

**Pain assessment of children under five years in a Primary
Health Care setting**

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DECLARATION

I, Dorothy Mami Taye, student number 201548872, declare that:

- The dissertation with the title: **Pain assessment of children under five years in a Primary Health Care setting** is my own work and that all the sources quoted have been indicated in the text and acknowledged by means of complete references;
- The study has been approved by the Ethics Committee of the North-West University (Potchefstroom Campus) in Potchefstroom;
- The ethical standards of the North-West University (Potchefstroom Campus) have been considered during the conduction of the study.

MD Taye

November 2012

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ABSTRACT

Pain is a very common problem experienced by the general population and children in particular. It goes beyond personal suffering and affects all dimensions of the quality of life and general functioning of both adults and children, be it the physiological, psychological or financial aspects. Children may suffer from pain that may either be chronic or acute, depending on the diagnosis. Assessment of pain in children is equally important as that of adults, except that they lack the verbal fluency and cognitive development to communicate their pain. Children's experience of pain is similar to that of adults. Pain assessment is a key aspect in the nursing management of children and delivery of care within the Primary Health Care (PHC) setting. Effective pain assessment is thus reliant on comprehensive assessment of the child and his or her pain.

The aim of this research was to explore and describe practices and perceptions of professional nurses working in a PHC facility regarding pain assessment of children under five years in the Mangaung Metropolitan Municipality and to formulate recommendations for professional nurses in PHC facilities to facilitate pain assessment in PHC settings.

A qualitative study design was used and data was collected with the use of focus groups. A purposive sampling was conducted to select participants who represent the target population. The sample used for the study included all the professional nurses working in PHC facilities registered with the South African Nursing Council and that have at least one year of experience. The practical training of the researcher to conduct an interview was done prior to the actual research. A pilot focus group was conducted and the interview schedule was finalised. Semi-structured focus groups were used to obtain data from the participants. The researcher conducted 6 focus group interviews attended by 32 professional nurses. Data was collected until data saturation was achieved. Trustworthiness was ensured in accordance with the principles of credibility, transferability, dependability and confirmability. Data was captured on a digital voice recorder and transcribed verbatim. Field notes were taken during each focus group.

Data analysis was done by means of content analysis by the researcher and an independent co-coder. After consensus and saturation, three major themes emerged.

Each theme was identified and divided into sub-themes and was consequently discussed together with the relevant data obtained from literature. The findings indicated that professional nurses perceive the assessment of pain in children under five years as a challenge. The combination of signs and symptoms to make decisions with pain assessment was identified as an area of concern. The participants further perceived the history provided by the parent as important in the process of pain assessment.

The conclusions drawn are that the professional nurses acknowledge that they don't take sufficient notice of pain in children under five, which means that children with pain are neglected. Professional nurses maintain that there is a need for sufficient pain assessment and the need for guidelines and tools to assess pain in children under five, especially in the PHC setting. These professional nurses support the availability of guidelines to assist them to conduct effective and comprehensive pain assessment.

The research report concluded with the researcher's recommendations for nursing education, nursing research and nursing practice with specific formulation of guidelines for the facilitation of professional nurses to truly render effective and comprehensive pain assessment in PHC settings.

[Key concepts: practices, perceptions, pain assessment, pain, child, professional nurse and PHC setting.]

OPSOMMING

Pyn is 'n algemene probleem wat deur die breë populasie ervaar word, en veral deur kinders. Dit gaan wyer as persoonlike lyding en affekteer alle dimensies van lewenskwaliteit en algemene funksionering van beide volwassenes en kinders, insluitende die fisiologiese, psigologiese en finansiële aspekte. Kinders kan kroniese of akute pyn ervaar, afhangende van die diagnose. Die assessering van pyn in kinders is net so belangrik soos in volwassenes, behalwe dat hulle nie beskik oor die verbale en kognitiewe ontwikkeling om hulle pyn te kommunikeer nie. Kinders se ervaring van pyn is soortgelyk aan die van volwassenes. Pynberaming is 'n sleutelaspek in die verpleegbestuur van kinders en lewering van sorg binne die Primêre Gesondheidsorg (PGS) omgewing. Effektiewe pynberaming berus dus op die omvattende beraming van die kind en sy of haar pyn.

Die doel van die navorsing was om die praktyke en persepsies van professionele verpleegsters in die PGS omgewing met betrekking tot die pynberaming van kinders onder vyf te ondersoek en te beskryf soos dit voorkom in die Mangaung Metropolitaanse Munisipaliteit, en om aanbevelings te maak vir professionele verpleegkundiges in PGS omgewings om pynberaming beter te fasiliteer.

'n Kwalitatiewe studie-ontwerp is gebruik en data is ingesamel met behulp van fokusgroepe. 'n Doelgerigte steekproef is geneem om deelnemers te kies wat verteenwoordigend is aan die teikenpopulasie. Die steekproef vir die studie het al die professionele verpleegkundiges ingesluit wat in PGS fasiliteite werk, geregistreer is by die Suid-Afrikaanse Raad op Verpleegkundiges en ten minste een jaar se ondervinding het in die praktyk. Die praktiese opleiding van die navorser in onderhoudvoering het voor die navorsing plaasgevind. 'n Loodsondersoek is onderneem en die onderhoudskedule was gefinaliseer. Semi-gestruktureerde fokusgroepe is gebruik om die data in te samel. Die navorser het 6 fokusgroepe gehou wat deur 32 professionele verpleegsters bygewoon is. Data is ingesamel tot data saturasie bereik is. Geloofwaardigheid is verseker in ooreenstemming met die beginsels van geloofwaardigheid, oordraagbaarheid, betroubaarheid en bevestigbaarheid. Data is deur

middel van 'n digitale klankopnemer opgeneem en verbatim getranskribeer. Veld-notas is gedurende elke fokusgroep geneem.

Data-analise is gedoen deur middel van inhoud analise deur die navorser en 'n onafhanklike mede-kodeerder. Na konsensus en saturasie is drie hooftemas geïdentifiseer. Elke tema is geïdentifiseer en in subtemas verdeel, en was dan geïntegreerd bespreek saam met die relevante data uit die literatuur. Die bevindinge het aangedui dat professionele verpleegkundiges die beraming van pyn in kinders onder vyf as 'n uitdaging beskou. Die kombinasie van tekens en simptome om besluite te maak oor pyn is geïdentifiseer as 'n probleemarea. Die deelnemers het verder die pasiëntgeskiedenis soos verskaf deur die ouer beskou as belangrik in die proses van pynberaming.

Die gevolgtrekking is dat professionele verpleegkundiges beaam dat hulle nie genoeg ag slaan op pyn in kinders onder vyf nie, wat impliseer dat kinders met pyn afgeskeep word. Professionele verpleegkundiges hou vol dat daar 'n behoefte is aan genoegsame pynberaming en riglyne en toerusting om pyn in kinders onder vyf te beraam, veral in die PGS sektor. Hierdie professionele verpleegkundiges ondersteun die beskikbaarheid van riglyne wat hulle lei om pyn effektief en volledig te beraam.

Die navorsingsverslag sluit af met die navorser se aanbevelings vir verpleegopleiding, verpleegnavorsing en verpleegpraktyk en spesifieke riglyne omskryf vir die fasilitering van professionele verpleegkundiges vir die effektiewe en omvattende beraming van pyn in PGS fasiliteite.

[Sleutelwoorde: riglyne, persepsies, pynberaming, pyn, kind, professionele verpleegkundiges en PGS omgewing.]

ABBREVIATIONS

AAP	American Academy of Paediatrics
AIDS	Acquired immunodeficiency syndrome
ANC	African National Congress
DHIS	District Health Information System
DHP	District Health Plan
DoH	Department of Health
HIV	Human immunodeficiency virus
HOD	Head of Department
HST	Health Systems Trust
ICN	International Council of Nursing
IMCI	Integrated Management of Childhood Illnesses
NWU	North West University
PGS	Primêre Gesondheidsorg
PHC	Primary Health Care
PN	Professional Nurses
SA	South Africa
SANC	South African Nursing Council
WHO	World Health Organisation

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CHAPTER 1 - OVERVIEW OF THE RESEARCH

1.1 INTRODUCTION AND BACKGROUND

Pain is the most common problem with which the general population of patients seek help from health professionals, especially in a Primary Health Care (PHC) setting (Klopper *et al.*, 2006:12; Maree *et al.*, 2010:2). According to Drendel *et al.* (2006:1512), 78% of patients evaluated in a health care centre report pain. It is a symptom worthy of independent investigation rather than merely the consequence of a disease (Conlon, 2009:585). It goes beyond personal suffering and affects all dimensions of the quality of life and general functioning of both adults and children, be they the physiological, psychological or financial aspects (Zhang *et al.*, 2008:617). Although it has been found that the prevalence rate of pain in general ranges between 12%-33% among children in European countries (Denison *et al.*, 2007:66), there is a paucity of information on its prevalence in South Africa.

Pain, particularly in children, is not only prevalent but also costly, as it requires analgesic drugs that are often very expensive. Gatchel and Okifuji (2006:780) estimated that the treatment of pain in general costs the United States of America's health care industry more than \$150 billion annually. However, there are no South African (SA) statistics on what the financial burden of pain is. In a personal interview with the chief pharmacist it became clear that pain medication may contribute substantially to the financial burden of the Mangaung Metropolitan Municipality. He noted that more than 34 875 bottles of pain medication are issued to children every month for pain complaints in 42 clinics, with an average head count of 2 926 children under five years (Molakeng, 2011). The rather high cost of pain treatment suggests that pain in children may be a potential public health issue. PHC in SA is costly to the government, especially since it is a free service to the community (Maree *et al.*, 2010:2).

The early childhood phase is considered the most important phase in every human being's growth and development (Department of Social Development [DoSD], 2006:2). However, it is also not uncommon for children under five years to suffer from pain. Children may suffer from either acute or chronic pain, depending on the

diagnosis. The most common pain experienced by children who are under five years is acute pain resulting from an illness, injury due to trauma and/or medical procedures (Reany, 2007:1) Diseases associated with pain in children include, but are not limited to otitis media, teething, infantile colic and pharyngitis (Greeff, 2005:30). Children's illnesses should be carefully observed so that proper pain assessment can be executed. Assessment of pain in children is equally important than in adults, but children lack the verbal fluency and cognitive development to communicate their pain (Rajasagaram *et al.*, 2009:199; Reyers, 2003:2). As a result of the lack of verbal fluency, there are myths that children do not perceive pain the same way as adults and that they do not have the neurological capacity to experience pain (Srouji *et al.*, 2010:1).

For a clear understanding of the mechanism of pain in children, note should be taken of Reyers (2003:3) informative and explanatory work. This research revealed that an infant's nerve fibres that innervate bone and skin and form the peripheral nervous system begin migration from the neural crest at about seven weeks of gestation and this migration process is complete after twenty weeks of gestation. Towards week twenty nine the density of nociceptive nerve endings, pain pathways and the cortical and sub cortical centres involved in the perception of pain are well developed, as are the neurological system for the transmission and modulation of painful sensation. This explanation makes it clear that children's experience of pain will be similar to that of adults. In addition, young children can also communicate their response to feelings of pain (Pawar & Garten, 2010:256).

Pain in children is an obvious reality, which is why pain assessment is an important task facing nurses who work with children under five years in an effort to eliminate pain and suffering when possible. The assessment of pain in children under five years is essential, not only to ensure proper and effective intervention (Zhou *et al.*, 2008:334), but also to promote comfort. This population in particular is vulnerable to neglect with regard to their pain (Bell & Duffy, 2009:153; Drendel *et al.*, 2006:1512; Klopper *et al.*, 2006:13; Powel *et al.*, 2010:69; Snidvongs *et al.*, 2008:211 & Christian, 2008:1).

Furthermore, in terms of Chapter 2 of the Constitution (1996) every person has the right to freedom from pain, which is considered a fundamental human right. These rights are also awarded to children. Breaches in reasonable pain care may constitute a violation of these rights and professional nurses working in PHC settings¹ in particular play an important role in the assessment of children's pain (Sherman *et al.*, 2004:107). However, most studies have found that pain assessment is not conducted adequately and remains a problem confronting health care professionals in general and specifically in a PHC setting (also referred to later in the study as PHC facilities).

The researcher's experience in the clinics that pain assessment is not done effectively and comprehensively is supported by a recent South African study that was conducted in PHC facilities by Maree *et al.* (2010:22) and Klopper *et al.* (2005:12).

PHC is an essential health care service at community level, usually the local clinics as part of the comprehensive public health care services in South Africa (Joubert & Ehrlich, 2007:307). It is accessible, affordable, acceptable, sustainable and equitable (Zweigenthal *et al.*, 2009:7). The service is generally the first care provided to public patients (children under five in this study) seeking health care. It is nurse-driven (Kautzky & Tollman, 2009:22) as nurses in the PHC facilities are mostly the first point of contact with the patient. PHC is in addition mostly utilized by the poverty stricken families in the community as a free health service, which is accessible through decentralization of clinics to the communities (Zweigenthal *et al.*, 2009:64) The majority of children use the public health care sector, especially PHC facilities, to seek help for their health needs. At PHC level, Integrated Management of Childhood Illnesses (IMCI) case management training equips professional nurses with skills to manage a combination of illnesses, to identify those in need of referral and to provide relevant information to parents (in this study referring to mother, child minder or aunt) (Kerry, 2005:35; Horwood *et al.*, 2009:1).

¹Although the title refers to Primary Health Care settings, it will be used as setting or clinic or facility.

IMCI was initiated by the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) in the early 1990's, and was first introduced and adopted in South Africa in 1996 (Kerry, 2005:32). The IMCI strategy was drawn up with the goal of improving child survival in poor resource settings and is the standard of care for children at primary level for South Africa (Horwood *et al.*, 2009:9). This program was adopted to identify and manage sick children and focuses on those illnesses that cause the majority of deaths in children under five years, namely diarrhoea, malaria, malnutrition and chest infections. Its main objective is to move to a more integrated approach to children in line with the principles of PHC. Sick children are classified into defined categories of severity based on the presence or absence of key signs and symptoms.

According to these guidelines, all children should be routinely checked for such signs and symptoms. The purpose of the classification is to enable the professional nurse to select a management plan based on clinical grounds and the assessment of signs to reduce the chances of missing something that may be wrong with the child (Saloojee, 2007:172).

1.2 PROBLEM STATEMENT

Children in sub-Saharan Africa are more likely to suffer from diseases and face death before the age of five years than in any other region in the world (Albertyn *et al.*, 2009:91). This means there's a greater chance that children experience pain and suffering during the disease process. The question is whether or not this pain is addressed and managed effectively in children under five, but including the age of five. As far back as 1998, the South African Demographic and Health Survey, done by the Health Systems Trust (HST) mentioned that there is an increase in the mortality rate to 58 per 1000 live births among children under five years (Kautzky. & Tollman, 2009). The causes of death include a lack of adequate health care, HIV/AIDS and inability to treat communicable diseases like pneumonia and malaria (Albertyn *et al.*, 2009:91; Awasthi *et al.*, 2006:819). In addition to the above-mentioned causes of death, trauma and inflammations, which are common causes of pain in children, rarely, if ever receive the attention they require from health professionals (Albertyn *et al.*, 2009:91; Johnston *et al.*, 2007:467). This has

an adverse impact on the child's ability to cope with the consequent or related pain.

Comprehensive assessment is the cornerstone of nursing management and of the delivery of care within the clinical environment (Francke *et al.*, 2008:13). Consequently, effective pain intervention is reliant on comprehensive assessment of the child and his or her pain. According to Hirsh *et al.* (2010:454) assessment of children's pain in clinical settings is a neglected area of practice by nurses. This lack of assessment is attributed to the gap between theory and practice, which creates a conflict for nurses regarding what to apply and how to apply it when assessing pain.

In the United States of America, the American Academy of Paediatrics' (AAP) policy statement on prevention and management of pain in neonates recommends the consistent evaluation of pain and policies to standardise the assessment of infant pain (Reyers, 2003:291). In a study conducted in one of the largest hospitals in South Africa, pain assessment strategies used by nurses from different cultures suggested that their effectiveness should be evaluated and that nurses underestimated the pain score level indicated by patients in their pain assessment (Klopper *et al.*, 2006). It is urgent that nurses should assess pain of children effectively and comprehensively in order to facilitate comfort and alleviate suffering, especially in PHC facilities (Malviya *et al.*, 2005:27).

Despite the comprehensive nature of the IMCI process as explained in the introduction of this study, pain is only addressed in the ear box for ear pain assessment, and therefore does not get attention anywhere else (DoH, 2012:5). Pain assessment in PHC setting is also addressed in the Guidelines for the Management of HIV in Children (DoH, 2010:79). This means that a child suffering from illnesses like tonsillitis, injuries and other acute emergencies that mainly produce general pain and which may require general pain evaluation, is not assisted.

General pain is one of the most adverse effects experienced by children and may be attributable to a variety of causes (Carr *et al.*, 2005:5). According to Conlon (2009:585) and Rajasagaram *et al.* (2009:199), pain assessment in children poses

a major challenge to the nursing team in general. This statement is also supported by Hirsh *et al.* (2009:454), who point out that children are at risk of having their pain under-assessed. Professional nurses working in PHC facilities should be able to anticipate predictable painful experiences and therefore have the potential to make a difference in relation to pain assessment in general (Bell & Duffy, 2009:155). It can furthermore be said that pain assessment is an important area of child care that should occur routinely in the nursing process (Bell & Duffy, 2009:155; Reyers, 2003:292). Conlon (2009:595) also recommends that pain assessment occurs with routine nursing assessments. However, evidence exists that nurses do not assess pain consistently and/or frequently (Reyers, 2003:299; Banguigui & Stein, 2006:80).

From the above information and the researcher's personal experience as a community health nurse in a PHC facility, it is evident that the pain assessment conducted by professional nurses in general and in particular with regard to children under five years, needs more attention. The main question that arises is: "How can the pain assessment of children under five years conducted by professional nurses in PHC facilities in the Mangaung Metropolitan Municipality be enhanced?" In order to answer this question the following sub-question will lead the research:

What are the practices and perceptions of professional nurses regarding the pain assessment of children under five years in PHC facilities in the Mangaung Metropolitan Municipality?

1.3 AIM AND OBJECTIVES

The aim of this research is to identify recommendations on how to enhance the assessment of pain in children under five in PHC facilities in the Mangaung Metropolitan Municipality. In order to reach this aim, the following objective is formulated:

- To explore and describe professional nurses' practices and perceptions regarding pain assessment of children under five years in PHC facilities in the Mangaung Metropolitan Municipality.

1.4 RESEARCHER'S ASSUMPTIONS

Babbie (2007:31-32) describes a paradigm as a framework for organizing our observation and reasoning; a filter through which one judges the world. The paradigmatic perspective of this study is based on the meta-theoretical, theoretical and methodological assumptions that are discussed in the section that follows.

1.4.1 META-THEORETICAL ASSUMPTIONS

The meta-theoretical assumptions determine the research paradigm influenced in this study by the researcher's Christian world view that has its roots in God and the Old and New Testaments of the Bible as the truth. Though these statements guide the study, they are not testable. Meta-theoretical assumptions comprise man, health, nursing and illness as described in the paragraphs that follow.

1.4.1.1 Man

God created man in His own image (Genesis 1:27) and as distinct from other beings (Bible, 1995). Equally, the researcher's view of man is related to that of God. In this research, man refers to the child, parent (mother, aunt, and minder) and the professional nurse, who are God-created, unique, multi-dimensional beings. The professional nurse has an obligation to deliver nursing care to the sick and to demonstrate God's love. Children are in need of nurture and care from both parents and the professional nurse. For the purpose of this research, the focus will be on the professional nurse in order to discover the perceptions and practices regarding their pain assessment of children under five years who visit PHC facilities.

1.4.1.2 Health

The professional nurse in the PHC facility spends time interacting with the child and parent (mother, aunt and child minder) who seek support and care in pursuit

of health. The professional nurse should treat each patient as of equal value and worth in God's eyes during the process of interaction and communication. When children are confronted with pain, the intervention of the nurse becomes necessary.

1.4.1.3 Nursing

The concept includes the actions, characteristics or attributes of a person who gives care. Such a person is reliant on God for strength and should have a sense of being God's ambassador. Christian nurses see the person as a creation of God and are dedicated to helping all human beings in pursuit of holistic health (Haldeman, 2006:20-21; Trafecanty, 2006:6). For the purposes of this study nursing will be viewed as the interaction between the nurse and patients who seek support and care in the PHC facilities.

1.4.1.4 Illness

The relationship between a person and God has a physical effect. God takes good care of the body, which He considers the temple of the Holy Spirit. Illness is viewed as the physical or emotional experience of a person that is a deviation from the normal sensation. The focus is on the pain experienced by children under five as seen at the PHC facilities for intervention.

1.4.2 THEORETICAL ASSUMPTIONS

The theoretical statement for this research comprises of the definitions of key concepts as discussed below.

1.4.2.1 Definitions of concepts

The following are definitions of concepts used in this study that are derived from the literature. These concepts, described in the context of this study are:

- **Child**

Is a person of either gender between the time of birth and the age of full physical development and younger than eighteen years (South African Oxford Dictionary,

2009:198). A 'child' in this research refers to children under the age of five years who experience pain and who consult PHC facilities for pain assessment.

