

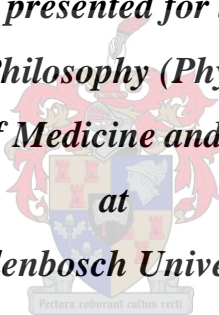
**THE DEVELOPMENT OF A CONTEXTUALISED  
EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE  
FOR THE PRIMARY HEALTH CARE OF CHRONIC  
MUSCULOSKELETAL PAIN IN THE WESTERN CAPE,  
SOUTH AFRICA**

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## DECLARATION

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Dawn Ernstzen

Date: March 2017

# ABSTRACT

## Background

Chronic musculoskeletal pain (CMSP) is a global healthcare concern, and is a major cause of disability and morbidity in sub-Saharan Africa. The implementation of high-quality, evidence-based clinical practice guidelines can enable quality healthcare for CMSP. Clinical guidelines for CMSP developed in developed nations may not be appropriate in developing countries with resource-constrained environments, due to differences in socio-cultural, societal and policy contexts. The contextualisation of clinical guidelines may be an option to provide guidance in resource-constrained environments.

## Aim

The overall aim of the research project was to develop a contextualised evidence-based, multimodal clinical practice guideline for the primary health care of chronic musculoskeletal pain in adults in the Western Cape Province of South Africa (SA).

## Method

The research was conducted in three parts:

**Part 1** comprised two qualitative descriptive studies to explore contextual factors that play a role in the health care of CMSP in three community centres. Three community health centres were strategically selected to represent a rural, a semi-urban and an urban-township setting. Study one used semi-structured interviews with patients to discover patients' perspectives of CMSP and its healthcare management. In study two, semi-structured interviews were conducted with a diverse group of healthcare practitioners' to explore their perspectives on the contextual barriers and facilitators regarding the healthcare of CMSP. Interviews were recorded, transcribed and analysed using inductive content analysis.

**Part 2** entailed study three, a systematic review conducted to identify current, high-quality clinical guidelines on the primary health care of CMSP. Guidelines that met the inclusion criteria were assessed using the Appraisal of Guidelines Research and Evaluation, Version II. Evidence-based recommendations were extracted from high-quality guidelines and synthesised for the contextualisation process.

**Part 3** of the project entailed the validation and contextualisation of the clinical recommendations. In study four, a multi-disciplinary panel of experts validated the clinical recommendations for the South African context using a modified Delphi approach. The panel developed context points relevant to the recommendations during a consensus meeting. In study five, potential end-users reviewed the applicability and acceptability of the contextualised clinical practice guidelines through a survey.

## **Results**

Twenty patients with CMSP and 21 practitioners participated in Part one. The findings indicated that CMSP influenced patients in multiple ways. Participants largely agreed on the context factors that influence CMSP care, namely the personal characteristics of the patient and practitioner, the social and environmental circumstances within which the patient lives, the healthcare interventions received and healthcare system factors. These contextual factors formed the foundation of the relevant facilitators and barriers to CMSP care in the context investigated.

Twelve clinical guidelines on the primary healthcare management of CMSP were identified through the systematic review. Six of these clinical guidelines were of high quality, and 156 recommendations were extracted from them. The recommendations were synthesised using a structured process. The end-result was a core set of 43 multimodal evidence-based, clinical recommendations.

Seventeen multi-disciplinary panel members validated the recommendations for the South African context, nominated an extra recommendation and positioned the recommendations within the context of application for primary healthcare. The contextualized guideline was reviewed by a diverse group of 18 end-users who confirmed the clinical guideline to be largely applicable and acceptable for the intended context.

## **Conclusion**

The end-product of the project was a contextualised, evidence-based and multimodal clinical guideline for the primary healthcare of CMSP in the Western Cape province of South Africa. The findings indicate that modifications in practice patterns, healthcare system organization and governance will contribute to the successful implementation of the guideline. A inter-/multi-disciplinary approach, with the outcome of the patient as self-manager within a supportive environment, is underscored. Further research avenues include the development of a multilevel implementation plan and a pragmatic trial to investigate the feasibility of the contextualised clinical guideline in the South African context.

# OPSOMMING

## Agtergrond

Daar is wêreldwyd besorgdheid oor gesondheidsorg vir kroniese muskuloskeletale pyn (KMSP). Muskuloskeletale toestande is 'n groot oorsaak van beperkte funksie en morbiditeit in sub-Sahara Afrika. Hoë-kwaliteit, bewysgesteunde kliniese praktyk riglyne is een manier om kwaliteit-gesondheidsorg aan individue met KMSP te lewer. Kliniese riglyne vir KMSP wat in ontwikkelde lande ontwikkel is, is waarskynlik nie toepaslik vir omgewings met beperkte hulpbronne nie, vanweë verskille in die sosio-kulturele, samelewings- en politieke konteks. Die kontekstualisering van bestaande riglyne is dus 'n opsie.

## Doel

Die oorhoofse doelwit van hierdie navorsingsprojek was om 'n gekontekstualiseerde, bewysgesteunde, multimodaliteit kliniese praktyk riglyn vir die primêre gesondheidsorg van KMSP in volwassenes in die Wes-Kaap, 'n provinsie van Suid Afrika, te ontwikkel.

## Metode

Die navorsing het uit drie dele bestaan:

**Deel 1** het twee kwalitatiewe beskrywende studies behels om die konteks faktore wat 'n rol speel in die behandeling van KMSP te ondersoek, in 'n steekproef van drie gesondheidsorgsentrums. Die drie gesondheidsentrus is strategies gekies om landelike, semi-stedelike en 'n stedelike-township te verteenwoordig. Studie een het semi-gestruktureerde onderhoude met pasiënte gebruik om hul perspektiewe rakende KMSP, en die behandeling daarvan te ondersoek. In studie twee is semi-gestruktureerde onderhoude met 'n diverse groep gesondheidsorg praktisyns gevoer om hul perspektiewe rakende potensiële kontekstuele struikelblokke en fasiliteerders vir die behandeling van KMSP in primêre gesondheidsorg te bepaal. Die onderhoude is opgeneem, getranskribeer en ge-analiseer deur middel van induktiewe inhoud analise.

**Deel 2** het studie drie van die navorsing behels. 'n Sistematiese oorsig is gedoen om huidige, hoë-kwaliteit kliniese praktyk riglyne ten opsigte van die primêre gesondheidsorg van KMSP te identifiseer. Die kliniese riglyne wat voldoen het aan die insluitingskriteria is geëvalueer met behulp van die Beoordeling van Kliniese Riglyne Navorsing en Evaluering, weergawe II. Bewysgebaseerde kliniese aanbevelings is vanuit die hoë-kwaliteit riglyne ontgin en verwerk vir die kontekstualiseringsproses.

**Deel 3** van die projek het die bekragtiging en kontekstualisering van die kliniese aanbevelings behels. 'n Multi-dissiplinêre groep kundiges het die kliniese aanbevelings vir die Suid-Afrikaanse primêre gesondheidsorg konteks bekragtig deur 'n aangepaste Delphi-metode (studie vier). Die paneel het konteksreleante punte relevant tot die kliniese aanbevelings ontwikkel tydens 'n konsensus vergadering. In studie vyf, het potensiële eindgebruikers die toepaslikheid en aanvaarbaarheid van die gekontekstualiseerde kliniese praktyk riglyn geëvalueer deur middel van 'n vraelys.

## **Resultate**

Twintig pasiënte met KMSP en 21 praktisyne het deelgeneem aan Deel een van die projek. Die bevindinge dui daarop dat KMSP pasiënte op verskeie maniere beïnvloed. Deelnemers het grootliks saamgestem oor die konteks faktore wat die behandeling van KMSP beïnvloed, naamlik die persoonlike eienskappe van pasiënte en praktisyne, die sosiale en die omgewings omstandighede waarbinne die pasiënt leef, die behandeling ontvang en faktore wat betrekking het op die gesondheidsorg stelsel.

Twaalf kliniese praktyk riglyne rakende die primêre gesondheidsorg van KMSP is met die sistematiese oorsig geïdentifiseer. Ses kliniese riglyne was van 'n hoë gehalte, en 156 aanbevelings is uit die riglyne versamel. Die aanbevelings is met behulp van 'n gestruktureerde proses gesintetiseer. Die eindresultaat was 'n kern stel van 43 multimodale, bewysgesteunde kliniese aanbevelings.

'n Multidissiplinêre groep van tot 17 kundiges het die lys van aanbevelings vir die behandeling van KMSP in die Suid-Afrikaanse konteks goedgekeur, 'n ekstra aanbeveling genomineer en het die aanbevelings binne die konteks van implementering in die Suid-Afrikaanse konteks geïdentifiseer. Die gekontekstualiseerde riglyn is geëvalueer deur 'n diverse groep van 18 eind-verbruikers, wat bevestig het dat die riglyn grootliks toepaslik en uitvoerbaar is vir die bedoelde konteks.

## **Gevolgtrekking**

Die eind-produk van die projek was 'n gekontekstualiseerde, bewysgesteunde en multimodale kliniese riglyn vir die primêre gesondheidsorg van KMSP in die Wes-Kaap provinsie van Suid-Afrika. Die bevindinge dui daarop dat veranderinge in die praktykpatrone, organisasie en bestuur van die gesondheidsorg stelsel sal bydra tot die suksesvolle implementering van die kliniese riglyn. 'n Inter-/multi-dissiplinêre benadering, met die uitkoms 'n pasiënt as self-bestuurder binne 'n ondersteunende omgewing, word beklemtoon. Verdere navorsing behels die ontwikkeling van 'n multivlak implementeringsplan, asook 'n pragmatiese proefneming om die haalbaarheid van die gekontekstualiseerde kliniese riglyn in die Suid-Afrikaanse konteks te evalueer.

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## LIST OF ABBREVIATIONS

AAP	American Academy of Pain Medicine
AGREE II	Appraisal of Guidelines Research and Evaluation, Version II
APS	American Pain Society
ASIPP	American Society of Interventional Pain Physicians
CMSP	Chronic musculoskeletal pain
CPG	Clinical Practice Guideline
EML	Essential Medicines List
FORM	An Australian method for formulating and grading recommendations in evidence-based clinical guidelines
GRADE	Grading of Recommendations, Assessment, Development and Evaluation
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
IASP	International Association for the Study of Pain
ICF	International classification of function
ICSI	Institute for Clinical Systems Improvement
IOM	Institute of Medicine
IQR	Inter-quartile range
K10	Kessler psychological distress scale
LASER	Light Amplification by Stimulated Emission of Radiation
LBP	Low back pain
NICE	United Kingdom's National Institute for Health and Clinical Excellence
NOUGG	National Opioid Use Guideline Group
NPRS	Numeric Pain Rating Scale
NSAIDs	Non-steroidal anti-inflammatory drugs
PACK	Practical approach to care kit
PARM	Philippine Academy of Rehabilitation Medicine
PHC	Primary health care

PI	Primary investigator
PIPOH	Population, Intervention, Professions, Health Outcomes, and Health setting
Practitioner	Healthcare practitioner/provider
RNAO	Registered Nurses' Association of Ontario
ROC	Receiver Operating Characteristics
SA	South Africa(n)
SD	Standard deviation
SIGN	Scottish Intercollegiate Guidelines Network
SNRI	Serotonin Norepinephrine Re-uptake Inhibitor
SSRI	Selective Serotonin Re-uptake Inhibitor
SU	Stellenbosch University
TENS	Trans-Electrical Nerve Stimulation
UK	United Kingdom
UMHS	University of Michigan Health System
USA	United States of America
WHO	World Health Organization
WSAMDG	Washington State Agency Medical Directors' Group
YLD	Years lived with disability

## LIST OF DEFINITIONS

**Acceptability:** The extent to which users are likely to accept a recommendation based on the following criteria: quality, comprehensiveness, logical reasoning, patient and provider attitudes and beliefs, ease of implementation into current system, patient needs, expectations and preferences (ADAPTE II Collaboration, 2009).

**Adapt a guideline:** The use and/or modification of guideline(s) produced in one cultural or organisational setting for application in a different context. Adaptation can be used as an alternative to *de novo* guideline development or for customising existing guidelines(s) to suit the local context (ADAPTE II Collaboration, 2009).

**Adopt a guideline:** The acceptance of a guideline as a whole after the assessment of its quality, currency and content. Healthcare providers (or other users of recommendations) who adopt a guideline, are committed to changing their practices in accordance with the recommendation in the guideline (ADAPTE II Collaboration, 2009).

**Applicability/Feasibility:** The ability to which users can put a recommendation into practice. Applicability is influenced by a clearly defined eligible patient population and its congruence with the population in the intended setting. External factors such as knowledge, skill, staff, time frames, equipment and resources influence applicability (ADAPTE II Collaboration, 2009).

**Beliefs:** These are the personally formed cognitions, often influenced by culture. Beliefs are informed by understanding of self and of the environment, and this influences behaviour (Daykin & Richardson, 2004).

**Biomedical model:** This refers to the belief that pain symptoms are caused by physical structures, and thus the separation between body and mind (Daykin & Richardson, 2004).

**Biopsychosocial aspects:** There is a complex and dynamic interaction between biological (physical), psychological and social aspects that influences the person's experience of pain and clinical presentation (IASP, 2009a)

**Chronic non-malignant pain** (WHO, 2007): Chronic non-malignant pain includes:

- i) **Chronic musculoskeletal pain**, including spinal pain or low back pain, chronic degenerative arthritis, osteoarthritis, rheumatoid arthritis, myofascial pain and rheumatic pain, chronic headache, migraine and bone pain; and



- ii) **Neuropathic pain** including nerve compression pain, post-nerve injury and post-amputation pain, diabetic neuropathy, complex regional pain syndromes (type I and II), skeletal muscle spasm, post-herpetic neuralgia and chronic post-surgical pain; and
- iii) **Visceral pain** (distension of hollow viscera and colic pain); and
- iv) Chronic pain in sickle cell anaemia.

**Chronic (persistent) pain:** This refers to pain that persists for longer than 12 weeks or beyond expected healing time (Blyth et al., 2001).

**Clinical practice guidelines:** These guidelines are systematically developed recommendations that assist the practitioner and the patient in decision-making about health care for specific clinical circumstances (IOM, 2011).

**Conformability:** This refers to the extent to which the findings are based on the study participants and settings (Frambach et al., 2013).

**Consensus development:** Formal consensus development methods are ways of obtaining and synthesising views of experts, opinion leaders and stakeholders. They involve the generation of group judgements based on explicit aggregation on individual participants' judgements (Halcomb, et al., 2008).

**Contextual factors:** Contextual factors include personal and environmental features of the individual. Personal factors are individualistic features such as gender, age, coping styles, social background, education, profession, past and current experience, overall behaviour pattern, and character, amongst other factors. The environmental factors comprise the physical, social, legal, external and attitudinal environment in which people live and conduct their lives. Contextual factors can act as facilitators of health care or barriers to such care (WHO, 2002, 2013).

**Contextualise a guideline:** Contextualisation of a guideline for use in developing countries means retaining its current form, and using writing strategies that assist in its operationalisation in the local environment. The focus is on how to best translate existing evidence statements into local practice (Gonzalez-Suarez et al., 2012).

**Credibility (Trustworthiness):** The extent to which a study's findings are trustworthy (Frambach et al., 2013).

**Dependability:** The extent to which findings are consistent in relation to the context in which they were generated (Frambach et al., 2013).

**Disability:** Problems in performing daily life tasks and activities, in the home as well as the workplace (Leeuw et al., 2007).

**Evidence-based practice:** The conscientious explicit and judicious use of current best evidence in making decisions about the care of individual patients; the integration of best research evidence with clinical expertise and patient values (Sackett et al., 1996).

**Health systems strengthening:** Improving the country's health care system by identifying challenges and implementing changes in policy and practice in a country's health system. In this way, the country can respond better to its health and health system challenges (WHO, 2016).

**Interdisciplinary team:** A group of health care professionals from different disciplines that integrate care as a team; who work in a coordinated fashion toward a common goal through frequent communication (IASP, 2009b; Medical Dictionary, 2016). Key features of an interdisciplinary approach are joint problem-solving, mutual responsibility and shared decision-making (Turk et al., 2012).

**Knowledge synthesis:** The contextualisation and integration of research findings of individual research studies within the larger body of knowledge on a topic (Canadian Institutes of Health Research, 2012).

**Knowledge translation research:** The scientific study of the determinants of knowledge use and the methods to promote the uptake of research findings by healthcare providers, policy makers and patients (Eccles, Grimshaw, Walker, Johnston & Pitts, 2005). It is also known as implementation research and quality improvement research.

**Level of evidence:** A hierarchical system that classifies evidence according to different individual study designs (Hillier et al., 2011).

**Multi-disciplinary team:** A team of professionals including representatives of different disciplines who coordinate the contributions of each profession, which are not considered to overlap, in order to improve patient care (Medical Dictionary, 2016).

**Pain beliefs:** A person's conceptions of what pain is and what it means to the person (how the person makes sense of pain) (Daykin & Richardson, 2004).

**Patient/-person-centred care:** The patient as central within the professional relationship, with an understanding of the patient's perspective, which underpins good practice in an equal therapeutic relationship (Kidd et al., 2011).

**Primary health care:** Health care provided in the community by medical doctors, nursing and allied health professionals, which is often an individual's first point of entry into the health system (Keleher, 2001).

