning in response to the pain” (POP 008).

4.7 Spiritual Influence on Pain Expression and Management

This was the second additional theme that emerged after analysis of the data from participants of the study. It is about how the religious beliefs of participants influenced their postoperative pain expression and management. Some of the participants were reluctant in expressing their pain with strong conviction in God’s intervention to relieve them of the pain. Other participants believed that interventions for their pain by the health workers needed to be complimented by divine intervention. Whiles some participants thought that prayer was a remedy to their postoperative management; others used the reading/recitation of their religious text to seek divine relief of their pain.

4.7.1 Faith in God

Participants indicated that they saw God as the ultimate source of relief to their pain hence, their reliance on God’s intervention to alleviate their pain without expressing their pain to attract attention from the health care staff for any intervention.

“Yes as a believer you need to have the strong believe in the supremacy of God and that only God can grant you total comfort and relief from any kind of suffering including pain. So I was always having the firm believe in God that he will make an intervention into my situation even without the health workers” (POP 004).

“Whiles I was confined to the bed after the operation, I still observed my obligatory Islamic daily prayer because for me God’s healing mercies surpasses all others. So I have the strong believe in Allah and he alone can grant me comfort and relief of the pain but not just the medicine they were giving me for the pain. So because of my strong faith in Allah I never see the need to let my pain manifest for anyone to know about it” (POP 013).

According to this participant, even though he believed in God he could only rely on divine intervention to relief his pain without showing it when the pain is within his tolerance threshold. But when he can no longer endure it he will show it in order to get intervention from the nurses.

“... Oh yes I have the strong believe in Allah and so will rely on him grant me comfort and relief from the pain without involving any other person but when the pain become severe and persist for long, I have let them know and do something about it” (POP 014).

4.7.2 Prayer

Many other participants saw prayer as universal remedy to their postoperative pain management hence, they prayed throughout the period of hospitalization including the postoperative period. Thus, according to them, the prayer really worked very well for them.

“As for theatre when you are going there it is only God who will remain your ultimate source of hope against death, pain or any kind of suffering so you need to believe in God in order to go in and come out of the theatre safely. Prayer therefore has been my weapon against any negative occurrence that could come my way” (POP 007).

“Before the operation I prayed and continued to pray so I was very much certain that things will end well for me without any further complications. And in the end my prayers got answered” (POP 12).

Some other participants thought that management of their pain by health workers could only work when augmented by prayers for God’s intervention. So they prayed to God in order for the medicine for the pain to work well for them.

“After coming back from the theatre the pain started shortly and at that moment it was only prayers that one could add to what the medical people were doing to take care of the pain.” (POP 003)

“I used to pray because when I’m in pain so that God will make the pain go away and leave me alone. Because God who controls everything and so I will put my trust in him and pray for help.” (POP 005)

To this other participant, both medication and believing in God helped in taking care of his pain and so he believes in the two. Therefore, he expressed his pain to get medicine and also prayed as well for God to relieve his pain and both worked well for him.

“... I believe in God and the pain medicine, because it is the same God who wished this accident and the same God will help me out of the pain and the situation. So while I told them about pain I also prayed for God to intercede and stop the pain and I think both helped me very well”. (POP 009)

4.7.3 Reading/Recitation of Religious text

Aside prayers participants also sought divine relief from their postoperative pain through the reading or recitation of their religious sacred text.

“I used to also recite short verses of the Quran when I am in pain so that God will make the pain medicine work well for me. Because like I said earlier that it is God who controls everything and so I will put my trust in him.” (POP 005)

“I’m a catholic so I always prayed for mercy of God through recitation of the rosary so that the Holy Spirit will guide the health workers and

protect me against harm and the pain they told me about before the operation was done” (POP 008)

Among the participants for the study, only one indicated that though he believed in God, he did not see the connection of his postoperative pain to God’s ways because to him the pain was caused by an injury to the body hence, could only be managed well with pain medicine from the health care workers. He therefore, continuously expressed his pain in order to get intervention from the health team.

“..... Yes like I said that even though I’m a believer I actually don’t think that this kind of pain caused by cutting of the body part in the theatre has anything to do with god’s ways but rather purely a physical problem that can only be resolve by use of pain medicine so for me I don’t have too much belief in such things.” (POP 002)

4.8 Summary of findings

The findings above were based on data generated from interviews with postoperative patients on their pain expression and management. The findings were more revealing and also brought to bear multifaceted nature of factors influencing postoperative pain expression and management. Pain experience, modes of expression, sociocultural issues, patient’s perspectives as well as spiritual issues were the factors identified to have influences on the pain expression and management among postoperative patients. The findings are discussed in detailed in the next chapter.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

The study aimed at exploring factors influencing pain expression and management among postoperative patients at the Tamale Teaching Hospital. The study exclusively sought to achieve this aim through the following objectives;

- 1 To investigate the influence of pain experience on postoperative patient's pain expression.
- 2 To explore the ways in which postoperative patients express pain.
- 3 To describe sociocultural factors affecting postoperative patient's pain expression and management.
- 4 To explain postoperative patients' perspective on pain management.

After conducting in-depth interviews with fourteen (14) participants and subsequent analysis of the data generated, five (5) major themes emerged based on some aspects of the conceptual framework which guided the study as well as content analysis. The major themes included; influences of pain experience on pain expression, modes of pain expression, sociocultural influences on pain expression and management, patients perspective on pain management, spiritual influences on pain expression and management. The findings of the study were discussed relative to existing literature hence references were made to previous literature throughout the discussion in order to

situate the findings within the context of the body of nursing knowledge and beyond. The rationale for discussing findings of every study is to offer readers specific guidance on what was accomplished by a study, to demonstrate its scientific significance and to provide direction for future research (Drotar, 2009). It was therefore, anticipated that these findings will help enhance the understanding of postoperative pain expression and management and ultimately contribute to improving the quality of pain care rendered to postoperative patients.

5.1 Influences of Pain Experience on Pain Expression

The first major theme from the findings of the present study was influence of pain experience on postoperative pain expression, as the participants shared their experiences regarding various issues which influenced their postoperative pain expression. Some of the pain experience related factors that influenced participant's postoperative pain expression included their past surgical pain history, their thoughts, feelings and sensations.

It was revealed that personal history of previous pain had an influence on postoperative pain expression. Some of the participants said that because of their previous experience of surgical pain they did not express their postoperative pain. This finding agreed with a previous study (Linton & Shaw, 2011) which acknowledged that past experiences can greatly influence one's pain behaviour in any form. Similarly, a study that examined the influence of children's pain memories on their expectations and experience of subsequent pain revealed that memories of past pain has significant influence on subsequent pain experience (Noel, Chambers, McGrath, Klein, & Stewart,

2012). Some of the participants who had no previous experience of surgical pain reported that they expressed their postoperative pain. These findings on personal history of participants regarding pain experience reinforced some aspects of the Integrated Pain Adaptation Model (Peck et al., 2008) which emphasized the individuality of the reaction to pain and suggests a tailored approach towards management. The findings therefore, highlighted the importance of review of patient's history before surgery as reported in many studies (Aziato & Adejumo, 2014b; Kumar & Srivastava, 2011; Nelson, Fisher, & Weinstein, 2011; Pozek et al., 2018) that evaluation of patients' prior healthcare experience and patient's history helps in their pre and postoperative care. Evaluation of the past and present history of surgical patients may therefore, serve as a critical predictive factor that determines positive perioperative outcomes (Lan & Kamath, 2017). Consequently, subjecting all surgical patients to such evaluations including review of their history on pain experience would offer the surgical team an enhanced opportunity to adequately prepare towards patient's effective pain relief which is imperative to the surgical team (Garimella & Cellini, 2013).