- **Professional Nurse**

A person performs any act in the observation and care of the ill or injured (George 1990:64) who has undergone specific training in order to have the necessary level of expertise in the area of practice (Brooker, 2006:167). For the purpose of this research, the researcher will define a professional nurse as someone registered with the South African Nursing Council (SANC) and working in Primary Health Care (PHC) facilities.

- **Pain**

Brooker (2006:174) defines pain as “an unpleasant feeling felt when certain nerve endings are stimulated. The discomfort signals actual or potential injury to the body, it includes perception and the subjective interpretation of the discomfort”. It therefore consists of the physiological sensation and the emotional response. In this research, pain refers to general pain, whether acute or chronic, experienced by children under the age of five years visiting the PHC facilities.

- **Assessment**

Assessment is the first step in the nursing process. It consists of two phases, the systematic and orderly collection and the analysis of data by the nurse, pertaining to the health status of the patient for the purpose of making a nursing diagnosis or planning an intervention (Brooker, 2006:21).

The focus in this research is the professional nurse's collection of the patient's history and his or her observation and evaluation of the pain of children under five visiting the PHC facilities.

- **Pain assessments**

Pain assessment is an important function in the nurses' role and may be especially difficult with children who are unable to articulate their pain experiences (Brooker, 2006:174). In this research pain assessment refers to the clinical practice executed by a professional nurse who works in a PHC facility. It involves the

collection of information, evaluating and analysing a child's or parent's complaint with regard to pain for the purpose of making a diagnosis and/or planning an intervention.

- **Primary Health Care (PHC)**

The Alma-Ata conference outlined the definition Primary Health Care as “essential health care based on practical and socially acceptable methods accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain in the spirit of self-reliant and self-determination” (ANC, 1994; Hattingh *et al.*, 2006:83). In this research PHC refers to the PHC facilities rendering comprehensive care to children under five in the community. The professional nurses provide care and promote health to children under five in the Mangaung Metropolitan area.

- **PHC facility**

A primary health care facility is part of the district health service, which must be staffed by at least 50% of the time by a clinical nurse practitioner. PHC facilities are nurse driven in South Africa (DoH, 2001). The focus of this research is on the PHC facilities in the Mangaung Metropolitan area. Primary Health Care facilities are staffed with professional nurses that see children under five on a daily basis.

- **Practices**

Practice is the expected procedure or way of doing something on a regular basis. It includes performing an activity or skill repeatedly or regularly in order to acquire, maintain or improve proficiency in it (South African Oxford Dictionary, 2009:917). Practices refer to the activities performed by professional nurses in PHC facilities in the Mangaung Metropolitan Municipality to assess the general pain of children under five years in this research.

- **Perceptions**

Perceptions involve the ability to see or become aware of something through the senses. It is the state of being or process of becoming something by regarding, understanding, or interpreting something (Oxford Dictionary, 2009:864).

Perception refers to what professional nurses base their decision making processes on, their efforts to understand and interpret the pain experiences of children visiting the PHC facilities.

- **Integrated Management of Childhood Illnesses (IMCI)**

IMCI involves an integrated approach to child health that focuses on the diseases that may occasionally affect children specifically. Sick children are “classified” to enable the primary health care provider to select a management plan based on clinical grounds and the assessment of a few signs. It is presented as the principal strategy to improve child health among children under five years of age. The strategy includes improving case management skills of health-care staff as one of its components (Kerry, 2005: 32; Saloojee, 2007:172).

IMCI in this research refers to the strategy in health facilities that promotes the accurate identification of childhood illnesses in PHC settings, which ensures appropriate combined treatment of all major illnesses, the correct implementation of prescribed care, and timeous referrals of severely ill children to the next level.

1.4.3 METHODOLOGICAL ASSUMPTIONS

The methodological assumptions that will guide this study are grounded on the Christian world view (Bible, 1995) which the researcher supports due to its perspective of the functional thought approach. The assumption implies that research must be applicable and practical. Research emanates from three orders that for descriptive purposes may be arranged as follows:

The first order refers to the nursing practice that from time to time is confronted by problems that need solutions or improvements. The solutions are sought through research. The problem in this study is the lack of performance of effective and comprehensive pain assessment by the professional nurses who manage children under five years in the PHC facilities. An investigation into the perceptions and practices of the professional nurses working in a PHC facilities regarding pain assessment in children under five will enable the researcher to formulate recommendations for professional nurses in PHC facilities to facilitate pain

assessment in children under five years in the Margaung Metropolitan Municipality.

The second order represents the methodology to be adopted. This study follows a qualitative descriptive design. The information yielded will lead to the assistance of professional nurses who manage children under five years in the PHC facilities to perform effective pain assessment.

The third order represents meta-theoretical assumptions that are based on the researcher's beliefs regarding the health care system. At this stage the researcher adopts a total person approach (George, 1990:267). The theoretical statement includes the central theoretical argument, as well as conceptual definitions from other sources consulted for the conceptual definitions of this research.

1.4.4 CENTRAL THEORETICAL STATEMENT

The professional nurses who work in PHC facilities are faced with sick children under five years of age that seek medical help and interventions on a daily basis. These children do not only present with the illnesses described in the IMCI chart booklet, but also with conditions that present with pain that alters the quality of life more than any other health-related problems (Zhang *et al.*, 2008:617). Exploration and description of the health assessment practices and perceptions of professional nurses in PHC facilities regarding the pain assessment of children under five years will provide insight and understanding of this phenomenon that can assist in the formulation of recommendations for the nursing practice, - education and -research on effective pain assessment in children under five years in PHC facilities in the Margaung Metropolitan Municipality.

The research design is briefly discussed below, and will be discussed in more detail in chapter two.

1.5 RESEARCH DESIGN

The researcher follows a qualitative research design. Its qualitative nature offers the opportunity to uncover the natural world of the professional nurses'

perceptions and practices in performing pain assessment in children under five years in the Mangaung Metropolitan Municipality.

The research is contextual in nature because the data will be collected within the participant's own work setting or environment. In this research, the experiences of the participants are described within the context of the specific setting, which is the three PHC facilities in the Mangaung Metropolitan Municipality (previously known as Motheo District). As the study is contextual in nature the results of the study will only be valid for the situation in which the study is conducted.

1.6 RESEARCH METHOD

The research method provides an overview of the population in terms of the sample, sample size, data collection and data analysis methods applied in this research. The aim is to achieve the objectives in a trustworthy and ethical manner. A detailed description of the methods follows in chapter two.

1.6.1 Population

The term population refers to the entire group of clearly defined and described individuals who meet the criteria for inclusion in a study (Burns & Grove, 2009:40). For the purpose of this research one population has been identified and it comprises all professional nurses registered with SANC working in the PHC facilities. The sample of thirty six professional nurses were divided into focus groups of six to eight participants, according to the number that were willing to participate.

1.6.2 Sampling

Sampling refers to the process of selecting a part or group of people who are suitable or qualified to participate in a research study, from the study population in order to obtain information regarding the phenomenon under study in a way that represents the population (Brink, 2008:135). In this study a non-probability, purposive sampling was used based on the judgement of the researcher to select the participants as described by Polit and Beck (2006:265). The participants

selected complied with the set criteria and were to participate. The reader will find a clear outline of the sampling in chapter 2.

1.6.3 Sample size

The sample size refers to the number of participants who are selected from the population (Brink, 2008:135) and is determined by the richness of information and data saturation, that is when sampling provides repeating information and no new themes are observed (Burns & Grove, 2009:358).

1.6.4 Data collection

Polit and Beck (2006:36) defines data collection as pieces of information that the researcher gathers that are relevant to the purpose of the study. The actual steps of collecting the data are specific to each study and are dependent on the research design (Burns & Grove, 2009:542).

For the purpose of this qualitative research, the focus is on properly describing the perceptions and practices of professional nurses regarding pain assessment of children under five. The method that was used in the collection of data was focus-group interviews. Greeff *in* De Vos *et al.*, (2011:363) describes a focus-group interview as a means of gaining a better understanding of how people think about an issue. Consequently, this seemed to be an appropriate method of data collection for this study. Field notes were recorded after data collection had occurred. The field notes entailed the time and interview procedure (methodology notes), the behaviour of the respondent (observational notes, e.g. facial expression, gestures and reactions) and the own thoughts of the researcher (Botma *et al.*, 2010:218). The group dynamics assists the professional nurses to express and clarify their perceptions and assist each other regarding the practices on assessment of pain in the child under five years, which is something that is less likely to occur in a one-on-one interview.

1.6.5 The role of the researcher

Permission to conduct the research was obtained from the following structures: Ethics Committee of the North-West University, Potchefstroom Campus (see

Addendum A); the Head of the Free State Health Department (see Addendum B) and the District Director of the Mangaung Metropolitan Municipality (see Addendum C). The researcher identified a mediator (Clinic Manager) to help with the recruitment process of participants, identified a private room at the PHC facilities that is sufficiently in size and comfort for the focus group. Permission to gain entry to each area was obtained from relevant key persons, namely the Free State Health Department and the District Director. Furthermore, the researcher obtained the permission of the participants. The researcher first explained the research, got informed consent from the participants before the onset of the focus group, and asked permission regarding the recording of everything said during the focus group. The whole focus group discussion was electronically voice recorded. All the ethical procedures are also explained to the participants for better understanding and assurance of confidentiality. Field notes are made to remind the researcher of events that might have occurred during the focus group.

1.6.6 Data analysis

Data analysis in qualitative research is the process of imposing some order on a large body of information so as to reach a general conclusion (Polit & Beck, 2006:329). In this research, the records of data collection (verbatim transcriptions of the focus-group interviews) were analysed and coded in accordance with the technique of content analysis by two independent analysts. A consensus discussion was held between the researcher and an independent co-coder and a decision was reached on the main themes and the sub-themes that emerged from the written text.

1.7 RIGOUR

Rigour in research ensures that the research is reliable and valid; otherwise, it can be argued that the research is worthless, represents fiction and has no use (Morse *et al.*, 2002:2). Credibility refers to confidence in the truth of the data. The goal of credibility is to determine that the participants were accurately identified and described (Brink *et al.*, 2008:119; Polit & Beck 2006:332). Conformability refers to objectivity of data and guarantees that the findings, conclusions and recommendations are supported by the data and there is internal agreement

between the interpretation of the data and the actual evidence (Brink *et al.*, 2008:119; Polit & Beck 2006:335). The transcripts and the voice recorder were handed to an expert in qualitative studies (the co-coder) in order to conduct an enquiry audit on the data and the meaning attached to it. According to Lincoln and Guba (1985:318) transferability refers to the extent to which findings can be transferred to other settings. In this study results will be transferred to other PHC facilities in South Africa. The richness of the data in this qualitative study showed that it can be repeated somewhere else. A detailed description of rigour and the ethical principles follows in chapter 2.

1.8 ETHICAL CONSIDERATIONS

Ethical issues could manifest in any study and the researcher should be sensitive to this and should be aware of what is right and what is wrong in any given situation (Babbie, 2007:65). Cognisance was taken of different ethical issues that might occur in the interaction with the professional nurses working in the PHC facilities involved in the study.

The ethical principles as identified by Burns and Grove (2009:181-230) guided the researcher to carefully consider and respect possible ethical dilemmas that may occur during the study. Written permission was obtained from the following institutions:

- The Ethics Committee of the North-West University (Potchefstroom Campus), (certificate number **NWU-00059-11-A1**), (see Addendum A).
- The Head of the Department of Health in the Free State Province, to request approval for undertaking the study in the province (see Addendum B). The District Manager of Mangaung Metropolitan Municipality, where the research was conducted in Mangaung Metropolitan Municipality (see Addendum C).
- The participants, after giving them adequate information concerning the research, ensuring that they comprehend the required information, enabling them to consent voluntarily to participate in the research (see Addendum D).

The researcher did also adhere to further principles as briefly stated below:

- The appropriate protection of the rights and welfare of the participants, by ensuring that the degree of risk taken by those participating in the research will not exceed the benefits of the knowledge to be gained;
- Protection of the identities and interests of those involved, by maintaining identifying information in locked files and substituting identification (ID) numbers for participants' names on study files and computer files to prevent any breach of confidentiality;
- Consideration of the right to fair treatment by selecting study participants based on research requirements and not compromise certain people; and to treat people who decline to participate in the study (or who withdraw from the study after agreeing to participate) in a non-prejudicial manner.

A detailed description of the ethical principles follows in chapter 2.

1.9 OUTLINE OF CHAPTERS

The division of chapters is the generic structure used for the dissertation that entails empirical research (Bak, 2005:31). In this study the chapters will be divided as follows:

Chapter 1: Overview of the research.

Chapter 2: Methodology of the research.

Chapter 3: Discussion of research findings.

Chapter 4: Conclusions, evaluation of research, recommendations and limitations.

1.10 SUMMARY

In chapter 1 the researcher dealt with the background of the study, the research question and the objectives the study aims to achieve, the research design and methodology, as well as the consideration of rigour and ethics. The chapter was concluded with an outline of all the chapters. A detailed description on the research design and methods as applied in this study follows in chapter 2.

CHAPTER 2 – RESEARCH METHODOLOGY

2.1 INTRODUCTION

In chapter 1 an overview of the research was provided. The research problem was formulated followed by the problem statement, objectives, and the researcher's assumptions, as well as a brief orientation of the research methodology employed within this study. In this chapter a detailed description of the research methodology is given with special attention to the research design, the method and the ethical issues applicable to this research, as well as trustworthiness. The objective of this study is as follows:

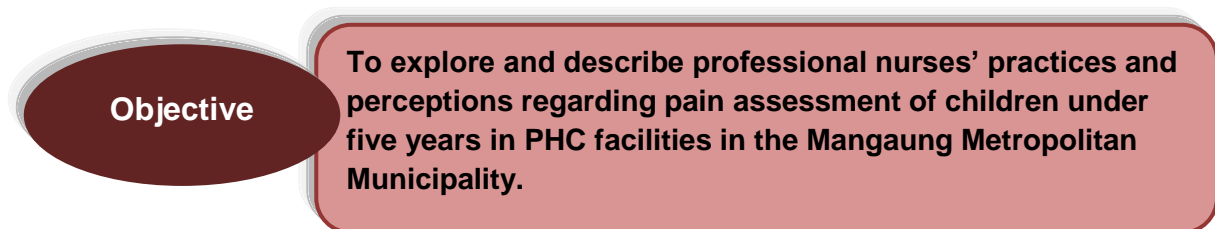


Figure 2.1: Objective of the study

The aim of this research is to identify recommendations on how to enhance the assessment of pain in children under five in PHC clinics in the Mangaung Metropolitan Municipality.

2.2 RESEARCH DESIGN

The researcher follows an explorative, descriptive and contextual design with the aim of exploring the lived perceptions and practices of professional nurses and describing their practices pertaining to pain assessment in PHC facilities (Nieuwenhuis *in* Maree, 2011:70). The researcher is concerned with understanding the natural observation with the subjective exploration of reality from the perspective of professional nurses.

Qualitative research gathers information through direct mutual interaction with an individual or a group that is expected to poses the knowledge the researcher seeks by spending a great deal of time with them during the data collection (Burns

& Grove, 2009:23; Botma *et al.*, 2010:205; Polit & Beck, 2006:16) in order to uncover and understand factors that influence opinions or behaviour in a certain context. A qualitative design was appropriate in this research in order to gain a better understanding of the practices and perceptions of professional nurses regarding pain assessment of children under five years in PHC settings in the Mangaung Metropolitan Municipality. The researcher wanted to go beyond a mere list of professional nurses' pain assessment practices and wanted gain more insight into professional nurses' perceptions about pain assessment.

Exploratory research is aimed at exploring the dimensions of the phenomena, the way in which they unfold. This research was exploratory in nature and was conducted to gain insight and a deeper understanding (Fouche & De Vos in De Vos *et al.*, 2011:95; Polit & Beck 2006:20) into the practices and perceptions of professional nurses regarding pain assessment in children under five years. The central question was asked and explored further according to the participants' responses.

The **descriptive** nature involved the depiction of the practices and perceptions within its practical context as it unfolded in real life (Burns & Grove, 2009:734). Describing findings explored from the world of the participants through qualitative data collection meant that communication and sharing of information took place between the researcher, who interpreted and reflected the practices and perceptions of nurses working in PHC facilities on pain assessment of children under five years.

The **context** of the research referred to the site or environment where the phenomena were explored (Fouche & De Vos *in* De Vos *et al.*, 2011:65). The exploration and description of professional nurses' practices and perceptions regarding the assessment of children under five was conducted within the context of PHC facilities. The research was conducted in the PHC facilities in the Free State, one of the 9 provinces in South Africa. These facilities are positioned within the Mangaung Metro, which is the only Metropolitan Municipality in the Free State Province. It consists of three local areas, namely Bloemfontein, Thaba N'chu and Botshabelo. Both Botshabelo and Thaba N'chu are semi-urban areas, whereas

Bloemfontein is an urban area. Bloemfontein is \pm 60 kilometres from Thaba N'chu and \pm 55 km from Botshabelo with Botshabelo and Thaba N'chu about 5km from each other.

The Mangaung Metropolitan Municipality has 42 fixed PHC facilities and ten mobile clinics, which are customised vehicles equipped to render PHC, and two further Community Health Centres (District Health Plan [DHP], 2012/13). The clinics operate 8 hours per day and 6 of the 42 PHC clinics, including the 2 Community Health Centres, operate 24 hours per day, including weekends and holidays. According to the District Health Information System (DHIS), Mangaung Metropolitan Municipality has a population of children under five years of 34,536 females and 34,896 males. The PHC facilities selected for the study had an average headcount of 22 645 children under than five years per month with only an average of 4% utilisation rate (DoH, 2011). The professional nurses who render care and who participated in this study all live and work in the same geographical context as the sick children under five who visit the PHC facilities. Although they are not all from the same socio-cultural and temporal context, the professional nurses were purposively chosen because of their practical experience and wisdom.

2.3 RESEARCH METHOD

Detailed information on the research method is provided below with emphasis on the population, sampling, data collection and data analysis.

2.3.1 POPULATION AND SAMPLING

The population refers to all the elements or the entire set of individuals who have some common characteristics that meets the inclusion criteria (Burns & Grove, 2009:343). In this study all the professional nurses who work in PHC facilities in the three sub-districts of the Mangaung Metropolitan Municipality were included in the study. These professional nurses were involved in the assessment of children under five years that visited the PHC facilities where the IMCI strategy was deployed. According to the DHP (2012/13) of the Mangaung Metropolitan Municipality, this Municipality has 831 professional nurses working in PCH

facilities and 542 of these professional nurses were trained to use the IMCI strategy (Furter, 2011).

A purposive sampling was used in this research. As a sample is the portion of a population that denotes a group of people selected (because of defining characteristics that make them the possessors of the information needed) to take part in research (Botma *et al.*, 2010: 124, Burns & Grove, 2009:343), a sample therefore refers to a part of all the professional nurses in PHC facilities in the Mangaung Metropolitan Municipality that is a smaller representation of all the professional nurses. In order to obtain the best possible source of information to answer the research problem, purposive **sampling** was conducted (Nieuwenhuis *in* Maree, 2011:90; Burns & Grove, 2009:342) according to specific inclusion criteria. The inclusion criteria entailed that a prospective participant:

- has worked at least one (1) year in a PHC facility in the Mangaung Metropolitan Municipality;
- has had the responsibility to assess sick children under five years;
- is registered as a professional nurse and midwife with the South African Nursing Council (SANC);
- is able to understand and speak English; and
- should provide informed consent to participate in the study voluntarily.

The clinic manager of each PHC clinic was identified as a mediator to assist with the identification and selection of the participants.

The **sample size** refers to the number of focus groups that were conducted with professional nurses (Polit & Beck, 2006: 509). In this study the sample size was determined by the depth of information needed to gain more insight into the practices and perceptions of professional nurses regarding the pain assessment of children under five years in PHC settings in the Mangaung Metropolitan Municipality and by the data saturation indicated by patterns of repetition (Burns & Grove, 2009:361). Of the 36 participants invited to participate, 32 professional nurses participated in six focus groups.

2.3.2 DATA COLLECTION

Data collection is the process of gathering information relevant to the study in a systematic manner (Burns & Grove, 2009:430). In this study six (6) semi-structured focus group interviews were conducted for data collection. Practical training of the researcher to conduct a focus group was conducted prior to the actual data collection. The researcher compiled an interview schedule and conducted a pilot focus group (Burns & Grove 2009: 540). Thereafter the supervisors were consulted, who listened to the digital voice recording, highlighted the researcher's more and less effective communication skills and permitted the researcher to conduct the rest of the interviews.

The **role of the researcher** in data collection constituted the following:

The researcher requested permission from different role players in order to conduct this research. In addition to consent, the researcher was responsible for preparing the data collection by means of focus groups. After the prospective participants were informed about this research and responded positively to the invitation, the researcher arranged a briefing session to explain the method of data collection and to address or clarify any uncertainties raised by the prospective participants. The physical setting for data collection was identified beforehand. A private office or a private room in the facilities had to be large enough, non-threatening and comfortable to conduct a focus group.