**Quality of evidence:** The body of evidence. The quality of evidence reflects the extent to which confidence in an estimate of the effect is adequate to support recommendations (Guyatt, Oxman, Vist, Kunz, Falck-Ytter & Schünemann, 2008b). The evidence base (i.e. number, level and risk of bias in included studies, which forms the body of evidence) (Hillier et al., 2011).

**Recommendations:** Evidence-based statements that promote or advocate a particular course of action in clinical practice (Misso, Pitt, Jones, Barnes, Piterman & Green, 2008).

**Rehabilitation:** A goal-orientated and time-limited process aimed at enabling impaired persons to reach an optimum mental, physical or social functional level (National Department of Health, 2015).

**Strength of the recommendation:** The extent to which one can be confident that the desirable effects of an intervention outweigh the undesirable effects (Guyatt, Oxman, Kunz, Falck-Ytter, Vist, Liberati & Schünemann, 2008a).

**Transferability:** The extent to which the research findings can be applied to other, different settings (Frambach et al., 2013).

## **ETHICAL APPROVAL**

The study protocol was approved by the Health Research Ethics Committee of Stellenbosch University, South Africa (S14/01/018) (see Appendix 1). Ethics approval was renewed yearly by the Committee. Permission to conduct the study at the healthcare facilities of the Provincial Government of the Western Cape was provided by the Western Cape Provincial Research Health Committee (RP038/2014) (see Appendix 2). Appendix 3 provides further information on the research ethics principles used in this study.

# CHAPTER 1

## INTRODUCTION AND RATIONALE

### 1.1 BACKGROUND

Chronic musculoskeletal pain (CMSP) and its associated disability are worldwide concerns; and also a concern in the local South African (SA) context. The global prevalence of CMSP is high and rising (Schnitzer, 2006; Cimmino, Ferrone & Cutolo, 2011; Rauf, Meyer, Marcus & Becker, 2013). There are indications that the prevalence of CMSP is higher in African countries when compared to other countries (Demyttenaere, Bruffaerts, Lee, Posada-Villa, Kovess, Angermeyer, Levison, De Girolamo, Nakane, Mneimneh, Lara, De Graaf, Scott, Gureje, Stein, Haro, Bromet, Kessler, Alonso & Von Korff, 2007; Igumbor, Puoane, Gansky & Plesh, 2011; Rauf et al., 2013; Hoy, Geere, Davatchi, Meggit & Barrero, 2014). In SA, musculoskeletal conditions contribute significantly to the years lived with disability (YLDs) (Global Burden of Disease study 2015 Collaborators, 2016). However, the problem of CMSP is not prioritised in SA, due to the country's quadruple burden of disease. Much health resources is spent on the prevention and management of HIV/AIDS (Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome) and tuberculosis, chronic (non-communicable) diseases; maternal and child health and trauma and violence (Mayosi, Flisher, Lalloo, Sitas, Tollman & Bradshaw, 2009), therefore resources are not channelled towards the management of musculoskeletal conditions.

There is a need for evidence-based, cost-effective and time-efficient management strategies to address CMSP and its consequences within the realities and constraints in the SA healthcare sector. The SA healthcare sector consists of a dual and separate public sector and private healthcare sector. The public sector suffers the consequences of SA's historical apartheid system, and is currently a system in transition to reform (Coovadia, Jewkes, Barron, Sanders & McIntyre, 2009). This process of reform creates the opportunity for innovation and the hope of a uniquely African healthcare system that addresses the needs of African people (Coovadia, 2015). New and creative ways are needed to bring evidence-based practice for CMSP directly to the patients and the practitioners, where they interact within the current healthcare system. The implementation of clinical practice guidelines (CPGs) have been advocated to optimise health care by improving the quality, consistency, appropriateness and cost-effectiveness of care (Shekelle, Woolf, Grimshaw, Schünemann & Eccles, 2012; Graham, Harrison, Brouwers, Davies & Dunn, 2002; Vlayen,

Aertgeerts, Hannes, Sermeus & Ramaekers, 2005). CPGs may therefore play an important role in healthcare reform and the operationalisation of evidence-based practice.

The focus of this study was on synthesising and organising evidence-based recommendations, using the novel approach of CPG contextualisation (Gonzalez-Suarez, Grimmer-Somers, Dizon, King, Lorenzo, Valdecanas, Gambito & Fidel, 2012). Contextualisation can be described as the process whereby clinical recommendations from existing high-quality CPGs are extracted, synthesised and used to create a new CPG. The recommendations sourced from original CPGs retain their form, but are re-written, using specific writing strategies. The reformed recommendations are accompanied by context points to facilitate the operationalisation of recommendations in the local context (Gonzalez-Suarez et al., 2012). The contextualisation process necessitated a thorough knowledge about contextual factors that impact the care of CMSP in SA. Therefore, contextual factors, such as personal and environmental factors that have an influence on the care of CMSP, as experienced by key informants consisting of patients and practitioners managing CMSP in the SA public sector primary healthcare (PHC) sector, were investigated. The knowledge about contextual factors was essential in informing the process of CPG contextualisation.

## **1.2 SIGNIFICANCE OF THE STUDY**

CMSP, in SA and Africa, is a significant burden that should be addressed. In SA, chronic pain is reported to be often underdiagnosed, undertreated, or inappropriately treated (Narasimooloo, Naidoo & Gaede, 2011; Chetty, Baalbergen, Bhigjee, Kamerman, Ouma, Raath, Raff & Salduker, 2012), which may lead to poor pain control. Additionally there is a dearth of research on CMSP impact and management in SA settings (Igumbor et al., 2011; Rauf, Meyer, Marcus & Becker, 2014). The high prevalence of CMSP and its debilitating consequences necessitates effective strategies to prevent and manage the condition. An evidence-based CPG is thus ideally suited to enhance the implementation of strategies for the management of CMSP pain in the SA context. However, such a CPG that is applicable for a resource-constrained environment has not yet been developed. The research project focuses on the development of a CPG through the novel process of CPG contextualisation to address the burden of CMSP in the SA public health care sector.

## **1.3 OVERALL AIM**

The overall aim of the research project was to develop a contextualised evidence-based, multi-disciplinary clinical practice guideline for the primary health care of adults with CMSP in the Western Cape province of SA. To achieve the aim of the project, six research questions were asked:

- What are patients' perspectives about their CMSP and its PHC in the SA context; in particular their pathway of care and the factors that have an impact on their pain experience and management?
- What are healthcare practitioners' perspectives about the PHC of patients with CMSP; in particular the pathway of care and the barriers and facilitators in implementing optimum pain management in PHC?
- What are the evidence-based clinical recommendations contained in existing, current, high-quality CPGs for the management of adults with CMSP in PHC settings?
- Which of the identified evidence-based clinical recommendations are valid, to be included in the CPG for the local (Western Cape, SA) context?
- What are the context and practice points that represent standards for implementation of the recommendations contained in the CPGs?
- Is the contextualised CPG for PHC of adults with CMSP pain applicable and acceptable for the intended setting?

## **1.4 RESEARCH SETTING**

The research setting was primary health care, focusing on Community Health Centres/Clinics in the public health care sector of the Western Cape of SA.

## **1.5 METHODS**

Five interlinked studies with different methods were implemented, drawing on the principles of knowledge translation research. Knowledge translation research is defined as the scientific study of the determinants of knowledge use and the methods to promote the uptake of research findings by healthcare practitioners, policy makers and patients (Curran, Grimshaw, Hayden & Campbell, 2011). In the first part of the project, two corresponding qualitative studies were performed to investigate the context. In the second part, a systematic review was performed to source and synthesise the available evidence-based management options. In the third part, the context information and the evidence-based recommendations were integrated using consensus methodology and the feasibility of the integrated information was verified via an external review.

## **1.6 STRUCTURE OF THE DISSERTATION**

The structure of the dissertation is illustrated in Figure 1.1. The dissertation begins with an overarching introduction and literature review (Chapters 1–2) and ends with a comprehensive

discussion chapter, which includes the limitations and recommendations derived from the study (Chapter 9), followed by a short conclusion (Chapter 10). The three phases of the research project are presented in three parts (Chapters 3–8) as follows:

### **1.6.1 Part 1: The context**

Part 1 addresses the need for information about the authentic conditions within which CMSP is experienced and managed through the views of patients and practitioners as key stakeholders. Chapter 3 reports on the findings of a qualitative descriptive study about patients' perspectives of CMSP and its PHC management; and Chapter 4 reports on a qualitative descriptive study about practitioners' perspectives on the management of CMSP in the PHC context. The end-product of Part 1 is a framework of contextual factors that influence CMSP care. This framework was considered for contextualising CPGs for the management of CMSP in the Western Cape.

### **1.6.2 Part 2: Evidence sourcing and synthesis**

Part 2 focuses on the identification and synthesis of evidence-based recommendations for use in the contextualisation process. Chapter 5 describes the procedures and outcome of a systematic review for the identification and appraisal of existing, up-to-date CPGs for the PHC management of CMSP. Chapter 6 describes the process whereby recommendations were extracted from high-quality CPGs to be further analysed and synthesis. The process of synthesis involved transformation of recommendations into a context-friendly form, by merging and re-writing recommendations, using a specific writing guide. The end-product of Part 2 was a core set of multi-disciplinary evidence-based recommendations for inclusion in a CPG for CMSP.

### **1.6.3 Part 3: Contextualisation**

In Part 3, the information from Parts 1 and 2 was brought together for the final stages of contextualisation. An expert multi-disciplinary panel evaluated and validated the recommendations produced for the applicability and feasibility of the recommendations for the intended setting, using the Delphi process (Chapter 7). During a consensus meeting (Chapter 7), the same panel generated context and practice points to accompany the recommendations, using the information obtained for Part 1. The validated recommendations with their context points were organised into an authentic patient pathway/journey, which was formed using the information from Part 1. Chapter 8 reports on the evaluation of the contextualised CPG and patient pathway via an external review, for further validation.



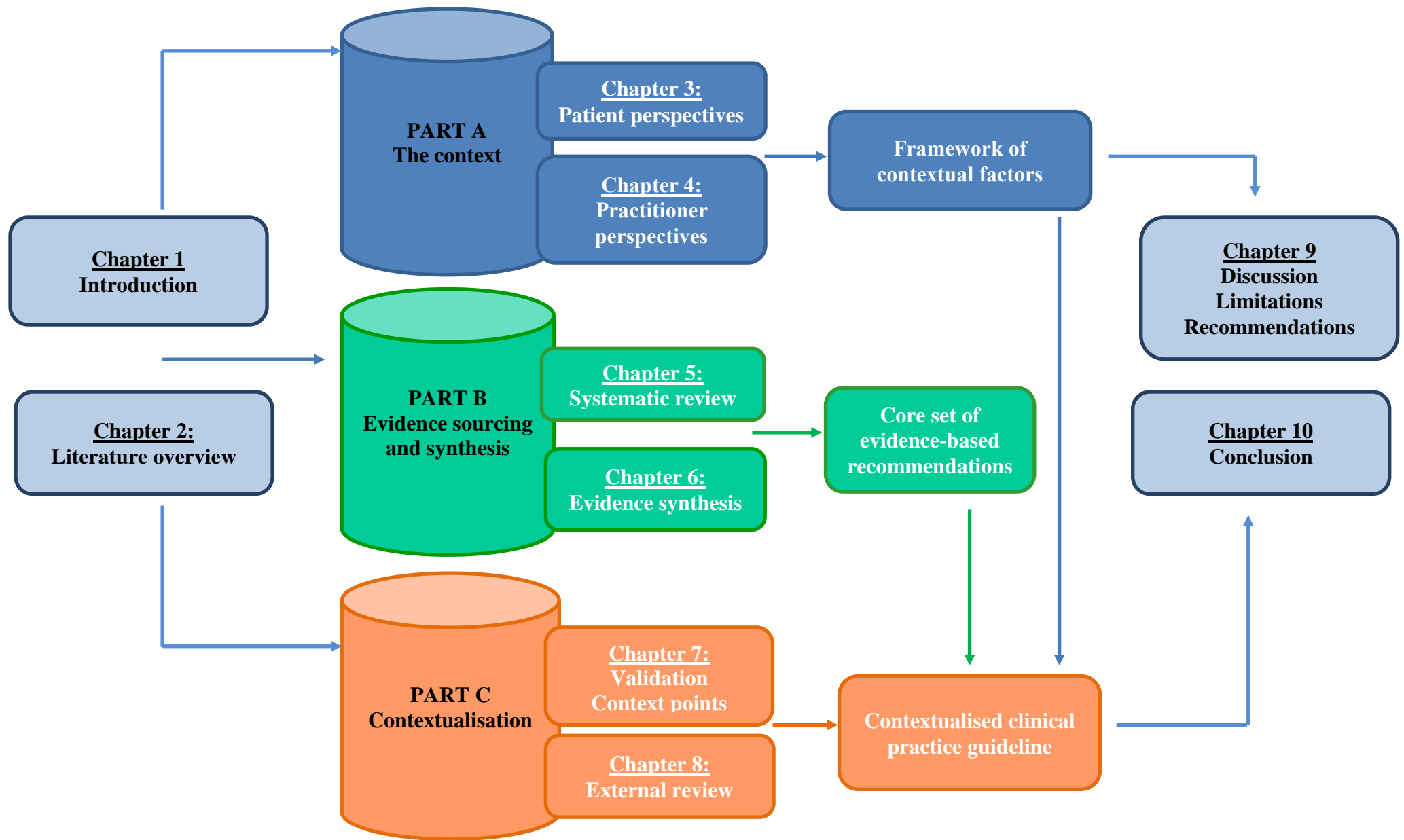


Figure 1.1: Outline of the dissertation structure

## CHAPTER 2

# LITERATURE OVERVIEW

## 2.1 CHRONIC MUSCULOSKELETAL PAIN

### 2.1.1 Chronic musculoskeletal pain and its consequences

Chronic musculoskeletal pain and its management present a challenge to patients, healthcare providers and communities. CMSP is pain associated with joints, muscles, tendons and nerves that persist for longer than 12 weeks, and thus beyond the expected healing time (Blyth, March, Brnabic, Jorm, Williamson & Cousins, 2001); Harstall & Ospina, 2003). The condition is classified as part of chronic non-malignant pain, which includes musculoskeletal, neuropathic and visceral pain and pain from sickle cell disease (WHO, 2007). Musculoskeletal pain can be a symptom from various conditions, for example osteoarthritis, rheumatoid arthritis, low back pain, tendinopathies and overuse injuries; however, in many cases, a clear diagnosis regarding CMSP cannot be made (Parsons, Harding, Breen, Foster, Pincus, Vogel & Underwood, 2007). CMSP is recognised as a global healthcare concern and it affects many societies, including those in sub-Saharan Africa, where CMSP is a major cause of disability and morbidity (WHO, 2003; Furlan, Reardon & Wepler, 2010; Rauf et al., 2014). Work absenteeism, unemployment compensation and repeated treatments contribute to considerable socioeconomic burden of CMSP in developed and developing countries (Punnett & Wegman, 2004; Woolf & Pfleger, 2003). CMSP has a significant impact on physical and psychological health, function, participation in life roles and ultimately on quality of life (Foster, Pincus, Underwood, Vogel, Breen & Harding, 2003; Furlan et al., 2010); and reduces health-related quality of life. The condition is associated with high personal, financial, healthcare system and social system costs (Woolf & Pfleger, 2003).

### 2.1.2 Prevalence of chronic musculoskeletal pain

There is consensus that the prevalence of chronic pain and CMSP pain is high and may be increasing (Foster et al., 2003; Schnitzer 2006; Cimmino et al., 2011; Rauf et al., 2013; Hoy et al., 2014). The increase is attributed to multiple factors which include an ageing population, obesity, urbanisation and lifestyles factors (Woolf & Pfleger, 2003; (Global Burden of Disease study 2013 Collaborators, 2015). The prevalence of CMSP as an entity is unclear, as authors often do not differentiate between types of pain. The reported prevalence of chronic pain differs between

countries due to different definitions used, differences in population groups, cultures, comorbidities and lifestyles (McBeth & Jones, 2011; Rauf et al., 2013). While it is difficult to determine the precise global prevalence of chronic pain, Smith, Hopton and Chambers (1999) estimate it to be between 7.6% and 45%, and Harstall and Ospina (2003) estimate it to be between 10.1% and 55.2%. In SA communities, a chronic pain prevalence of up to 41% was reported in the Eastern Cape (Igumbor et al., 2011) and Tshwane (Rauf et al., 2013) regions. Demyttenaere et al. (2007) found the SA prevalence for neck and back pain to be 26% (the fourth highest of the 17 countries surveyed). The findings are similar to the findings of Major-Helsloot, Crous, Grimmer-Somers and Louw (2014) who found a chronic low back pain (LBP) prevalence of 26% in Western Cape community settings. In a systematic review, Usenbo, Kramer, Young and Musekiwa (2015) report the prevalence of osteoarthritis in SA to be as high as 55.1%. Africa thus shares the high global burden of chronic pain.

Chronic pain is one of the commonest complaints for consulting practitioners in PHC (Matthias, Parpart, Nyland, Huffman, Stubbs, Sargent & Bair, 2010; Patel, Peacock, McKinley, Clark Carter & Watson, 2008). Musculoskeletal conditions have likewise been found to be a significant reason for seeking PHC in SA (Mash, Fairall, Adejayan, Ikpefan & Kumari, 2012). Mash et al. (2012) report LBP as the sixth commonest complaint, while leg pain and joint pain ranked 13<sup>th</sup> and 23<sup>rd</sup> respectively. The management of musculoskeletal pain and the prevention of chronicity should thus be prioritised to address the health burden that these conditions pose.