The findings of this study also showed that the thoughts of the experiencing person such as expectations about the surgical outcome and impending pain are said to have influenced their postoperative pain expression. This finding on expectations supports findings from other studies which showed that expectations about painful stimuli and its treatment can profoundly influence behaviour in responding to the pain (Atlas & Wager, 2012; Coghill, 2010; Kortessluoma et al., 2008). According to this finding, the effect of unmet expectations of the participants was disappointment as they

continued to experience pain after surgery and this is similar to findings of a recent systematic review by Gunaratne et al. (2017) which revealed that unmet preoperative expectations among other factors led to patient's dissatisfaction following total knee arthroplasty. However, contrary findings from an exploratory study on patients' expectation and satisfaction with surgical outcome using randomised controlled trial revealed that satisfactions levels remained same despite unmet expectations (McGregor, Doré, & Morris, 2013). In view of these, the impact of expectations requires further examination. This finding from the present study may however imply that the preoperative teachings and orientation on the experience and management of pain may not have been done well by the surgical team. Yet evidence suggest that preoperative pain related teachings holds a huge potential in enhancing patients' knowledge in key areas of postoperative pain to prevent negative outcomes (Best et al., 2017; O'Donnell, 2018). This therefore, calls for a multidisciplinary teamwork in preoperative preparations since health professionals such as nurses, doctors, laboratory technicians, anaesthetists among others work together to ensure that surgical patients are well fit to go through surgery successfully (Karlsson, Ekebergh, Mauléon, & Österberg, 2013).

Feelings and sensations manifesting as fear, anxiety as well as pain severity and intensity on the part of the experiencing person were identified in the present study to have influenced the expression of postoperative pain. This is in line with earlier studies which indicated that pain experience and behaviour is influenced by a host of psychological factors (Linton & Shaw, 2011) such as fear (Leeuw et al., 2007; Vlaeyen & Linton, 2012) , anxiety (Asmundson et al., 2010; Asmundson & Katz, 2009) among

others. Participant's anxiety and fear was attributed to pain severity and intensity resulting to their pain expression. This is similar to prior findings which indicated that patients with increased anxiety or fear have higher pain intensity and severity (Kreddig & Hasenbring, 2017; Kroska, 2016; Martinez-Calderon et al., 2018; Masselin-Dubois et al., 2013). In their study, Wang et al. (2018) also partially agreed with this finding that fear predicts more intense postoperative pain but it is independent of other pre-surgery factors. Also, Desai and Chaturvedi (2009) in a report using case scenarios method concluded that, overt behaviour and emotions determined pain ratings in terms of severity. However, Anguita-Palacios et al. (2016) in cross observational study in Madrid contradicted the finding with their evidence that fear and anxiety among others has no positive correlation with acute postoperative pain. This phenomenon may therefore require further exploration in future using mixed design with very large sample since it was not the case in all the studies above.

Few of the participants who had their surgical wounds created around the anal area believed that their pain severity was due to location of the surgical incision hence, making them to express their pain presence. This finding on anatomical region of surgical incision confirmed earlier results from Sommer et al. (2008) which reported variations in pain severity among patients who underwent abdominal, extremity and back/spinal surgeries. Similarly, a cross sectional study in the Netherlands revealed that operations of nose and pharynx, abdomen, breasts (plastic), and orthopaedics were considered more painful in terms of severity compared to operations involving other body parts (Gramke et al., 2007). Some other studies in the past (Faucheron, Poncet, Voirin, Badic, &

Gangner, 2011) have specifically concurred with the present study finding about high pain severity around the anorectal area though the type of surgeries varied. Since the physiological mechanism behind the phenomenon is unclear it may require further exploration using different designs with samples from multicultural settings.

The findings from the present study therefore, suggest that fear and anxiety transform pain experience and increase both pain severity and intensity leading to pain expression. Severity is also linked to location of surgical incision. Therefore, elimination of pre and postoperative fear and anxiety by health care professionals could be seen as an essential step towards reducing postoperative pain among surgical patients (Meissner et al., 2015). It has been established that, educational interventions which are carried out in the preoperative period are effective in reducing anxiety after surgery (Alanazi, 2014; Guo, East, & Arthur, 2012). The identification of predictive factors for intense acute postoperative pain may consequently be useful for designing specific preventive interventions to alleviate patient suffering (Kulkarni et al., 2017). Also, qualitative measures though difficult to gauge, will provide a deeper understanding of patient's subjective perception of pain when employed by future investigators (Ha & Longnecker, 2010).

5.2 Modes of Pain Expression

This thematic area focused on the manner in which postoperative patients drew attention to their postoperative pain (pain expression). From the findings, pain expression varied among postoperative patients as they used verbal and non-verbal or a combination of the two to express their postoperative pain. It also emerged that postoperative pain

may sometimes manifest latently in physiological forms such as changes in some of the vital signs in the postoperative period.

One pain communication pattern among postoperative patients which emerged from the present study findings was verbalization or vocalization of pain presence through crying, reporting pain presence, complaining or shouting for help among others. Similar reports of pain verbalizations or vocalizations have been reported to be used by patients in acute pain situations including postoperative patients (Booker & Haedtke, 2016; Dobbs et al., 2014). Such self reports of pain presence are considered by Horgas (2017) and Pautex et al. (2006) to be among the most accurate and reliable means of assessing pain existence and its intensity. Therefore, this suggests that verbal pain expression as identified in the present study is a vital indication of pain presence among postoperative patients. The individuality of pain experience and expression requires multidimensional assessment of pain using credible tools (Briggs, 2010). Consequently, clinicians may perhaps have to assume a bigger responsibility of fostering productive pain-related discussions with the patients in order to offer them the opportunity to freely express their pain verbally without any form of hindrance. Clinicians seeking for self report of pain from their patients are doing so in line with the popular definition of pain by McCaffery (1968) as what the experiencing person says it is and exists whenever the same person says it does exist.

Non-verbal mode of pain expression by postoperative patients as found in the present study included facial expression, use of gestures such as turning in bed, pointing at the direction of the pain, groaning or sometimes clenching the teeth together. Similar

forms of non-verbal pain expressions have been enumerated in earlier studies (Booker & Haedtke, 2016; Rowbotham et al., 2014; Stanley & Chinwe, 2016). This finding raises awareness of people's response to pain in nonverbal forms and the factors which may motivate such reactions. This means some patients rely on nonverbal means of pain communication because they may not be able to adequately articulate their pain experience through verbal or self report due to certain challenges such as varied meaning attached to pain which make communication very difficult (Gélinas et al., 2008), insufficient pain description by children (von Baeyer, 2006) and cognitive deficiencies (Herr et al., 2011). Therefore, paying particular attention to the non-verbal means of pain expression may hold some clinical value in ensuring accurate pain assessment particularly for patients with some cognitive deficiencies and or oral communication challenges (Booker & Haedtke, 2016; Herr et al., 2011). When pain assessment is not adequately done, health professionals find it difficult to manage pain for people with such degree of vocal limitations. Therefore, the Hierarchy of Pain Assessment Techniques recommended by Pasero and McCaffery (2010) to serve as a framework that guide pain assessment approaches need to be adopted in order to ensure that pain is appropriately assessed and alleviated in such vulnerable populations.