Polit and Beck (2006:16) stated that a **physical setting** is the environment within which human behaviour unfolds and they add that this should not be constrained. This environment should foster psychological freedom and enhance participation. For this reason, the physical setting was a private room, large enough to accommodate all participants of a focus group in a comfortable manner. The focus groups were scheduled to be conducted in a quiet room in the PHC facility(s) that is comfortable, well-ventilated and promoted freedom for expression. The researcher had to ensure that the rooms were free from distraction and that temperature, ventilation and noise from cellular phones were under control. Chairs were arranged to facilitate eye contact and continuous rapport during the focus groups. The tables were set in a horseshoe formation with the researcher at the

open end. The anticipated duration of a typical focus group was one to two hours and participants were requested to avail themselves for this period.

Focus groups are group interviews that form social relationships, intended to exchange opinions and experiences simultaneously between the researcher and the participants (Botma *et al.*, 2010: 205; Greeff *in De Vos et al.*, 2011:360). It serves as a means of better understanding how people think about an issue and it is useful when multiple viewpoints or responses on a specific topic are needed. The focus groups allowed stimulation of thoughts by the responses from the participants (Botma *et al.*, 2010:205 & Greeff *in De Vos et al.*, 2011:360). The researcher directed the flow of the discussion by open-ended questions and non-verbal cues to extract greater depth of meaning. Focus groups were an appropriate method of data collection because professional nurses were grouped together and could express their practices and perceptions about pain assessment of children under five years in PHC clinics simultaneously.

The researcher planned to conduct all the focus groups and was scheduled to be at the applicable facility and selected venue prior to each focus group. The realisation of data collection will be described in chapter 3. The remainder of this paragraph highlights the preparation needed prior to a focus group, as well as the interview skills necessary to conduct this focus group.

The preparation for focus groups entailed checking the electronic equipment (voice recorder) and to ensuring that the room was clean and chairs arranged in a circle. The researcher had an additional voice recorder and extra batteries as a backup system. With regard to the conduction of a focus group, the following is suggested:

- The researcher should welcome the participants and usher them into the identified room and make them conformable;
- The researcher should make sure that focus groups are kept as disturbance-free as possible, i.e. no distracting movements or cellular phones (Burns & Grove, 2009:233);

- In this case, the researcher availed an occupational nurse after the interview in case the participants expressed or indicated extreme feelings of discomfort;
- The participants who agreed to participate were asked to hand over their signed informed consent forms (see Addendum D) before the actual interview started. The following aspects were highlighted in the informed consent:
 - It clarified the purpose of the research;
 - It reassured the participants that confidentiality and anonymity will be maintained;
 - It indicated to participants that the proceedings would be digitally voice recorded to ease the analysis process.

The focus group started with an open question: “How do you assess pain in children under five?”, followed by the second open question: “What are your perceptions about pain assessment of children under five years in PHC clinics?” During the focus groups the researcher used communication techniques as adapted from Burns and Grove (2009: 540):

- open ended questions were formulated prior to the focus groups in an interview schedule;
- the researcher allowed the participants to talk freely about their perceptions and provided participants sufficient time to respond;
- participants who were uncomfortable talking in a group setting were considered;
- probing was used to encourage participants to elaborate further on the topic of discussion with examples such as “Will you please explain what you mean by” and “Does anyone else have a comment to offer about...”;
- paraphrasing was used during which the participants’ words were repeated in order to get clarity about what was said;

- participants were encouraged to continue talking by using techniques such as nodding the head or making sounds that indicate interest;
- reflection was used by the interviewer to communicate to the participants that their concerns and perspectives are understood by verbalising the themes mentioned by participants (Greeff *in* De Vos *et al.*, 2011:344);
- the interviewer directed questions according to the interview schedule and ensured that she heard and understood what the participants were saying by summarising, also to bring those that tend to wander off the subject;
- the researcher enhanced communication techniques by demonstrating non-verbal behaviours in order to show that she was listening and is interested in the participants by smiling occasionally, nodding, making eye contact and involving facial expression.

A digital voice recorder should be placed unobtrusively in the focus group and a highly sensitive microphone was used.

2.3.3 FIELD NOTES

Field notes were formulated by the researcher regarding the unstructured observations made during the data collection process and their interpretations (Polit, Beck & Hungler, 2004:642). Botma *et al.* (2010:218) describe field notes as a written account of the things the researcher heard, saw, thought and experienced in the process of collecting or reflecting on data obtained during the study. Field notes were written by the researcher to serve as an analytical base for the collected data and as a written record for future publication of the research results (Polit & Beck, 2006:36). The following three types of field notes were recorded (Addendum E):

- **Descriptive notes:** reports on the portraits of description of participants, the physical setting, the interviewers' account of particular events that occurred and of activities that took place during the interview and the reconstruction of dialogue (Botma *et al.*, 2010:218; Polit & Beck, 2006:307).
- **Reflective notes:** these involved the researcher's personal thoughts such as speculation of incidents, feelings, problems encountered during an interview,

ideas generated during the process, as well as hunches, impressions and prejudices (Botma *et al.*, 2010:218).

- **Demographic notes:** information pertaining to the time, place and date to describe the physical setting where the interview took place.

The field notes were typed, marked and attached to each transcript and made ready for data analysis.

2.3.4 DATA ANALYSIS

Nieuwenhuis *in* Maree (2011:99) indicated that the aim of data analysis was to organise and structure data in such a way that meaningful conclusions could be drawn. Data was analysed by coding that was generally initiated as soon as data collection began (Brink *et al.*, 2008:105). An expert experienced in qualitative research was appointed to do the transcribing of the recorded interviews. The researcher came to an agreement with a second researcher who is an advanced psychiatric nursing specialist with a known record as being experienced in qualitative data analysis to act as co-coder. Content analysis was conducted and entailed the following steps (Nieuwenhuis *in* Maree, 2011:6):

- transcripts were read, reflecting on the possible meaning and relationship of data and keeping the research question in mind;
- words and themes were used as the units for analysis;
- the underlined words and themes were written in the right margin of the transcript;
- the identified themes were grouped into main- and sub-categories;
- redundant information in the themes that do not specify, clarify or elaborate on the remaining themes were eliminated by relating them to each other as a whole.

2.3.5 LITERATURE INTEGRATION

After data analysis, the research findings were discussed with literature integration. Literature integration was done to verify the research findings against

the existing literature and to highlight the findings that came up from the research and those not found in the research (Burns & Grove, 2009: 564). Literature was also reviewed on the themes that emerged from the focus groups to provide a scientific basis for the research and to highlight new insights gained from it. The literature integration necessitated a wide literature search. A computer search was conducted using databases such as CINAHL, Medline, PubMed, Premier, EbscoHost, Eric, Google Scholar, Science Direct and SA Publications. In addition to the search engines indicated above, text books, reports and other appropriate sources of literature were also accessed.

2.3.6 RIGOUR

In qualitative research rigour refers to trustworthiness (Klopper, 2008: 69). Research is said to be trustworthy and accurate in general when engaging in multiple data collection such as observation and interviews, and involving several investigators or peer researcher to assist with the interpretation of data. The trustworthiness of this research was assured by the criteria identified by Lincoln and Guba (1985:290) namely: 'True value, applicability, consistency and neutrality'. True value was enhanced by using the strategy of credibility, applicability through transferability, consistency through dependability and neutrality through conformability. Table 2.1 (below) provides the strategies and criteria used to ensure trustworthiness in this study.

Table 2.1 Considerations to ensure trustworthiness in this study

Epistemological standard	Application of strategy
<p>Truth value</p> <p>Truth value determines whether the researcher has established confidence in the truth of the findings with the participants and the context in which the research was undertaken (Botma <i>et al.</i>, 2010:233).</p>	<p>Credibility as a strategy of truth value (Schurink <i>et al.</i>, 2010:420) was obtained through prolonged engagement and peer examination:</p> <p><i>Prolonged engagement</i></p> <ul style="list-style-type: none"> • All PHC nurses were included, who will be candid and who have relevant information to contribute to the research process. • The researcher establishes the relationship of trust with the professional nurses through the establishment of rapport. The researcher does not rush the interview, but

	<p>provides enough time for gathering of information.</p> <ul style="list-style-type: none"> • The participants were provided with an information leaflet prior to the interviews and contacted in time to give them enough time to comprehend the research question or topic, and to engage them in giving them information before and during the interviews. • More time was spent by the interviewer on aspects that come up repeatedly from the responses and participants are given time to relax and respond to the questions. <p>Peer examination</p> <ul style="list-style-type: none"> • An examination of research data analysis by an expert in qualitative research and the involvement of the co-coder with the assistant researcher ensure peer examination.
<p>Consistency</p> <p>Consistency considers whether the findings will be consistent if the enquiry was replicated with the same participants and in a similar context (Botma <i>et al.</i>, 2010:233).</p>	<p>Dependability as a strategy to ensure consistency in the study was obtained through indirect measures of credibility, direct stepwise replication and an inquiry audit. In this study the following apply:</p> <ul style="list-style-type: none"> • The study includes a thick or dense description with detailed information about the research context, participants' research design and method. • The study is auditable in the sense that it is open to other researchers who will be able to follow the researcher's decisions. • Other researchers were allowed to access how transferable the findings are, an audit inquiry was assured and the transcripts were checked with the co-coder.
<p>Neutrality</p> <p>Neutrality entails freedom from bias during the research process and refers to the degree to which the findings are a function solely of the informants and conditions of research, and not of other biases, motifs or perspectives (Botma <i>et al.</i>, 2010:233).</p>	<p>Conformability was obtained through triangulation with the following that apply to the study:</p> <ul style="list-style-type: none"> • The researcher functioned as a neutral leader and referee at the same time (Seymour, 2004:7). • The researcher is pragmatic and able to offer a detached look at the discussion, viewing each point on its merits; encouraged feedback and discussion of key points raised by all members of the group; and remained neutral to the discussion.

	<ul style="list-style-type: none"> • The researcher did not share participants' lists with the focus group in advance of the session to avoid opportunities for advance preparation that might skew the results. • Focus groups were conducted by the researcher, field notes were taken and a literature control was conducted to ensure triangulation of data sources. This maximises the range of data that might contribute to the complete understanding of the concept.
<p>Applicability</p> <p>Applicability is the degree to which the findings can be applied to different contexts and groups, such as the similarity in the target population (Polit & Beck, 2006:475, Botma <i>et al.</i>, 2010: 233).</p>	<p>Transferability as a strategy was obtained through the selection of sources (nominated sample), saturation of data and thick description. The following apply to this study:</p> <ul style="list-style-type: none"> • In this study it was ensured that the findings can fit into a context outside the research situation as determined by the degree of similarity between two contexts. It is therefore not the researcher's responsibility to control this criterion of transferability, but that of a person wanting to fit the findings into another situation. • By using probing and asking questions like "is there anybody who wants to add something?", the researcher allowed participants to give rich of information until themes are repeated. • The researcher gave detailed information about the research context, participants, research design and methods to allow other researchers to assess how tangible the findings are.

2.3.7 ETHICAL ASPECTS

This research utilised human beings as participants and the researcher consequently had to consider certain ethical issues in order to ensure that the rights of the participants were observed. The researcher took special care in ensuring that the ethical standards were met (Polit & Beck, 2006:91-98).

Ethical considerations refer to the protection of participant's rights. In this study rights were protected by obtaining informed consent from the participants and the institutional approval from the Ethics Committee of the North-West University (certificate number NWU-00059-11-A1), (Strydom *in De Vos et al.*, and 2011:114). It also implies consent to conduct the research in identified health facilities by the relevant authorities, which were the Head of Department (HOD) of the Free State Department of Health and the district manager of the Mangaung Metropolitan Municipality. The following ethical principles were adhered to in this research:

- *The right to self-determination*

Any agreement made with the participants was honoured. The researcher was punctual. The professional nurses at the facilities had the right to decide whether or not to participate in the study. They had the right to ask for information or to ask for clarification of the purpose of the study. The participants had the right to withdraw from the study without giving a reason and not to be victimised for doing so (Brink, 2008:32).

- *Right to privacy and confidentiality (Justice)*

Every research participant had the right to remain anonymous and was assured that the data were kept confidential (Brink, 2008:233; and Burns & Grove, 2009:83). Although the researcher knew the participants' identity, it remained confidential, especially in relation to the findings of the research. All the information obtained during data collection was treated as confidential. In this case, the researcher ensured that the privacy of professional nurses was not violated and that the actual names are not mentioned and that numbers are allocated to participants (Brink, 2008:233; Burns and Grove, 2009:83). It was explained that after the completion of the research, the digital voice recordings were used to record the information. These will be destroyed after it has been kept for the period determined by the NWU (Potchefstroom Campus).

- *Right to fair treatment*

Brink (2008:32) and Klopper (2008:71) view the right to fair treatment as based on the principle of justice. In this study, fairness was maintained in that the criteria for

selection of participants were clearly stated and were followed to ensure that those willing to participate were fairly included in the focus groups. The researcher selected the participants for reasons directly related to the study and not because they were readily available or could be easily manipulated. The findings of this study were made available to the participants so that they were aware of their contribution to the study. All agreements with regard to the role of the researcher and that of the participants were respected throughout the research process of the study.

- *The right to protection from discomfort and harm*

According to Brink (2008:33) and Klopper (2008:73), the right to protection from discomfort and harm means that the researcher should do good and above all avoid harming participants. This could firstly be done by structuring the questions and monitoring the participants for any signs of distress. In this study the researcher needed to use interpersonal skills to handle situations where participants could have experienced anxiety. If necessary participants could be referred for counselling (Brink, 2008:33). Where necessary, the researcher used interpersonal skills to ensure the emotional support of participants. The participants were allowed at any stage of the research to withdraw if they experienced anxiety and were too uncomfortable to continue. The researcher explained possible benefits to the participants without promising unrealistic and false hopes.

2.4 SUMMARY

The chapter provided an overview of the research methodology applied in this study, as well as a detailed description of the research design and methods. The methods applied to ensure trustworthiness and ethical accountability concluded the chapter. In chapter 4 the researcher reports on the realisation of data collection and analysis, the research findings and the literature integration.

CHAPTER 3 - DISCUSSION OF RESEARCH FINDINGS

3.1 INTRODUCTION

This chapter discusses the study findings of the practices and perceptions of professional nurses (PNs) regarding pain assessment of children under five in the Primary Health Care (PHC) settings in Margaung Metropolitan Municipality. In addition the chapter considers in light of the existing literature how pain assessment can be integrated into the IMCI strategy. In the following paragraph the realisation of data collection will be discussed, followed by a detailed discussion on data analysis. The discussion of the research findings are enriched by direct quotations from the transcripts of the interviews. In order to confirm these findings in terms of the existing literature pertaining to pain assessment of children under five, references to current literature are also included. The process of data integration will add to the richness of the findings and crystallization of conclusions on pain assessment of the child under five years. For clarity the objective of the study is highlighted:

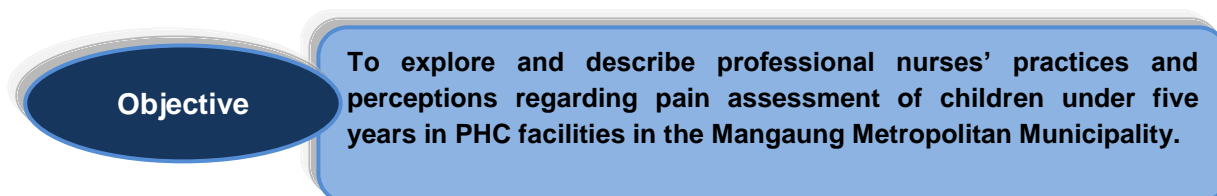


Figure 3.1: Objective of the study

3.2 REALISATION OF DATA COLLECTION AND DATA ANALYSIS

The following is a description of how data collection and data analysis were realised within this study.

3.2.1 Realisation of data collection

The sample that qualified according to the set inclusion criteria was selected from the population for the identification of the participants. A purposive sampling method was used as described in chapter 2. The sample was drawn from all the

PNs working in the PHC facilities in Mangaung Metropolitan Municipality in the Free State Province. The study included the PNs who assessed children under five years in the PHC facilities and had consented to participate in the study. For the orientation of the potential participants and in order to request them to participate in the study, the information sheets with the consent form (see Addendum C and D), were hand delivered. Follow-up contact was telephonically established to confirm participants' willingness to participate, as well as to secure appointments for the focus groups.

Where potential participants could not be reached by cell phones or telephones, follow-up contact was established personally by the researcher by visiting the facilities where they worked. Some potential participants kept on postponing the interviews, citing as reason the busyness of the PHC facilities. Some were on leave or booked off sick during the scheduled date and were not willing to come to the focus group interviews as a result. The participants who confirmed their willingness to participate were invited to the prepared location at the nearest PHC facilities on the date and time agreed upon with the researcher. Before each focus group interview, the researcher obtained signed consent forms, as well as the demographic data capture sheet (see Addendum D). Data was collected using semi-structured focus group interviews. The focus group interviews were recorded using a battery operated digital voice recorder. Field notes (see Addendum E) were written immediately after each focus group. Two questions were asked (refer to Chapter 2, paragraph 2.3.2) and data saturation was reached with six focus groups in which 32 PNs participated. Digitally voice recorded focus groups were transcribed for data analysis.

3.2.1.1 Participants' demographics

The participants were professional nurses working in the Mangaung Metropolitan Municipality's PHC facilities. The data indicated in figure 3.2 give background knowledge on the total with and/or without IMCI training. The reader can also see the total of professional nurses with a diploma in diagnosing, treatment and care.

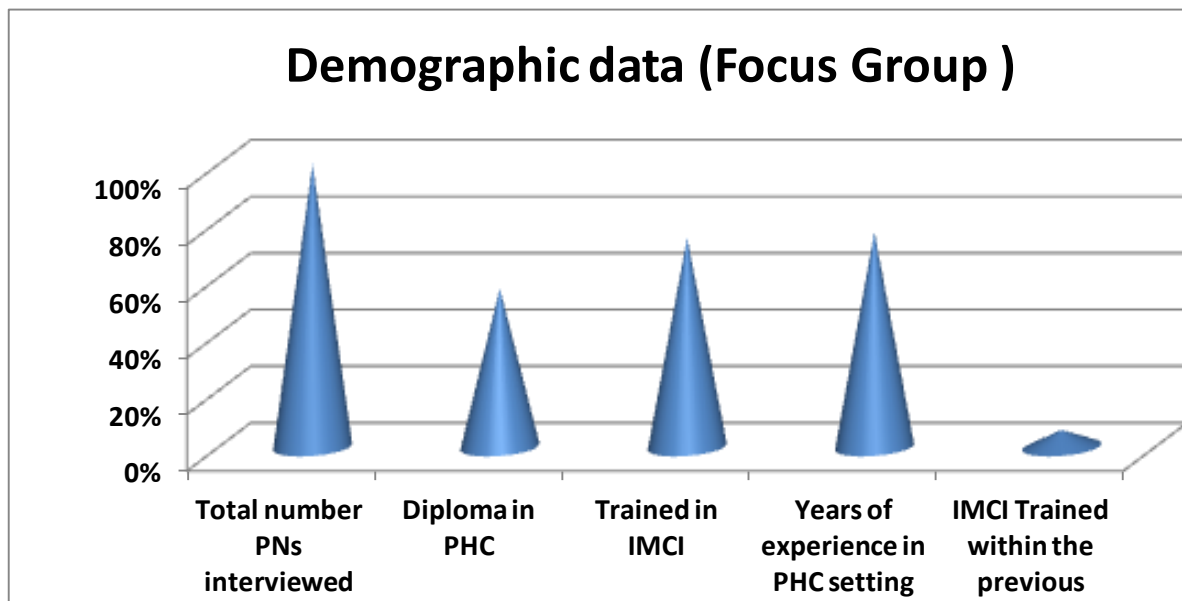


Figure 3.2: Demographic profile of professional nurses working in PHC facilities in the Mangaung Metropolitan Municipality.

The study included all the PNs who consulted children in the PHC facilities daily and had consented to participate in the study. The demographic profile (Figure 3.2) of the participants in this study provides a summary of the education, years of experience in PHC facilities, and IMCI training of the PNs. Half of the participants (56%) had an additional educational qualification namely a Diploma in Clinical Nursing, Health Assessment, Treatment and Care. About 74% of the participants were IMCI trained as these courses offered by the Department of Health are required of all nurses working in PHC facilities. The number of years of experience of the participants in PHC facilities ranged from 1 to more than 5 years. The majority of the participants had longer years of clinical experience (76% worked 5yrs and above). Six percent of the participants completed the initial IMCI strategy training less than a year ago and twenty four (24) participants had received IMCI strategy training by means of a refresher course within the last 3 years. The demographic data revealed that most of the PN's working in PHC facilities are trained in the implementation of the IMCI strategy. This reality was taken into account when the findings on pain assessment of the child under the age of five years unfolded for it confirms the possibility for inclusion of pain assessment in the implementation of the IMCI strategy. The findings further shows a group of PN's that are not only well-trained, but also have the experience to add great value

during the exploration of their practices and views in the quest for answers on pain assessment in the child under the age of five.

Field notes were written immediately after each interview and typed (Addendum E). The focus group interviews were digitally voice recorded with a digital voice recorder placed in the middle of the table where focus groups were held. The participants were informed about the use of the voice recorder on the information brochure and signed consent forms beforehand. This information was again highlighted during the briefing session. Each participant signed informed consent together with the completed demographic data form and the researcher checked both forms for completeness.