### **2.1.3 Conceptual models for chronic musculoskeletal pain**

The conceptual models for chronic pain accentuate it as a complex condition, which is influenced by individual factors, personal beliefs, values, attitudes, expectations, cognitions, biological mechanisms, psychological factors, social and environment contexts and culture. Historically, pain was explained as a biological phenomenon by the pain gate theory (Melzack & Wall, 1965) and later the biopsychosocial model (Engel, 1977). A structural, biomechanical model often fails to sufficiently explain why pain persists, and it does not consider the impact of psychosocial and environmental influences on pain production and maintenance (Hayes & Hodson, 2011). The contemporary understanding of pain has evolved to conceptualise it as a multidimensional phenomenon which is governed by higher centres in the brain. The aforementioned concept is explained by the pain neuromatrix conceptual model (Melzack, 1999; Moseley, 2003). The pain neuromatrix model explains that widespread brain activity is initiated when the individual experiences pain. This brain activity is individual specific, denoting that there are individual differences as to which stimulus activates the pain neuromatrix and the areas of the brain that

respond to the stimulus, producing a perceptual and motor output (Moseley, 2003). This model transcends the biopsychosocial model to include the neurophysiological changes that takes place in the brain during the chronic pain experience. Consequently, effective management of pain requires a multimodal approach with the integration of pharmacological and non-pharmacological management approaches to address the multiple features that play a role in chronic pain construction.

## **2.2 MANAGEMENT OF CHRONIC MUSCULOSKELETAL PAIN**

### **2.2.1 Evidence-based practice**

The multiple features of CMSP, as well as its high prevalence and debilitating consequences, necessitate effective strategies to prevent and manage the condition. Evidence-based practice is imperative for the quality management of CMSP. Research about effective strategies to manage CMSP is fundamental to inform evidence-based practice. However, it is estimated that research findings can take up to two decades to be incorporated in practice (Sussman, Valente, Rohrbach, Skara & Pentz, 2006), implying that there may be complex barriers to evidence uptake. The uptake of evidence further requires knowledge translation, whereby research evidence is applied for decision-making in different contexts (Curran et al., 2011). Evidence-based practice is defined as the integration of best research evidence with clinical expertise and patient values (Sackett, Rosenberg, Gray, Haynes & Richardson, 1996), which indicates that, while it is imperative to consider the evidence base for interventions targeting CMSP, patient values and practitioners' experience need to be considered during clinical decision-making. Knowledge translation requires understanding and attending to the multidimensional barriers and facilitators that influence decision-making within real world circumstances. Consequently, knowledge about the context factors that influence CMSP care may inform relevant prevention and management strategies.

### **2.2.2 Interdisciplinary primary health care for chronic musculoskeletal pain**

The prevention and management of CMSP requires a holistic, multimodal and inter-/multi-disciplinary approach to address the complex interaction between biological, psychological, social and environmental factors (Scascighini, Toma, Dober-Spielmann & Sprott, 2008). Turk, Stanos, Palermo, Paice, Jamison, Gordon, Cowan, Covington & Clark (2012) describe interdisciplinary care as an approach that involves a variety of healthcare practitioners, with complementary knowledge and skills and shared objectives. Key features of an interdisciplinary approach are joint problem-solving, mutual responsibility and shared decision-making. In a multi-disciplinary approach, several practitioners are also involved; however, their approach is not integrated, but parallel, indicating

complementary goals (Turk et al., 2012). Schatman (2012) and Scascighini et al. (2008) conclude that an interdisciplinary team approach is more cost-effective and more effective to reach treatment goals, than treatment being given by a single practitioner. Schatman (2012) suggests that the core elements for an interdisciplinary approach to CMSP care include medication management, physical therapy, cognitive and behavioural therapy and stress management. The use of interdisciplinary care vs multi-disciplinary care in a healthcare system depends on organisational factors such as collaboration, healthcare system characteristics and resources available. For example, interdisciplinary care might not be possible in resource-constrained environments. The terms ‘interdisciplinary’ and ‘multi-disciplinary’ seem to be used interchangeably in the literature. In this dissertation, I use both terms, staying true to which one authors have used in their study, ultimately indicating that multiple healthcare providers are involved in the patients’ care.

A significant percentage of patients with CMSP are managed in PHC, as opposed to secondary and tertiary care (Gureje, Von Korff, Simon & Gater, 1998; Smith et al., 1999; Patel et al., 2008; Matthias et al., 2010), indicating the need for access to different professions in PHC to provide the core elements of pain management. PHC is provided in the community, addressing the health needs of the community within that community (WHO, 2008b). The components of PHC include community participation and empowerment while integrating preventative, promotive, curative and rehabilitation services. These components of PHC are congruent with the proposition that CMSP management should be multimodal and focus more on rehabilitative options, and less on curative management options as would be the case for acute pain (Smith et al., 1999; WHO 2007; Stein, Reinecke & Sorgatz, 2010). PHC appears to be ideally situated to deliver holistic care to prevent and manage CMSP. Consequently, PHC needs to be adequately resourced to deal with the service-provision load associated with CMSP (Rauf et al., 2013).

## **2.3 CLINICAL PRACTICE GUIDELINES FOR THE MANAGEMENT OF CHRONIC MUSCULOSKELETAL PAIN**

The implementation of CPGs is one way of providing efficient, evidence-based options for the PHC management of CMSP. CPGs are defined as systematically developed recommendations that assist the practitioner and the patient in decision-making about health care for specific clinical circumstances (IOM, 2011). The recommendations in a good quality CPG is based on a systematic review of evidence and can provide information on the benefits and harms of interventions. CPGs summarise the extensive, published evidence for different interventions in a user-friendly form, making it easier for busy practitioners to apply evidence-based practice. The implementation of CPGs has been found to optimise patient care by improving the quality, consistency,

appropriateness and cost-effectiveness of care (Shaneyfelt, Mayo-Smith & Rothwangl, 1999; Graham et al., 2002; Vlayen et al., 2005). Furthermore, CPGs are important in influencing public healthcare policy and promoting equal healthcare distribution and quality healthcare for all (Woolf, Grol, Hutchinson, Eccles & Grimshaw, 1999; Qaseem, Forland, Macbeth, Ollenschlager, Philips & Van der Wees, 2012).

### **2.3.1 The need for clinical practice guidelines on chronic musculoskeletal pain**

Contextually relevant, evidence-based and up-to-date CPGs for the primary care of CMSP may thus play an important role in translating research findings into clinical practice in order to optimise the health outcomes of patients with CMSP. The WHO (2007) has also prioritised the development of multimodal CPGs for the management of chronic non-malignant pain. In SA, two guidelines that focus on pain management in adults have recently been published. The one guideline focuses on opioids for chronic non-malignant pain (Raff, Eppel, Meyer, Sarembock & Webb, 2014), and the other focuses on neuropathic pain (Chetty et al., 2012). However, these guidelines do not include the holistic management of CMSP in the SA context. Therefore, a CPG that focuses on inter-/multi-disciplinary management of CMSP in the SA context is needed. Such a CPG would need to consider the uniquely SA needs, which may be coloured by socio-cultural, societal and policy factors that influence the experience and healthcare management of pain in this context. Grimmer-Somers, Vipond, Kumar and Hall (2009) emphasise the importance of understanding the social-cultural implications of interpreting pain experiences. Systematically integrating evidence-based practice with patient-centred care is an important consideration in resource-constrained environments such as those that are evident in Africa.

### **2.3.2 Stakeholder values in clinical practice guideline development**

A patient-centred approach in the management of CMSP is essential, since individuals with chronic pain often perceive their condition to be neglected and not understood by medical practitioners (Upshur, Bacigalupe & Luckmann, 2010). A CPG that considers patients' perspectives on CMSP may be the key to advancing patient-centred, relevant and holistic management of CMSP in PHC. Such an approach which takes cognisance of patient needs may contribute to patient satisfaction and improved clinical outcomes (Mead & Bower, 2000; Kidd, Bond & Bell, 2011). The consideration of patient values and preferences in CPG recommendations stems from the acknowledgement of patient autonomy and the patient-centred paradigm (Woolf, Schünemann, Eccles, Grimshaw & Shekelle, 2012). It is advocated that patient perspectives be considered when developing CPGs to ensure contextually relevant CPGs (Kredo, Gerritsen, Van Heerden, Conway & Siegfried, 2012). Several authors advocate the inclusion of patient values and preferences as part of CPG

development; however, this strategy has not been adopted by many guideline developers (Krahn & Naglie, 2008; Van der Weijden, Légaré, Boivin, Burgers, Van Veenendaal, Stiggelbout, Faber & Elwyn, 2010). Schünemann, Fretheim and Oxman (2006) and Hooten, Timming, Belgrade, Gaul and Goertz (2013) suggest the following ways to incorporate patient preferences in CPG development:

- A literature search of patients' preferences or patient preference-related evidence;
- Patient or patient advocate participation in the guideline development group;
- Key informant interviews and focus groups;
- Environmental scanning through surveys;
- Comments about CPG drafts and recommendations provided by patients or patient groups.

In addition to patient involvement, policy makers and clinicians should also be involved in the process of CPG development to ensure that CPGs consider the needs of the target practitioners and patients (Kredo et al., 2012). Practitioner values play an important role in the healthcare decision-making process. Involving target practitioners early in guideline development may assist in the identification of training needs, barriers to uptake, the relevant facilitators to uptake and it may instil a sense of ownership, which could facilitate the uptake of the CPG in the intended setting. However, as is the case with patient involvement, there is a dearth of literature on how practitioner values and preferences are incorporated in the guideline development process. In this study, the inclusion of patient and practitioner values and perspectives were regarded as important, as research about CPG development and implementation in this context is new.

### **2.3.3 Development of clinical practice guidelines – *De novo*, adopt, adapt and contextualise**

Different options exist regarding development of CPGs, namely developing a new CPG (*de novo*), or adopting, adapting or contextualising existing CPGs. *De novo* development entails the sourcing and synthesising of primary and secondary evidence to create clinical recommendations. Adoption of a CPG is the acceptance of a guideline and its recommendations as a whole after the assessment of its quality, currency and content (ADAPTE II Collaboration, 2009). Adaptation of CPGs has been described as the modification of recommendations from one or more guideline(s) produced in one cultural or organisational setting and applying it in a different context (customising a guideline(s) to suit the local context) (ADAPTE II Collaboration, 2009). During contextualisation of a CPG(s), guideline recommendation(s) retains its form, and specific writing strategies are applied to facilitate the operationalisation of recommendations in the local environment (Gonzalez-Suarez et al., 2012). Contextualisation is focused on ways to transform evidence recommendations into local practice by placing the recommendation within a suitable context (Gonzalez-Suarez et al.,



2012). Contextualisation closely follows the adaptation process (see Appendix 4 for a comparison); and contextualisation may indeed be seen as a form of adaptation (Dizon, Machingaidze & Grimmer, 2016). However, with contextualisation, the intent is not to update or revise existing CPG recommendations (as is the case with adaptation). With contextualisation, congruent evidence-based recommendations from different high-quality CPGs are merged, and they are transformed into a representative version of the original recommendations. Contextualising CPGs has the advantage that it considers context-specific factors, local practice patterns and an authentic care pathway when writing the guideline recommendations. The process of contextualisation of CPGs arose from the realisation that guideline adaptation has been undertaken primarily in Western countries; and no framework existed to guide the use of Western guidelines in resource-limited low- and middle-income countries with different healthcare systems, healthcare provider relationships, education, and patient needs.

The decision to adopt, adapt or contextualise CPG recommendations is dependent on the local context and resources. The *de novo* development of CPGs is expensive, time-consuming and skill-intensive. In resource-constrained environments, such as Africa, *de novo* CPG development may not be feasible. A viable option would be to adopt, adapt or contextualise existing CPGs for use in that context (ADAPTE II Collaboration, 2009; Gonzalez-Suarez et al., 2012). Considering the need for a CPG on CMSP in SA and the array of contextual factors that may influence optimum management of pain in the SA healthcare system, the contextualising process was indicated.

#### **2.3.4 The implementation of clinical practice guidelines**

The effectiveness of implementation and uptake of CPGs for CMSP are often questioned regarding their ability to influence behaviour change (change in practice patterns), patient outcomes and cost effectiveness of care. Three systematic reviews that investigated the impact of implementation strategies for LBP, neck pain and CMSP found variable results for the effectiveness of the implementation strategies (Ospina, Taenzer, Rashiq, MacDermid, Carr, Chojecki, Harstall & Henry, 2013; Mesner, Foster & French, 2016; Suman, Dikkers, Schaafsma, Van Tulder & Anema, 2016). These authors made several suggestions to improve the effectiveness of complex interventions such as CPGs. The suggestions include: to make use of underpinning theory to support intervention strategies, to identify specific barriers and facilitators for implementation and address those in the implementation plan, to include patient mediated interventions, to follow best practice in design, conduct and reporting of implementation studies and to offer implementation strategies of long duration and increased frequency (Ospina et al., 2013; Mesner et al., 2016; Suman et al., 2016).



Implementation research is a new field of science, and development of this concept can influence the effectiveness of implementations strategies designed for CPGs.

The concept of developing and implementing CPGs in the SA healthcare context is in its infancy. Two guidance initiatives, that concerns CMSP, has been successfully implemented in the SA public healthcare sector, namely the Standard Treatment Guidelines (STG) and Essential Medicines List (EML) for primary healthcare (developed by the National Department of Health, 2014); and the PACK (Practical Approach to Care Kit), developed by The Knowledge Translation Unit (2016) of the University of Cape Town, SA.

The purpose of the primary care EML is to facilitate access to safe, efficacious and quality medicines, to facilitate equitable healthcare access in SA and to bring health care to communities (National Department of Health, 2014). The EML is a WHO concept whereby the list of medicines contained in the EML is selected according to the healthcare needs of a country, together with public health relevance, evidence on efficacy and safety and cost-effectiveness of the medication. The medicines in the EML are anticipated to be available in adequate amounts, in the appropriate dosage forms and at an affordable price (WHO, 2016). A range of conditions is covered in the 21 chapters of the EML. Chapter 20.2 focuses on chronic non-cancer pain where guidance for essential medicines, dosages and treatment information for CMSP is provided. The EML recommends Paracetamol and/or NSAIDs (Non-steroidal anti-inflammatory drugs) for the management of CMSP. Tramadol is the only opioid listed for the management of CMSP; and Amitriptyline can be used as an adjuvant (National Department of Health, 2014). The EML is advocated to be the standard practice for the public sector but it is emphasised that this guidance should not replace sound clinical judgement.

The Knowledge Translation Unit (2016) provides another guidance initiative for PHC in SA. This Unit uses the PACK to provide guidance to healthcare practitioners (particularly nurses and community care workers). PACK is described as a collection of policy-based and evidence-informed guidelines on priority conditions seen in the SA PHC context (Fairall, Bateman, Cornick, Faris, Timmerman, Folb, Bachmann, Zwarenstein & Smith, 2015). PACK Adult covers 40 symptoms and 20 chronic diseases through an algorithm and checklist approach, and there is evidence for its effectiveness to improve health outcomes and health systems strengthening (Fairall et al., 2015). Despite evidence of the high prevalence and associated morbidity of musculoskeletal conditions in PHC in SA (Mash et al., 2012; Global Burden of Disease 2015 Disease and Injury Incidence and Prevalence Collaborators, 2016), PACK Adult only contains information of arthritis,

gout, fibromyalgia and back pain. It would thus be ideal to include aspects of the CPG for CMSP in PACK Adult, since it is widely distributed in the public healthcare sector.

Despite the uncertainties about the effectiveness of implementing CPGs, they have the potential to play an important role in providing guidance about management options. The section above discusses guidance initiatives that were successfully implemented in the SA context. However, as mentioned in section 2.3.1, two SA CPGs concerning chronic pain management exist, however no formal implementation strategy for its use in the public or private sector could be found. It is hypothesised that a contextualised CPG for CMSP, with a relevant implementation plan, can be useful to influence evidence-based practice and enable effective decision-making towards providing person-centred care in busy clinics, such as in the SA PHC sector.