According to most of the participants who expressed their pain in nonverbal forms, they did so by facial expression. Studies in the past have reported the validity of facial expression of pain (Pasero & McCaffery, 2010; Rahu et al., 2013; Sheu, Versloot, Nader, Kerr, & Craig, 2011). This is particularly so because of the easy accessibility of the human face and so a great deal of information can be displayed (Craig, 2009; Lints-

Martindale et al., 2007). Facial pain assessment has a proven clinical value especially, for non-verbally communicating patients such as critically ill patients (Rahu et al., 2013). However, reliability of facial pain expression may be challenged by individual differences in facial features as such difference in terms of shape of face, variations in both facial and scalp hair (Wilmer, Germine, & Nakayama, 2014). These personality variations in appearance may have significant consequence for facial assessment (Christofolleti, Oliveira, & Siqueira, 2018). Therefore, nurses need to have a deeper understanding of the intricacies of facial expression in order to use it as a reliable tool in assessment of pain.

Physiological changes such as alteration in some vital signs were identified in the present study to be an indication of pain presence among postoperative patients. This manifested latently in a form of elevated blood pressure, increased temperature and palpitations. This finding is in line with findings of other prior studies (Booker & Haedtke, 2016; Horgas, 2017). This present study identified elevation of blood pressure, increase in temperature and palpitation as the changes in vital signs that may be indicative of postoperative pain presence. Similar to these, earlier studies have reported similar positive relationship between acute pain and blood pressure (Kaplow, 2015; Sacco et al., 2013) and heart rate (Kaplow, 2015). However, some previous studies reported differently that elevated vital signs are not very reliable gauge of pain, although they can be indicative of the need for pain assessment (Herr, Coyne, et al., 2006; Herr et al., 2011). For example, increased body temperature after surgery is said to originate from either infectious or non-infectious sources but not linked to pain (Brandom &

Visoiu, 2011; Deng, 2015) as found in the present study. It could therefore, be deduced that, despite the accuracy of these physiological changes in predicting pain presence, it remains unclear hence requires further exploration to either validate or refute them.

5.3 Sociocultural Influences on Pain Expression and Management

The study found sociocultural norms to have an effect on the responses to postoperative pain among postoperative patients in terms of expression and management. According to Ogala-Echejoh and Schofield (2010) pain response behaviour and its management are both said to be linked with the experiencing person's cultural background and social orientation to pain. Thus, the expressions of pain in verbal and non-verbal forms are shaped by the culture of the person in pain (Aziato & Adejumo, 2015). Similar to the present study findings, social environment where pain occurs has been identified to be one of the factors that modulate people's perception and expression of pain by most studies (Krahé et al., 2013; McClelland & McCubbin, 2008; Sambo et al., 2010; Vervoort et al., 2011; Vlaeyen et al., 2009; Whitburn et al., 2017; Wilson & Ruben, 2011)

The present study specifically found the presence of social relations to influence pain expression in two folds. In one instance, the presence of social relation enhanced postoperative pain expression and this affirmed prior conclusions of McClelland and McCubbin (2008) in USA and Karmann et al. (2014) in Germany which suggested that the presence of social relation increase acute pain report. In other instance, the present study found that the presence of social relations inhibited the expression of pain and this is confirmed by the findings of some earlier studies (Sambo et al., 2010; Vlaeyen et al.,

2009) which showed that social presence diminished responses to pain. The opposite of this is however reported in previous quantitative studies (Gallant & Hadjistavropoulos, 2017; Karmann, Lautenbacher, Bauer, & Kunz, 2014; Vigil et al., 2014) which indicated that while presence of a stranger leads to decrease in pain expression, the presence of an intimate partner leads to pain expressive behaviour through facial communication. These findings supported the importance of social learning factors in influencing pain experiences. However, they have been contradicted in a recent study by Karos et al. (2018) which specifically indicated that social context do not affect painful facial expression and intensity of pain. Perhaps this variation of findings could be attributed to some unique characteristics of study participants. Also it can be traceable to the type of pain participants' were exposed. Therefore, further exploration of this dimension of the phenomenon using large samples from multicultural sources in mixed designs may provide more light in the future.

In line with past findings such as Jackson et al., (2009) and Younger et al., (2010), the present study showed that social interaction provided attention diversion from the pain to the interactions hence contributing to pain tolerance and coping. Additionally, social support has been identified to enhance pain management through the production of the analgesic effect which reduce pain experience (Che et al., 2018). Within the broader picture of association between social support and health care outcome in the general population, there is evidence in favour of social support. For example, strong support from others is viewed to be protective of health (Reblin & Uchino, 2008; Siv et al., 2012). It is also said to be a vital component of any emerging health information system

(Visvalingam et al., 2017). Again, social support has been identified to be a significant factor in the recovery of musculoskeletal injury (Prang et al., 2016). Yet social isolation which is the opposite of social support is said to be a major risk factor for all forms of mortality (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Holt-Lunstad, Smith, & Layton, 2010). The significance of social interactions as identified by findings of the present study may be calling the attention of health care professionals most especially, nurses to consider the close association between social support and efficient pain care in all clinical settings including the postoperative state (Okkonen & Vanhanen, 2006). This perhaps may form the basis for including social support in the development of contextual protocols for pain management (Jamison & Edwards, 2012).). Therefore, an enhanced appreciation of these social factors will provide more light on the challenges patients encounter and compensate for them in the course of treatment (Kodjo, 2009).

From the sociocultural elements of findings in the present study, it also emerged that sociocultural outlook concerning age differences determined whether or not an individual should cry, frown, groan or remain mute in response to postoperative pain. Similarly, Lovering (2006) observed that culture dictates whether a person should report pain, and how the person acts or responds when in pain. The present study discovered that adults were not supposed to express their postoperative pain through crying as their behaviour was deemed culturally inappropriate. This finding concurs with what had been reported extensively in the literature relative to cultural regulation of pain expression among adults (Bartley & Fillingim, 2013; Fillingim, King, Ribeiro-Dasilva, Rahim-Williams, & Riley, 2009). Previous discoveries in this regard have also indicated that

caregivers' interpretations of pain expression is also said to be influenced by their individual and family cultural values, beliefs and experiences (Finley et al., 2009). Therefore the presumption from these findings is that both patients and health professionals carry their biased cultural attitudes to the communication and interpretation of the patient's pain experience (Craig, 2009). This could lead to the deduction of the health professional overriding the response to the patient's experience of pain (Finley et al., 2009). Nurses as frontline health care professionals responsible for care plans formulation must be watchful of their cultural biases (Maier-Lorentz, 2008).

Gender difference also emerged from the present study findings as one of the socio-cultural variables that determined pain expression between men and women. Some of the participants indicated gender was an influential factor to pain expression as women are allowed to show pain than men within the cultural context. A recent prospective cohort study by Cai et al. (2017) affirmed the influence of gender on postoperative pain. Women unlike men were noted to freely express their pain without hindrance due to the fact that they were culturally perceived as weak. Similarly, there is evidence concurring this finding from studies which showed that response to pain is influenced by the gender where females can freely display pain behaviour both verbally and non-verbally unlike males (Bartley & Fillingim, 2013; Fillingim et al., 2009; Paller et al., 2009). However, a qualitative systemic review on the predictors of postoperative pain and analgesic consumption by Abrishami, Peng, Wong, and Chung (2009) contradicted the above about gender influences as their result showed that gender is not a significant predictor as traditionally presumed.