After everyone was seated comfortably, the participants were welcomed by the researcher and the audio tape was switched on and placed in the middle of the table. The researcher introduced herself as a master's student from the North-West University. The researcher then commenced with the group interview. Each of the six focus group interviews lasted approximately 30 minutes. As the interview began, the participants were asked to verify consent to participate. Each one seemed eager to participate. The researcher consciously sought to bracket thoughts and feelings in order to avoid influencing responses. Self-awareness by the researcher of previous PHC experience contributed towards a shared understanding of the process involved in PHC decision-making with children who come to the facilities with a painful condition. Four of the interviews were conducted in the morning and two in the afternoon. The morning hours tend to be generally busy, and this busy time allowed for observation of the PHC entrance, initial sign-in area and the waiting room. However, the participants were not willing to meet for a longer period of time. Despite the brevity of the morning interviews, the researcher was able to gain insight into the perceptions and practices of professional nurses.

3.2.2 Realisation of data analysis

The data was analysed by the researcher. A verbatim transcription was read and re-read. The audio recordings were played and replayed in order for the researcher to become thoroughly familiar with them. The data was reduced to

small, manageable parts, closely examined and compared for similarities and differences. Words and themes were used as the units for analysis. The descriptive codes that characterised the data incident they presented were written down. The underlined words and themes were written on the right margin of the transcript; the identified themes were grouped into main- and sub-themes. The redundant information in the themes that do not specify, clarify or elaborate on the remaining themes by relating them to each other as a whole were eliminated. Themes and sub-themes that emerged were written on the margin of the page.

Data analysis was done according to the principles of contents analysis for qualitative research as described by Botma *et al.* (2010:4-5). The data was analysed by the researcher and another researcher who is a psychiatric nurse specialist with experience in qualitative data analysis and interviewing. Both the co-coder and the researcher worked independently to analyse the data and code the transcripts. A meeting was then scheduled between the researcher and co-coder. The transcripts were read carefully by both the researcher and co-coder. After a lengthy discussion, they both reached consensus on the themes and sub-themes that emerged from the data and the researcher and the co-coder completed the data analysis. Three main themes emerged from the analysed data. Table 3.1 presents the main and sub-themes that emerged from the data analysis.

3.3 RESEARCH RESULTS AND LITERATURE INTEGRATION

The consensus reached between the researcher and the co-coder resulted in the identification of three main themes related to the PNs' perceptions and practices of pain assessment of children under five in the PHC setting. These main themes identified are subsequently discussed. A detailed discussion of the study findings (main and sub-themes) are enriched with relevant quotations taken from the interviews with PNs. The existing literature that has been surveyed is used to confirm the findings of this research to indicate findings that are unique to this study, as well as to indicate findings that are found in the literature, but not confirmed by this study.

Table 3.1: Main and sub-themes regarding practices and perceptions of PNs on pain assessment of the child under five years

Main Themes	Sub-Themes
<p>1. There is a need for sufficient pain assessment for children under five</p>	<p>1.1 The PNs acknowledge the absence of and the need for sufficient guidelines and/or tools in pain assessment for children under five.</p> <p>1.1.1 Acknowledge that PNs don't take sufficient notice of pain in children under five, children with pain is neglected.</p> <p>1.1.2 It remains a challenge to assess for pain in children under five.</p> <p>1.1.3 There are not guidelines/tools specifically designed for pain assessment in children under five.</p> <p>1.1.4 There is a need for a checklist to assess pain in children under five.</p> <p>1.1.5 The "fever box" in the IMCI is usually associated with the possibility that a child might have pain.</p> <p>1.1.6 In some events PNs make use of palliative manuals to assess pain of children under five with the main focus on facial expression.</p> <p>1.2 Pain assessment of children under five remains contradictory and subjective.</p> <p>1.2.1 Children have contradicting responses to their pain experiences.</p> <p>1.2.3 PNs hold personal opinions about pain and pain assessment of children under five.</p> <p>1.2.3 It remains difficult to assess pain in children under five that cannot speak or locate the area.</p> <p>1.2.4 PNs depend on their professional experience in the pain assessment of children under five.</p> <p>1.2.5 PNs categorise age with pain according to their own knowledge/experience.</p>
<p>2. PNs use a combination of signs and symptoms associated with pain in the assessment of pain in children under five.</p>	<p>2.1 Signs that PNs associate with pain in children under five.</p> <p>2.1.1 PNs associate pain with different signs of disease. The presence of these signs is directly associated with the possibility that the child will experience pain: infection, fever, discharges from the ear or infected area, tachycardia, oedema, scratches around the ear area, boils, tonsillitis, vomiting and diarrhoea.</p> <p>2.1.2 The crying of the child under five indicates that the child is experiencing <i>pain</i>.</p> <p>2.1.3 Letswejane (fever and chest in-drawings and difficulty in breathing).</p> <p>2.2 Symptoms that the PN associated with pain in children under five.</p> <p>2.2.1 PNs associate the presence of specific symptoms to imply that the child does experience pain because this symptom has been reported: pain reported when touching the affected area, refusal of meals, complaints of abdominal pain, and complains of headache and when locating a specific area.</p> <p>2.3 Body language that the PN associated with pain in children under five.</p> <p>2.3.1 The PN associated the following body language of the child to be associated with pain in children under five years namely irritability of the child, facial expressions to rate the pain, the position the child prefers to take and remain, the movement of the child.</p> <p>2.4 Verbal sounds.</p> <p>2.4.1 Making verbal sounds such as "hmmmm....hmmmm".</p>

Main Themes	Sub-Themes
3. The combination of history taking, physical examination and observation is critical.	3.1 The history provided by the mother (also referred to the primary child minder, aunt) remains an important step in the pain assessment for children under five.
	3.1.1 The mother indicates behavioural changes in the child.
	3.1.2 History of crying during the night.
	3.1.3 History of being withdrawn.
	3.1.4 Although the mother provides a history, the mother might miss the real problem.
	3.1.5 O tlotse mothlala (a traditional diagnosis indicating that the child does have pain).
	3.2 Physical examination should be conducted in combination with the history of the child during pain assessment for children under five.
	3.2.1 A physical examination should ALWAYS be conducted.
	3.2.2 A physical examination should be conducted IN ADDITION TO the history provided by the mother.
	3.3 Observation and sensitive awareness of the child during the time of interaction.
3.3.1 The impact of the clinic environment should be taken into consideration during the pain assessment of children under five.	
3.3.2 The PNs need good observational skills.	
3.3.3 The PNs should be aware of contradicting factors during pain assessment of children under five and should look at patients comprehensively (aware of child abuse, look at child's posture).	

3.3.1 Discussion of the research findings

The PNs practices and perceptions regarding pain assessment of children under five in PHC settings, is described under the three main themes identified from an analysis of the data collected during focus-group interviews. The three main themes that emerged from the data analysis are summarised in figure 3.2 hereafter.

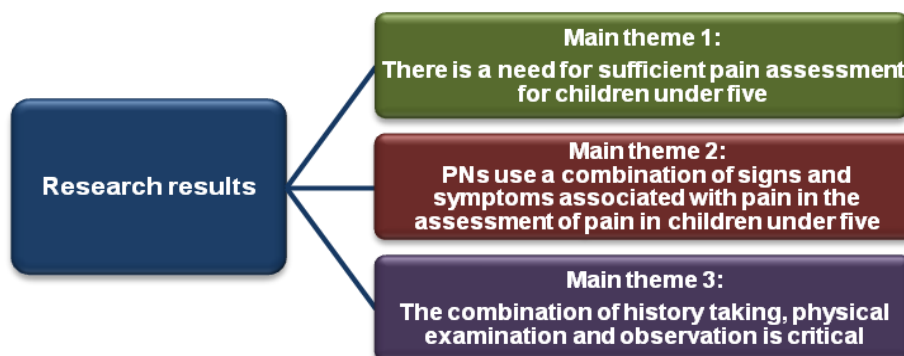


Figure 3.3: Three main themes of the professional nurses practices and perceptions regarding pain assessment for children under five

Based on the analysis of information from the key participants in the focus group interviews, PN's perceive pain assessment in children as essential and acknowledge that it has been lacking, particularly in children under five. They recognize the need for sufficient pain assessment in children under five. These views by the PNs are subsequently discussed on the following page.

Theme 1.1: The PNs acknowledge the absence of and the need for sufficient guidelines and/or tools in pain assessment for children under 5 years

From the findings of this study, it seems that the PNs recognise the need for sufficient pain assessment for children under five. This perception seems to emanate from the lack of pain assessment guidelines/tools in the PHC settings, and subsequently contributed to the lack of sufficient notice of pain in children.

The sub-themes will now be discussed with the integration of literature in the following paragraphs.

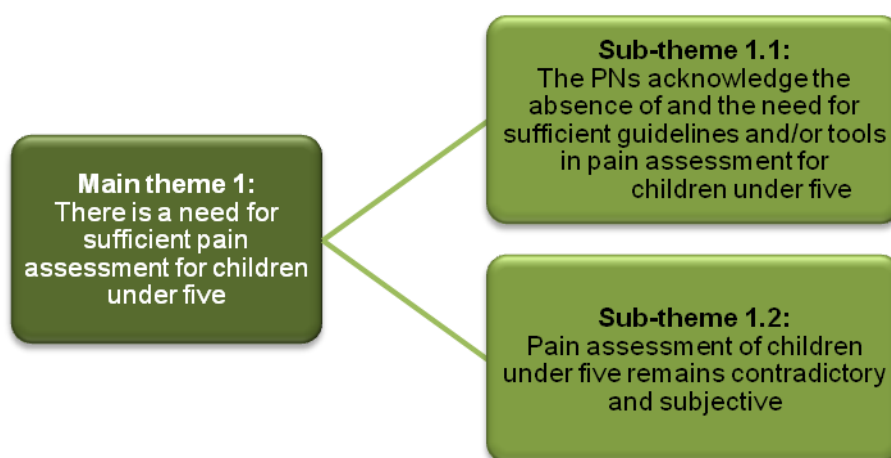


Figure 3.4: Main theme 1: There is a need for sufficient pain assessment for children under five

Pain assessment is recognised as an important procedure in a clinical setting. Pain assessment is even more crucial where children are concerned, more so children under five. Literature suggests that an estimated 10 million children die annually before their fifth birthday (Awasthi *et al.*, 2006:5). It may imply that pain assessment should form an integral part of all clinical assessments. This view is

also held by Conlon (2009:585). In this respect Zhang is of the opinion that pain goes beyond personal suffering for both adults and even more so in children. This view is supported by Rasagaram *et al.* (2009:199) and Reyers (2003:2). Pain often has a negative impact on the child's physical, social and psychological well-being, which means pain affects the totality of the child. PNs contributing in this study admitted that pain assessment is a priority, even though they are not doing it as they should. In this regard one participant in the focus group had this to say regarding pain assessment of children under five:

"Very good study, an eye opener' meaning children pain assessment was not really done, ehh or even considered before."

Similarly, PNs involved in this study realised the importance for assessing pain in children particularly under five. One participant added that:

"...sometimes we neglect some of the things because with adult we concentrate more if the..."; and "...say they are having pains but with children we don't get deeper to see the cause, the cause of the problem so that is why I am saying, sometimes we neglect the child because we concentrate on the IMCI chart."

Another PN shared:

"...they are sometimes in more dangerous situation without showing pain. Like I have this child she had a serious problem, this child had signs of meningitis but some children with meningitis they do cry others, this child was just like this (demonstrating with the lowered head), not crying and this child could have been miss diagnosed .We neglect some of these thing, when the child is not crying I would think that the child does has not have pain, really pain assessment should be performed."

Zhou *et al.* (2008:334) also has the view that assessment of pain in children is essential, not only to ensure proper intervention, but to promote the comfort of the child. Barnard and Gwyther (2006:30) further states that the correct diagnosis is the key to good pain assessment. Paediatric pain assessment presents a unique challenge to the healthcare team (Conlon, 2009:585). Children may not

necessarily communicate their feeling of pain very well, which can lead to poor patient management unless specific tools are made available to the nursing staff as an adjunct to comprehensive pain assessment. Conlon (2009:585) supports this view because he perceives that pain scales are important to assist with assessing pain in children, especially for those who are unable to self-report.

The above discussed main theme that emerged from the data analysis is divided into two themes that are further divided into sub-themes. The 1st theme is: The PNs acknowledge the absence of and the need for sufficient guidelines and/or tools in pain assessment for children under five as indicated in the figure 3.5 below:

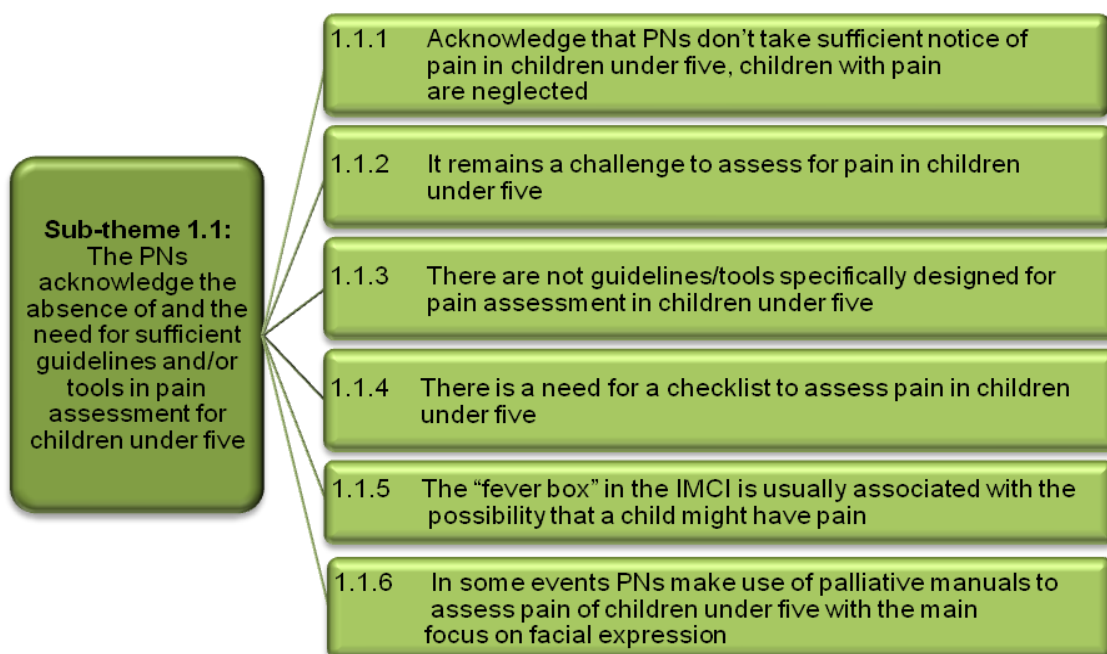


Figure 3.5: The PNs acknowledge the absence of and the need for sufficient guidelines and/or tools in pain assessment for children under five 5 (Sub-theme 1.1)

Sub-theme 1.1.1: Acknowledge that PNs don't take sufficient notice of pain in children under five, children with pain are neglected

Most of the PNs interviewed expressed their concern a regarding the lack of pain assessment of children with painful experiences. It was evident from their responses that they felt uncomfortable about the situation; children in pain had not been properly attended to. Much displeasure is portrayed in the transcripts about how pain assessment is currently conducted, particularly with children under five.

According to the PNs, pain assessment has been neglected, especially in children under five that come to their facilities. They admitted that they do not take sufficient notice of children under five. In this regard two participants expressed their concerns as follows:

<p><i>"...actually uhm, we neglect the child, uhm the pain in children."</i></p>
<p><i>"...with adults we concentrate more if they say they are having pain , but with children we don't get deeper to see the cause of the problem so that is why I am saying sometimes we neglect the child."</i></p>
<p><i>"..And to add onto that, maybe we have missed a lot of other kids with pain."</i></p>

The feeling of having neglected the children in pain by PNs in this study are also confirmed by Albertyn *et al.* (2009:91) and Malviya (2006:26) who state that children in pain rarely if ever receive the attention they need from health professionals in general. This is a cause of concern, especially in sub-Saharan Africa, because children have to cope with massive problems (e.g. disease, poverty, ineffective health care systems), in addition to not receiving basic pain assessment for disease (Albertyn *et al.*, 2009:91).

Sub-theme 1.1.2: It remains a challenge to assess for pain in children under five

Assessing pain in children was perceived a challenging task. The PNs further mentioned the complexity of children's pain expression. The process of assessing pain in children under five was not a straightforward task. It was evident from the responses that they experience difficulties in assessing pain with children under five. Most of the PNs mentioned that they find assessing children in pain a cumbersome task. It came up most often from the PNs that children report their pain haphazardly, which leads to them to not understanding exactly whether the pain is sharp or burning.

The PNs frustrations were described as follows:

<p><i>"...so actually it is difficult to assess the pain with the child I must say... Actually is a challenge to actually go and look for pain in children."</i></p>
<p><i>"... we don't actually get the right thing always to get the pain from children. It is very difficult to get the information from the children. They cannot tell where the pain is..."</i></p>
<p><i>"... it is not easy to get the pain from the child because the child cannot tell where there is pain."</i></p>
<p><i>"...and the other thing is they are not able to tell you whether the pain is sharp or burning, they are not able to describe the kind of pain they are experiencing."</i></p>

A similar finding is found in a study conducted by Russo (2010:53) where nurses working in triage mentioned how challenging it can be to assess pain in children, eliciting the chief complaint from the parent. The PNs response in this study suggests their appreciation of the complexities of the child's perspective of pain. Their experience of a challenge with pain assessment has been confirmed by Bell and Duffy (2009:153), Drendel *et al.* (2009:1512), Klopper *et al.* (2006:13), Powel *et al.* (2010:69) , Snidvongs *et al.* (2008:211) and Christian (2008:1). These authors state that pain assessment remains a clinical challenge confronting health care professional. Maree *et al.* (2010:2) and Clark *et al.* (2003:5) further mention that professional nurses take pain assessment decisions haphazardly. The assessment of pain is difficult, but it remains a vital part of paediatric practice. Carr *et al.* (2005:4) and Srouji *et al.* (2010:1) also mention that children's pain can be difficult to recognise, that pain evaluation in children is complex and can be difficult to assess. Stevens *et al.* (2011:763) found in their study conducted in Canada that the PNs who participated in that study admitted experiencing challenges of assessing pain in children. In the study conducted in Thailand by Jongudomkarn *et al.* (2006:162) regarding children in pain in general, he stated that culturally children always express their pain to a parent or guardian rather than a health worker, from there the difficulty of assessing their pain by health professionals.

Sub-theme 1.1.3: There are no guidelines/tools specifically designed for pain assessment in children under five and there is a need for a checklist to assess pain in children under five

It also emerged that resource challenges added to the complexity of delivering pain care. Lack of guidelines or tools designed for pain assessment in children under five was described as an obstacle to delivering pain care by most of the PNs who participated in this study. They admitted not having any knowledge about tools to assess pain in children under five. Almost three quarters of PNs considered that pain assessment tools would improve current practice. The researcher noted concerns about identifying pain symptoms and the need for a checklist that addresses assessment of pain specifically and that will aid in accurate pain decision making. The exasperation stems from the fact that children with pain have been neglected and that correct diagnosis is the key to pain assessment. A checklist that addresses pain assessment specifically was perceived as something that may assist them in enhancing appropriate care for these children.

When asked: “***Do you have pain assessment tools for children under five?***” the PNs expressed their perception in this regard as follows:

<p><i>“You know we are doing our best but not that great because now we don’t have a tool for that pain. Our best is not adequate.”</i></p>

<p><i>“Not necessarily, but it is only ear pain that we are following in the IMCI guidelines, but there is no any other guidelines that we can use for pain”.</i></p>

<p><i>“ ...tools that specifically dealing with assessment of children’s pain, no”</i></p>
--

<p><i>“We do not have tools at Primary level , you assess if unsure you refer to doctor”</i></p>
--

Participants expressed concerns about the failure to assess pain in children earlier, which appeared to be related to the unavailability of pain assessment tools. Several PNs were adamant that they need tools or guidelines to assist them to assess pain in children under five. They felt that the availability of a tool will assist them, and may improve on what they are doing currently.

The PNs qualified their answer with further comments:

"If we could have something like a tool that could assist us about that pain I think we could improve on what we are doing."

"...We must have a tool, sometimes maybe I am not doing the right thing there I don't know. Eh so the tool will guide me"

"I think that the best suggestion is that there must be guidelines that we use for the assessment of pain."

"I think they should come up with something like a checklist or assessment tool that we can assess the pain for this under-fives"

One participant explained how it might be necessary to include pain assessment in IMCI chart booklet.

"According to what I understand about this tool it will be an additional form or column in IMCI, then we adding this new one which will be a separate sheet of IMCI this one will be only for pain, focusing only pain."