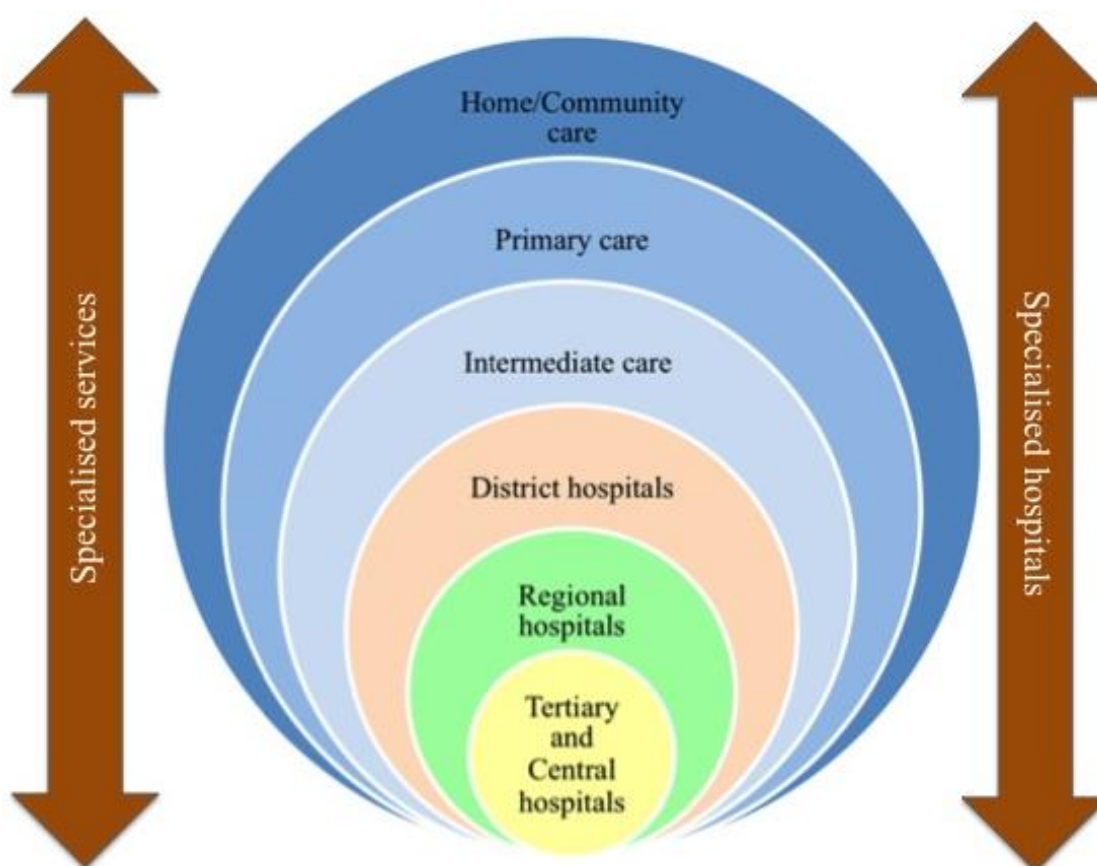
## **2.4 HEALTH CARE IN SOUTH AFRICA**

### **2.4.1 The healthcare system**

The healthcare system in SA consists of a dual system of public and private health care. The public health system has undergone many changes since the demise of apartheid, and is currently in the process of healthcare reform to address inequities in the system and to provide quality care to all. Sixty-eight per cent of the SA population depends entirely on public sector health care which is funded by government tax; while 16% of the SA population makes exclusive use of the private sector; and 16% uses a dual system of state-provided specialist and in-patient services (Ataguba & Akazili, 2010). The transitioning public healthcare system in SA carries a high service load to provide health care to the population without health insurance.

The public healthcare system in SA is organised in different parts. The emphasis of the public healthcare sector is on PHC and the district health system (Western Cape Government: Health, 2014). PHC is an important point of access where a client makes first contact in seeking health care. In policy, there is an emphasis on disease prevention, health promotion and quality of healthcare in a re-engineered PHC system. The district health system is based on the principles of PHC, which consists of services rendered through home- and community-based care, in community health centres and clinics, and intermediate care (see Figure 2.1). Home and community based care provides care in living, working and recreational spaces, with a focus on prevention and health promotion. Community health clinics are clinics situated in a community, staffed by nurses, with support services from community health centres, such as visiting doctors and rehabilitation staff;

while community health centres are located in towns and are staffed by a team of doctors, pharmacists, radiographers and physiotherapists (Mash et al., 2012). In the SA context, the public sector primary care services are nurse-led; with nurses being the first line practitioners, supported by medical doctors and family physicians. Nurses therefore assess patients and refer patients to the doctor when necessary (Mash et al., 2012). Intermediate care entails transitional care to facilitate seamless transition between acute care and home care; and therefore focusses on supported discharge (Western Cape Government: Health, 2014). The re-engineering of PHC is strengthened by the Healthcare 2030 framework of the Western Cape Government. The Healthcare 2030 framework builds on several other policies and frameworks within the national and international context (Western Cape Government: Health, 2014). This framework indicates the vision, values and principles that guide the Department of Health (Box 1). The focus of Healthcare 2030 is on wellness as opposed to illness, including the patient experience (patient-centredness), staff wellness and the impact of the social determinants of health.



**Figure 2.1: Service delivery platform for Healthcare 2030 (figure used with permission)**

**Box 1: The vision, values and principles for Healthcare 2030 (Western Cape Government: Health, 2014)**

**Healthcare 2030  
Strategic framework**

**Vision:** Access to person-centred, quality care

**Values:** Caring, Competence, Accountability, Integrity, Responsiveness and respect (C<sup>2</sup>AIR<sup>2</sup>)

**Principles:**

1. Striving for person-centred care
2. Adopting an outcomes-based approach
3. Commitment to the PHC philosophy
4. Strengthening the district health system model
5. Promoting equity
6. Operating with efficiency
7. Developing strategic partnerships

**2.4.2 Challenges of health care provision in South Africa**

The PHC sector is fundamental in providing accessible and affordable health care to all (WHO, 2008b). As a transitioning system, the PHC sector in SA is faced with several challenges such as a lack of resources, infrastructure and staff shortages. Coovadia et al. (2009) contend that health reform in SA has not yet reached adequate levels of implementation, despite good healthcare policies. The lack of implementation of aspects of key healthcare policies has been attributed to human resource challenges and management inadequacies (Coovadia et al., 2009). The implementation of key healthcare policies is essential to provide quality health care.

The Western Cape Department of Health faces several challenges to deliver quality PHC. The increasing volume of people who require healthcare pose a major challenge to providing healthcare (Western Cape Government, 2014). Data from the Statistics South Africa National census (2011) reports the migration pattern of an influx of people to the Western Cape since 2001, whereby people migrate from other provinces to seek employment and health care in the Western Cape. The increasing numbers are believed to lead to increased financial costs, staff shortages and an overloaded PHC system with increased waiting times to receive health care.

SA's quadruple burden of disease (discussed in Chapter 1), poses another challenge for the provision of quality health care. The increase in the prevalence of chronic diseases in SA can be attributed to the increased life expectancy with HIV/AIDs and to ageing (Mash et al., 2012; Ortblad Lozano & Murray, 2013). This phenomenon is likely to increase the pressure on PHC services, to cope with the growing burden of chronic diseases (Mayosi et al., 2009; Kautzy & Tollman, 2008).

Kautzy and Tollman (2008) propose that new models and approaches to PHC delivery are warranted to accommodate the changing disease profile; which necessitates a change in focus from acute to chronic care provision. The Healthcare 2030 framework (Western Cape Government: Health, 2014) acknowledges this challenge to change and proposes the renewed focus on PHC and promotion of wellness as solutions. The Global Burden of Disease study 2013 Collaborators (2015) support the notion of a rise in the burden of chronic diseases and the need for changed healthcare systems to accommodate the non-fatal dimensions of disease and injury.

The recent global burden of disease study (Global Burden of Disease 2015 Disease and Injury Incidence and Prevalence Collaborators, 2016) highlight disability resulting from musculoskeletal disorders and mental disorders, substance abuse disorders and other non-communicable diseases and HIV/AIDs in sub-Saharan Africa. LBP, neck pain and major depressive disorder were found to be the leading causes of YLD. In the global ranks for top 25 causes of YLD, LBP was ranked as first, neck pain was fourth, other musculoskeletal was tenth, and osteoarthritis thirteenth (Global Burden of Disease study 2013 Collaborators, 2015). Additionally, the burden of musculoskeletal disability in developing countries was estimated to be 2.5 higher than in developed countries (Adebajo & Gabriel, 2010). The Global Burden of Disease study 2013 Collaborators (2015) point out that the burden of musculoskeletal disorders is much more that what was previously estimated. However, despite the clear message contained in the YDLs, musculoskeletal conditions are not priority non-communicable disease in SA, which indicates that a change in healthcare focus and planning is pertinent to address the burden associated with it. The knowledge about the burden of disease should drive healthcare policy to equip healthcare systems to address CMSP as a key healthcare issue. The challenge in the SA context is to provide quality evidence-based care for CMSP amidst the current health care challenges.

## **2.5 CHAPTER SUMMARY**

The information contained in this chapter illustrates the need for cost-effective and evidence-based management options to address the burden of CMSP in SA primary care settings. The use of guidelines to support efficient, best practice was discussed. The use of contextualisation of existing international guidelines in this regard was explored. Additionally, the need to include stakeholder perspectives in the development of guidelines was emphasized.

# **PART 1: UNDERSTANDING THE CONTEXT**

## **INTRODUCTION**

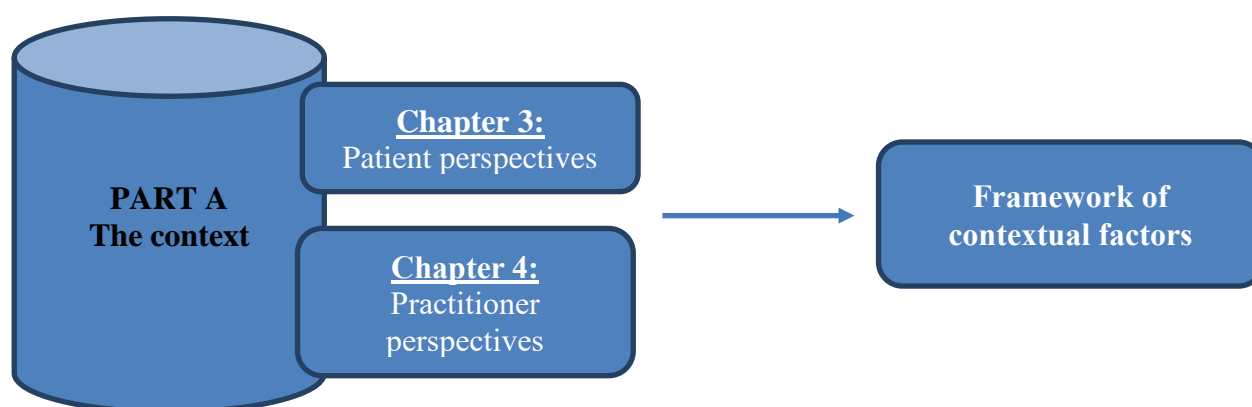
This first part of the dissertation describes two qualitative studies that investigated contextual factors influencing the PHC of CMSP as experienced by a sample of patients suffering from CMSP (Chapter 3) and healthcare practitioners caring for patients with CMSP (Chapter 4). The International Classification of Function (ICF) (WHO, 2002, 2013) describes functioning and disability as outcomes of interactions between the health condition and contextual factors influencing a person. Contextual factors comprise personal and environmental factors. Personal factors include individualistic features, e.g. gender, age, coping styles, social background, education, profession, past and current experience, overall behaviour patterns and character. The environmental factors are described as the physical, social, legal, external and attitudinal environment in which people live and conduct their lives. In this study, knowledge about the contextual factors was important in attempting to discover the interaction between the individual, the practitioner, the healthcare sector and the societal environment that could influence the provision of chronic pain care (Kagee, 2004). Kagee (2004) advocates gaining a rich understanding of the contextual realities of persons living with chronic illness to understand barriers to, and the facilitators of health care.

An understanding of patients' perspectives can inform the content of management programmes to be person-centred, holistic, innovative, contextually relevant and culturally acceptable. There is a scarcity of research on patients' perspectives on CMSP in Africa. Five recent systematic reviews on qualitative studies about patient perspectives of CMSP highlight the scarcity of research regarding CMSP and its management in the African context (Parsons et al., 2007; Bunzli, Watkins, Smith, Schütze & O'Sullivan, 2013; Snelgrove & Lioffi, 2013; Toye, Seers, Allcock, Briggs, Carr, Andrews & Barker, 2013; MacNeela, Doyle, O'Gorman, Ruane & McGuire, 2015). Only one SA study was included (Snelgrove & Lioffi, 2013). However, four other African qualitative studies focusing on chronic pain was identified during the literature search. Parker, Burgess, Dubaniewicz, Gouws, Krone, Madden, Nortje & Parsons (2009) investigated patient satisfaction with a chronic pain management programme in SA tertiary care; Wade & Shantall (2004) and Ernstzen, Louw & Hillier (2016) studied the lived experiences of a small group of SA patients with chronic pain/CMSP; Igwesi-Chidobe, Kitchen, Sorinola & Godfrey (2016) studied the experiences of 30 individuals with chronic LBP in rural contexts in Nigeria. Therefore, there is a need for more

qualitative research regarding CMSP in the African context, to discover the impact of chronic pain, its management and the contextual factors that influence it.

Healthcare practitioners are at the forefront of assessing and making decisions about the management of musculoskeletal conditions. There is an increasing need to include practitioners in the CPG development process, to represent the needs of the practitioners (Kredo et al., 2012). It is common practice for healthcare practitioners to be represented in CPG development teams. However, in Chapter 4 a different approach is taken, by studying their practitioners' perspectives at the commencement of CPG development. This approach was needed to obtain a portrayal of the authentic circumstances within which practitioners provide care. Furthermore, several authors agree that practitioners' perspectives influence their clinical reasoning and treatment choices (Daykin & Richardson, 2004; Matthias et al., 2010; Allegrettia, Borkana, Reisa & Griffiths, 2010; Jeffrey & Foster, 2012). Exploring practitioners' perspectives may assist in identifying contextual factors that play a role in pain care, including requirements regarding guideline content, lay-out, educational needs and potential barriers to the CPG development and facilitators in this process.

The findings of the studies referred to in Part 1 (Figure Part1a) were combined in a contextual framework shown at the end of Part 1 (Figure Part1b), to triangulate the information and to provide a comprehensive outline of contextual factors that were nominated by participating patients and practitioners.



**Figure Part1a: Outline of part A: Understanding the context**



## CHAPTER 3

# PATIENTS' PERSPECTIVES ABOUT CHRONIC MUSCULOSKELETAL PAIN AND ITS PRIMARY HEALTHCARE MANAGEMENT

### 3.1 RESEARCH QUESTION

**The research question for this part of the research project was formulated as follows:**

What are patients' perspectives about their chronic musculoskeletal pain and its primary healthcare management in the South African context, in particular their pathway of care and the factors that have an impact on their pain experience and management?

#### 3.1.1 Objectives

The objectives were to discover the experiences and perspectives of patients with CMSP about PHC management. The focus was on the following:

- To provide a demographic profile of the participants, to aid understanding of their views.
- The reported pathway of care (patient journey) and practitioners involved.
- The impact of pain on the individual.
- Patients' views on management interventions.
- The contextual factors that can be barriers to pain management and the facilitators in the PHC of CMSP.

### 3.2 METHODS

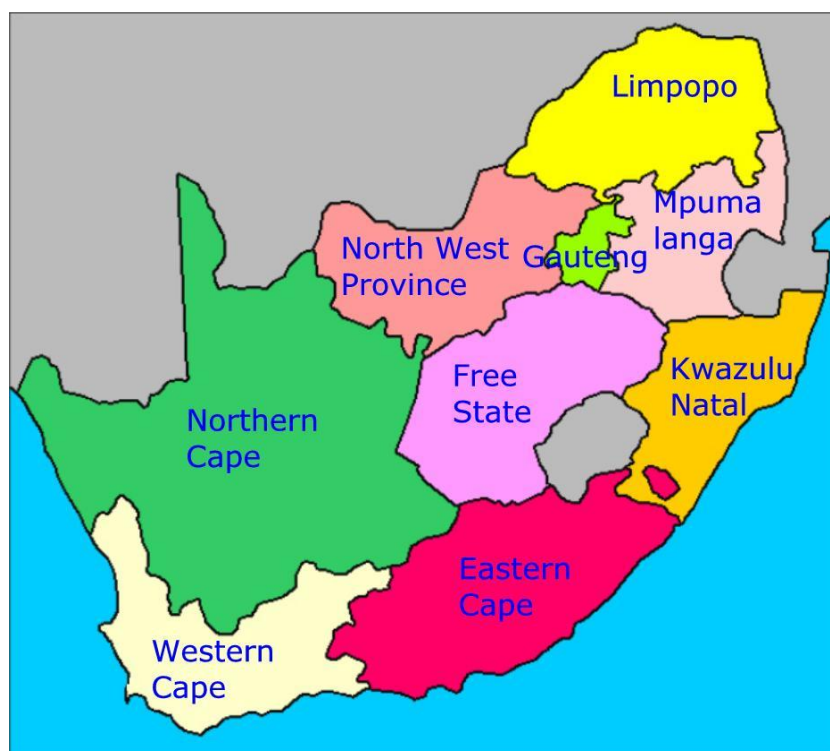
#### 3.2.1 Study design

An exploratory, descriptive, qualitative study was conducted, using an interpretive research paradigm and phenomenological approach, to study the lived experiences of patients with CMSP (Pope & Mays, 2006). This approach was chosen to develop an understanding of how participants conceptualise their pain and to explore participants' personal contexts and how these influence CMSP and its PHC management.



### 3.2.2 Study setting

The study was conducted in the Western Cape, which is one of the nine provinces in SA. The Western Cape is situated at the most southern part of the African continent, and houses about 11% of the SA population (Figure 3.1). Three community health centers/clinics in the public healthcare sector in the Western Cape were strategically chosen as study sites, based on their geographical location according to Cape Town Census (2011), the City of Cape Town, Strategic Development Information and Geographic Information System Department (SDI&GIS) (City Statistics and Population Census, 2013) and the Western Cape Profile (Western Cape Government, 2012). Clinics that offer rehabilitation services were included to offer a multi-professional perspective. The three clinics represented different settings namely a rural, a semi-urban and a township setting which allowed for diversity in language and culture of the potential sample. The three dominant languages spoken in the Western Cape is Afrikaans (50%), isiXhosa (25%) and English (20%). All three locations were resource-constrained (low socio-economic settings), and the dominant occupations practiced were of physical nature, for example agriculture, production (factories) and domestic assistance. Appendix 5 provides more information on the population characteristics of the communities served by the three selected clinics.