From the present study findings, men were expected to display some form of stoicism towards postoperative pain in accordance with cultural folklore of northern Ghana. Similarly, findings from other parts of the world such as in Somalia (Berit & Olle, 2006) is congruent with this finding about expected stoical attitude of men towards pain. Also, Aziato, Acheampong, and Umoar (2017) in their exploratory descriptive study of pain experiences among puerperal women somewhat concurred this finding about pain enduring nature of people from Northern Ghana though their participant were principally females. The broader sense of gender variations in the expression generation are said to be emanating from historic difference in social relationship where males exhibit dominance through aggression while females show submissiveness through crying (Vigil, 2009). Similarly, the social learning theory also indicates that males and females are socialised from an early age to display emotions in different ways (Tobin et al., 2010).

However, contrary evidence from other studies (Bourke, 2014; Kelley et al., 2009) reported that some cultural groups consider moaning or loudly crying as the best way to cope with pain hence, they encourage all their members in pain to seek attention and support from care givers. The probable source of this contradiction may be the uniqueness of cultural settings across the globe. This finding from the present study could consequently, mean that there is societal expectation on pain behaviour with particular attention to the gender of the person in pain. This, therefore, imply that depending on the gender of the person in pain, same pain expression can be interpreted differently by observers (Hirsh, Alqudah, Stutts, & Robinson, 2008; Torres et al., 2013). Hence, gender is an essential element of pain assessment and management in medical practice (Melchior

et al., 2016). These socioculturally predetermined gender related distinctions in pain behaviours add meaning to the subjectiveness of pain experience. There is the need for care givers to desist from prejudices such as expecting similar pain behaviours from patients even those who share identical clinical attributes.

5.4 Patients Perspective on Pain Management

This thematic area of the study discovered findings relating to the perspective of postoperative patients on their pain management. Several recent findings (Brown et al., 2013; Chou et al., 2016; Ogboli-Nwasor et al., 2012; Turk, 2017; Wu & Raja, 2011) have indicated that postoperative pain management is still a challenge in most clinical settings notwithstanding, an increasing general consciousness of the problem.

According to the participants of the present study, their postoperative management revolved around three broad areas; thus, pharmacological management, psychological remedies and environmental control. This is line with recommendations found in recent clinical practice guidelines from the American Pain Society (APS) on the management of postoperative pain which emphasized on multimodal pain therapy approach (Chou et al., 2016). The findings on pharmacological management of participant's pain revealed that postoperative pain was managed with intravenous, intramuscular and oral analgesics and this is coterminous with findings of previous studies on the management of postoperative pain (Benzon, Shah, & Benzon, 2018; Chou et al., 2016; Stuit, 2017). The finding also fulfilled international human rights law, which enjoins signatory countries to provide pain treatment medications as part of their core responsibility under the right to health (Lohman et al., 2010). In the views of majority of

the participants, these pharmacological interventions were the most effective and their mainly preferred intervention for postoperative pain management. Similarly, some randomized trials (McDaid et al., 2010) on multimodal analgesic pain management using combined medications through different routes is linked with better pain relief compared to one medication.

Majority of the study participants expressed their preference for oral analgesic in managing their postoperative pain. Though the present study did not assess the comparative effects between opioids administered by oral and those by intravenous routes, some pre-existing findings indicates that intravenous opioids administration is not a better option for the management of postoperative pain compared with oral administration (Ruetzler et al., 2014; Snell & Hicks, 2006). Oral administration of opioids can therefore, be considered as the obvious choice in the management of postoperative pain particularly for patients who are fit and can tolerate it (Chou et al., 2016). The present study finding on the use of intramuscular route in administering postoperative pain analgesia is inconsistent with current practice guidelines of the American Pain society (Chou et al., 2016) because of its poor absorption as well as the other clinical challenges. This is further buttressed by findings of an exploratory study in the UK which showed that intramuscular route has not proven to be a better alternative compared to other routes such as oral, intravenous, rectal and tropical (Snell & Hicks, 2006).

It also emerged from the present study that majority of participants had engaged in self management of their pain at home after discharge as they were discharged home with some pain medicines. Varied responses were elicited from participants regarding the

effectiveness of their home management of pain with analgesics after discharge. While some consistently followed the regimen of their medications, others indicated they could not adhere to the regimen. Few other participants also indicated that their pain medication finished before their next follow up review date. This finding reinforced the challenges associated with home management of postoperative pain after discharge as identified among total knee arthroplasty patients by Chan et al. (2013). Therefore, to ensure effective pain management, discharge information should comprehensively cover information on analgesic plan, the likely effects of defaulting in medication intake, need for follow up review and management of side effects (Chan et al., 2013). The shortage of patient's pain medicines at home after discharge as identified in the present study, could be due to the underestimation of their pain by the clinicians. This is similar to findings of a recent study among surgical orthopaedic patients which showed that doctors in treatment centres undervalue the importance of the requirements to manage acute postoperative pain, particularly in terms of prescribing opioids when it is required (Selaković et al., 2016). These findings exposed the need for further studies devoted to develop safer and effective pain management strategies using patient specific analgesic requirement tools (Bach, Forman, & Seibaek, 2018; Bartels et al., 2016).

Another dimension of pain management which emerged from the present study was non-pharmacological pain management where postoperative patients obtained some form of pain relief through psychological remedies such as attention diversion using conversation, encouragement from family members as well preoperative counselling/teaching from health professionals. Analogous with these findings are earlier

study findings on non-pharmacological techniques such as reducing patient anxiety and fear, preoperative education, family support, relaxation techniques, music therapy, and acupuncture which have proven to be valuable for reducing postsurgical pain (Kalinowski et al., 2015; Kehlet, 2012). These forms of non-pharmacological pain management through cognitive strategies have been recommended as part of multimodal approach in the clinical practice guidelines by the American Pain Society (Chou et al., 2016) though it is considered a weak recommendation because of the moderate quality of the evidence supporting it. Also, a context appropriate clinical guideline for postoperative pain management in Ghana developed by Aziato and Adejumo (2015) recommended the use of non-pharmacological techniques to serve as adjuncts to analgesics in managing postoperative pain. The relevance of pre-surgical pain management education as found in this study is further buttressed by outcome of a recent quality improvement project in the USA which showed that that patients who received the preoperative education intervention reported less severe pain during the first 24 hours postoperatively, experienced fewer and less severe pain medication side effects, returned to normal activities sooner, and used more non-pharmacologic pain management methods postoperatively compared with those who did not receive the education (O'Donnell, 2015). Since the usefulness of these non-pharmacological pain management strategies have not been questioned by any contrary evidence, its incorporation into practice guidelines could be emphasized while further exploration in the area can continue.

It also emerged from the findings of the present study that their postoperative pain management was sometimes inhibited by happenings in their environment such as noise

on the ward as it sometimes aggravated participant's pain despite taking medication.

There appear to be no previous literature specifically concurring this finding, although some evidence suggested negative patient outcomes such as decreased satisfaction, sleep disturbance, and higher incidence of rehospitalisation are associated with patients staying in care settings with higher noise levels (Hill & LaVela, 2015).

Again, it emerged that cold water provoked some analgesic effects which brought some few participants postoperative pain relief. This finding on the therapeutic benefits of cold water reaffirmed effectiveness of cold therapy in pain management identified in prior studies (Gorji et al., 2014; Nurcan & Saadet, 2012). It also concurred with conclusions of Chailler et al. (2010) which indicated that cold therapy can be used to manage sternal incisional pain for post cardiac-surgery patients. Though water may be a potential source of infection, results of a systematic review by Dayton, Feilmeier, and Sedberry (2013) showed that there is no basis scientific basis to restrict showering or bathing a surgical incision site. These findings may therefore, be validating the need for further investigations using large samples in varied designs and replicated in different context especially so when it may be difficult to apply cold therapy in regions with very low temperatures.