This strong perception expressed by PNs about a need for a tool to assist them in the assessment of pain has been supported by Barnard and Gwyther (2006:30) who mentioned that history taking should be aided by a checklist in paediatric pain assessment. Despite the PNs lack of pain assessment tools, they viewed pain as a high priority in their task load. Maree *et al.* (2010:2) who conducted a study in Pretoria (South Africa) also supports this finding, stating that pain assessment tools are not used in PHC facilities and that decisions are taken haphazardly. Furthermore, Conlon (2009:585) stated that pain tools are important to assist with assessing pain in children, especially for those who are unable to self-report. Barnard and Gwyther (2006:30) mentioned that pain assessment tools are valuable in monitoring the pain of children in general and that the correct diagnosis is the key to good pain management. Children may not necessarily communicate their feeling of pain very well, which can lead to poor patient management unless specific tools are made available to the nursing staff as an adjunct to comprehensive pain assessment

Sub-theme 1.1.4: The “fever box” in the IMCI is usually associated with the possibility that a child might have pain

During the focus group interviews, some of the participants indicated that they “associate the fever box” in the IMCI strategy with the possibility that a child might have pain. It is perceived that high temperature in children is a sign that the child might have pain. They are of the opinion that it is the nurse’s responsibility to relieve pain and to give Paracetamol according to IMCI strategy guidelines or to refer to the doctor if the child does not get better. Statements of what the PNs said with regard to that are as follows:

“...and when you take temperature it is always elevated, depending on the severity of pain.”

“...I think that it is more often, somehow the child having pain, you must identify because the child is running an elevated temperature.”

No confirmation was available with regard to the “fever box” in the IMCI strategy as being associated with the possibility that a child might have pain. However, Greeff (2005:34) mentioned that fever can be associated with pain in general. In the studies conducted by Stapelkamp *et al.* (2011:46) and Joslyn (2005:16), the nurses regarded physiological changes as pain cues, particularly vital signs, because infants were routinely monitored for these. Although pain might be associated with fever in the pathophysiology of infection and inflammation, there was insufficient information to conclude that fever and can be considered related to pain as a unique finding to this research.

Sub theme 1.1.5: In some cases PNs make use of palliative manuals to assess the pain of children under five with the main focus on facial expression

PNs also reportedly rely on other information when making pain related decisions. They could clearly articulate the fact that they do not have knowledge of pain assessment tools. Two PNs mentioned using the palliative manuals to assess pain in children. They stated that the main focus of the manual is on facial expressions. The actual influence of the decision to use the manual could not be determined. This is confirmed by these statements from the interview:

“There are some tools that we use by checking the movement of the child, the position, and the facial expression, eh and thing like Palliative care manual that, that will tell that this child is having pain.”

“...for children and pain assessment, it is in that Palliative care manual, it even shows the facial expression or how you rate pain and how you manage that type of pain.”

The only evidence in literature of the use of a palliative manual for pain assessment in children under five by Barnard and Gwyther (2006:32) who refer only to children with cancer. In addition, Pawar and Garten (2010:255) mention that the pain experienced by children with cancer is not always related to the disease. Additional pain due to cancer can be the result of surgery, chemotherapy and radiation therapy.

Sub-theme 1.2: Pain assessment of children under five remains contradictory and subjective.

The second theme, namely that the pain assessment of children under five remains contradictory and subjective, is divided into five sub-themes as indicated in figure 3.6 below:

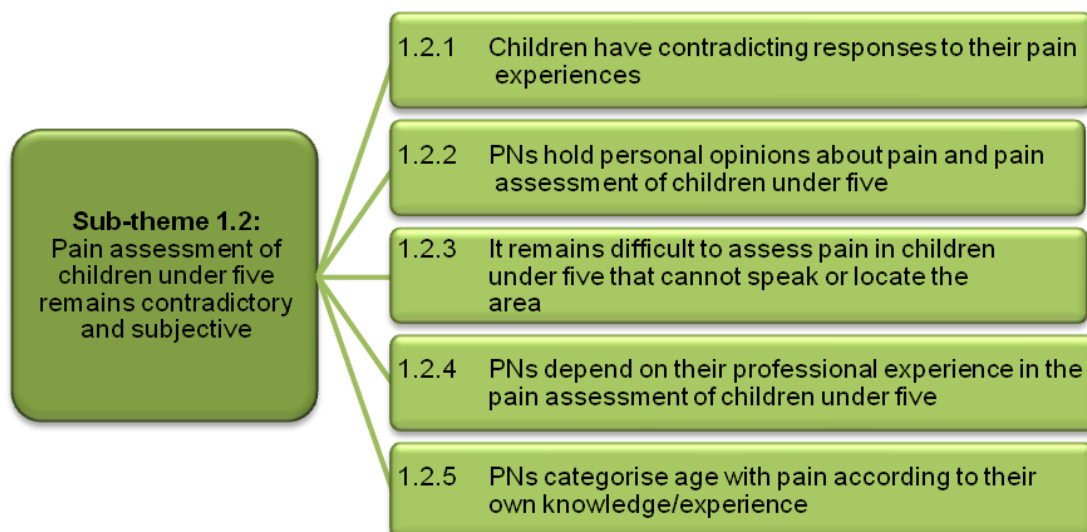


Figure 3.6: Pain assessment of children under five remains contradictory and subjective (Sub-theme 1.2)

Sub-theme 1.2.1: Children have contradicting responses about their pain experiences

PNs frequently mentioned the complexity of children's pain expression. About two thirds of the participants mentioned that children have contradicting responses to their pain experiences, and poses as a hindrance to their decision-making. A child pointing to a body part that is completely unrelated to their experience of pain was mentioned often as something that interferes with the decision-making process. One of the PNs mentioned that they have to conduct a physical assessment to know exactly where the pain is. The participants' frustrations were expressed as follows:

"... it's very difficult to assess the intensity of the pain, sometimes it is a painful ear but the baby will touch the abdomen' So you have to do a full assessment to see where exactly the pain is."

"... If the child says that there is something wrong with the abdomen, if you examine the child you find that the child is having tonsillitis. If this child complains of this then I know it is that."

"... the child cannot explain where there is pain, so you actually when there is an assessment you have to think for the child,..."

According to Fournier-Charrière *et al.* (2011:1576) children modify their pain description depending on what they expect will happen to them as a result of their response to pain, e.g. they may deny pain for fear of analgesia by painful route. In addition Royal College of Nursing (2009:28) and Snidvongs *et al.* (2008:211) also confirm the findings by mentioning that children's reports of their pain are important, but they show inconsistent behavioural pain responses and cannot always identify the location and severity of their pain. Carr *et al.* (2005:40) further mention that children use many coping strategies' to deal with pain, including sleep and play, which can mislead the observer to falsely conclude that the child is not in pain. In a study conducted in China (Zhang *et al.*, 2008:616) regarding perspectives about children living with pain, the authors found that when children do express their pain it is always to their parents or caregiver rather than a health worker and in some cultures, it may not be acceptable for children to express their pain at all. The recognition of pain in children is also confirmed by Drendel *et al.*

(2009:1516) who mention that recognition of pain in children is important because they are unable to express their pain.

Sub-theme 1.2.2: PNs hold personal opinions about pain and pain assessment of children under five.

Participants expressed how they would use their own intuition in determining pain in children that visit the facilities. This included making assumptions when looking at the child during the initial visit for signs of pain. They also mentioned gathering assessment data and noting physiological signs as important indicators. Focusing on the child in the context of gathering assessment data was mentioned frequently as a component of the decision-making process. Each participant had his or her own view of the situation. These are the direct quotes from the interviews:

“... When the child is having difficulty in breathing then you must know that the child is having a problem.”

“...the pattern of the child, then you suspects that the child is having pain.”

“.. the way the breathes, maybe if he grunts or the rate of breath is maybe a fast one then you can detect that there is pain by observing on the child.”

“You cannot perceive how much pain the baby has, unless we just assume that she must be having a terrible pain.”

This view is confirmed by Klopper *et al.* (2006:13) as these authors state that pain assessment is influenced by the health care professional's framing of the phenomena within their personal cognitive field. In addition Joslyn (2005:18) mention that without valid clinical pain assessment tools, nurses rely on their own “intuitive feeling” when making decisions about children's pain experience.

Sub-theme 1.2.3: It remains difficult to assess pain in children under five that cannot speak or locate the area.

One of the further observances of the PNs was that pain assessment in children depended on the age of the child and his or her communication capabilities. PNs perceive pain assessment in children as difficult to achieve, especially with those

children who have limited linguistic ability due to their age and language development. Most of the participants in this study were concerned that children's 'pain is regularly missed, especially with those children that cannot speak or locate their pain. The challenge of assessing pain in children that cannot speak was described by the PNs as follows:

"Sometimes it is not so easy to get pain from the child because the child cannot tell when there is pain."

"...it is not easy to get to where the pain is from the child if he can't talk or show you where the pain is."

Drendel *et al.* (2009:1516) support these findings because they found that the recognition of pain in children is important because children do not articulate their pain and the objective assessment of preverbal children can be difficult. This experience by the PNs is also confirmed by Stapelkamp *et al.* (2011:39) who state that the assessment of pain is a complex process, particularly in children who are verbally unable to communicate their experience of pain. Srouiji *et al.* (2010:1) also mention that children present unique challenges that necessitate communication skills when pain assessment is conducted.

Sub-theme 1.2.4: PNs depend on their professional experience in the pain assessment of children under five.

There was strong belief among the participants that professional experience enhances pain assessment practices. PNs mentioned that practice guided by professional clinical experience creates clear expectations for pain assessment and they regarded this as very important. More than half of the participants in this study have more than 5 years experience in the PHC setting. Recognition of behavioural indicators of pain was related to the experience gained with recognizing the symptoms after a number of years working in the facilities. The PNs rely on their own experience during the decision-making process on pain assessment. They felt that having worked in one setting for that long they have gained much experience and have nursed many children.

The following are some statements from transcriptions of the interview:

<i>"... You use your experience , your own discretion"</i>
<i>"...That is why I say the experience count a lot "</i>
<i>"... should use your experience , if the child complains of this then I know it is this"</i>

In the study conducted by Russo (2010:43) nurses depended on their experience when making decisions about pain assessment in children. These findings are also confirmed by a study conducted by Sloman *et al.* (2005:1300) and Hirsh *et al.* (2010:458). They found that nurses unconsciously draw on their clinical experience when making pain-related decisions. Finley *et al.* (2009:33) further state that the understanding and interpretations of pain by children are influenced by the health workers' professional experience.

Sub-theme 1.2.5: PNs categorise age with pain according to their own knowledge/experience.

The PNs mentioned the age of the child as an important factor in assessing pain and making decisions, but participants in this study correlated recognising or categorising age with their own years of experience. This finding was emphasised by most of the PNs who participated in this study. Apparently they view age in children as a determining factor in the child's communication regarding their experience with pain. It is evident that PN'S in this study perceive that children's capability to describe pain increases with age and their developmental stages. They perceived that children between the ages of three to five can communicate their pain better. The younger the child, the more difficult assessing pain becomes, and the greater the need for more assessment data.

The following are the concerns the PNs brought up:

<i>"...and then with the kids that can talk, the one that is above three years to five years, they normally when they complain of abdominal pain, mostly it is abdominal pain."</i>

“...Sometimes it depends on the age of the child, the one who is older will show you, while the smaller child will not show you, the mother will give you history.”

“...and the others above three, those who can talk they will always say mamma it is' eina' or mamma it no, no I don't want to do that until you realise that there must be a pain here.”

From the above quotations it is evident that PNs perceived that children's capability to describe pain increased with age and their developmental stages. This has also been confirmed by Srouji *et al.* (2010:1) and Herr *et al.* (2006:47) when they mention that children and infants who present with pain necessitate consideration of the child's age and developmental level. The above authors furthermore state that children that are three years of age are able to mention whether they feel pain or not and its intensity. Kozlowski *et al.* (2011:17) also mention that age plays a role in the report of pain by children under five. In addition, nurses in the study conducted by Russo (2010:53) mentioned the age of the child as an important factor in assessing pain and making decisions, especially for infants. They further mentioned that young children make pain assessment more challenging due to limited verbal skills.

Main theme 2: Professional Nurses use a combination of signs and symptoms associated with pain in the assessment of pain in children under five.

This main theme relates to how PNs perceived their experiences regarding the interaction between themselves, the parent and the child in the clinical practice with the decisions they make in pain assessment. The researcher appreciates the fact that PNs used objective evidence of the disease perceptible when examining the child, as well as the subjective evidence of the disease perceived by either the parent or the child. Signs and symptoms were mentioned as one of the first indicators that alerts PNs to the presence of pain in children under five. The themes and sub-themes will be summarised and discussed individually in combination with literature integration. Figure 3.7 below indicates further themes and sub-themes under the second main theme.

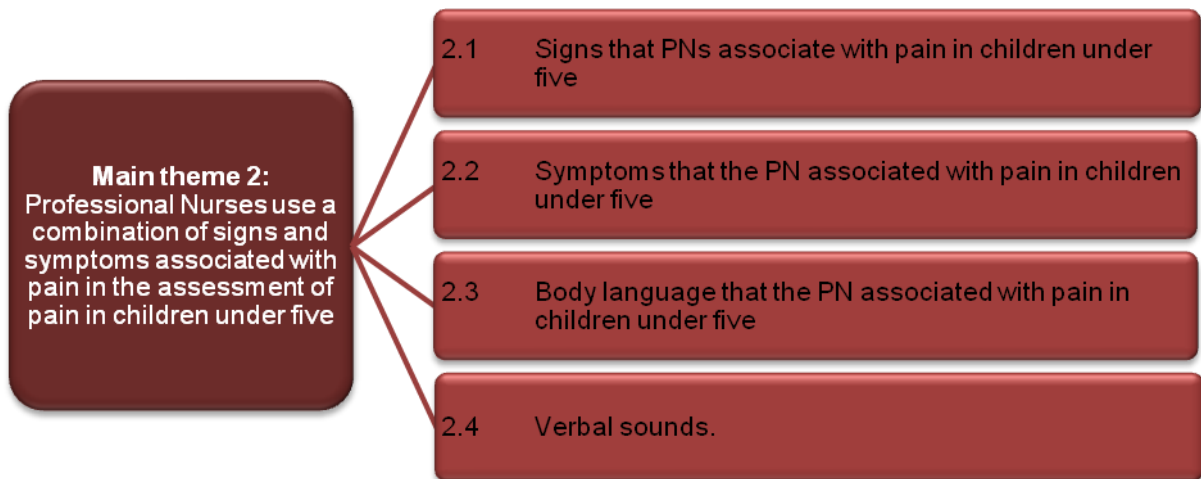


Figure 3.7: Professional nurses use a combination of signs and symptoms associated with pain in the assessment of pain in children under five

Sub-theme 2.1: Signs that PNs associate with pain in children under 5

In this theme, the PNs reportedly relied on cues when making pain related decisions. More than half of the PNs mentioned having identified signs that may indicate pain in children under five. One way of assessing a child’s pain is dependent on the signs exhibited by the child at the visit to the PHC facilities. Below, the focus falls on the sub-themes (Figure 3.8) with regard to the above-mentioned, and theme 2.1 will now be discussed with literature integration.

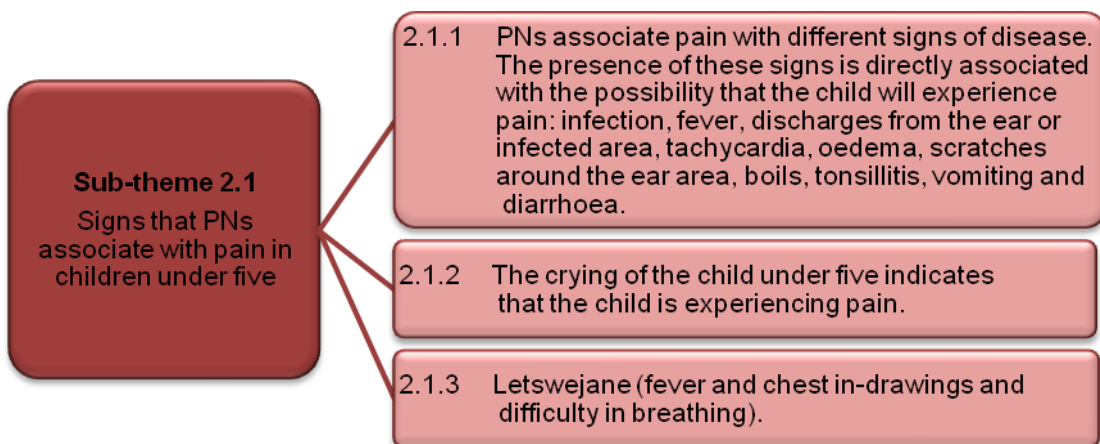


Figure 3.8: Signs that PNs associate with pain in children under five (Sub-theme 2.1)

Sub-theme 2.1.1: PNs associate pain with different signs of disease. The presence of these signs is directly associated with the possibility that the child is experiencing pain.

- ***Infection***

The participants in this study had internalised the practical and theoretical knowledge needed to make sound decisions regarding children experiencing pain. Two PNs mentioned that according to their theoretical knowledge of infection, generally, pain can be expected. This view of the PNs is quoted from the interview as follows:

“...Infection goes to the head pain, if the temperature is elevated there is infection and infection goes hand in hand with pain.”

“...Sometimes it is just assumption, I don't know, infection which mean pain”

In confirming the results Pawar and Garten (2010:257) mention that pain in children can be caused by infections such as opportunistic infections, typhlitis and sinusitis. Shaikh *et al.* (2007:2898) only mentioned a urinary infection though as a sign of abdominal pain.

- ***Fever***

The PNs interviewed further mentioned fever as another feature detected during a physical examination indicating the presence of pain in children under five. The PNs mentioned that they usually confirm this by taking the vital signs of the child and the temperature will be elevated. Examples of the PN statements were formulated below:

“...and when you look the child you see the child is having flurry nostrils the child is having fever the child is having difficulty breathing then you must know the child is having a problem.”

“The temperature of the child, having a high temperature it is a sign of having pain.”

“Eh the pattern of the child, then you suspect that the child is having pain and sometimes when you take, normally actually not sometimes. Most of the time when you take temperature the

temperature is elevated it is more than 37 degree.”

The only support mentioned in literature is by Greef (2005:34), who refers to fever as associated with pain in children. Carr *et al.* (2005:4), Royal College of Nursing (2009:3) and Snidvongs *et al.* (2008:211) mention that elevated vital signs may be an indication of pain in children. Joslyn (2005:77) found in her study conducted in the United States of America that nurses associated increased temperature with pain in children. These finding may be considered similar to the findings in this study.

- ***Discharge from the ear or infected area***

The PNs strongly perceive that children who come to the facility with discharges from the ear or any infected area have pain.

The statements quoted directly from the transcripts are as follows:

“Others do come with pain. For example discharging ear. During an examination you find that the ears are inflamed.”

“ ... the child maybe scratching the ears, when you look at the ears and do physical ‘Sometimes you may suspect the pain on the ear,. The child has been crying a lot during the night and is touching here on the ear.”

In the study conducted by Joslyn (2005:77) in United States of America, nurses identified ear infection as a common cause of pain in children; nurses recommended that the child or infant’s ear drum should be examined. Also, the IMCI chart booklet (WHO, 2009:13) indicates ear pain and discharge from the ear as part of pain assessment. This is therefore a finding that supports this study.

- ***Tachycardia***

Some of the PNs mentioned tachycardia as another sign of an experience of pain in the child under the age 5, and the one that they usually base their decisions on. One of the PNs who participated in this study has this to say along these lines:

“... yeah and even the heart beat is fast, tachycardia cause the child is having pain.”

This view is supported by Srouji *et al.* (2010:2), Rajagopal (2011:15), Snidvongs *et al.* (2008:211), James and Gibbins (2004:1) and Greef (2005: 34). These authors all mention that tachycardia is a physiological response to pain in children and that the assessment of the heart rate can be used as a physiological measure of pain intensity in children. In the study conducted by Joslyn (2005:5) nurses regarded an increase in the heart rate as an acute pain stimulus.

- **Oedema**

The PNs associate oedema with pain in children under five. A sign like swelling and the discoloration of the skin is an indication that the child is experiencing pain. One of the participants' statements in this light is as follows:

“And then sometimes there will be those with the signs like swelling maybe, change of the skin colour you see and that child will also cry.”

In support of the above information, Klopper *et al.* (2005:15) and James and Gibbins (2004:1) mention that one way of assessing a patients' pain depends on the patient's appearance when they enter the facilities, e.g., the presence of oedema on the area and skin colour. This can be considered as partly supporting the findings of this study, though not clearly stated.

- **Scratches around the ear area**

Another sign associated with pain is scratching around the ear area. The PNs perceived that if the child had scratches around the ear area, particularly infants, it is an expression of their pain. The following quotations from the interviews verify the impression:

“... the child maybe scratching the ears, when you look at the ears and do physical examination and find that the ears are inflamed”

“You will see for instance when the problem is pain in the ear you will see the child continuous

scratching the ear which will show you there is something wrong,”

The view is also held by Greef (2005:34) and Twycross (2006b:10), who state that when assessing for pain responses, the infant's reaction to the site of pain will be noticed by pulling or rubbing of ears when it hurts. Although there is literature about the infant in this regard, no literature could be found about the child.

- **Boils**

The PNs perceive that children that are HIV positive and present with boils or abscesses will definitely be experiencing pain. One of the participants has this to say in that regard:

“some of the children mostly those who are HIV positive you can find that they are having some abscess or boils nè.”

The only support mentioned in literature is by Rajagopal (2011:27) who refers only to pain in HIV positive children. In addition Pawar and Garten (2010:255) mention that the pain experienced by children with HIV is not always related to the disease and that pain not directly related to HIV infection can be caused by invasive medical procedures and opportunistic infections. Nothing was found with regard to boils in pain assessment, so the finding seems unique to this study.