**Figure 3.1:** Map of South Africa (<http://www.southafrica.to/provinces/provinces.htm>)

### 3.2.3 Population and sample

#### **Inclusion and exclusion criteria**

The population was comprised of adults with CMSP who presented for PHC management at the clinics. Purposive (strategic) sampling in the form of criterion sampling was used to ensure maximum exposure to key variables (Palys, 2008). These key criteria linked to the study objectives and included:

- Musculoskeletal pain;
- Persistent pain for longer than three months in duration;
- Language: any of the three prevalent languages in the Western Cape, namely Afrikaans, English and isiXhosa (Western Cape Government, 2012);
- Gender: males and females, taking into consideration that chronic pain is reported to be more prevalent in females (Demyttenaere et al., 2007);
- Age: adults between 18 and 85 years, based on the age range of patients that have already participated in SA chronic pain prevalence studies (Igumbor et al., 2011; Rauf et al., 2013; Major-Helsloot et al., 2014);
- Diverse cultural grouping: research on ethno-cultural influences on pain is in its infancy. Insufficient evidence exists to confirm that culture alone influences pain experience. Gender, education, religion, communication and locus of control play a role (Mailis-Gagnon, 2010);
- Received PHC in the SA public health sector.

Persons with chronic pain from non-musculoskeletal origin were not eligible to participate, for example, cancer pain, neuropathic pain or sickle cell anemia. This exclusion criterion was set as these types of chronic pain have different pathological processes, clinical symptoms and management processes, which could lead to different patient perspectives. Another exclusion criterion was inability to participate in interviews, e.g. as a result of aphasia or dementia.

#### **Sample size**

Starks and Trinidad (2007) advise that a typical sample size for a phenomenological study can range between one and ten participants to identify the core elements of the phenomenon. However, sample size is tied to the objectives of the study and may depend on resources and time available (Ritchie, Lewis & Elam 2003; Palys, 2008). Six to ten participants per clinic were recruited. This number was thought to be adequate to provide sufficient diversity, identify core elements of the

phenomenon and to provide adequate answers for the research question. The intention was to recruit more participants if data saturation were not achieved. This is similar to studies that used individual interviews with 20 to 25 patients with chronic pain (Morden, Jinks & Ong, 2014; Cooper, Blair, Smith & Hancock, 2009, Allegretta et al., 2010; Kenny, 2004).

### **3.2.4 Instrumentation**

#### **Semi-structured individual interviews**

Semi-structured individual interviews were conducted, due to the possibly sensitive nature of the information. An interview schedule was developed (Appendix 6), based on the study objectives and the literature reviewed (Harding, Parsons, Rahman & Underwood, 2005; Cooper et al., 2009; Allegretta et al., 2010; Crowe, Whitehead, Gagan, Baxter & Panckhurst, 2010; Upshur et al., 2010; Matthias et al., 2010; Igwesi-Chidobe et al., 2016). The topics in the interview schedule were participants' narrative (story) about pain, the influence of pain on life, their healthcare pathway, and their perspectives on health care and further suggestions for health care. A pilot study was conducted, to refine the interview schedule and methodological aspects of recruitment and interviewing. The interview schedule was adapted to include more specific probing questions regarding contextual factors as well as coping strategies. The principal investigator (PI) conducted the interviews in Afrikaans and English, as she is proficient in both languages. A research assistant, a trained interviewer proficient in isiXhosa, was sourced from the Centre for Research on Health and Society, Stellenbosch University, to conduct the interviews with first-language isiXhosa participants. The PI orientated the assistant to the study and the aims of the interview, and the assistant attended one interview as an observer.

#### **Questionnaires**

Participants were requested to complete three short questionnaires after the interviews. The questionnaires as well as more information on their psychometric properties are presented in Appendices 7-9). The information obtained from the questionnaires was used to profile the participants and to triangulate with qualitative data.

##### **- *General information questionnaire***

This form was developed by the PI based on previous SA studies on chronic pain (Morris, 2013; Igumbor et al., 2011), and had three parts: socio-demographic information, pain information and healthcare-related information (Appendix 7). Questions included, age, gender, family, work status, pain area, pain intensity, health providers consulted, medications used and general health. Current

pain intensity and average pain intensity for three months were measured using the numeric pain rating scale (NPRS). The NPRS is a simple, validated, self-report/practitioner-administered measurement tool for pain intensity. It consists of a line with a numerical point scale with two anchors, with 0 representing no pain and 10 representing extreme pain (Kahl & Cleland, 2005). The respondent is asked to rate his/her pain intensity on the scale.

- *The Kessler psychological distress scale*

The Kessler psychological distress scale (K10) is a simple, brief, valid and reliable mental health scale designed to screen for psychological distress; primarily mood, anxiety and depression that a person has experienced in the last four-week period (Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, Walters & Zaslavsky, 2002; Andrews & Slade, 2001; Cornelius, Groothoff, Van der Klink & Brouwer, 2013) (Appendix 8). The wording is appropriate for moderately literate individuals. The 10-item scale has five response categories, from 1 (none of the time) to 5 (all of the time). The score is calculated as the sum of the responses to the 10 items (out of 50). The K10 has been proposed as the standard screening tool for mental illness at primary care level in the SA setting (Spies, Stein, Roos, Faure, Mostert, Seedat & Vythilingum, 2009). The K10 was widely used and studied in the SA context (Myer, Stein, Grimsrud, Seedat & Williams, 2008; Kuo & Operario 2011; Spies et al., 2009; Anderson, Grimsrud, Myer, Williams, Stein & Seedat, 2011). Anderson et al. (2011) evaluated the performance of the K10 in screening for depression and anxiety in a multi-cultural SA population, using the translated versions of the K10 in English, Afrikaans, isiZulu, isiXhosa, Northern Sotho and Tswana. For the purposes of the current study, the Afrikaans and isiXhosa K10 versions were sourced from Anderson et al. (2011).

The interpretation of the K10 is guided by its cut-off scores. Cornelius et al. (2013) found the cut-off score to be 24 in Dutch disability claimants, while Andrews and Slade (2001) developed the following cut-off scores from an Australian population health survey for PHC:

- Scores under 20 are likely to be well.
- Scores 20-24 are likely to have a mild mental disorder.
- Scores 25-29 are likely to have moderate mental disorder.
- Scores 30 and over are likely to have a severe mental disorder.

Scores usually decline with effective treatment. Patients whose scores remain above 24 after treatment should be reviewed and specialist referral considered.

### - *The Pain Disability Index*

The Pain Disability Index (PDI) is a self-report instrument to assess the degree to which chronic pain interferes in a person's ability to engage in various life activities (Pollard, 1984; Chibnall & Tait, 1994) (Appendix 9). It consists of seven categories of life activity in two factors:

- Factor 1 measures voluntary activities (items 1-5, family/home responsibilities, recreation, social activity, occupation, and sexual behaviour).
- Factor 2 measures obligatory activities (items 6 and 7; self-care and life support activity).

Participants rate their level of disability on a graphic rating scale ranging from 0 (no disability) to 10 (total disability). This questionnaire is a simple, easy to comprehend, rapid (1-2 minutes), valid and reliable instrument (Tait & Chibnal, 2005; Soer, Reneman, Vroomen, Stegeman & Coppes, 2012). An overall disability score is determined by summing the numerical ratings of the seven categories (out of 70). The higher the index out of 70, the greater the person's disability due to pain. No cut-off scores apply.

The PDI was used in this study as it is not restricted to a condition or body area and can be used to evaluate pain-related disability in multiple pain conditions (Tait & Chibnal, 2005). Furthermore, assessment of functional ability is a crucial element of chronic pain assessment (Cieza, Stucki, Weigl, Kullmann, Stoll, Kamen, Kosrtanjsek & Walsh, 2004).

### **Translation of the interview schedule and questionnaires**

The interview schedule and questionnaires were available in English, Afrikaans and isiXhosa and were translated from English to Afrikaans and isiXhosa by the SU Language Centre. The translation in Afrikaans was verified by the PI, while the translation in isiXhosa was further checked and refined by the research assistant.

### **3.2.5 Procedures**

The PI contacted the clinic manager and requested permission to visit the clinic and recruit patients. Clinical nurse practitioners and/or rehabilitation professionals at clinics were requested to identify eligible patients from their register who had visited the clinic in the prior six months (Ritchie et al., 2003). A list of the inclusion and exclusion criteria was provided. The clinicians informed eligible patients about the study and asked permission to be referred to the PI. The clinicians provided the researcher with the names and contact details of patients who agreed. The PI contacted the eligible patients, informed them about the study aim and procedures, and invited them to participate in the

interviews. The PI/assistant gained permission to access the patients' medical records at the clinic, to apply the inclusion and exclusion criteria. Interviews were conducted at a time and place convenient for the interviewees. Interviews took place in a private room in participants' homes, places of work and where indicated at the clinics, to allow for a natural setting considering factors such as patient preference, interviewer safety, presence of family members and physical space (Britten, 2006).

Prior to the interview, the PI/assistant gained written informed consent for participation (Appendix 10). Each interview lasted approximately 20-40 minutes and was recorded on a digital voice recorder. After the interview, the participants completed the three short questionnaires. Participants who were unable to read and/or write were assisted by the PI/assistant to complete the questionnaires. The researcher documented field notes on general aspects such as atmosphere, comfort and additional information that could inform/shape further data collection (Pope, Ziebland & Mays, 2006). Participants were reimbursed for their time and/or travel expenses (R100).

### **3.2.6 Data management**

The digital voice recordings were downloaded to the PI's personal computer and allocated a unique serial number. IsiXhosa interviews were translated into English by the assistant who conducted the interviews, to provide in-context translation and to remain true to the personal nuances that were communicated. Translations were done shortly after the interview, and involved the research assistant listening to the original interview recording, and typing a translated version. An independent, professional transcription company transcribed the English and Afrikaans interviews. The PI authenticated each transcription by verifying it with the recording and correcting any discrepancies. An external audit of one of the isiXhosa translated interviews was done, to confirm authenticity. Selected member checking was done to assist with validation, by presenting data to individual participants (three participants) and a representative group at the relevant health care centres. The representative groups were current chronic pain rehabilitation groups. This approach was taken due to the inability to secure appointments with participants. A summary of the data was presented to provide a holistic overview of all themes. Members could confirm or refute relevant themes.

The data from the questionnaires were scored by the PI, captured on Excel for analysis and verified by a research assistant.

### **3.2.7 The role of the researcher in the research process**

The positionality of the researcher forms an integral part of the research process. Data collection and analysis are influenced by the personal characteristics of the interviewer (age, occupation, gender and social distance) (Britten, in Pope & Mays, 2006; Karnieli-Miller, Strier & Pessach, 2009). The PI introduced herself as a researcher and student. Some participants enquired about her profession and thus knew that she was a physiotherapist. This knowledge could have influenced the participants' responses. The researcher has worked in private and public healthcare settings, at both primary and tertiary healthcare level, and has experience in the academic setting, which could have influenced her interpretation of the data. The researcher has experience in qualitative research, and underwent training in qualitative methods, including interviewing skills, to prepare for data collection and analysis.

The isiXhosa research assistant was a male, who was trained as a qualitative research assistant and had been involved in numerous qualitative health studies. He interviewed one male and four female first language isiXhosa-speaking patients. It is acknowledged that the gender difference might have influenced the level of disclosure.

Qualitative research involves power relations (Karnieli-Miller et al., 2009). In the case of interviews, the interviewer and interviewee are involved in the process of power interchange, which entails continuous establishing of boundaries and negotiation of power. Power interchange included the researcher requesting the participants' consent to participate. The interviews were done in the participants' preferred setting, which were unfamiliar settings for the researcher. The researcher built rapport and trust at the start of the interview, emphasising the contribution of the participant and communicating the researcher's wish to hear the participant's story. It was envisaged that a trusting relationship would ease communication, leading to open communication and approachability.

### **3.2.8 Data analysis**

Inductive, thematic, content analysis of the interview transcripts using the framework method was undertaken (Gale, Heath, Cameron, Rashid & Redwood, 2013; Pope & Mays, 2006; Hsieh & Shannon, 2005). Qualitative content analysis focuses on the characteristics of language as communication with attention to the content and contextual meaning of the text (Hsieh & Shannon, 2005). Content analysis aims to explore and understand a phenomenon. Knowledge is generated based on the participants' unique perspectives and is grounded in the actual data. The framework method was used as a rigorous, transparent and systematic way to explore data, and draw



descriptive or explanatory conclusions (Gale et al., 2013; Spencer, Ritchie, & O'Connor, 2003). Using this approach, a framework is used to organise data into themes, concepts and categories, while being embedded in the actual data (Spencer et al., 2003).

The data were analysed using Computer Assisted Qualitative Data Analysis Software (Atlas.ti, version 7) (<http://atlasti.com/>). Data analysis involved an iterative process of immersion in the data; familiarising self with the data; highlighting significant statement (quotes); creating a codebook; coding the data; developing clusters of meaning (categories); sorting categories based on their relations and linkages; and establishing themes (Pope et al., 2006). This process was followed by interpretation and additional validation of data. The PI and a second research assistant (a medical anthropologist), studied a selection of six of the transcripts and independently coded them. These codes were compared, discussed and merged to create a codebook. Thereafter, the PI independently coded the data according to the codebook, created new codes where necessary and revisited the data to check accuracy as part of validity checking. Analytical memos were made in Atlas.ti to track decisions made during data analysis process. Categories were formed by using patterns within the data. These categories were explored for their possible relationships. Categories were reorganised into themes, and relationships between categories and between themes were explored (Pope et al., 2006). This analysis was done in the language in which the transcript was presented (English or Afrikaans). The Afrikaans quotes were subsequently translated by the PI for this dissertation and to enable auditing by the research supervisors and research assistant. Appendix 11 and 12 provide the codebook and examples of translated quotes.

The questionnaire data were recorded and analysed in a purpose-built data collection sheet in MS Excel and were conveyed as frequencies, proportions and percentages. Ordinal data was summarised using the median and interquartile range (IQR); while interval data was summarised using the mean and standard deviation (SD), to indicate the central tendency and level of dispersion (Kirkwood & Sterne, 2003).

### **3.2.9 Qualitative quality criteria**

The research adhered to the applicable quality criteria for qualitative research, highlighted by Frambach, Van der Vleuten & Durning (2013). Credibility was ensured using multi-level triangulation consisting of multiple data sources: three different community health clinics, multiple methods (interviews and questionnaires) and theory triangulation (different underpinning theories). Data were collected from October 2014 to April 2015, which indicates prolonged engagement. Member checking was done by presenting analysed data to individual participants and representative groups. Transferability was attended to through the sample strategy and the



description of context. Attention was given to dependability through iterative data collection and the analysis strategy. Theoretical data saturation was reached on the features of the research question; however, full data saturation was not reached on all characteristics identified by participants. To obtain full data saturation on all topics discussed by patients would require theoretical sampling for different groups or cases and additional data would have to be collected. However, this was not indicated due to the focus of this study, and also not possible due to time and resource constraints. Conformability was attended to by discussing the findings within the context of current literature, by peer debriefing, by acknowledging the researcher's role and through the documentation of decisions in Atlas.ti. Additionally, data and findings were audited to ensure accuracy of data and valid interpretation of findings. Data was audited by member checking, external auditing by the supervisors, research assistants and external audiences (conferences and peer group discussions).

### **3.3 RESULTS**

Twenty persons with CMSP participated in the study. The results section presents the quantitative data, followed by the qualitative data. All patients who were invited agreed to participate. However, several listed patients was not contactable due to invalid telephone numbers. All except one participant gave informed consent for the conversation to be recorded. However, this participant wanted to tell his story. The PI thus made notes during the interview (Participant 12). The same participant also declined to complete the outcome measure questionnaires.