Despite the fact that, the above findings may appeared to have demonstrated the efficiency of pharmacological management of postoperative pain, it has also demonstrated that the use of analgesics may not be enough in relieving pain for postoperative patients and come with adverse effects, such as nausea, vomiting, constipation among others (Chailler et al., 2010). This therefore, implies that

postoperative patients' perspectives on their pain management provide a valuable source of data for further knowledge generation regarding improvement of pain management. More knowledge concerning practice-oriented postoperative pain management is needed (Bach et al., 2018).

5.5 Spiritual influence on pain expression and management.

Findings of the present study discovered that postoperative patients were unwilling to express their pain with strong conviction in God's intervention to grant them total relief of pain. This finding somewhat agrees with Levin (2010) exploratory findings which concluded that faith or beliefs are crucial in matters about healing process in human. Furthermore, in a social environment where medical facilities finds it highly difficult to offer satisfactory explanation to afflictions, coupled with the pervasive admiration for spirituality, it is obvious that people will solicit divine interventions in satisfying their health needs (Azongo, 2014). This means that this finding on the sole reliance on God's invention for relief by participants is not entirely unique to the population under study as spirituality and religiosity are well recognized universally as part of the factors that affect patients' quality of life, quality of care, and satisfaction (Hill & Pargament, 2008; Phelps et al., 2009). Due to this, a lot of high profile organizations such as the World Health Organization (WHO, 1998) have recognized importance of attending to religious or spiritual needs of patients in clinical settings. Even though spirituality-based strategies are frequently used to cope with chronic pain (Moreira-Almeida & Koenig, 2008) it can be deduced from the above finding that its application in acute pain setting could still yield some benefits relative to pain management.

It was also found in the present study that participants believed that interventions for their pain by the health workers needed to be augmented by divine intercession hence, they took medication for pain while seeking for the intervention of God through prayers. Similarly, a study in Nigeria that sought to examine the relevance of religion in modern health care delivery revealed that patients combined prayers with medical care (Agbiji & Landman, 2014). Again, in a recent qualitative study (Aziato et al., 2017) on labour pain experiences and perception among Ghanaian post-partum women, it was revealed that participants prayed to God to help reduce the severe pain. In addition to these, prayers and meditation as religious/spiritual intervention were identified in a study to be some of the non pharmacological pain management modules for reducing pain among post caesarean surgery patients (Beiranvand et al., 2014). Prayer according to Dedeli and Kaptan (2013), is a universal practice that may take forms such as confession, intercessory prayer, or silent communion but it does not involve direct physical contact such as giving or doing anything.

It was also found that aside prayers, recitation of the sacred text of their religious faith in the postoperative period were another means of invoking God's intervention for pain relief. This concurs with reports of qualitative descriptive study in Somalia where remedy against health problems such as pain was achieved through reading religious material such as the Holy Quran (Clarkson-Freeman et al., 2013). Similar finding was made in another study in Turkey involving mothers taking care of sick children (Sülü, 2006). Also, Wiech et al. (2008) made similar finding among Catholics who sought pain comfort through recitation of sacred phrases and viewing picture of Holy Mary. Findings

of the present study have identified that religious and/or spiritual interventions appears to play a very important role in pain management just like what has been reported in some previous studies (Glover-Graf, Marini, Baker, & Buck, 2007; Wachholtz & Keefe, 2006). Yet some negative spiritually based cognition such as God is abandoning me are said to be associated with greater pain sensitivity (Wachholtz & Pearce, 2010).

In view of the overwhelming evidence supporting spirituality and religiosity relative to its significance in medical care such as in pain relief, it would be appropriate to call for the merger of spiritual factors as an integral component in pain assessment and management as concluded earlier by Siddall, Lovell, and MacLeod (2015). This will also be in line with the biopsychosocial-spiritual model which seeks to determine the role religiosity and spirituality play in the evaluation process of care (Amy & Carol, 2011). In formulating patients' care plan, it would be very appropriate for individuals' religiosity and spiritual needs to be considered as it may be a useful coping strategy (Baetz & Bowen, 2008).

5.6 Evaluation of Conceptual Framework Used for the Study

The social communication model of pain developed by Craig, (2009) was used as guide for the study. Since the study was seeking to explore the influences of pain expression and management from the perspectives of the person experiencing the pain, only constructs under the person in pain were utilised in the study. Notwithstanding, the constructs used by the researcher were helpful as it informed the formulation of objectives of the study. It also guided the review of related literature as well as the development of the instrument for data collection. The construct on personal experience

of pain enabled the researcher to explore the various dimensions of participants' postoperative pain experience. This led to the emergence of the first major theme influences of pain experience on pain expression which had personal history, thoughts, feelings and sensations as sub-themes consistent with the model.

The construct pain experience was explored and it allowed the researcher to ascertain the various ways in which participants expressed their postoperative pain and the data that emerged from the responses of participants led to the theme modes of pain expression. This particular theme had verbal pain expression, nonverbal pain expression and physiological changes as its sub-themes which was line with the model. The situational and contextual domains under the interpersonal dimensions of the model were modified to generate a major theme as sociocultural influences of pain expression and management. Aside one sub-theme under this major theme (social interaction), age variations and gender differences were emerged though they were not congruent with the constructs of the model.

In all, five major themes were generated from the study and three of them were congruent with the model used for the study. These themes included; influences of pain experience on pain expression, modes of pain expression and sociocultural influences on pain expression and management. These themes were all consistent with the existing constructs under the person in pain. The only construct which was absent in the study was biological endowments and constraints. This is because it may perhaps demand biological examination which was not possible given the qualitative motive and nature of the study. The additional themes which were conceived from data were patient's perspectives on

pain management and spiritual influences on pain expression and management. The perspectives on pain management had three sub-themes which were; pharmacological management, psychological remedies and environmental control. The major theme spiritual influences on pain expression and management had three sub-themes as faith in God, prayer and recitation or reading of religious text.

5.7 Suggestions to the Conceptual Framework

The social communication model of pain has contributed immensely to the understanding of the numerous complexities among the interaction between biological, psychological and social characteristics of pain. However, the understanding of these complexities of pain may further be enhanced with some adjustments of the model. Firstly, from the study findings, people in pain are able to deal with their pain using diversion or spiritual interventions without the involvement of the caregiver. In view of this, the incorporation of pain coping strategies into the constructs under the person in pain will add some further meaning to the model. Furthermore, alteration of the situational and contextual domains of the model to be represented by the broader term sociocultural. This will broaden the perspective since the sociocultural modulation of pain has a universal prominence. Again, physical constructs may be merged into one domain with the biological endowment and constraints to give it further clarity and appreciation. The next chapter presents the summary, implications, limitations, conclusions, and recommendations made from the findings of the study.

CHAPTER SIX

SUMMARY, IMPLICATIONS, LIMITATIONS, CONCLUSION, AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the summary and conclusions of the study. It also includes implications for nursing practice, research, education and policy as well as limitations of the study. In addition to these are some recommendations for consideration to serve as a possible guide to practice, education and research.