- **Vomiting and diarrhoea**

The PNs that participated in the study also perceived that another sign exhibited by the child experiencing pain will be vomiting and diarrhoea. The following is a statement quoted from the transcript:

“..this child is having a pain then we take the history ,...and when you ask she even vomited and then she is even having diarrhoea then you just rehydrate the child.”

James and Gibbins (2004:1) and Joslyn (2005:18) mention that vomiting as a physiological indicator of pain when used with behavioural and contextual indicators can be useful as part of an overall assessment for child pain. Carr *et al.* (2005:2) only mention stomach-ache as a physiological indicator of pain. Pawar

and Garten (2010:257) further mention vomiting and diarrhoea as treatment-related side effects that cause pain.

- **Tonsillitis**

The PNs interviewed in the study also mentioned that in their professional experience, children suffering from tonsillitis will definitely experience pain. The following is a statement quoted from the transcript:

“Most of the children are brought by their mothers who will tell the history, so if the child is having, let me say tonsillitis the mother will say the child refuse meals then if you check the child you will see it is because of pain and swelling.”

“Yeah even the injuries is going to have pain and even the tonsillitis he is going to cry and if you take the temperature and examine that baby, you are going to find what is wrong with that baby, that is tonsillitis.”

The view is confirmed by Pawar and Garten (2010:255). The authors mention that the pain experienced by children can be caused by opportunistic infections such as tonsillitis.

Sub-theme 2.1.2: The crying of the child under five indicates that the child is experiencing pain.

Most of the PNs stated that another sign associated with the child’s expression of pain is crying. They mentioned that crying is a child’s way of expressing a whole host of needs and children under five that visit the facilities usually cry. Crying seems to be the sign PNs look at most. The following quotations illustrate their experience:

“The first sign will be maybe crying and maybe refusing to be touched, the child will be crying uncontrollably.”

“When you want to hold the child like this, (PN demonstrated) and he is crying, then the pain is there. So, there are various things that we can do as we are assessing the baby to see where the pain located is.”

“You look at the child, you see if the child is irritable and you can see when the child cries a lot

and you would like to see where the pain comes from.”

Greef (2005:38) states that crying is a behavioural response to a child’s pain in general and infants cannot tell, but can simply cry in response to pain. The authors further state that, “to know whether a crying child is in pain may require common sense, but it is really one’s pain awareness and empathy that will truly make a difference”. The sign of crying is also supported by Srouji *et al.* (2010:2) who mention that one of the behavioural measurements for pain in children is crying and the quality of this measure depends on the gestational age of the child. Powel *et al.* (2010:69) confirm what was said by the PNs about crying by saying that the child may cry intensely or loudly to display the pain. In a study done by Joslyn (2005:67) crying was identified as an indication of pain in children. However, Fourie-Charriere *et al.* (2011:1573) and Twycross (2006b:12) mention that crying considered alone is not a reliable sign of pain. Herr *et al.* (2006:48) concur when they mention that high pitched and harsh cries have been indicated as a behavioural measure of the child’s pain. James and Gibbins (2004:1) further mention that children cry for reasons such as hunger or fear, but cries of pain are distinctive. This is therefore a common finding as confirmed by the above-mentioned authors and this study.

Sub-theme 2.1.3: Letswejane (fever and chest in-drawings and difficulty in breathing)

The PNs in this study further indicated that Letswejane is another sign indicating pain in children that are seen at their facilities. Letswejane is a Sotho word that means a combination of signs denoting pneumonia. The PNs perceive that if the child presents with the mentioned signs, and the mother has applied a scarf or some sort of a bandage around the child’s waist, then it is apparent to them that the child must be suffering from pain. Their experience in this regard is quoted with the following statements from the transcripts:

“The way the child breathes, maybe if he grunts or the rate of breath is maybe a fast one, then you can detect that there is pain by observing on the child.”

“Some other thing with our people there is so called letswejane, when the child is having

letswejane there is pain with that child."

Nurses In the study conducted by Joslyn (2005:5) in the United States of America regarded an increase in shortness of breath as an acute pain stimulus. The only support mentioned in literature is by Harper (2007:601) who states that culture and language plays a role in pain assessment. Klopper *et al.* (2006:13) are also of the opinion that pain assessment is influenced by the health professional's framing of the phenomena within their personal "subjective" cognitive fields. The authors go further by stating that cultural differences play a part in the interpretation of the phenomenon. Finley *et al.* (2009:33) state that a health worker understands and interpretation regarding the child's expression as an indication of pain is influenced by the individual's experience in a socio-communication context. The environment, in which the child, the parent and the health professional coexists, may also influence a caregiver's interpretation of the child's pain expression. No confirmation was available regarding the cultural aspect.

Sub-theme 2.2: Symptoms that PNs associated with pain in children under five

Several participants in the study described observations they would employ in determining whether the child is experiencing pain. PNs perceived that children react to pain by exhibiting specific behaviours. Another way of making pain-related decisions was dependent on behaviours, visual cues and physiologic data displayed by the child on arrival at the facilities. Under this theme the following sub-themes are discussed in figure 3.9 below:

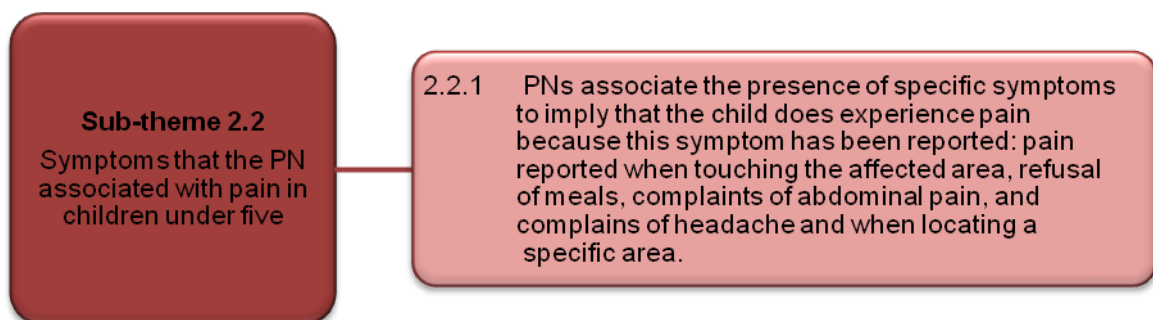


Figure 3.9: Symptoms that the PN associated with pain in children under five (Sub-theme: 2.2)

Sub-theme 2.2.1: PNs associate the presence of specific symptoms to imply that the child does experience pain because the symptom has been reported

According to the PNs interviewed, they mostly rely on skills such as the use of their senses, a stethoscope and observational and physical touching of the child. These skills are put into practice during their everyday encounters with children. PNs associate the presence of specific symptoms to imply that the child does experience pain: pain reported when touching the affected area, refusal of meals, complaints of abdominal pain and complaints of a headache and when locating a specific area.

- ***Touching the affected area***

The child's behaviour towards the affected body area is one of the symptoms mentioned by PNs interviewed in this study. It was mentioned that the child may elicit some behaviors as a protective response towards pain experience. A child may exhibit increasing awareness of a body area e.g. by wincing and protecting a body part from being touched or examined. The PNs stated that they will ask the child where they feel pain. Most PNs reported that the child will report pain while they are doing assessments on the child, especially when they touched or palpated the affected area. The following are the direct statements from the interview transcripts:

"...You will touch that part and you will see the response of the baby and you will see that there is pain there."

"...Hmm so I will automatically touch the part that is affected that the mother is telling me about maybe the mother said that the child has fallen on her shoulder, I try to touch the shoulder and automatically it really there is that pain the child will sort of shrink to show that there is pain."

"...But like the other is saying it is like that the child will show when you touch the child she will scream or frown,"

Christian (2008:1) and Russo (2010:53) both confirm the finding when stating that, based on nurses' observation, children will display the behaviour of being

protective or defensive of the affected part or area and will grimaces when the affected part is moved or touched. This ruling is also supported by Zhou *et al.* (2008: 340) who warn that nurses need to avoid relying solely on the interpretation of parents for the assessment of pain in children. They also need to conduct their examination in order to reach an effective pain diagnosis. This is supported by Barnard and Gwyther (2006:32) when they mention that examination may provide enough information, 'the laying of hands.'

- ***Refusal of meals***

Another symptom used to assess pain is when the child refuses meals. When a physical exam is done and the tonsils of the child is found to be reddish or swollen, the PNs conclude that the child is experiencing pain. The pain felt when eating results in the child refusing meals. The experience is evident in the following words quoted directly from the interviews:

"...mother will say the child refuses meals then if you check the child you will see because of pain and swelling."

This finding of the child refusing to eat has been confirmed by Powell *et al.* (2010:69) who found it to occur in children between the ages of one month and one year. Powell furthermore states that children at this age exhibit poor oral intake when experiencing pain.

- ***Complaints of abdominal pain***

Most of the PNs mentioned that children often complain of abdominal pain (pain in the tummy). It is the most common reason mothers bring children to the facilities. PNs said that often the child will have pain, but not be unwell, and if a child does not want to do things that he or she normally enjoys (such as playing), then that child is unwell.

The following direct quotations clarify some of the PNs experiences in that regard:

“... let’s say you palpate the abdomen then you will see if the child is feeling the pain in the abdomen. And the child will say “my tummy is painful”

“The mother will tell you that the child eh has been crying and touching the abdomen, they tell you this child has been crying, not sleeping, touching the abdomen.”

The view is also supported by Carr *et al.* (2005:2) who mention that stomach-ache may be a cause of pain in children and acute abdominal pain may indicate appendicitis or constipation.

- ***Complaints of headache***

“Or maybe the other pain that usually the children complain of, they say that they having headache.”

The above view is also supported by Carr *et al.* (2005:2) who say that headaches occurring from recurrent pain may be a cause of pain in children.

- ***Locating a specific area***

The PNs further mentioned that the location of a specific area was another symptom displayed in the experience of pain by the child. According to the PNs, the affected area is held tense and defended so that touching it is discouraged. The following are experiences as quoted directly from the transcripts:

“...in most cases if the child has got ear pain, the child would be touching that part regularly where the pain comes from.”

“...you can see if maybe it is not abdominal pain you can see when he holds on the part where there is pain”.

“...some children even go to the extent of touching the area maybe it is abdominal pain you know the child’s hand will be maybe most of the time at the area where there is pain so that is one way of identifying pain and assessing pain in children.”

In confirming this finding, Powell *et al.* (2010:69) and Christian (2008:1) seem to agree when they mentioned that children usually guard the painful area of the

body. The study done by Russo (2010:53) confirms the finding when he states that, based on Triage Nurses' observation, children will display the behaviour of being protective or defensive of the affected part or area and grimace when the affected part is moved or touched.

Sub-theme 2.3: Body language that the PNs associate with pain in children under five

PNs that participated in this study seemed to know the child's typical behavioural response to pain and could identify behaviors unique to the child that can be included in the assessment of the child's pain. Figure 3.10 below indicates sub-themes identified under this theme, the subsequent discussions in that regard will follow:

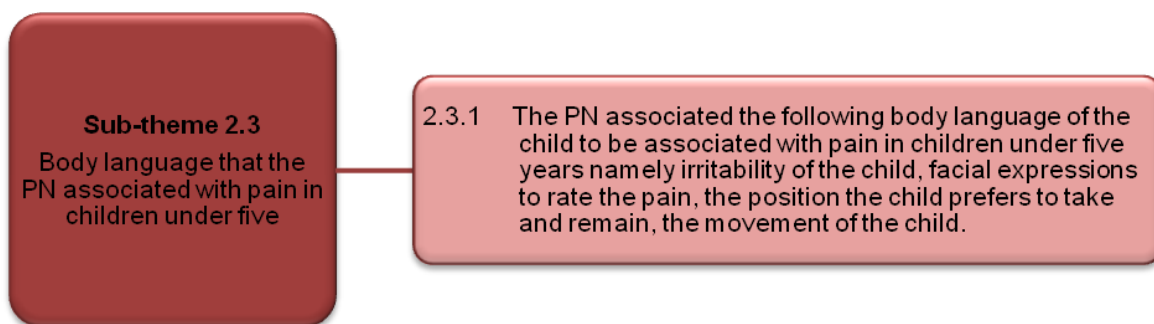


Figure 3.10: Body language that the PN associated with pain in children under five (Sub-theme: 2.3)

Sub-theme 2.3.1: Body language associated with pain

- ***Irritability of the child***

The PNs mentioned that a child in pain may be restless or uncomfortable. The statement from the interview is as follows:

“... you will see that irritability in the child ,and you will take the child and assess the child you try to get the child ,you know? “

Joslyn (2005: 77) found in his study that nurses referred to a “very irritable” infants as a sign of distress. The findings are confirmed by Greef (2005:34) and Rajagopal (2011:25) who mention that acute pain in children can be assessed by

behavioural indicators such as irritability and sleep disturbance. Both are often under-diagnosed in children and can increase pain. Powell et al. (2010:69) further report that children one month to one year exhibited hypersensitivity or irritability when experiencing pain.

- ***Facial expressions to rate the pain***

Most of the participants indicated facial expression as another behavioural index that reflects the experience of pain in children. The PNs said that they use facial grimaces like frowning to determine if the child is experiencing pain. These are the quotes from the interview:

“But like the other is saying it is like that the child will show when you touch the child she will scream or frown,”

“...Like we have mentioned the facial expression the expression of the child also then it will tell you that something is quiet not right.”

“...And then also the facial expression, when you touch the area you will see the child will show by facial expressions that now there is pain there.”

Facial expressions are generally regarded as the best single and common behavioural indicator of pain in in children (James & Gibbins, 2004:1). This finding is also confirmed by Greef (2005:38), Powell *et al.* (2010:69) and Herr *et al.* (2006:48). Herr *et al.* (2005:48) further mention that facial expression of an infant experiencing pain includes eyebrows lowered and drawn together to form a vertical furrow. In the study conducted by Hirsh *et al.* (2010:458) and Joslyn (2005:42), nurses reported that facial expression in the child had an impact when they make pain-related decisions.

- ***The position the child prefers to take and to remain in***

The participants also perceived that the position the child chooses to remain in might indicate pain. In the PNs experience the position the child prefers to take shows to them that something is wrong. The PNs expressed their experience as follows:

“..or sometimes she will lie on the floor or show that something is not right in...”

Powell *et al.* (2010:69) and Herr *et al.* (2006:48) seem to agree when they mention the child’s body posture as another behavioural response. Children from one month to one year displayed behaviour like drawing the knees to the chest to react to their experience of pain. Some may simply not have the energy to cry, they may become still, and not move to minimise the amount of pain (James & Gibbins, 2004:1).

- ***The movement of the child***

Further body language identified within this study is that of the movement of the child. PNs mentioned that the child’s movement is noted to be abnormal, either very still or writhing in agony. They further stated that the child will not be using the affected part for fear of pain. Examples of the PNs statements were expressed as follows:

“And if he can come in again you can see it by the mobility of the child, is he able to use the limb then it will show you that there is pain there he will not be able to move the affected part.”

“If maybe the child has fallen down then he has a fracture, the patient will not be using it and that will be infected that is how you will see that now this little one is having a lot of pain.”

The finding is also confirmed by Greef (2005:38) that body movements are a behavioural response that may also be of diagnostic importance to a child’s pain. Christian (2008:1) confirms the finding when he states that children will display decreased or no movement due to pain, and the nurse should observe the child for that.

Sub-theme 2.4: Verbal sounds

The PNs who participated in the study stated that children express verbal sounds when experiencing pain. They mentioned that children usually express sounds like crying and making “hmmm...hmmm” sounds. The sub-themes will be discussed below:

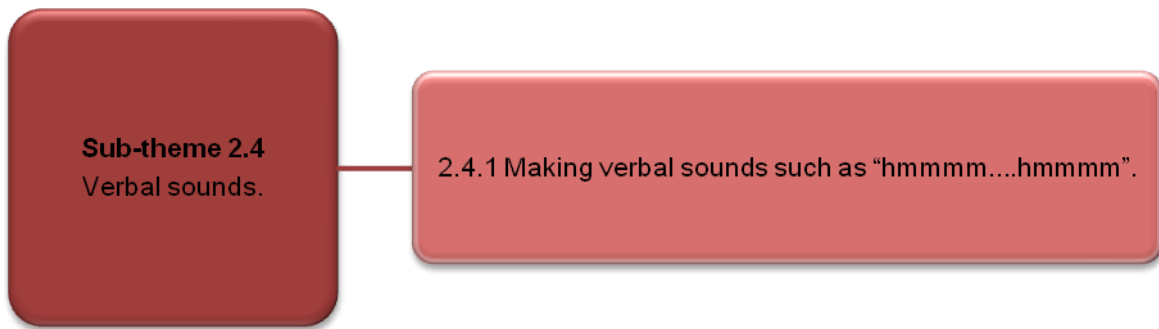


Figure 3.11: Making verbal sounds (Sub-theme 2.4)

Sub-theme 2.4.1: Making “hmmmm....hmmmm” sounds

According to some of the PNs interviewed in this study, children make verbal sounds like “hmmm...hmmmm” to express their discomfort.

“Severe pain, some of them they will just go hmmm, hmmm, hmmm.”

The only support mentioned in literature is the study conducted by Joslyn (2005:28-44) about infants where nurses mentioned that they identify pain cues as moaning and sounds such as ‘ehh” or babbling. Slusartz (2012:54) mentioned that children develop an expressive pain vocabulary and the vocals consists of words such as “ouch” and owie’. Hicks (2005:34) further mentions that children in pain and learning to talk will express it by saying “Ow, ow, ow”. No confirmation was available or found for making sounds like “hmmmm....hmmmm”.

Main theme 3: The combination of history taking, physical examination and observation is critical.

The figure below summarises the third main theme identified during data analysis. Three themes and the sub-themes will be listed and discussed individually with literature integration (see Figure 3.12).

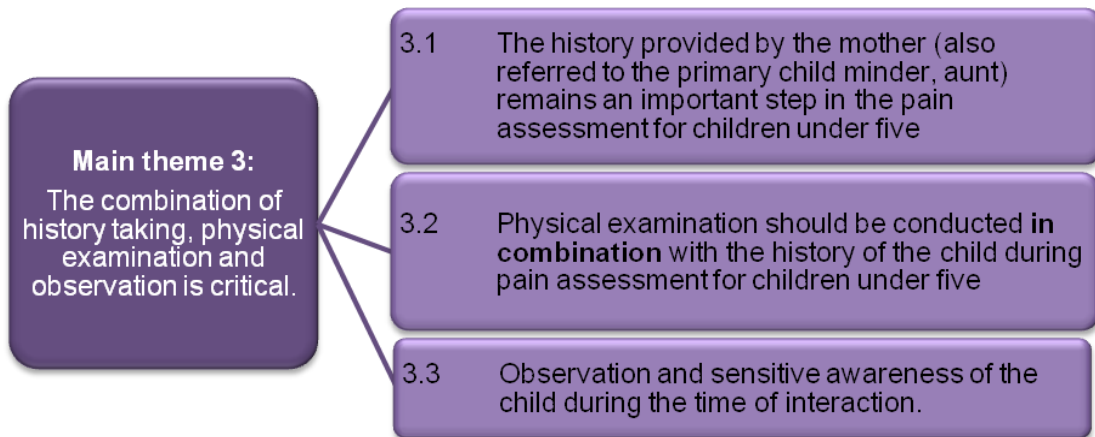


Figure 3.12: The combination of history taking, physical examination and observation is critical (Main-theme: 3)

Sub-theme 3.1: The history provided by the mother (also referred to as the primary child minder, aunt) remains an important step in the pain assessment for children under five.

The results indicated that PNs value the history given by the care giver of the child. Three quarters perceived that skilful interviewing of the parent or guardian can reveal a wealth of information. They acknowledge the fact that the person who stays with the child knows best and is in the best position to give an idea of what transpired in relation to the child. This may be the aunt, the child minder or the mother herself.

The following quotations illustrate their experience:

<i>"We usually take history, I will detect the pain according to the history from the mother..."</i>
<i>"For me I think just a good history from the mother, very good history from the mother. Cross questioning from the mother, actually the person who sees the child."</i>
<i>"...you can identify this child has pain then from history taking from the person who brought the child to the facilities , Most of the time it is the actual history from the mother because I mean a child cannot give you a proper history."</i>
<i>"It can be the mother or maybe the aunt or the guardian who care."</i>

This finding is supported by the Royal College of Nursing (2009:11) when they state that parents (also referred to as/caregiver and or guardian) should be listened to and their views respected as their role is a significant part of providing services to children. Goldman (2007:44) and Herr *et al.* (2006:45) further support the findings by mentioning that a detailed history from the parent can provide important information about pain. Greef (2005:34) also states that it is important to ask parents questions because their concerns and fear play a role in the perception of the child's pain. This literature supports the findings of this study as perceived by PNs. The subsequent discussions will concentrate on the sub-themes under the heading of theme.

The history provided by the mother (also referred to as the primary child minder, aunt) remains an important step in the pain assessment for children under five as summarized in figure 3.13.