#### **3.3.1 Quantitative results**

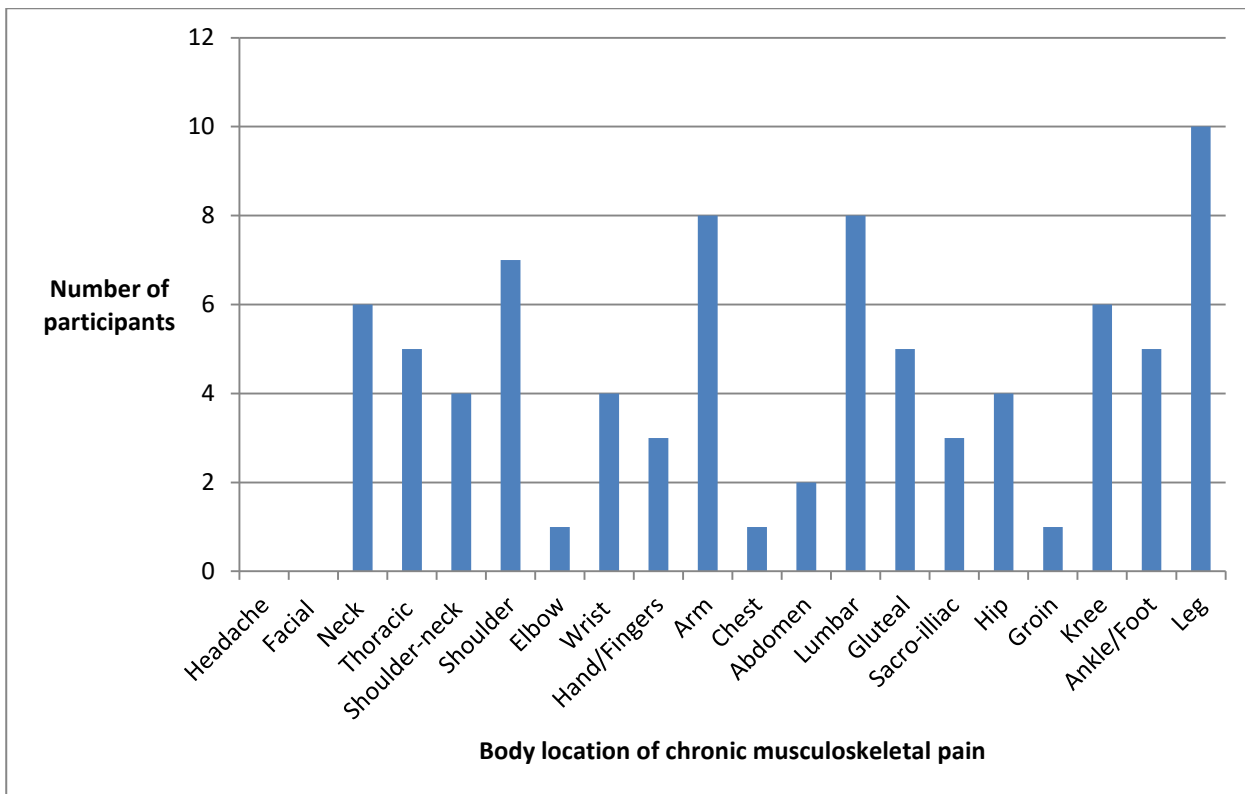
The data derived from the questionnaires are presented to profile the participants. The participants' demographic information, pain information, scores for psychological distress (K10) and disability (PDI) are included in Table 3.1. Table 3.2 summarises information on diagnosis and health care received. Figures 3.2 report on the body locations of pain and Figure 3.3 provides information on participants' on self-reported comorbidities.

**Table 3.1: Profile of the participating patients with chronic musculoskeletal pain**

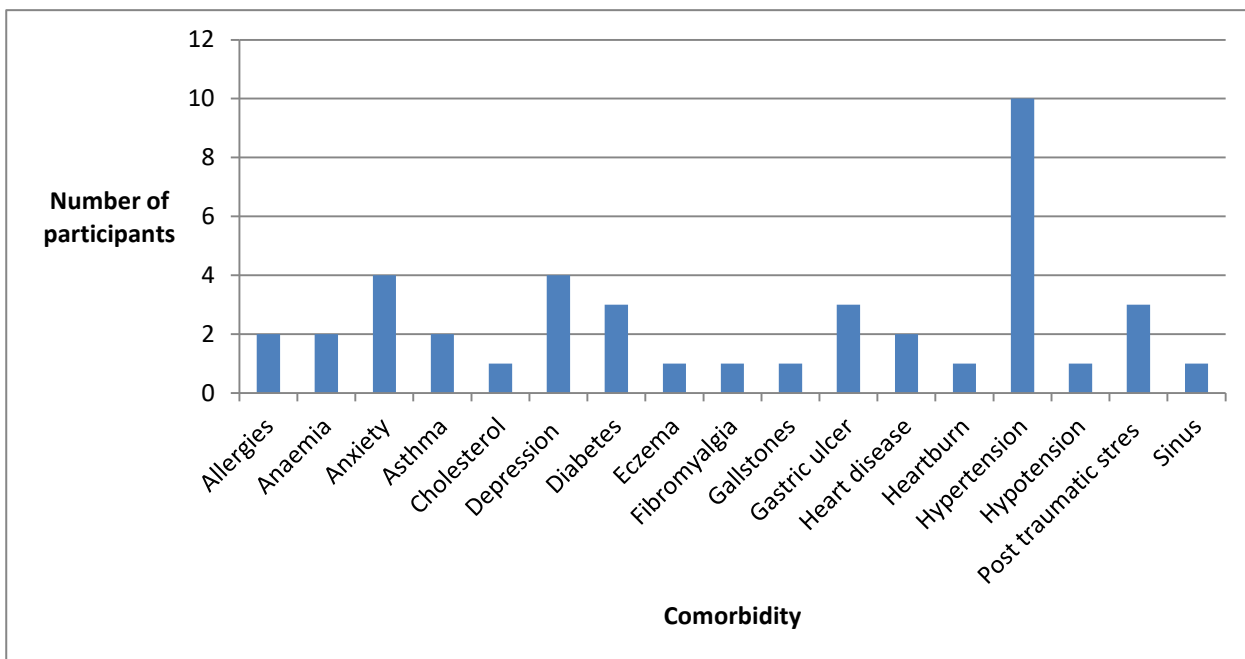
<b>Variable</b>	<b>Number (n=20)</b>	<b>%</b>	<b>Mean (SD)</b>
<b>Geographical location</b>			
Urban	8	40	
Rural	6	30	
Urban township	6	30	
<b>Gender</b>			
Female	15	75	
Male	5	25	
<b>Language</b>			
Afrikaans	13	65	
isiXhosa	6	30	
English	1	5	
<b>Age (years)</b>			57 (9.6)
<20	0	0	
20 – 30	0	0	
31 – 40	0	0	
41 – 50	6	30	
51 – 60	8	40	
61 – 70	5	25	
71 >	1	5	
<b>Ethnicity</b>			
Coloured	9	45	
Black	7	35	
White	4	20	
<b>Marital status</b>			
Married	11	55	
Widowed	3	15	
Single	3	15	
Divorced	2	10	
In relationship	1	5	
<b>Number of children</b>			
0	3	15	
1 – 3	13	65	
4 – 6	4	20	
>6	0	0	
<b>Employment</b>			
Full-time employment	7	35	
Retired/Pensioner	6	30	
Unemployed	5	25	
Disability grant	1	5	
Home executive	1	5	
<b>Occupation (past/present)</b>			
Domestic worker	6	30	
Industry	4	20	
Office worker	3	15	
Homemaker	2	11	
Production	2	11	
Baker	1	5	
Farm worker	1	5	

Variable	Number (n=20)	%	Mean (SD)
Petrol attendant	1	5	
<b>Highest educational level</b>			
Primary school	11	55	
Secondary school	8	40	
Tertiary education	1	5	
<b>K10<sup>a</sup></b>			20 (8.22)
< 10	0	0	
10 – 19	11	58	
20 – 24 (mild)	2	11	
25 – 29 (moderate)	3	16	
30 – 50 (severe)	3	16	
<b>PDI<sup>a</sup></b>			27 (11.7)
0 – 20	6	31	
21 – 40	10	53	
41 – 60	3	16	
61 – 70	0	0	
<b>Pain duration<sup>a</sup></b>			
< 1 year	1	5	
1 – 5 years	11	58	
6 – 10 years	2	11	
>10 years	6	31	
<b>Pain intensity today (NPRS)<sup>a,b</sup></b>			Median (IQR): 5 (6.5)
Mild pain: 0 – 3	9	47	
Moderate pain: 4 – 6	3	15	
Severe pain: 7 – 10	7	38	
<b>Pain intensity average (NPRS)<sup>a,b</sup></b>			Median (IQR): 8 (4)
Mild pain: 0 – 3	2	10.5	
Moderate pain: 4 – 6	6	32.5	
Severe pain: 7 – 10	11	58	
<b>Worst pain<sup>a,b</sup></b>			Median (IQR): 10 (2)
<b>Least pain<sup>a,b</sup></b>			Median (IQR): (3) (4)

<sup>a</sup>One missing data score) <sup>b</sup>NPRS = Numeric Pain Rating Scale out of 10



**Figure 3.2: Reported prevalence of pain in different body locations (n = 20)**



**Figure 3.3: Self-reported prevalence of comorbidities (n = 20)**

**Table 3.2: Patient-reported healthcare management**

<b>Pain information</b>	<b>Number (n=20)</b>	<b>%</b>
<b>Pain diagnosis provided</b>		
Osteoarthritis	6	30
Disc lesion	5	20
No diagnosis	4	20
Rheumatoid Arthritis	3	15
Other	3	15
<i>(More than one option possible)</i>		
<b>Pain medication</b>		
Paracetamol	12	60
NSAIDs	8	40
Opioid (Tramadol)	8	40
Tricyclic antidepressants	2	10
Muscle relaxant	2	10
<b>Healthcare providers in journey</b>		
Medical doctor	20	100
Nurse	18	90
Physiotherapist	18	90
Occupational therapy	5	25
Orthopedic doctor	4	20
Neurosurgeon	3	15
Occupational health doctor	3	15
Psychologist	2	10
Psychiatrist	1	5
Rheumatologist	1	5

### 3.3.2 Qualitative results

The interviews provided a rich and extensive data set as participants shared their stories.

Table 3.3 provides an overview of the major themes and categories that emerged. The participants highlighted several factors that influenced their pain experience, namely individual factors, healthcare management factors, the healthcare system and socio-environmental factors. The relevant strongest themes and categories are discussed in the sections below. Verbatim quotes are provided and referenced by indicating the participant number, age and description of condition (e.g. P1, 47y, LBP Sciatica). Where indicated, quotes were translated from Afrikaans to English for the purpose of the report. Examples of translated quotes are as available in Appendix 12.

**Table 3.3: Major themes and categories that emerged from the interviews**

<b>Theme 1: Individual factors</b>	<b>Theme 3: Healthcare system factors</b>
Beliefs about chronic musculoskeletal pain <ul style="list-style-type: none"> <li>• Knowledge and understanding of pain</li> <li>• Biomedical beliefs</li> </ul> Impact of chronic pain <ul style="list-style-type: none"> <li>• Movement and function</li> <li>• Emotions</li> <li>• Relationships</li> <li>• Participation</li> </ul> Coping with chronic pain <ul style="list-style-type: none"> <li>• Active or passive coping strategy</li> <li>• Spirituality</li> <li>• Resilience</li> <li>• Acceptance</li> </ul> Stress response	Pathway of care (patient journey) <ul style="list-style-type: none"> <li>• Private and/or public sector usage</li> </ul> Waiting time/Waiting lists Continuity of care Regularity of care Patient interaction with healthcare system <ul style="list-style-type: none"> <li>• Satisfaction with care</li> <li>• Understanding the system</li> </ul> Access to care/Access to rehabilitation System load
<b>Theme 2: Healthcare management/intervention factors</b>	<b>Theme 4: Societal and occupational factors</b>
Practitioner messages Access to inter-/multi-disciplinary care Pharmacological management <ul style="list-style-type: none"> <li>• Effectiveness of analgesia</li> <li>• Beliefs about analgesia</li> <li>• Adherence to prescribed medication</li> </ul> Self-medication/use of traditional medicines Non-pharmacological management <ul style="list-style-type: none"> <li>• Effectiveness of exercise/other therapies</li> <li>• Beliefs about exercise and other therapies</li> </ul> Advice and education Treatment goals	Family <ul style="list-style-type: none"> <li>• Family support</li> <li>• Concerns about family</li> </ul> Financial circumstances Occupational influences Personal loss/stress Community influence <ul style="list-style-type: none"> <li>• E.g. drug abuse, violence, gangsterism</li> </ul>

### 3.3.2.1 *THEME 1: Individual factors*

#### - *Beliefs about pain*

The participants' understood their pain through a biomedical (structural) model that appeared to strengthen their belief for further investigations. Events related to the start of pain were thought to be linked to type of occupation and ergonomic factors. Participants indicated a partial understanding of their condition and had many unanswered questions. It was reported that these knowledge gaps

created anxiety and uncertainty while the acquisition of knowledge created a sense of control over the condition.

*They say it is because I am a machinist. They say it is a general problem. Your lower back will be painful, because you are sitting bent forward the whole day. You are not sitting correctly. You sit as it is comfortable for you to sit behind the machine and do your work. (P1, 47y, LBP leg pain)*

*And the X-rays showed that there are cushions in my back. They told me that those cushions were damaged. I don't know what is pressing on my nerve, so they say. That is why my back pain is so severe. I know about the cushions, and some of the joints were also displaced. Now they can't fix that displacement, and that is why my back pain is so severe. (P18, 51y, LBP osteoarthritis)*

*I don't know, it is just that I cannot understand why it is like this, after all these years. That is why I am telling you, something is not right with me. I've got a problem. ... It makes me worry; it makes me worry a lot. (P15, 50y, shoulder pain)*

#### - **Impact of pain**

The multiple impact of CMSP was one of the main messages that participants wanted to communicate. CMSP influenced the individual's ability to move, to do their daily activities (function), to sleep and to participate in meaningful life activities (specifically occupational/work performance). The pain influenced participants emotions/feelings and their relationships with others. The participants identified a whirlpool of dominant emotions that they endured on their life journey with CMSP, namely emotions of despair (hopelessness), helplessness (destitution) and fear and worry (anxiety).

*I noticed that this arm is not functioning like it used to. I use to work before but now it's difficult. Even if I am carrying a 5 litre (bottle) I would feel the pain. I then decided to visit the clinic and find out (what is causing the pain) because I use to do everything. But this arm did not want to move like the other one. (P5, 59y, wrist and arm pain)*

*It is difficult to sleep. If I am walking I would be in pain as if I am going to fall. If I am standing I must make sure that I hold on something very tight because I may fall. (P3, 57y, multiple joint pain)*

*When I felt the pain I felt that I cannot take it anymore so much that I did not even care that I am not working, I decided to just sit at home and do nothing. (P19, 70y, multiple joint pain)*

*You know, a person feels like going into depression because of the pain. I have been there; I have used medication for it. ... But the pain lets you go in depression if you are not careful. (P10, 69y, LBP leg pain)*

*Then I am so tired. So terribly tired from inside myself and the pain is dreadful. But then I lie down and relax, and later I get up again. (P14, 43y, multiple joint pain)*

*You are moody, because you are in pain, because you can't do the things that you enjoy doing. So yes, it definitely influences my relationship with my people at home. You are abrupt when you are really in pain. Yes it influences your work also, the things that you have to do. It definitely has an influence, it influences many things. (P11, 53y, neck and shoulder pain)*

### - **Coping with pain**

The participants reported on different active and passive strategies they used to deal with the impact of pain on their lives. Participants depended regularly on the passive strategies, although these strategies had varying effects on pain. Active coping/management strategies were interconnected with the individuals' perseverance and tenacity to continue with life activities. Participants described their journey towards acceptance of pain consisting of several interrelated steps. These steps included a perseverance that pain would not win; the skills of tenacity (holding on to something firmly) and resilience (adapting to a life with pain). Spirituality was also commonly reported as a coping mechanism.

*Then I go through my daily routine, my stuff that I do, I pay attention to it. But I have to tell you, if there are people with a lot of pain, tell them: Keep yourselves busy. We cannot sit and cry about it. We need to keep ourselves busy. Invite somebody for a cup of tea, chat and laugh a bit, even if you laugh through the pain. (P10, 69y, LBP leg pain)*

*But I use the pills, I rub with the strong ointment, and many times I go lay down. It pains day and night. Then I rub some ointment on it, sometimes it helps, sometimes it does not. (P6, 66y, LBP, leg pain)*

*I ask the Lord to make it more bearable so that I can handle it because I am ... I have a task to do. Yes, I give it to the Lord. (P6, 66y, LBP, leg pain)*

*In the beginning, after therapy, I had more pain, but I did not give up hope, I came back every time. No, I did not give up hope. (P1, 47y, LBP leg pain)*

*I would like to be pain free, but I don't know ... Maybe an operation in future, I don't know. But in five years I would like to see myself pain free. To always live in pain is not pleasant. (P11, 53y, neck and shoulder pain)*



*I so hoped that that they can heal me, so that I can be normal again, but I realised that it is not going to happen. I will have to learn to live with the pain. But I told him, luckily I adapted already. I adapted. Adapted and accepted. It will go with me into my grave. (P6, 66y, LBP, leg pain)*

### 3.3.2.2 **THEME 2: Healthcare management**

Participants reported that they had received a wide array of management options as summarised in Table 3.4. The prevailing management option received was pharmacological.

**Table 3.4: Management received for pain as reported by patient participants**

Management received	Self-management
Advice and education	Rest
Analgesic medication	Rubbing ointments
Exercise	Heat application
Breathing techniques	Exercise
Group therapy	Self-medication
Electrotherapy	Medicinal plants
Heat application	Pacing
Cognitive therapy	Attention to posture and ergonomics
Surgery	

#### - **Pharmacological management**

Participants communicated a belief and hope in the effectiveness of medication, and simultaneously, a fear of medication dependence. However, they admitted that they used over the counter medicines for their pain. Participants' reports indicated that they were acutely aware about the effects and side-effects of medication. Their beliefs about analgesics surfaced as well as their irregular pattern of taking analgesics. Only two participants revealed that they use traditional medicine as an adjunct with prescribed management.