6.1 Summary

The study explored the factors that influence pain expression and management among postoperative patients at the Tamale Teaching Hospital. The study was guided by the the Social Communication Model of Pain by Craig (2009). The study employed a qualitative exploratory design. Ethical clearance was obtained from the Institutional Review Board of the Noguchi Memorial Institute for Medical Research in the University of Ghana and also the Tamale Teaching Hospital granted authorization to access the study setting. Through purposive sampling technique, fourteen (14) participants were recruited into the study after informed consent of each participant was obtained. In-depth interviews were conducted using semi-structured interview guide. These interviews were audiotaped, transcribed and analysed simultaneously in a manual format using the thematic content analysis approach. Based on the criteria of Lincoln and Guba (1985), methodological rigour was ensured. Five (5) major themes emerged during analysis of the data gathered. These included; influence of pain experience on pain expression,

modes of pain expression, socio-cultural influences on pain expression and management, patients perspectives on their pain management and spiritual influences on pain expression and management. The study discovered a number of findings many of which were consistent with other studies regarding pain experience, expression and management. The participants of the study reported a myriad of factors which impacted their postoperative pain expression and management. According to participants, their previous experience of pain was a determining factor to their postoperative pain expression. While those who have experienced surgical pain in the past did not express their pain, those who were first time surgical patients expressed their pain. Postoperative pain severity and intensity as reported by some of the participants intensified their fear and anxiety leading to pain expressive behaviour. From the findings of the study, postoperative pain expression by participants was in various forms. Participants expressed their postoperative pain through crying, reported pain presence or shouted for help. Some other participants also resorted to use of gestures, turning in bed, frowning, pointing at the direction of the pain or sometimes clenching their teeth together. Also postoperative pain among the study participants manifested in physiological forms such as elevation of blood pressure, increased body temperature and palpitations.

Again, socio-cultural norms about pain dictated the postoperative pain expression and management of the study participants. This was through social interaction of the study participants with their significant others. This helped to create attention diversion from the pain they were experiencing or the presence of these people either enhanced or inhibited their postoperative pain expression. Age and gender related influences from

sociocultural perspective were also found in this study to modulate postoperative pain expression and management. Among the major findings of the study is perspective of participants on the management of their postoperative pain. It was discovered that pharmacological and non pharmacological means were used to manage the postoperative pain of the participants. Under pharmacological approach, multimodal analgesics were administered to the participants and they were very much satisfied with the efficiency of the pain medicines. It also emerged that some psychological remedies were used to manage the postoperative pain of the participants. However, some environmental factors also affected the management of participant's postoperative pain. Religiosity and spirituality of participants were also found to have influenced on the postoperative pain expression and management of the participants. Some of the participant's strong beliefs and faith in God inhibited their pain behaviour. Participants of the study also believed that medical intervention for their surgical pain was not enough unless complemented with spiritual intervention as well through prayers or reading of their religious sacred text.

6.2 Implication of the Findings

The findings from the study have implications for nursing practice, nursing education, policy formulation and future research

6.2.1 Implication for Clinical Nursing Practice

Findings of the present study have brought to the fore some of the insights regarding postoperative pain expression and management as revealed by the study participants. It was realised from the findings of the present study that preoperative

evaluation of patient's previous surgical experiences including pain experience is inadequately done by nurses and other members of the surgical team. Again, it emerged that preoperative and postoperative teachings and education regarding pain experience and management were not adequately done by the surgical team leading to unfavourable postoperative outcomes. Discharge education on medication was another area of pain management which was identified in the present study to have been poorly done by the nurses. Yet adequate delivery of information to patients as part of the preoperative teaching and education has the tendency to empower surgical patients in cooperating with care instructions as well as improving surgical outcomes.

In view of these, perioperative nurses as frontline professionals in surgical settings should put emphasis on the review of patient's previous history in their preoperative preparations. They should also ensure proper teachings and education on pain is done in order to give competent pain care to patients taking into account their contextual peculiarities. Understanding the needs of patients relative to their postoperative pain care will allow the nursing team to prepare well towards ensuring positive surgical outcomes. Pre-discharge education should also be done in comprehensive manner to cover every part of post discharge pain medication intake at home. Pain expression is a very critical factor that determines the course of pain assessment which intends form the basis for pain management. This means that all forms of pain expressions are clinically essential hence nurses should make every effort to encourage useful pain-related discussions with their patients in order to offer them the opportunity to freely express their pain either verbally or non-verbally without any form

of hindrance. Since pain can also manifest through physiological changes, nurses should emphasize the relevance of routine monitoring of the vital signs particularly in the immediate postoperative period. The study found socio-cultural norms to have an effect on the responses to postoperative pain in terms of pain expression and management among postoperative patients. These imply that nurses must make every effort for improved cultural competence and explore ways to make nursing care more responsive to culturally diverse groups under their care. Pain management among postoperative patients should be tailored towards contextual requirements of individual patients since the experience of pain is universally proclaimed to be subjective. Notwithstanding the benefits of pharmacological pain management, nurses should ensure multimodal approach to pain management by incorporating non-pharmacological strategies in to their interventions. Some environmental threats have been identified to impact negatively on pain management and so rapid identification and elimination of these threats by nurses is essential to adequate pain management. Finally nurses must endeavour to meet the spiritual need of patient relative pain expression and management particularly in the postoperative setting.

6.2.2 Implication for Nursing Education

The study findings revealed some pertinent knowledge gaps in the perioperative practices of nurses at the study setting. This is most likely to be emanating from the fact that many of the nurses were general nurses without specialised training in perioperative nursing. Whiles on admission nurses have more direct contact hours with surgical patients before and after their operation than any other health care professionals hence

nurses serve as the link between patients and other health care professionals in surgical settings. Therefore positive surgical outcomes including adequate pain management will be attained if nurses are sufficiently equipped with the required knowledge and skills through education.

Though there is an institution in Ghana that offer post basic education in perioperative nursing, the fact that it is only one institution implies that there are few practicing perioperative nurses in the country. This therefore calls for the need to replicate perioperative nursing training institutions across the length and breadth of Ghana. This will make perioperative nursing education more accessible to most nurses in clinical settings and improve care delivery in perioperative settings. In the short to medium term, training programmes in a form of continuous professional development (CPD) for nurses should be designed on postoperative pain experience, assessment and management to equip all categories of nurses in the hospital with the rudiments of pain care in line with current standards.

6.2.3 Implication for policy

The findings of the study revealed some shortfalls in providing postoperative pain management yet, Ghana is a signatory to the International Human Rights law which enjoins signatory countries to provide pain adequate treatment. This therefore, calls for policy interventions from the Ministry of Health which is responsible formulating health policies in Ghana to ensure the development, adoption and implementation of context appropriate guidelines on management of postoperative pain.

6.2.4 Implications for Future Research

The findings of the study could serve as the basis for additional research attention to postoperative pain expression and management. Therefore, further research with large multicultural samples using mixed designs can further illuminate the understanding of participant's perspectives on the phenomenon. In order to allow for generalizability and also make room for conclusive statements on the factors influencing postoperative patients' pain expression and management in the country. Other domains of the phenomenon that can be explored in future research based on the themes generated from the present study are as follows;

1. Lived experiences of second time surgical patients about their postoperative pain expression and management.
2. Factors influencing verbal pain expression among postoperative patients.
3. Influences of nonverbal pain expression among postoperative patients.
4. Sociocultural modulation of pain behaviour among postoperative patients.
5. Sociocultural determinants of pain management approaches among postoperative patients.
6. Effectiveness of non-pharmacological pain management among postoperative patients.
7. Investigating the significance of social support in postoperative pain management.