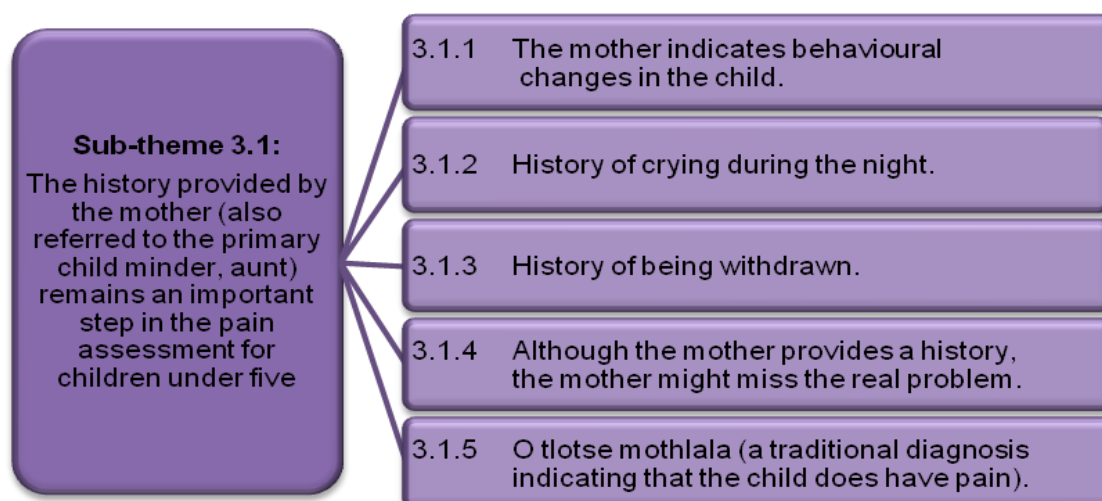


Figure 3.13: The history provided by the mother (also referred to as the primary child minder, aunt) remains an important step in the pain assessment of children under five (Sub-theme 3.1)

Sub-theme 3.1.1: The mother indicates behavioural changes in the child.

The behaviour of the child that can be indicative of pain frequently emerged from the interviews. The participants mentioned that the mothers were seen as helpful and as providing useful information about the child's problem. The behaviour of the child is a factor mentioned by the mother that provides insight related to pain assessment. According to the PNs, behaviour that is reported as being unusual by

the mother and as indicators of pain included when the child is “inactive or quiet”. The following are quotations from the PNs:

“...you ask the mother who is always with the child ,like this one she is active or not active, the mother will tell me ehe the child doesn't want to play and then you can see..”

“The mother will report the change of behaviour on the child, maybe the child is now demanding now or extremely quiet. That is the history form the parent that there is a change in behaviour like in eating and playing or the child is no longer in the mood to play or the child is quiet he does no longer eat as he used to do.”

Herr *et al.* (2006:45) and Royal College of Nursing (2009:3-8) supports this by saying that observation of behaviour is a valid approach to pain assessment. Familiarity with the patient and knowledge of usual and past behaviors can assist in identifying obvious changes in behaviour that may be indicators of pain presence. Those changes in child behaviour, appearance and activity level indicate pain. Stapelkamp *et al.* (2011:39) also state that parents have the responsibility to learn and to attend to the child's behavioural cues. Christian (2008:1) confirms the finding when he states that when assessing for pain, parents and the nurse should observe for the child being very quiet or no movement when experiencing severe pain.

Sub theme 3.1.2: History of crying during the night

The history of crying during the night was mentioned by 3 participants. The concept of the child being “inconsolable” during the night was mentioned in the context of behaviour indicative of pain. In this case, the behaviour of the child indicated by the mother is that of the child crying the whole night. The PNs said that this is a very common history from mothers who visits the facilities, especially those who report very early at the facilities. The mothers give reports of staying up the whole night with the baby crying. The following are statements quoted directly from the transcripts:

“The mother will tell you that the child eh has been crying a lot overnight and touching maybe the area that is in pain, if maybe it is on the abdomen they tell you this child has been crying, not

sleeping, touching the abdomen.”

“...sometimes the mother can come and say the baby has been crying for the whole night.”

Sub-theme 3.1.3: History of being withdrawn

The history of the behaviour of the child was mentioned by several participants. Other PNs expressed trust in the information from mother, particularly in reporting differences in the child’s behaviour. They reported that an active and involved child suddenly becomes quiet and withdrawn when experiencing pain. These are the quotations from the transcripts:

“...some children when they have pain they are sort of withdrawn you know, even if the child is an active child he won’t communicate the way he is used to, you know or play the way he is used to play but as a nurse you are able to identify some hidden behaviors of a child, a normal child..”

“The child won’t speak, you will just see the quietness, and if it is a jolly baby you will see the quietness, then you become suspicious that there is something wrong.”

Powell *et al.* (2010:69) agree when they mention that chronic pain can sap the children’s energy. Children between the ages of one to two years display behaviours like withdrawal, becoming quiet or still. Herr *et al.* (2005:48) further mention that behavioural responses to pain like sleeping and withdrawing may be the child’s attempt to control pain.

Sub-theme 3.1.4: Although the mother provides history, the mother might miss the real problem.

According to PNs in the study, mothers and child minders are important informants about the child’s behaviour in response to pain, and can identify behaviors that can be an indication of pain and be included in the pain assessment. Interestingly, mothers were also frequently described as not reliable in decision-making. Some participants expressed uncertainty regarding the information from the mother. The following views are quoted directly from the interviews:

“Sometimes the mother will say this but when you examine the child it is totally different you don’t get the same eh thing that the mother has explained about the pain of the child.”

“As my colleague has said sometimes when the baby is crying you mustn’t concentrate on what the mother is saying, because sometimes the mother can come and say the baby has been crying for the whole night but she doesn’t know what is the problem so you must examine the child like when you examine an adult...”

“Sometimes the mother brings the child to the facilities and say the child is crying he is having a pain here and when you look at the area there is no swelling there is no fracture there is no nothing.”

In confirming the perception of the PNs about the history of the mother missing the real problem, Triage Nurses in the study conducted by Russo (2010:55) mentioned that parents were either too emotional, over-reacting, or not able to provide helpful information regarding their report about the child’s pain. A study conducted by Zhou *et al.* (2008:339) found that discrepancies exist between parents’ pain perception of a child and the child’s report of their pain. Herr *et al.* (2006:46) added that judgments by parents may not be accurate reflections of the pain experienced by the child and should only be considered an estimate.

Sub-theme 3.1.5: O tlotse mothlala (a traditional diagnosis indicating that the child does have pain)

Some of the PNs also perceived that when they take the history from the mother and the mother says that the child ‘o tlotse mohlala’, they conclude that the child has pain. They regard it as a traditional diagnosis for pain experience on the part of the child. The PNs further believed that when mothers carry the child and are on the way to the clinics, the child might be exposed to invisible danger. One participant explained this in her comment:

“That is why I say the experience count a lot because when you look the child with motlala the child has otlotse mohlala that is our tradition, ... When you look at that child, that child will have sunken eyes, will be lethargic sometimes the child will be irritable then we think of the pain or this child is having a pain...”

These findings are unique to this study because there is nothing in literature about 'otlotse mohlala' being a sign of pain in children under five. However Sloman *et al.* (2004:126) indicate that cultural factors influence the perception of pain and that clinicians need to be culturally sensitive when conducting pain assessment.

Sub-theme 3.2: Physical examination should be conducted in combination with the history of the child during pain assessment for children under five

All PNs regard physical examination as a very important factor in the process of pain assessment in children under five. A complete physical examination is included as part of every visit. The examination must be comprehensive and builds on the history gathered. The subsequent discussions will concentrate on the sub-themes as indicated in Figure 3.14:

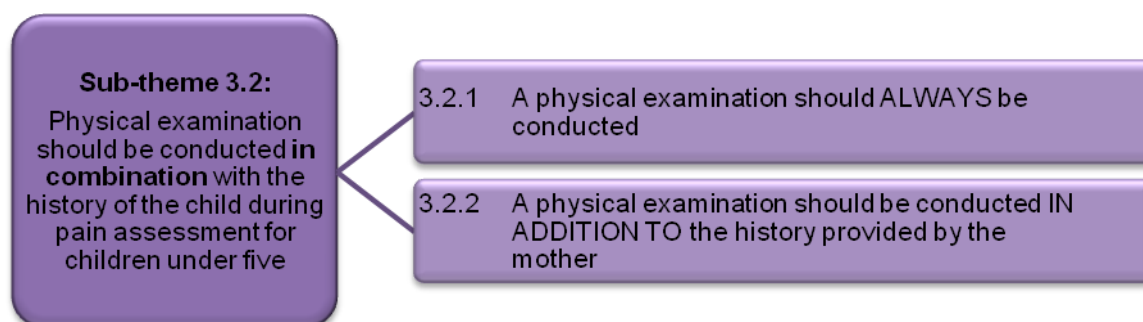


Figure 3.14: Physical examination should be conducted in combination with the history of the child during pain assessment for children under five (Sub-theme 3.2)

Sub-theme 3.2.1: A physical examination should ALWAYS be conducted.

Reliance on the physical examination was mentioned frequently and by most of the participants. Physical touching was a common element in the sub-themes. PNs interviewed in this study perceived that physical examination is the foundation to effective pain assessment and a fundamental principle in assessing pain. By performing an actual physical exam, the problem will definitely be discovered. The PNs mentioned that the child must be checked physically to rule out painful areas. They see physically touching the child as very important and as indicative of the actual problem. Performing a physical exam on a child will yield a perfect and reliable diagnosis. Examples of the PNs statements are as follows:

“That is why physical examination is very important when coming to pain because during evaluation what you are going to do, you are going to get where the pain is. So we try to always examine our kids here or our children.”

“So actually it is difficult to assess the pain with the child I must say, but when you do physical examination then you get actually where the problem lies.”

Two other participants emphasised this by saying:

“Hmm so I will automatically touch the part that is affected that the mother is telling me about maybe the mother said that the child has fallen on her shoulder, I try to touch the shoulder and automatically it really there is that pain the child will sort of shrink to show that there is pain.”

“So we cannot rely 100% on history to diagnose that patient even with other patient you still need to rely on your, on your findings.”

Barnard and Gwyther (2006:32) mention that a thorough physical examination should be done. The nurses in the study conducted by Joslyn (2005:67) mentioned that observation is very important, one has to do the “hands–on-thing”.

Sub-theme 3.2.2: A physical examination should be conducted in ADDITION to the history provided by the mother.

The PNs voiced that conducting a physical examination in the context of gathering assessment data on the child is very important. PNs perceived that conducting a detailed physical examination and connecting this data with the verbal information provided by the mother was another important aspect of pain assessment in children under five.

“We get the history from the mother but from that we are still going to check with to identify the pain, after gaining the information from the mother.”

“...we will try to touch the part that the mother is giving the history that the baby is complaining about...”

“The mother will say the baby is having tonsils and immediately when you touch the baby, the child will wince or cry.”

This has been supported by Zhou *et al.* (2008:340) in their study that showed that nurses need to avoid relying solely on the interpretation of parents for the assessment of pain in children. They also need to conduct their examination in order to reach an effective pain diagnosis. This is also supported by Barnard and Gwyther (2006:32) when they mentioned that examination and history may provide enough information for the diagnosis.

Sub-theme 3.3: Observation and sensitive awareness of the child during the time of interaction

PNs perceived that although the very young child may not be able to speak, one still may receive much information from him/her by being observant and receptive. The total evaluation of the child should include impressions obtained from the time the child first enters until she/he leaves; it should not be based solely on the period during which the child is on the examining table. According to the PNs, more information is obtained by careful inspection than from any of the other method of examination.

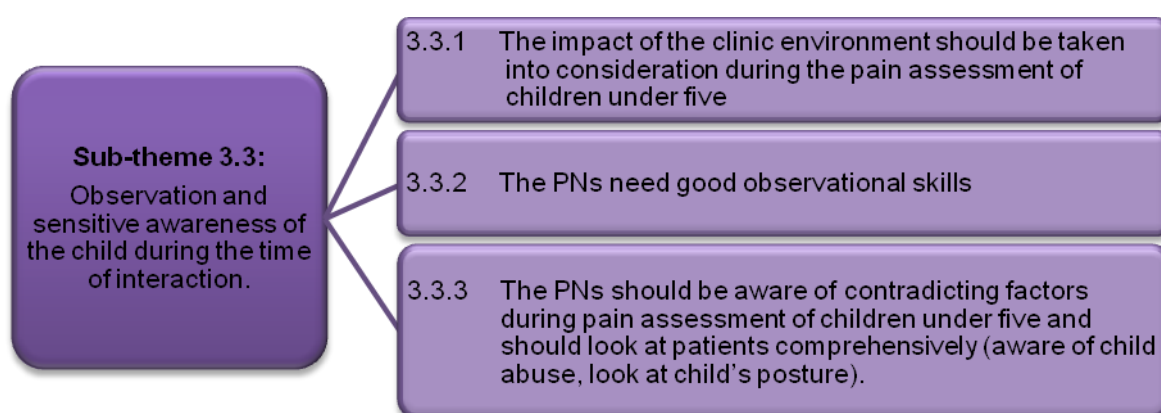


Figure 3.15: Observation and sensitive awareness of the child during the time of interaction (Sub-theme 3.3)

Sub-theme 3.3.1: The impact of the environment of the facility should be taken into consideration during the pain assessment of children under five.

The PNs mentioned that the facilities seem to have a negative impact on children. This is due to the immunisations and other painful procedures performed on

children when they visit the facilities. The children tend to fear the nurses and the environment, making it impossible for nurses to assess pain. They say that even mothers at home refer to the nurse as “gogo” (meaning something fearful).

“I was saying even that sometimes the situation itself, the setting it is not friendly enough to assess the pain of the child, our setting is to the child, and the child does not understand the situation.”

“Expression of pain is not always possible because even the environment itself when the mother brings the baby, the child here.”

“...The setting is not friendly enough to assess the pain of the child. We cannot diagnose properly because even the parent at home, the nurse has been made ‘gogo’ (something fearful).”

The notion held by the PNs that the impact of the environment of the facility should be taken into consideration when assessing a child in pain is also held by Finley *et al.* (2009:36). These authors mention that the environment in which the child and the health professional co-exist may also influence a caregiver’s interpretation of the child’s pain expression. Herr *et al.* (2006:48) also agrees that the child’s response to the environment is an indicator of pain.

Sub-theme 3.3.2: The PNs need good observational skills.

Looking at the child in the context of gathering assessment data and attention to detail was mentioned frequently as a component of the decision making process. Using good observational skills was another important aspect of pain assessment. PNs perceived that assessment of pain in children relies mostly on directly observing the behaviour of the child. They stated that the PN needs effective observational skills regarding the behaviour of the child in the assessment of pain. The area of concern is expressed as follows:

“And the good observation skill is required, in the behaviour of the child...”

Triage Nurses mentioned looking at the child in the context of gathering assessment data and paying attention to detail as a component of the decision–

making process in a study conducted by Russo (2010:42). Using good assessment skills, focusing on the appearance of the child and connecting this data with the verbal information provided is another important aspect in pain assessment. The PNs indicated that looking at the patient encompassed more than just observing behaviour. James and Gibbins (2004:1) mention that assessing a baby's pain through observation necessitates skill and requires an understanding of the child. Herr *et al.* (2006:45) also supports this when the authors mention that observation of behaviour is a valid approach to pain assessment. Goldman (2007:44) further states that a child's self-report may be supplemented with observations from the professional caregiver. Goldman (2007:44) supports the findings that a child's self-report may be supplemented with observations from the professional caregiver. In addition, Maclaren *et al.* (2007:237) mention that observational assessment is a crucial component of a comprehensive evaluation of children's pain.

Sub-theme 3.3.3: The PNs should be aware of contradicting factors during pain assessment of children under five and should look at patients comprehensively (aware of child abuse, look at child's posture).

PNs in this study indicated that there are other factors that may be the cause of the pain of the child. They feel that the child may present not only physical pain, but emotional pain as well. They mentioned that the children need to be assessed comprehensively to rule out child abuse. This is the direct quote from one of the participants:

“And one other thing we are living in a world that is changing you know because now some pain is not because of illness or something there are abusive parents you know and the very abusive parent will bring the child to the facilities you know but not tell you what has actually happened,..”

Powell *et al.* (2010:68) state that while it is important to manage an individual's pain in the assessment process, the health worker should also diagnose the cause of that pain.

3.4 Summary

The conclusions with regard to the findings will be discussed extensively in chapter 4. The realisation of the data as well as data analysis was described. The discussion of the study findings was done according to the main themes, themes and sub-themes that emerged from the analysis of the data obtained through focus-group interviews with participating professional nurses. The experiences of the Professional Nurses with regard to pain assessment of children under five in the Primary Health Care setting were integrated with literature on the topic. In chapter 4 the conclusion of the research report, limitations of the study, as well as recommendations will be discussed.

CHAPTER 4 - CONCLUSIONS, EVALUATION OF RESEARCH, RECOMMENDATIONS AND LIMITATIONS

4.1 INTRODUCTION

Chapter 3 offered a discussion of the study findings. The findings were supported by direct quotations from the interviews with the participants. A literature control was integrated into the discussion to verify the research findings against the existing literature and to highlight unique findings from the research and in some cases highlight findings in the literature not found in the research. In this Chapter, the conclusions and the shortcomings of the research will be discussed. Recommendations will be made for professional nurses, with specific reference to the formulation of guidelines on how pain assessment can be included in the IMCI strategy.

4.2 EVALUATION OF THE STUDY

The study will consequently be evaluated as a means of reflection by looking at the background, the aim and objectives, the central theoretic statement, the appropriateness of the research methodology and the research results.

In the **background** of this research, literature indicated that pain assessment in general is neglected by professional nurses. In addition, international and national literature referred to a plethora of pain assessment tools that are available, yet not utilised by professional nurses. The background constituted a reflection, but was proven accurate by the research results. The research results also indicated that despite the existence of pain assessment tools, these tools aren't used in practice by professional nurses. In addition, the background positioned pain assessment by professional nurses in PHC settings as associated with the IMCI strategy. Through the completion of the research process, the researcher confirms that the role of the IMCI strategy in pain assessment, whether positive or negative, was a reality. Literature warned that because pain is a subjective experience, there are challenges in the investigation into this phenomenon and its assessment. The warning that pain is personal and subjective is indeed true.

The **aim and objectives** of this research have been achieved. The aim of this research was to identify recommendations on how to enhance the assessment of pain in children under five in PHC facilities in the Margaung Metropolitan Municipality. These recommendations are formulated in Chapter 4 (please refer to paragraph 4.5) with regard to nursing education, nursing research and the nursing practice and with the specific focus on enhancing pain assessment. The subsequent objectives, namely to explore and describe professional nurses' practices and perceptions regarding pain assessment of children under five years in PHC facilities in the Margaung Metropolitan Municipality were also obtained. The research results were rich and enabled the researcher to list the current practices as well as perceptions about pain assessment by professional nurses in the PHC facilities in the Margaung Metropolitan Municipality.

The **central theoretical statement** was that the professional nurses working in PHC facilities are faced with sick children under five years of age that are seeking medical help and interventions on a daily basis. These children do not only present with the illnesses described in the IMCI chart booklet, but also with conditions that present with pain that alters the quality of life more than any other health-related problems (Zhang *et al.*, 2008:617). Exploration and description of the health assessment practices and perceptions of professional nurses working in PHC facilities regarding the pain assessment of children under five years will provide insight and understanding of this phenomenon under investigation in order for the researcher to formulate recommendations for the nursing practice, -education and -research on effective pain assessment in children under five years in PHC facilities in the Margaung Metropolitan Municipality.

Due to the personal and subjective nature of pain and pain assessment, a **qualitative research design** was appropriate. It enabled the researcher to get feedback from professional nurses in their own words, as practiced and experienced by themselves. The focus groups for **data collection** were functional as it enabled professional nurses to share common information with each other, yet it accommodated diversity.

The vast amount of participants and focus groups enabled the realisation of rich and in-depth research **results**. Sufficient data saturation was reached with regard to both the practices and perceptions of pain assessment by professional nurses in PHC facilities. The literature integration indicated research results that were unique to this research and not confirmed in literature. Although not applicable to the focus of this study, the researcher identified additional factors in the management of pain in children in general.

4.3 CONCLUSION STATEMENTS

Conclusion statements are formulated from the research findings, literature integration and field notes and formulated below.

- Pain assessment in children under five by professional nurses in PHC facilities was insufficient. This agrees with the existing knowledge, which states that professional nurses' assessment of pain is inadequate.
- The IMCI strategy impacts negatively on the pain assessment of children under five. The reasons for this are that firstly, the IMCI strategy doesn't provide pain assessment in general as part of the classification system. Secondly, the IMCI strategy enables a stereotyping in the way professional nurses assess children.
- Pain assessment is part of a comprehensive process during which the professional nurse should take all the factors that are part of a patient into consideration holistically. This implies that pain assessment should not only focus on the physical diagnosis and possible associated physical disease(s), it also affects the psychological and social aspects of the patient and can cause a disruption in the family.
- Pain in general is associated with different diseases of which many is similar to the diseases associated with high child morbidity and mortality rates, which may impact on the reaching of the target dates of the MDGs.
- The most important indicator of pain in children under five is their facial expression.

- Although crying serves as one of the most dominating factors in pain assessment in children under five, it might imply other conditions besides pain.
- Professional nurses need a tool or guidelines to assist them with the accurate assessment of pain in children under five. They voiced their frustration regarding pain assessment of especially children, as pain assessment is experienced as being complex, challenging, difficult and subjective. This conclusion statement correlates with national and international literature.
- The history taking from the parent (mother or aunt or child minder), as well as the physical examination and observation of the child all serve as a crucial combination in the assessment of pain in children under five by professional nurses.
- Professional nurses need to be familiar with context-specific expressions and words from the community which they serve when assessing pain in children under five, as this will help them to clearly understand the meaning of this phenomenon from the community's perspective.
- Despite the limited developmental challenges with regard to language and self-expression, the self-report by the child is an important aspect in the assessment of pain in children under five.