*The injection helped for a while. He told me I should give the injection two months to work. But when I went back to him, I told him, Doctor, that injection is worthless. It did not help me. (P15, 50y, shoulder pain)*

*Then he gave me Tramadol. Yes it actually helps for the pain. It lets me sleep well, and it takes the pain away a little bit. But when you are busy, then you feel the pain is there again. (P17, 67y, back and multiple joint pain)*

*And many times they ask me how I use my pills. Then I say, not often, as you say, as needed. When I feel there is pain and it is not getting less. Then I will drink the pill, not that I really*

*want to. The only pills I take regularly are my hypertension and water pill. If I get home and it (medication) does not work, then I buy ... If I have pain then I buy something else). (P6, 66y, LBP, leg pain)*

*There are days that you feel despair; you feel you can't handle it any more. Then you turn to the medication. I don't willingly take pills. It is just an aid. It helps for a short while and then it is past. And that is how it goes. But it is not easy. (P10, 69y, LBP, leg pain)*

*(P6, 66y, LBP, leg pain)*

*My husband brought me a book about herbal remedies for ailments. I believe in it. My mom also used it when I was a child and we never went to the doctor. We ate out of the fields. I go on with that and also the pain medication. (P6, 66y, LBP, leg pain)*

#### - **Non-pharmacological options**

Findings indicated appreciation for therapeutic exercise as a valued intervention. Other interventions mentioned as having a positive effect included manual therapy, electrotherapy and heat application. Two participants mentioned breathing exercise and cognitive therapy as interventions received from the psychologist. Although participants valued the therapeutic rehabilitation interventions, they acknowledged that these interventions had a positive but temporary effect.

*The way I am feeling now, I am satisfied. The exercise we do here, our conversations, how we must sit, how we must do this and that, how we must do our housework, it helps a lot. For me, personally, it helps tremendously, because the pain I had, I would not wish it on anybody. (P1, 47y, LBP, leg pain)*

*But the lady taught me, I should draw my breath in, and I must keep it as long as possible, and then let it out slowly. It helps me a lot. I do a lot. It helped me a lot because she taught me something I can do when the pain is there. The physiotherapist taught me other things. I always went to her to be treated with the machine and be massaged. It helped a lot; and also the cycling. (P6, 66y, LBP, leg pain)*

*I am very satisfied, they helped me a lot. My arm is not the way it was before. My arm can move since I started with physiotherapy. I can wash myself now. (P16, 49y, shoulder pain)*

*If I can't take it anymore, and I become despondent, I make an appointment with the physiotherapist. Then I go for two or three times, and then I feel better. But it comes back again. I think all her patients must go regularly, that is the unfortunate case. (P10, 69y, LBP, leg pain)*

- **Advice and group therapy**

Participants appreciated the advice and explanations they received from the practitioners, which was often delivered during group therapy and had the added benefit of socialisation and sharing of ideas. A small subset of participants reported that some HCPs provided explanations that counteracted empowering advice. This disempowering advice can be recognised in advice to be inactive and advice that creates fear/anxiety.

*It is good to exercise in the group, and also the questions. Sometimes I don't even need to ask the question, and then somebody else asks it. Then I also get the answer! (P1, 47y, LBP, leg pain)*

*She will explain to us a better way of dealing with this pain and teach us how to exercise in the morning, there is nothing better than to exercise. She told us what the cause of the chronic pain is, and everything that we need to know. (P3, 57y, multiple joint pain)*

*Then he (the doctor) told me: You must do nothing. You must lie down more often. But I told my husband I can't do nothing! (P6, 66y, LBP, leg pain)*

- **Goals for therapy**

Participants generally were unsure about their goals for attending care, and these centred on the reduction of pain, prevention and cure.

*For pain relief. That is it. Pain relief. (P7, 58y, leg, multiple joint pain)*

*I don't know if it is going to help, but I attend, I take part in the physiotherapy, let me see what happens. My shoulder was not like this, it was never like this. (P15, 50y, shoulder)*

### 3.3.2.3 **THEME 3: Healthcare system influences**

- **Healthcare pathway**

Participants disclosed that they used a combination of private and public healthcare systems. Private health care was used for quick access to care, avoidance of the long waiting times, wanting a second opinion and employer assistance. The cost of health care played a role in their choice to consult. Participants reported two types of patient journeys. A rapid journey was evident when physical trauma was a precipitating factor. The delayed journey was characterised by fragmented care and a lack of appropriate referral, which led to frustration.

*But when I am really ill, I go to the private doctor, because she is closer to me. (P17, 67y, back and multiple joint pain)*

*I was still attending the clinic, but I just wanted a different opinion, maybe he can do better. Yes maybe there can be a difference when you can visit the private doctor. I found out that I was getting the same pills that I am getting at the public clinic. (P3, 57y, multiple joint pain)*

*I went to three different doctors, and the one told me what this could be. But for three months I received Voltarens, injections, and by the fourth month I had enough. I told the sister, I can't get injections and pills all the time and you don't refer me. And I asked her; where I should go for this, because I also did not really know. (P1, 47y, LBP leg pain)*

#### - **Healthcare system mechanics**

The strongest theme within the system factors was the threats to continuity of care, namely access to care, long waiting times and consistency of care. Having to wait outside the clinic in designated waiting areas were particularly bothersome to those participants affected by it. Most participants acknowledged that they did not understand how the system works and why processes were managed in a certain way. They requested more information regarding system mechanics.

*I gave in my card and waited. After two hours, I asked where my card is, and then for three hours, I then asked: What happened to my folder? That to me is unacceptable. (P7, 58y, leg, multiple joint pain)*

*People are standing outside. They close the gate. It can be hot, it can be raining, but people are standing outside. We can't go in. Even if you have an appointment. You have to stand there until whenever. One day, I just left, without getting any assistance. I don't even want to go the clinic any more. (P9, 71y, foot, leg pain)*

*If a person can get one doctor, and you can see the same doctor every time, then it would be better. Now you get the other doctor, and then that doctor does his own thing. (P18, 51y, LBP)*

*They put the (appointment) times a bit too far apart. It has been two months now. Of course she is fully booked, and she also works alone. So okay, one should actually go more regularly (P8, 68y, multiple joint pain)*

*Yes sometime we spend a lot of time at the clinic just sitting here and sometime go back home with nothing and we didn't do that before. I think it's because of the lack of knowledge; they need to give us more information about how they operate. (P2, neck and upper quadrant pain)*

### - **Satisfaction**

Despite the many barriers to pain care management that participants identified, most were satisfied with and grateful for the care they received at the community health centre. Non-satisfaction was linked to pain persisting despite healthcare management.

*I am very satisfied, I can't lie. I also encourage the others. (P1, 47y, LBP leg pain)*

*Everything to me is... the exercise, everything that I have experiences here at the hospital, the physiotherapists, it is all good treatment. I cannot complain. (P11, 53y, neck and shoulder pain)*

*The pain is just not going away. If the pain was entirely gone, I would be satisfied, but the pain is still there. (P15, 50y shoulder pain)*

### 3.3.2.4 **THEME 4: Social and environmental influences**

#### - **Family influence**

The family, as the participants' immediate circle of influence, played an important part in the participants' pain experience. The family largely had a positive influence, but negative accounts (albeit limited) were mentioned. Some participants were concerned about the care of their family members; therefore, they often prioritised their family's wellbeing above their own pain care.

*The children are also, just like me, they don't know what to do. I go to doctors and physiotherapists; I go to the pharmacy, to get medication. And they also bring medication for me. (P9, 71y, foot, leg pain)*

*My child is 18 years; I have to take care of him. I have a grandchild that I have to care for. I can't disappoint them, and I am not old. (P15, 50y, shoulder)*

*I must not think about the pain, but you are human and if I think about the pain, it becomes worse. Because I used to stress a lot about my daughter, who is divorced and living with me. Sometimes I ask her to do something and she refuses. Then I stress about it and then the pain becomes worse. (P13, 59y, multiple joint pain)*

#### - **Financial circumstances**

Limited finances were identified as a barrier to seeking health care for pain; the inability to work and generate an income was reported to be a substantial stressor.

*There was a doctor, my physician that I'm attending, but now I don't have money.... because I'm thinking of going to the doctor, but I don't have money. (P4, 42y, shoulder, back pain)*

*Well, if I don't work, then I don't have an income. Then I begin to stress, because I have to pay the rent, I have to buy food. Then it starts, then I sit with the pain, and I feel the strain in my back, and the pain becomes worse and worse and worse. (P14, 43y, multiple joint pain)*

#### - **Occupational factors**

Pain had an effect on work and vice versa. There was a subset of participants who continued working despite the pain, while another group chose to leave employment due to pain. Work conditions and especially responsibilities at work were cited as barriers to attending care. The occupational barriers included the employer's or manager's attitude, non-support from co-workers, and their work schedule (deadlines and targets).

*Sometimes I have no choice but to go (to work), even though my leg is paining. What will I eat? Because I don't have the money, I must get some income. (P9, 71y, foot, leg pain)*

*When I felt the pain I felt that I cannot take it anymore. So much that I did not even care that I am not working, I decided to just sit at home and do nothing. (P19, 70y, multiple joint and leg pain)*

*I work on the machine. If I sit at the machine for more than an hour, then the pain tells me I have to move. They say it is because I am a machinist, and that it is a general problem with machinists. (P1, 47y, LBP, leg pain)*

*I started with physiotherapy, but due to the nature of my job, I can't come regularly. I can't take off so much time from work. So if I can't take it anymore and I gnash on my teeth, then I go for some more physiotherapy. (P11, 53y, neck and shoulder pain)*

#### - **Distress**

Different causes of stress and anxiety were identified in the participants' narratives, the most important cause being financial hardship. Other reasons for distress were identified personal loss, family circumstances, post-traumatic stress and the individual's natural tendency to stress.

*No, I've got this fear; I don't know whether I am going to get another baby. I don't know. (P4, 42y, shoulder, back pain)*

*And of course the stress. Stress also works on my pain, because I had the shock. Just a lot of stress and then my muscles go into spasm. (P11, 53y, neck and shoulder pain)*

*Remember, anxiety also affects this back. So I can't compare my personal circumstances with any other person. It depends on the person. But I am a nervous person and if I drank an antidepressant, it is if I can relax a bit. And then it is also better. (P10, 69y, LBP, leg pain)*

### 3.4 SUMMARY OF FINDINGS

The study discovered rich accounts of the participants' experiences regarding their condition, and their interaction with the healthcare system. The sample was predominantly female, and 40 years and older, which was congruent with national and international studies on chronic pain (Upshur et al., 2010; Igombur et al., 2011; Matthias et al., 2012; Rauf et al., 2013; Igwesi-Chidobe et al., 2016). Consistent with Igombur et al. (2011) and Rauf et al. (2013), the prevalent body area for chronic pain was LBP, followed by limb joint pain. However, in the current study, leg pain was very common (50%), while leg pain prevalence was very low (5%) in Igombur et al. (2011).

The main findings of the study indicate that CMSP impacted the participants in multiple ways, which was also evident in the results of the NPRS, K10 and PDI. The findings about the multidimensional impact of pain are congruent with qualitative systematic reviews about the patient experiences of CMSP (Bunzli et al 2013; Snelgrove et al 2013; Toye et al 2013; MacNeela et al 2015). CMSP challenged participants' ability to continue with meaningful life activities. Internal and external factors mediated the patients' pain experience. Internal factors included the individual's beliefs and coping mechanisms. The external factors included social and environmental influences and treatment received. Participants highlighted the emotional impact of pain, which included fear and worry about pain and the consequences of pain. However, few patients reported the use of cognitive strategies part of as self-management. The results indicated that patients' beliefs about pain influenced their interaction with the condition and health care system; and their choices about pain and its management.

Participating patients reported the dual use of the private and public healthcare sector, which complicated their healthcare pathway. This complexity was influenced by the participant's own preferences (e.g. second opinion) and by system factors (e.g. waiting times, cost). Additionally, participant reports indicated delayed referral to rehabilitation practitioners. Practitioners identified as involved in the healthcare journey were predominantly medical doctors, nurses and physiotherapists. Reported interactions with occupational therapists, psychologists and other practitioners were limited.

Most participants in this study had a biomedical (structural) understanding regarding their CMSP, which seemingly encouraged participants to continue searching for a diagnosis and cure. The



biomedical view was also evident in the participants' hope to find a solution for their chronic pain via stronger medication. However, ambivalence about the use of analgesia was reported as hope of analgesia as a solution for pain, contrasted by irregular use of medication. Exercise and advice were identified as useful strategies for treatment and self-management. However, exercise and analgesics were used as needed; and were not reported to be part of a daily routine. Participants acknowledged that the treatment received had a positive, but temporary effect, which could indicate that participants have not accepted their CMSP as a chronic condition. The participants' conversations revealed that they trusted practitioners to provide them with advice, guidance and opportunities for collaborative decision making.

Four themes of contextual factors that influenced the CMSP experience and management emerged from the participants' narratives, namely individual factors, treatment received, health care system factors, and social factors, environmental and occupational factors. The personal characteristic of resilience appeared to facilitate coping with pain. Patient knowledge and beliefs about treatment appeared to influence, in part, their adherence to prescribed treatment. Prolonged waiting times at the healthcare centre, a lack of continuity of care and regularity of care were system factors identified as impacting optimal care. Family played an important role in supporting the participants; however, some family situations were reported to cause distress. Additionally, limited finances, as a social factor, were nominated as significant stressor and were reported as a barrier to seeking and maintaining health care. Participants reported that tension exists between pain and work. A subset of participants chose to continue working despite pain, while others chose to terminate employment, regardless of the negative consequences of not being employed. Work conditions were discussed as either barriers to pain care or facilitators of pain care.

Despite the participants open hearted discussion about the barriers to access and continuity of care in the PHC system, the majority concluded that they were satisfied and indeed grateful for the care they receive at the community health centres.



## CHAPTER 4

# HEALTHCARE PRACTITIONERS' PERSPECTIVES ABOUT THE PRIMARY HEALTHCARE OF CHRONIC MUSCULOSKELETAL PAIN

### 4.1 RESEARCH QUESTION

**The research question for this part of the research project was formulated as follows:**

What are healthcare practitioners' perspectives about the primary health care of patients with chronic musculoskeletal pain; in particular the pathway of care and the barriers and facilitators in implementing pain management in primary health care?

#### 4.1.1 Objectives

- To provide a demographic profile of the participating practitioners, to aid understanding of their perspectives.
- To discover practitioners' experiences and perspectives about management of patients with CMSP, in particular:
  - To describe practitioner practice patterns for managing CMSP in primary care, including inter-/multi-disciplinary strategies, the referral system, and the care process, and
  - To determine the barriers and facilitators that practitioners experience for optimum primary health care of CMSP.

### 4.2 METHODS

#### 4.2.1 Study design

An exploratory, descriptive, qualitative study was conducted, using an interpretive research paradigm, and phenomenological approach to gain an in-depth understanding of practitioner experiences, perspectives and practices regarding the management of CMSP in PHC (Pope & Mays, 2006).

#### **4.2.2 Study setting**

The research was conducted at the community healthcare centres/clinics in the communities as described in Chapter 3 (section 3.2.2) and Appendix 5.

#### **4.2.3 Population and sample**

The population was comprised of all healthcare practitioners involved in the management of adults with CMSP at the clinics. The practitioners could be doctors, nurses, physiotherapists, occupational therapists, psychologists, social workers or community health workers. Purposive (strategic) sampling in the form of criterion sampling was used to ensure maximum exposure to key variables (Palys, 2008) and included:

- geographical area of the clinic (rural, township and urban),
- occupation (diversity of practitioners at each clinic), and
- involvement in the care of patients with CMSP.

The aim was to recruit 20-25 practitioners, which is similar to sample sizes in previous studies (Patel et al., 2008; Allegrettia et al., 2010; Kenny, 2004; Crowe et al., 2010; Matthias et al., 2010). This number was thought to be adequate to identify core elements of the phenomenon, and to provide adequate answers for the research question (Ritchie et al., 2003). The intention was to recruit more participants if data saturation were not achieved.

#### **4.2.4 Instrumentation**

##### **Semi-structured individual interviews**

In-depth, semi-structured interviews were conducted, to accommodate clinician work schedules. Each interview lasted 30-60 minutes, using the principles as outlined in Chapter 3 (section 3.2.4). An interview schedule (Appendix 13) was developed, guided by the research objectives and based on available literature (Patel et al., 2008; Matthias et al., 2010; Kenny, 2004; Allegrettia et al., 2010). The topics in the interview schedule were participants' narratives about healthcare management of CMSP, their beliefs about; practice pattern for; and barriers and facilitators for optimal management of CMSP in primary care. The PI conducted all the interviews in Afrikaans or English, as she is proficient in both languages.

## **Questionnaires**

Each participant completed a short questionnaire after the interview (Appendix 14). The questionnaire consisted of three parts, namely socio-demographic information, use of CPGs, and CMSP conditions.

## **Translation of the interview schedule and questionnaires**

The interview schedule and questionnaire were available in English and Afrikaans that was translated by the SU Language Centre, and verified by the PI.

### **4.2.5 Procedures**

The health centre manager was requested to assist in the identification potential participants, namely those involved in the management of CMSP. The PI contacted the practitioners, provided them with detail about the study, and invited them to participate. Written informed consent was obtained prior to participation in the study (Appendix 15). The interviews were conducted at the practitioner's office, to enable the natural setting of the therapeutic encounter.

### **4.2.6 Data management**

Interviews were recorded on a digital voice recorder. The recordings were downloaded on the PI's personal computer; unique serial numbers were allocated and were transcribed by a professional transcription company. The interviewer authenticated each transcription by verifying the recording with the transcription and correcting any discrepancies. Selected member checking was done to assist with data validation by e-mailing the transcription to the participant for feedback (three participants per site). Additionally, all participating practitioners at the participating health care centres were invited to attend a session where a summary of the data was presented. Data were audited by member checking, external auditing by the supervisors and a research assistant; and were appraised by external audiences (conferences and peer group discussions). The data from the questionnaires was scored by the PI, captured on an Excel spread sheet for analysis and verified by a research assistant.