6.3 Limitations of the Study

The study used adult participants in exploring the factors influencing pain expression and management among postoperative patients. In view of this, replicability of the study's findings may be limited to groups that share similar characteristics as the sample of the study. Also, the interviews of study participants were conducted in the own homes based on participant's chosen time of convenience. However, there were times when the interview sessions were interrupted by the relatives of the participants. Such interruption to some extent affected the chain of narration by participants during interviews. In spite of these limitations the findings of the study should be considered as rich contribution to knowledge generation towards enhancing postoperative pain management in Ghana and beyond hence, may be applied elsewhere.

6.4 Recommendations

Based on the findings of the present study, the following recommendations were made to nurses, the Tamale Teaching Hospital and the Ministry of Health (MoH) at large. It was anticipated that when these recommendations are implemented it will enhance the management of postoperative pain in the facility and beyond.

6.4.1 Ministry of Health

The Ministry of Health should;

- Allocate more resources towards strategies that seek to improve postoperative pain management and surgical outcome in general.

- Review all pre-existing pain management protocols and guidelines in line with current standards and evidence based practice and ensure their adoption in all clinical settings across the country.
- Put together policies that seek to increase the number of perioperative nurses in Ghana. This will guarantee the availability of specialised nurses in the surgical settings of all the major hospital in Ghana.
- Take steps to introduce transcultural nursing in the nursing training curricula in order to promote culturally sensitive nursing especially relative to pain management.
- Allocate more resources towards strategies that seek to improve postoperative pain management and surgical outcome in general.

6.4.2 Nursing and Midwifery Council of Ghana

The NMC should;

- Collaborate with the Nursing faculties at the various institutions of higher learning to design a specialists' programme for nurses and midwives to train as specialists in pain management and post-anaesthesia recovery to promote the quality of postoperative recovery in Ghana.
- Integrate pain management into the curricula of all levels of nursing education in Ghana and ensure they are taught.
- Ensure that practicing professional nurses and midwives take in-service training courses in pain management each year to renew their licenses to practice.

6.4.3 Tamale Teaching Hospital

The management of the Tamale Teaching Hospital should;

- Design leaflets with in-depth information on preoperative teachings and orientations for patients who can read to serve as reinforcement to education and orientation done by nurses in the preoperative period.
- Develop guidelines for pain assessment and management that will put emphasis on preoperative teachings and education as well all forms of pain expression particularly for post operative patients.
- Organize in-service training and sensitization workshops in a form of continuous professional development (CPD) on postoperative pain expression and management for nurses working in the surgical department to enhance their knowledge on the care and management of postoperative patients in order to ensure positive surgical outcomes.
- Design and introduce guidelines for culturally competent care in order to reduce discrepancies and improve the provision of context appropriate pain care to postoperative patients.
- Sponsor more nurses to pursue further education on specialized areas such perioperative nursing.

6.5 Conclusion

The study explored the various factors influencing postoperative pain expression and management at the Tamale Teaching Hospital. In accomplishing the study objectives, findings revealed that postoperative pain is influenced by previous surgical experience, thoughts and feelings and sensations of the experiencing person as well as sociocultural factors. These factors as identified vary from one person to another giving further meaning to the subjectivity of pain experience. It also emerged from the findings that postoperative patients express their pain in verbal, non-verbal or physiological forms. Postoperative patients were also noted to share varied perspectives on the management of their postoperative pain. The Social Communication Model of Pain used to guide the study was useful in identifying the interconnectedness of the process of pain experience, pain expression and pain management. Even though the research questions of the study were answered, further examination of these factors identified is required to provide direction of postoperative pain management in order to improve surgical outcomes.

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APPENDICES

Appendix A: Ethical clearance

NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH
Established 1979 *A Constituent of the College of Health Sciences*
University of Ghana

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Telex No: 2556 UGL GH

INSTITUTIONAL REVIEW BOARD



Post Office Box LG 581
Legon, Accra
Ghana

My Ref. No: DF.22
Your Ref. No:

13th November, 2017

ETHICAL CLEARANCE

FEDERALWIDE ASSURANCE FWA 00001824

IRB 00001276

NMIMR-IRB CPN 024/17-18

IORG 0000908

On 13th November, 2017, the Noguchi Memorial Institute for Medical Research (NMIMR) Institutional Review Board (IRB) at a full board meeting reviewed and approved your protocol titled:

TITLE OF PROTOCOL : **Exploring Factors Influencing Pain Expression and Management among Post Operative Patients at the Tamale Teaching Hospital.**

PRINCIPAL INVESTIGATOR : **Awal Issahaku M.Phil Cand.**

Please note that a final review report must be submitted to the Board at the completion of the study. Your research records may be audited at any time during or after the implementation.

Any modification of this research project must be submitted to the IRB for review and approval prior to implementation.

Please report all serious adverse events related to this study to NMIMR-IRB within seven days verbally and fourteen days in writing.

This certificate is valid till 12th November, 2018. You are to submit annual reports for continuing review.

Signature of Chair:

Mrs. Chris Dadzie
(NMIMR – IRB, Chair)

Appendix B: Certificate of Authorization



**Department of Research & Development
Tamale Teaching Hospital**

TTH/R&D/SR/43
26/03/2018

TO WHOM IT MAY CONCERN

**CERTIFICATE OF AUTHORIZATION TO CONDUCT RESEARCH IN
TAMALE TEACHING HOSPITAL**

I hereby introduce to you **Awal Issahaku**, a postgraduate candidate from the University of Ghana. He has been duly authorized to conduct a study on **"Exploring on Factors influencing pain expression and management among post-operative patients at the Tamale Teaching Hospital"**.

Please accord him the necessary assistance to enable him complete his study. If in doubt, kindly contact the Research Unit on the second floor of the administration block or on Telephone 0209281020. In addition, kindly report any misconduct of the Researcher to the Research Unit for necessary action.

Please note that this approval is given for a period of six months, beginning from 26th of March, 2018 to 26th of August, 2018.

Thank You.

**ALHASSAN MOHAMMED SHAMUDEEN
(HEAD, RESEARCH & DEVELOPMENT)**

Appendix C: Consent Information

CONSENT FORM

Title: Exploring factors influencing pain expression and management among pos operative patients at Tamale Teaching Hospital

Principal Investigator: Awal Issahaku

School of Nursing and Midwifery

University of Ghana Main Campus

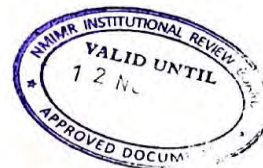
P.O. Box LG 43, Legon, Accra, Ghana

Tel: 0302 – 513250/028 9531213

Email: nursing@ug.edu.gh

General Information about Research

The purpose of this study is to determine the factors influencing pain expression and management of pain among post operative patients at Tamale Teaching Hospital. To be part of the study, you must have been admitted and operated at any of the surgical units of the Tamale Teaching hospital, you must be 18 years or older, and also, you must be fluent in Dagbani or English language. You are at liberty to decide whether you want to participate in the study or not. If you agree to take part, your cooperation will be needed. You will be given an agreement form, and you will have to give your consent by signing or thump printing the agreement form. You would also be engaged in an interview that will last for about 30 to 60 minutes. There is no right or wrong answer and you are free to express any opinion or sentiments. The interview will be conducted in your home based on a scheduled time convenient to you. The conversation will be about your perspectives on factors that influence your post operative pain expression and management. The interview will be tape- recorded and transcribed. You may ask to have the tape-recorder turned off at any time during the interview. You are free to opt out of the study at any time if you wish. Your decisions to participate or not to participate in the study will not in any way affect your medical ^{care} attention here at the Tamale Teaching Hospital.