4.4 SHORTCOMINGS OF THE STUDY

The researcher identified the following shortcomings of the study.

- One of the digitally voice recorded focus group interviews was not audible after the session, and the participants of the group refused to repeat the interview. As a result the interview was discarded and valuable information and time was lost in the process.
- The participants for this study were professional nurses who were involved in the assessment of children at the clinics. The question arises whether the results would have been different if the sample included the parents/mothers.

4.5 RECOMMENDATIONS FOR NURSING EDUCATION, NURSING RESEARCH AND PRACTICE

From the above conclusions, recommendations are formulated in order to enhance the assessment of pain in children under five by professional nurses in PHC facilities. These recommendations are divided into nursing education, research and practice.

4.5.1 NURSING EDUCATION

Recommendations for nursing education should be aimed at assisting professional nurses in the development of skills that will enable them to conduct comprehensive and effective pain assessment in children under five. The following are the recommendations based on the conclusions of this study:

- Professional nurses should be adequately trained in order to comprehensively assess pain in children under five at PHC clinics therefore Management must ensure that a strategic plan for the training of all professional nurses at PHC clinics is developed and implemented. Incorporating pain related information in the Diploma in Health Assessment, Treatment and Care may increase their awareness. PNs should be trained to recognise and assess pain, understand pain responses, question children sensitively and observe coping strategies that can be indicative of pain.
- A continuous training based on the IMCI strategy with the incorporation of pain assessment should be conducted to keep the professional nurses up to date through a well-planned program to enable them to render comprehensive and effective pain assessment.
- Pain assessment tools or guidelines competency validation could be incorporated into PHC based yearly updates. Incorporating pain related information in IMCI strategy may increase awareness. The goal of any education program concerning pain assessment, in children in particular is to improve patient care and outcome.
- The researcher commits to give feedback regarding the findings and guidelines of this study to all the stakeholders. Should there be a need; be

prepared to facilitate discussions between the stakeholders to address the challenges that emerged during this study.

- Both the findings and guidelines of the study should be included in the in-service programmes for professional nurses who are working/caring for children so that they can become more sensitive to the potential for painful experiences of children and become skilled in identifying signs that indicate pain.
- A procedure for evaluating the decision-making process regarding signs that indicate the experience of pain should be instituted.

4.5.2 NURSING RESEARCH

According to the research findings the potential for further research in the field of pain assessment of children under five in PHC setting suggest the following possible areas:

- Development of a pain assessment box into the IMCI strategy.
- An attempt to increase awareness of evidence that exists is needed, such as the information included in the reviews of literature for this study.
- Factors affecting the process of decision making in pain assessment of children by professional nurses.
- Activities such as participation in research days and other means for disseminating research evidence can increase awareness, generate interest in taking part in research, and lead to change in practice.
- Activities that promote interest in research and circulate information will in turn promote better paediatric care, better pain assessment and management, and improved patient outcomes.
- Further research to refine and validate the professional nurses' children pain assessment and identify a need for more age appropriate guidelines in PHC settings.
- The role played by the parent/carer in pain assessment of their child's pain within the home setting.

- Further research of children’s concepts of pain will contribute to the limited research in the field of child life and the current knowledge on the development of young children’s expression of pain. It will further inform parents (mothers, aunt and carers) and healthcare providers on how to discuss pain with young children.

4.5.3 NURSING PRACTICE

Recommendations for primary health care nurses regarding pain assessment in children under five, have reference to the specific guidelines as set out in objective two (see 1.3) of this research to formulate guidelines for professional nurses on how pain assessment can be included in the IMCI strategy in children under five years.

- The department should appoint a dedicated lead facilitator to promote and support the implementation of pain assessment for all children under the age of 5.
- Pain assessment as an integral part of total pain management should be included in routine observations, with specific reference to the IMCI strategy.
- Be aware that language and cultural factors may influence the report of pain from the parent/carer and assessment of pain by the professional nurse.
- Pain assessment practice requires a cultural and organisational shift towards prioritising pain and the competent assessment of pain in children.
- Be vigilant for any indication of pain, pain should be anticipated in children at all times.
- Children’s self-report of their pain is important, especially those that are between the ages of two and five.
- If pain is suspected, use the available and recommended tool/guideline for pain assessment in all children and across all contexts in the district.
- Professionals should use age appropriate language and concepts with children when discussing “pain.”

- The improvement of pain assessment of children under five should be in collaboration with the district's IMCI strategy coordinator. This coordinator is responsible for the standards of IMCI strategy implementation and can serve as the mechanism to integrate pain assessment into this established infrastructure.
- In-service training to professional nurses in the PHC setting regarding pain assessment of children under five with specific reference to: i) facial expression of the child, ii) the child's self-report and iii) the critical combination of the history from the parent (mother or aunt of child minder) with physical examination and observation.
- When working with children in pain, professional nurses should employ developmentally appropriate pain assessment strategies that symbolise concepts that young children can understand.
- Put a poster on the walls of the clinics and examination rooms to remind staff of pain assessment in children.

4.6 SUMMARY

The purpose of this research was achieved, which was to explore and describe the professional nurses' perceptions and practices regarding pain assessment of children under five years in PHC clinics in the Marga Mangrove Metropolitan Municipality. The journey taken by the researcher on this project was a learning curve. The exploration and the description of the perceptions and the practices regarding pain assessment of children under five in PHC facilities was really an eye opener to both the researcher and the professional nurses who took part in the study. The researcher learned that the professional nurses working in the facilities really make a difference in the health care system. Some of the things are done unconsciously, the goal being to preserve lives.

The findings and the conclusions of this research emphasised that there is a need for sufficient pain assessment in PHC facilities, and that tools or guidelines to assess pain is a priority at this juncture. The researcher concluded with the recommendations for nursing practice, nursing education and nursing research.

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Department of Health DoH) **see** South Africa, Department of Health.

Department of Social Development **see** South Africa, Department of Social Development.

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**ADDENDUM B: Consent to conduct research DOH,
Free State Province**



health

Department of
Health
FREE STATE PROVINCE

17 June 2011

Mrs MD Taye
34 Visarends Avenue
Woodland Hills
BLOEMFONTEIN
9301

Dear Mrs Taye

Subject: REQUEST FOR APPROVAL TO CONDUCT RESEARCH IN MOTHEO DISTRICT

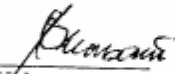
The above mentioned correspondence bears reference.

Permission is hereby granted for the above – mentioned research on the following conditions:

- Approval from Ethics Committee needs to be obtained.
- Research results shared with the Department as well as all reports made available to the Free State Department of Health.
- Research does not impact negatively on service delivery.
- Confidentiality of information will be ensured and no names will be used.

Trust you find the above in order.

Kind Regards,


Dr S Kabane
HEAD: HEALTH
Date: 27/06/2011

Head: Health
PO Box 227, Bloemfontein, 9300
4th Floor, Executive Suite, Bophelo House, off Mallard and, Harvey Road, Bloemfontein
Tel: (051) 408 1107/8 Fax: (051) 408 1055, e-mail: hdpa@health.gov.za / hs@health.gov.za

www.fs.gov.za

ADDENDUM C: Consent to conduct research by the District DOH in the Mangaung Metropolitan Municipality



health
Department of
Health
FREE STATE PROVINCE

To: ALL CEO'S
ALL LAM'S
ALL ASSISTANT MANAGERS: CHC'S
QUALITY ASSURANCE: CO-ORDINATOR

RESEACH IN MOTHEO: Me Taye.

- Dear colleagues attached please find relevant documents regarding the above mentioned matter.
- Please support Me Taye in this endeavour.

Your co-operation will be appreciated.

With Thanks


C.H. Kala
District Manager
Mangaung District
Department of Health
Free State Province
Me C.H Kala
District Director: Mangaung Metro
Free State Department of Health

Date: 20/10/25

ADDENDUM D: Consent letter to prospective participants

1. INFORMATION SHEET

PAIN ASSESSMENT OF CHILDREN UNDER FIVE IN A PRIMARY HEALTH CARE SETTING

I am conducting this research as part of a Masters degree at the School of Nursing Science from the North-West University (Potchefstroom Campus). With this letter you are invited to take part in this research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve.

Please take time to read the following information carefully.

The Purpose of the Study

Despite the comprehensive nature of IMCI strategy, pain is only addressed in the ear box and therefore not getting attention anywhere else (IMCI chart booklet, 2009:5). This means that a child suffering from illnesses like tonsillitis, injury and other acute emergencies which mainly produce pain and which may require pain assessment or evaluation is not addressed in the IMCI strategy guidelines.

General pain is one of the most adverse effects experienced by children, and may be attributive to a variety of causes (Conlon *et al.*, 2005:5). Pain assessment in children poses a major challenge to the nursing team in general (Colon, 2009:585, Rajasagaram *et al.*, 2009:199) and nurses working in Primary Health Care clinics should be able to anticipate predictable painful experiences and therefore have the potential to make a difference in relation to pain assessment in general (Bell & Duffy, 2009:155). It can furthermore be said that, pain assessment is an important area of child care which should occur routinely in the nursing process (Bell & Duffy, 2009:155; Reyers 2003:192).

However, evidence exists that nurses do not assess pain consistently (McDonald & Simmons, 2004:205; Reyers 2003:299; Yehuda *et al.*, 2006:80). It is also the researcher's experience in the Primary Health Care setting that pain assessment is not conducted consistently. *Therefore the researcher sees a need to conduct a study to explore and describe pain assessment practices in children less than 5 years by professional nurses working in the Primary Health Care setting in the Motheo District.*

The exploring and describing of pain assessment practices in children under five by nurses working in Primary Health Care setting may contribute in better comprehension thereof, and the description of recommendations by Primary

Health Care on how pain assessment can be included in the IMCI strategy in children under 5 years in the Mangaung Metropolitan Municipality may assist in that category of children.

The inclusion criteria for prospective participants are:

Professional Nurses working in the Primary Health Care facility rendering care to children under the age of five years, who have at least worked one (1) year in a primary health care facility, registered as a general nurse and midwife with the South African Nursing Council (SANC), should be able to understand and speak English and should consent to participate voluntary in the study.

You have been identified to take part in the study because you fit the above-mentioned criteria. You will be in a focus group which includes five (5) to ten (10) people. The procedure of the research will take one (1) to two(2) You will be expected to go to the clinic or venue where the study will be conducted; the decision whether to be in the research is entirely up to you, participation is voluntary. If you do decide to take part you will be given this information sheet to keep and requested to sign a consent form. If you decide to take part you are free to withdraw at any time and without giving a reason. There are no costs for participating in this research. Although there is no anticipated danger in your participation in this research study besides the usage of your time, follow-up support will be available should your participation cause emotional discomfort.

If you consent to participate in this research study your identity and the identity of your institution will be kept strictly confidential. Numbers will be allocated in place of your name. Information generated by the study must be retained in accordance with the North West University's policy on academic integrity. The information generated in the course of the research must be kept securely in a paper or electronic form for a period of ten (10) years after the completion of the study.

The research has been approved by the Head of the Department Free State Health and the Ethics Committee of the North-West University. A copy of the consent and ethics clearance number is available from the research on request. If you have concerns about the way in which the study has been conducted, please contact the researcher, Me Mami Taye at 071 887533.

Thank you very much for taking time to read this information sheet.

28/07/2011

ADDENDUM E: Field notes

Interviewer: M.D Teye (Primary Health Care Nursing Specialist)

Interview August 2011 Conducted with eight PHC nurse

Descriptive

Interviews were conducted at the Tearoom, All participants sat quietly before the beginning of the interview, they seemed prepared though, and they also seemed uncomfortable with the voice recorder. One actually mentioned to me before the actual interview recording that although she understands that, for the sake of data analysis, recordings has to be made but it kind of made her uncomfortable. But to my surprise she was engaging well with the group and actually participated a lot. The participants were really engaging in the Topic although they concentrated more on explaining the behaviour of the child than what they actually do to assess it.

Participants seemed jubilant as they were laughing when they explained what usually happens during the consultation with the mother and child complaining of pain. One of the participants demonstrated how and where mothers will actually bandage the child who was suffering from “letswejane”.

Reflective

I was energetic during this interview and a bit happy as the participants looked happy and relaxed. I had problem expressing myself in English and also the participants seemed enthusiastic and eager to explain more but sometimes unable to express it in the foreign language. I felt that if we both (the interviewer and the participants) knew English better it could have been much easier. I was a bit worried because one participant mentioned her names. Actually the participants knew me as their coordinator for information, one of the nurses kept mentioning my name. I actually felt at peace as they were all taking part and engaging with the topic. At some stage I felt that I was not asking the right question for them to comprehend and give relevant answers.

Demographic

So far the participants stressed the behaviour of the child towards expressing their pain i.e. “withdrawal” and the “Letswejane” however the other one stressed physical exam as routine check for pain. The consensus was the need for guidelines or tool that specifically addresses pain assessment so that pain assessment can be approached better.

ADDENDUM F: Transcript

Example of one of the focus groups:

Good morning everybody, I guess it is before twelve o'clock anyway.

R Good morning.

I Eh, I hope everybody has signed her consent forms and her data capture forms. Has everybody done that?

R Yes.

I Okay you know this is a voluntary research participation one, that is why we sign the consent form and I would like to thank you very much for availing yourself to participate in the research. Uhm myself I am Mami Taje I am the student at the North West University. I am a master student; my topic is about pain assessment in children under five years by primary health care nurses. Uhm are you okay are you comfortable.

R Yes.

R Yes thank you mam.

I Oh I see that you are so quiet, I see that is this is a very big clinic, it is a big clinic, it is a twenty four hour clinic one

R Uhm.

I Okay as you are working with children every day and they come in complaining about different types of the diseases, I would like to find out from you, how do you assess pain and what signs do you look at specifically for pain, what do you do, how do you assess pain. The child's pain?

R Firstly we take the history from the mother, the mother will tell you that the child's behaviour has changed, for example for the child does no longer eat the way he used to eat, he is no longer playful, or the child is now crying or the change there is a change in the behaviour.

I Oh there is a change in the pattern.

R Eh the pattern of the child, then you suspect that the child is having pain and sometimes when you take, normally actually not sometimes. Most of the time when you take temperature the temperature is elevated it is more than 37 degree. Then if the child is the child that they can the child that can

talk which normally they would deter that they are having stomach err stomach ache. They will show that there is a pain in the abdomen, but even the experience now that counts because if the child says that there is something wrong with the abdomen, if you examine the child you find that child is having tonsillitis. Now experience you should use your experience, if this child complains of this then I know it is this. What you are are going to look for that child, you are going to examine her.

I Okay.

R That is why physical examination is very important when coming to pain because we during evaluation what you are going to do, you are going to get where the pain is. So we try to always examine our kids here or our children.

R And also it is very difficult for the child to show where there is pain the child cannot tell there is something wrong here but you will see the sings for instance if there is pain in the ear you will see the child continuously scratching the ear and you suspect there is something wrong with the ear. But if the child cannot talk and say I am having the pain here. So I think this is a very good thing because actually uhm neglect the child, uhm the pain in children, we don't actually get the right thing always to get the pain from the children. It is very difficult to get the information from the children because they cannot tell you when there is pain.

I What do you mean when you say that can you please explain what do you mean that you usually eh not concentrate err or what did you say?

R Okay I just wanted to say we tend to actually neglect the child in pain because we cannot, the child cannot explain when there is pain so you actually when there is an assessment you have to think for the child, so this actually is a challenge what's to actually go and look for pain in children.

I Okay you seem to be quiet in this corner.

R No I am just worried, I am just worried is your main concern only the pain now,

I Yes

R Is it the pain only because some babies they are sometimes in even more dangerous situation without showing pain. Like I have this child she had a serious problem, this child eh signs of meningitis but some children with meningitis they do cry others, this child was just like this and this child could have been miss diagnosed because this child was just on the mother s

back and the child was the head was just like you know the neck was. You couldn't even know what was it , but it is not only threw pain that you can see that a child is having a problem it is only that it is not only pain that can show that a child is having a problem.

I Uhum.

R So I was just worried when the stress is only on pain or rather be on other signs that the child might be having a serious problem.

I Okay like in the information you know in the information I have clearly if you have read in the information, in the information it is clearly stated that you know uhm like I explained with others you know they are able to and with my experience in the clinics I have experienced that others they are able to say where they feel pain in their you know speedily they say where it is painful to you know but with children you know we have this booklet, you know this child booklet where we where we assess,

R IMCI.

I IMCI, but with my with mine I don't know, with your experiences pain specifically how do you view it because its uhm according to your experiences with this IMCI book or whatever pain in general.

R No I understand, but it is not just that but it is a very good study, a very good study, it is an eye opener.

I Okay

R It is really an eye opener.

R Even the mother, when the mother came, they come already with the diagnosis that the child is having literature so you must be aware of literature and when you look the child you see the child is having flurry nostrils the child is having fever the child is having difficulty breathing then you must know the child is having a problem, the child is having pneumonia and the mother will tell you that this she is they have already applied the pentose around the babies chest showing that the child is sick. Definitely with that child is going to get pneumonia.

I Okay.

R What about the child, my other interest is what about the child that they say it is utas motlala another traditional diagnosis?

- R The child that has utas motlala, sometimes the child does have a pain, utas motlala when you examine the child you see that the child is going to come out with common cold or with the very same pneumonia, sometimes it is not a pain the child is dehydrated and when you hydrate the child the motlala goes away there is no pain there.
- I Okay.
- R That is why I say the experience count a lot because when you look the child with motlala the child has utas motlala that is our tradition, utas motlala..... when you look that child, that child will be sunken eyes, will be lethargic sometimes the child will be irritable then we think of the pain or this child is having a pain then we take the history that this is motlala and when you ask she even vomited and then she is even having diarrreaha the you just rehydrate the child the child is not having a pain and then the child will start to be playful it is not having a pain.
- I Uhum, what about guidelines concerning pains you know the tools or that we use to assess pain do you know of any in the department of health or in this, in our district?
- R Yes we do have IMCI that like test contest with pain it also has pain in it those guideline that we use to assess pain in children and adults.
- I And the others?
- R The rolling that appears on the pallet of care manuals it shows the the severity of pain and how you manage that pain.
- I Okay.
- R Because I mean for a child who is suffering from cancer you cannot just give panado you know.
- I Okay.
- R You can give paracetamol or with this type of pain you can give paracetamol and with this type you can give Stopain or whatever are there are those manuals whereby you have to assess the severity of pain and give treatment according to the pain.
- I Okay and the other sisters?
- R Ntatwe guidelines I don't know?

- I This guideline that you are talking of does it apply to everyone like the IMCI book, everybody is supposed to have it on her side so that when every child comes in they must use it or how, how?
- R The normal practical situation you use your experience your own discretion or this child is having a pain, or after you make a diagnosis this child is having tonsillitis, or that child is having a pain.
- I Okay, I am, I am talking about the guideline, the guideline.
- R Yes every time when we are working we have to have that book IMCI or EDL.
- I And about this one.
- R No it is in that training manual.
- I Is it available for everyone, does everyone use it every day, daily?
- R No.
- I Okay.
- R The IMCI guideline is the one that we use daily and EDL.
- I Okay. Okay is there anything other?
- R I was saying even that sometimes the situation itself, the setting it is not friendly enough to assess the pain of the child, our setting is to, the child does not understand the situation, when she comes in then we have meeting on the nurse then the child becomes uncooperative then it is difficult sometimes we miss that child. We cannot diagnose properly because even the parent at home the nurse has been made gogo to the child when the child sees the nurse he sees somebody that is going to inflict the pain on her unless she is already having a pain.
- I Hmm. Okay .
- R And that sister has said, actually experience is the one that counts a lot as the guidelines that we have because for instance if the child is having a problem and is very uncomfortable and continuously or sometimes she will lie on the floor or show that something is not right in the abdomen and when you do the assessment you will find that something is not right. For instance I had the one child for myself that was having appendicitis according to the parent appendicitis so it was the child of five years so to me the child of five years cannot be carried by the mother so that child the

mother had to carry her on the back so that I saw that child something is wrong with the child so when I examined her I saw that something is not right it is like she is having appendicitis and then the doctor examined her and then I was right with the diagnosis so it is not so easy to get the diagnosis when pain on the child but you will see with experience that there is something wrong with the child.

I Okay, like sister just said.

R Yes.

I Experience you know comes with or the experience plays a part in,

R Our assessment as well.

I Okay.

R And the observation in the behaviour of the child.

I Okay.

R Hmm.

I Okay anybody with anything else. Okay thank you very much for your time, I really really do appreciate it and at the end of the study I will make, I will avail my results to you and thank you very much again.

R Thank you.

R Thanks

R Thank you Me.

ADDENDUM G: Declaration of language editing

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DECLARATION OF LANGUAGE EDITING

I, Christina Maria Etrechia Terblanche, id nr 771105 0031 082, hereby declare that I have edited the dissertation of Ms Mami Taye, entitled *Pain assessment of children under five years in a Primary Health Care setting*, without viewing the final product.

Regards,

CME Terblanche

Director: Cum Laude Language Practitioners (CC)