Possible Risks and Discomforts

The study is not associated with any physical or social harm. However, you should expect that, some of the questions that will be asked may be sensitive or may bring out unpleasant feelings or memories during the interview session. Therefore, you are at liberty to decline answering such questions.

Possible Benefits

The study may benefit you indirectly because, it will help nurses and other health care workers to understand individual's perspectives on pain and also factors that influence how they express and manage pain. This will assist the health workers in designing pain management intervention strategies that will meet specific needs of post operative patients. The study therefore is expected to contribute towards quality health care at the Tamale Teaching Hospital and even beyond.

Confidentiality

In order to ensure confidentiality, all the information you will give out including the audio- taped and transcribed information will be protected. The information will be kept in a safe custody of the researcher for five years after which, it would be destroyed. Only the principal investigator (Awal Issahaku) and the supervisors will have access to the information gathered. Also, to ensure anonymity, your real names will not be used. Codes will be used in place of your real name. This will ensure that no information provided by you including what you say about yourself can be traced to you. To ensure privacy, the interview will be scheduled and conducted at a time and place convenient to you so that there will be no interruptions. Any information you need to know about the study will be explained to you and you have to sign a consent form as a sign of agreement before the interview will be conducted.

Compensation

There would be no compensation at the end of the study. However, you will be served with some snacks biscuit and malt drink after the interview session since you may be engaged in a chat for about an hour. This is however not a form of enticement.

Additional Cost

There will be no additional cost to you during and or after the research



Voluntary Participation and Right to Leave the Research

Participation in the study is voluntary and you are free to withdraw from the study at any time without penalties. You will not be liable for refusing to answer any and no explanation will be required for your refusal.

Contacts for Additional Information

In case you wish to obtain further information or ask pertinent questions about the research, please contact the principal investigator: Awal Issahaku Telephone: 0206814058/0246894532 or email: iwal002@st.ug.edu.gh

You may also contact the following supervisors for enquiries regarding the research:

Dr. Lydia Aziato, Ag Dean, Head of Adult Health Department School of Nursing and Midwifery

University of Ghana Main Campus, P.O. Box LG. 43, Legon, Accra, Ghana Tel: +233 244719686 Email:

laziato@ug.edu.gh

Mrs. Dzansi Gladys , Adult Health Department School of Nursing and Midwifery University of Ghana Main Campus,

P.O. Box LG. 43, Legon, Accra, Ghana Tel: +233 243059316 Email: gdzansi@ug.edu.gh

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your rights as a research participant you can contact the IRB Office between the hours of 8am-5pm through the landline 0302916438 or email addresses:

nirb@noguchi.ug.edu.gh



Appendix D: Volunteer Agreement

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title (Exploring factors influencing pain expression and management among post operative patients at the Tamale Teaching Hospital) has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction.

I agree to participate 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 benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Date

Name and signature of witness

I certify that the nature, purpose, potential benefits and possible risks associated with my participation in this research have been explained to the above individual.

Date

Name Signature of Person Who Obtained Consent



4

Appendix E: Semi-structured Interview Guide

Data Collection Instruments

SEMI-STRUCTURED INTERVIEW GUIDE

SECTION A: Background Information

Information regarding the background of participants will be collected after securing their consent to participate in the study. This information will enhance further understanding of the individual differences of the participants and examination of the characteristics of data

Code Number.....

Please tell me about yourself?

1. Age:.....
2. Gender
3. Nationality
4. Ethnicity
5. Marital Status
6. Number of Children if any
7. Religion
8. Occupation
9. Level of Education
10. Languages Spoken
11. How many operation(s) have you had?.....
12. What was the indication for the surgery?.....



SECTION B

Introductory question

1. Please can you share with me about your recent operation?

Probe

Pain presence

What made the pain worse?

What made the pain better?

2. How did you show your pain?

Probe:

Forms of pain expression

Verbal

Nonverbal

Physical Influences on Pain Expression and Management

1. What are some of the things that determined how you showed your pain?

Probe:

Dressings on surgical Wound

Location of surgical wound

Extent of surgical incision

Environment

2. How did you manage your pain?

Probe

Asked for medication

Change of position in bed

Movement restriction

3. What reasons informed how you managed the pain after surgery?

Probe:



Duration of the surgery

Previous use of pain medication

Psychosocial influence on pain Expression and Management

1. How did you feel before your operation?

Probes:

Hopeful

Anxious

Depressed

Afraid

2. How did your state of mind after surgery affect your pain experience?

Explain further

3. What personal factors influenced your pain expression?

4. What personal factors influenced your pain management?

Probe

Emotions and feelings

Expectation

Beliefs

History

Previous experience

5. How did the people around you influence your pain expression?

Probe: Family members

Health Workers

Other patients

5. How did the people around you influence your pain management?



Probe: Family members

Health Workers

Other patients

Cultural influences on Pain Expression and Management

1. Tell me about how pain expression is viewed in your culture/community?

Probe:

Socialization

Spirituality

Perceived discrimination

2. Can you share with me the acceptable ways of showing pain especially after surgery?

Probe:

Encouraged

Discouraged

Indifference

3. What issues influence how you manage your pain at home?

Probe:

Existing cultural methods on pain management

Availability of drugs

Financial status

Level of pain

Family members

4. Is there anything else you would like to tell me?



Appendix F: Participants' Biographic Data**Table 4.1 Participants' Biographic Data**

Code	Age	Sex	Marital S.	No. Of Chd	Ethnicity	Religion	Education	Languages	Surgical Operation
POP001	24	F	Married	1	Dagomba	Islam	Senior High	Dagbani, English	Open Reduction and Internal Fixation (ORIF)
POP002	35	M	Married	1	Gonja	Islam	Tertiary	Gonja,English,Hausa, Enflglish	Amputation
POP003	47	F	Married	4	Dagaati	Islam	None	Dagaare, Dagbani,Twi	Thyroidectomy
POP004	46	M	Married	4	Bimoba	Christian	None	Bimoba, Dagbani	Appendectomy
POP005	32	M	Married	1	Gonja	Islam	Senior High	Gonja, Dagbani,	Laparotomy, ORIF
POP 006	47	M	Married	2	Kassen	Christianity	Tertiary	Kassen,Dagbani, Hausa,English	Plastic Surgery of the Groin
POP 007	52	M	Married	10	Dagomba	Isla,m	None	Dagbanli	Skin grafting and wound debridement
POP008	46	M	Married	3	Bulsa	Christian	Tertiary	buli,asante,hausa,dagbanli,englishH	Bellow Knee Amputation
POP 009	45	M	Married	4	Dagomba	Islam	None	Mampruli, Dagbanli	ORIF
POP 010	20	F	Married	2	Dagomba	Islam	Senior High	Dagbani, English	Appendectomy
POP 011	72	M	Married	8	Dagomba	Islam	Undisclosed	Dagbanli, English, Hausa	Wound Debridement and ORIF
POP 012	23	M	Single	-	Gonja	Islam	Tertiary	Gonja,Dagomba,Engl ish,Twi,Hausa	Herniorrhaphy
POP 013	47	M	Married	7	Dagomba	Islam	None	Dagbani	Fasciocutaneous flap repair
POP14	30	M	Single	-	Dagomba	Islam	JHS	Dagbani	Laparotomy