### **4.2.7 The role of the researcher in the research process**

The role of the researcher in data generation and management has been discussed in Chapter 3 (section 3.2.7). In this part of the study, the researcher being a physiotherapist might have influenced participant responses. The researcher built rapport and trust at the start of the interview,

emphasising the contribution of the participant and the envisaged outcome of the project being a CPG.

#### **4.2.8 Data analysis**

Inductive, thematic content analysis of the interview transcripts was undertaken, using the framework method and the same principles and quality criteria as explained in Chapter 3 (section 3.2.8). Data analysis involved an iterative process of immersion in the data; familiarising self with the data; highlighting significant statement (quotes); creating a codebook; coding the data; developing clusters of meaning (categories); sorting categories based on their relations and linkages; and establishing themes (Gale et al., 2013; Pope et al., 2006; Richie et al., 2003). Data analysis took place in the language of the interview transcript (Afrikaans or English). The Afrikaans quotes were translated by the PI for this dissertation and to enable auditing by the research assistant and research supervisors. Appendices 16 and 17 provide the codebook for analysis and examples of translated quotes.

The questionnaire data were recorded and analysed in a purpose-built data collection sheet in MS Excel and were conveyed as frequencies, proportions and percentages (Kirkwood & Sterne, 2003).

#### **4.2.9 Qualitative quality criteria**

The research adhered to the applicable quality criteria for qualitative research, highlighted by Frambach et al. (2013) as credibility, transferability, dependability and conformability (see section 3.2.9). In addition to validation by member checking and external auditing, a concise report was sent to participating practitioners and centre managers towards the end of the project.

### **4.3 RESULTS**

#### **4.3.1 Quantitative results**

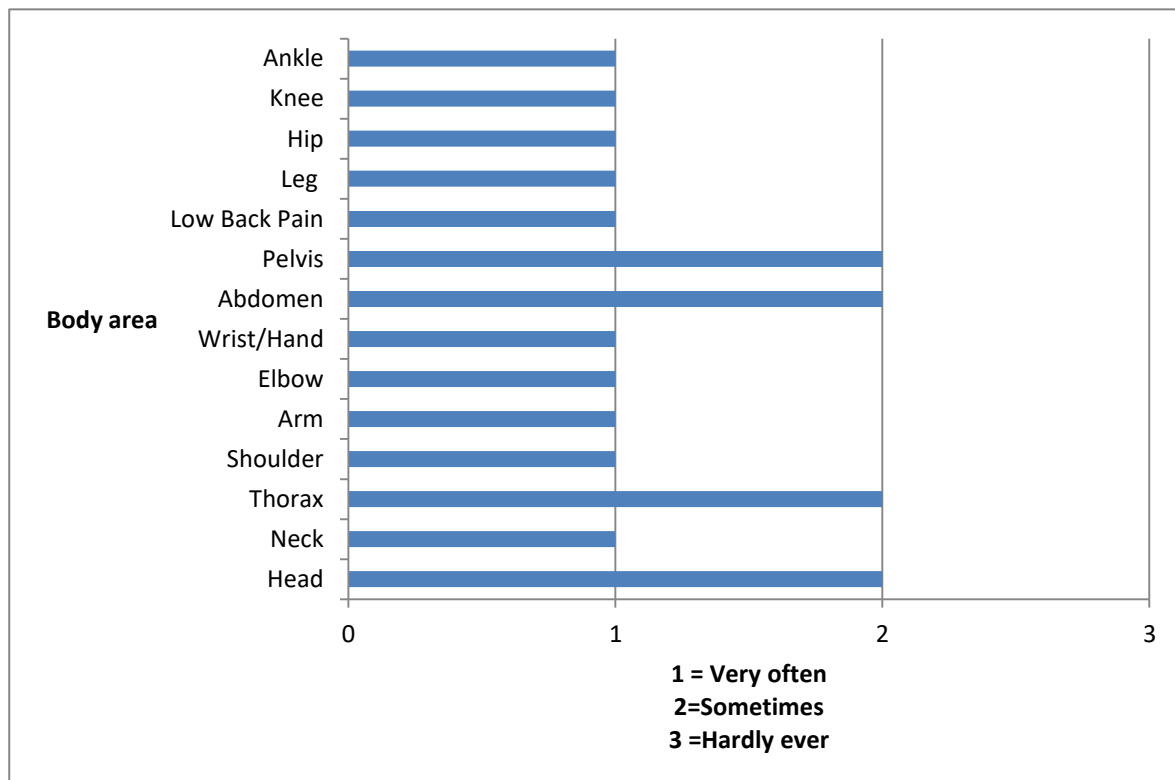
Twenty-one practitioners participated in the study. Twenty-three practitioners were invited and two declined. A psychiatric nurse in the urban township setting declined, due her report of not managing any patients with CMSP. A doctor in the urban township setting declined, due to her busy schedule. The questionnaire data are presented in Table 4.1 and the reported body sites of CMSP can be seen in Figure 4.1.

**Table 4.1: Sociodemographic and practice information of participating practitioners**

Variable	Number (n=21)	(%)	Mean (SD)
<b>Geographical location</b>			
Rural	9	43	
Urban	7	33	
Urban township	5	24	
<b>Occupation</b>			
Nurse	5	24	
Occupational therapist/technician	5	24	
Medical doctor	4	19	
Physiotherapist	3	14	
Clinic manager	1	5	
Family physician	1	5	
Psychologist	1	5	
Social worker	1	5	
<b>Gender</b>			
Female	18	86	
Male	3	14	
<b>Language</b>			
Afrikaans	13	62	
English	6	28	
isiXhosa	2	10	
<b>Ethnicity</b>			
White	11	52%	
Coloured	8	38%	
Black	2	10%	
<b>Age (years)<sup>a</sup></b>			41 (12)
<20	-	-	
20 – 30	6	30	
31 – 40	4	20	
41 – 50	6	30	
51 – 60	3	15	
61 – 70	1	5	
71 >	-	-	
<b>Years practising occupation<sup>a</sup></b>			14 (10)
< 5 years	6	30	
5 – 10 years	5	25	
11 – 20 years	4	20	
>20 years	5	25	
<b>Years practising at clinic<sup>a</sup></b>			8 (5)
< 5 years	9	45	
5 – 10 years	6	30	
11 – 20 years	5	25	
>20 years	-	-	
<b>Estimated % of patients seen with chronic pain (per week)<sup>a</sup></b>			50% (29%)
0 – 25%	5		
26 – 50%	5		
51 – 75%	5		
76 – 100%	4		

Variable	Number (n=21)	(%)	Mean (SD)
<b>Estimated % of patients seen with CMSP (per week)<sup>a</sup></b>			35% (31%)
0 – 25%	7		
26 – 50%	4		
51 – 75%	4		
76 – 100%	5		
<b>Satisfaction with the provision of CMSP care</b>			
Highly satisfied	2	10	
Satisfied	9	47	
Little satisfied	6	32	
Unsatisfied	1	5	
<b>Use of CPGs</b>			
Use CPGs in pain care	11	58	
Occasionally use CPGs in pain care	3	16	
Do not use CPGs in pain care	5	26	

<sup>a</sup>One or two data points missing



**Figure 4.1: Estimated regions of pain treated by practitioner (per one month)**

#### 4.3.2 Qualitative results

The participants' narratives largely corresponded to the contextual factors identified by patient participants in Chapter 3 and revealed eight major themes:

1. Conception of CMSP
2. Interdisciplinary care: important but difficult to implement
3. The patient healthcare pathway
4. Team roles and management interventions
5. The patients' needs and roles in management
6. Negotiation of healthcare system factors in pain management
7. Social and environmental factors complicates pain management
8. Use of evidence-based practice

The themes and categories were analysed for potential barriers to and facilitators of management (see Table 4.2). Verbatim quotes are provided and referenced by indicating the participant number and occupation (e.g. P6, Psychologist).

#### **4.3.2.1 THEME 1: Conception of CMSP**

The majority of participants attributed CMSP pain in the population under study to occupational factors. Physical work involving repetitive movements, together with incorrect ergonomics, was thought to play a role in chronicity. Additionally, participants attributed chronic pain development to 'wear and tear' and osteoarthritis, which they thought developed as a consequence of ageing and previous injuries. Overweight, lifestyle components and psychosocial stress were identified as contributing factors to the development of chronicity.

*We get lots of chronic pain with arthritis. There are a lot of them here, from wear and tear and all the hard work on farms, where they pick up very heavy loads. (P1, clinical nurse)*

*Motor vehicle accidents and accidents definitely play a role – you know if it is a fracture or any injury, it comes back to you later in life. You might not feel it now, but then when you get older, you develop arthritis after the injury. (P9, clinical nurse)*

*It's the type of labour and type of work people are doing, it's most manual type of jobs that patients are doing which causes back pain, which causes overuse injuries. So it probably needs a specific programme or programmes need to target the factories and employers more that if people are more empowered to take care of themselves in the workplace. (P17, occupational therapist)*

#### 4.3.2.2 **THEME 2: Interdisciplinary care is important but difficult to implement**

Participants emphasised the need for a holistic and interdisciplinary approach to care, which was thought to be underpinned by a thorough assessment of CMSP. This approach was, however, limited by time constraints and the sheer number of patients that needed care.

*I think we need a more holistic approach for chronic pain. We can do something for arthritis, the end-stage also. But we must have a diagnosis; we must know the reason for the pain to make the right diagnosis. We definitely need a multi-disciplinary team to manage pain, because there are different reasons for the pain. So I don't think that enough time and attention is spent on it.*  
(P3, doctor)

##### - **Organisational factors**

Differences were reported in the clinical practice patterns regarding referral, lines of communication and application of interdisciplinary care at the participating clinics. The facilitators in interdisciplinary care mentioned included the recognition of team roles, collaborative communication between members, commitment to interdisciplinary care and close proximity of team members. Several barriers were thought to impede on interdisciplinary management, e.g. the lack of awareness of interdisciplinary management, organisational culture, lack of collaborative communication, and non-efficient referral systems. Participants indicated that access to certain team members was hindered by the patient load and by some team members servicing several clinics, and thus travelling to different sites.

*The system is not perfect, but we try to be accommodating. The interdisciplinary approach makes a huge difference in our work. I can't tell you enough. You need to make an appointment to see the physiotherapist, because she travels to other clinics. That is a very difficult concept.*  
(P4, doctor)

*Yes, but that working together as a team with the pain patients with the chronic pain patients I would love to see the family physician, the physiotherapist, occupational therapist, nurses, pharmacists, part of a team working better together in various ways. I'm not quite sure how to structure it. We are not collaborating nicely and there is a lot of opportunity for that; it's just the time constraints.* (P17, occupational therapist)

*We have a physiotherapist and occupational therapist here. The problem is they are so fully booked, that a patient has to wait for some time, so the patient numbers are a challenge.* (P16, doctor)



*We work well together. I enjoy the collaboration. And the fact that we moved to this location now, makes it (collaboration) a lot easier. (P7, physiotherapist)*

#### - **Referral**

Primary and tertiary (specialist) care referral was cited as occurring in clinics with well-functioning referral systems. First-line practitioners mainly referred patients with CMSP to physiotherapy. The reported referral to occupational therapy in pain management was limited while referral to the dietician centred on weight management to decrease joint load. Referral to the mental health practitioners such as psychologists, psychiatrists and mental health nurses was identified to be reserved for patients with clearly identifiable mental disorders. The stated barriers to interdisciplinary referral were abundant and included access to team members, feedback after referral, patient abilities and roles, transport, patient numbers, staff capacity, and the long waiting lists for tertiary care.

*We are very lucky to have physiotherapist and occupational therapist here and we do make use of them and I do send patients to see them. But you know it's also difficult for patients who have got chronic pain and are not mobile to get here to come in so they don't always keep their appointments. (P10, doctor)*

*We have a physiotherapist and occupational therapist here. The problem is they are so fully booked that a patient has to wait for some time, so that is a barrier. (P16, doctor)*

*We refer a lot to the social worker and psychologist. However, the services are not always available, because the psychologist only visits the clinic twice a month. We do not get feedback to hear, did anything happen. You refer and you hope for the best. (P2, clinical nurse)*

*The referral to specialists is very difficult. The waiting period is very long. It can take five, six months before the patient can get an appointment. So it is very problematic. (P16, doctor)*

#### **4.3.2.3 THEME 3: The healthcare pathway**

Participants discussed a delay in the care pathway for patients with CMSP. Some practitioners even attributed the transition from acute to chronic pain to delays in the pathway. A delayed pathway for a patient with CMSP may thus be an important barrier to optimum care and recovery. The reasons for the delays were identified to be multifactorial and included patient-originated delays, delayed interdisciplinary referral and system factors. System factors include the load leading to long waiting times to obtain an appointment for rehabilitative care.

*I think there is a problem with referring people. The doctors and nurses maybe first to their interventions with medication and then only if that doesn't work, they send them here. I think of the many people with overuse injuries, they often only come six months down the line and it's become chronic already so one has to try and get the interventions or try and find ways to get the people to come sooner because some people then it's kind of too late. (P17, occupational therapist)*

*I really think patients need to get to us sooner. Because a patient will have pain for some period of time; a hand or an arm or a back; they present to XXX after three weeks of having pain, and say they have endured the back pain for three weeks. Once again, it is about education, so that the patient knows, if I have pain, I need to seek help. If it is painful for two or three days, come immediately and ask for help, because the sooner you stop it, the better. (P5, occupational therapist)*

#### **4.3.2.4 THEME 4: Team roles and management interventions**

Clinical nurse practitioners were the first contact practitioners at the clinics. They assessed the patient, referred to other practitioners, referred for special investigations if indicated and could prescribe certain analgesia. The role of physiotherapy was communicated to be patient education and advice, exercise prescription, facilitation of self-management, and home adaptations. While practitioners reported that they seldom directly refer to occupational therapists for pain care, the occupational therapists were diversely involved in exercise prescription, relaxation, work assessment and the provision of coping skills as part of chronic pain management groups. Reports indicate that only one centre had access to a psychologist involved in pain care. In line with the practitioners involved in the CMSP care pathway, discussions elaborated on medication, exercise and education.

##### **- Medication**

Prescribing practitioners reported that they follow the stepped care approach for analgesic prescription, basing their decisions on the guidelines of the EML for PHC (National Department of Health, 2014). The main types of medication prescribed were Paracetamol, NSAIDs, Tramadol and in selected cases Amitriptyline (confirmed in Table 3.2). Prescribing participants described the barriers to CMSP care as the type of analgesics available in PHC, the inadequate maximum allowed amount of analgesics they could prescribe and patients' patterns of analgesics use. The facilitators for providing pain care were labelled as the availability of the EML, the focus on re-assessment, and careful consideration of side-effects.

*I think you need to do a step care pain approach and they definitely need more than ten Panado a month or ten Tramadol. The other medication that we can use is Amitriptyline for chronic pain and we can use anti-inflammatory. The chronic pain that I find the most difficult to deal with is chronic joint pain: lower back pain, joint pain and because the reason being we are only allowed to prescribe limited amounts so we have our hands tied behind our backs. (P10, doctor)*

*The main barriers would be the type of medication we can prescribe and continuity of care and then also activities that the patients have to do. (P15, doctor)*

*You should always ask: How are you using the medication? They don't use it as prescribed, for many reasons. (P3, doctor)*

### - **Exercise**

Participants were positive towards the benefits of exercise for muscle strengthening, enhancing mobility and function, prevention of re-occurrence, counteracting inactivity, counteracting depression and enabling the patients to continue with their occupation. The most common mode of exercise prescription for CMSP was group therapy. Participants emphasised that the patient compliance and adherence was important in the success of exercise programmes.

*So support and physical exercise keeps the patient going. I think that is the most important thing. And the biggest mistake they make is by not being active. Because depression is next on the list. Then it is very difficult to get back from there. (P16, doctor)*

*We also refer to the Physio. So that patients can get exercise for their pain and help them to become more mobile and get pain control. (P9, clinical nurse)*

*It's because they can take it (exercise) home. They can do it on their own. For people who are compliant, it's better for them, because they can do it at home, they cannot always come to the clinic. (P11, occupational therapist)*

### - **Education**

The conversations with participants revealed that they placed a high therapeutic value on patient education. Rehabilitation practitioners used education as an integrated thread and core part of their practice. The content of education included teaching exercises, ergonomics, reassurance and explanation of the cause of pain. Education about analgesics was rarely described; the potential lack of this type of education may be a barrier to pain care. Language differences and time constraints were identified as the main barriers affecting educational interventions. Participants preferred visual

and verbal modes of education above written education to facilitate patient understanding. The importance of appropriate language and type of information was emphasised.

*I think that the patients have a low educational level, especially in rural areas. They appreciate it when you take time to explain something to them. Especially about their illnesses, or this is how the pill works. Nobody else, I guarantee you, have explained to them how it works. (P4, doctor)*

*The psychologist and I, we went together and explained to patients the complete anatomy and physiology about pain. We did that and it worked very well, the people reacted very well to it. They came regularly and with that to the exercise group. Afterwards, the patients did not attend the clinic again, not at all. They did not return for the usual treatment. (P7, physiotherapist)*

*So it's very difficult and all of this taken into consideration the language barrier. So now you have to explain to them how pain works. (P12, physiotherapist)*

*Patients need to be educated as to what the problem is, what causes it, what aggravates it, what they can do to make it better and so on and often we don't have enough time to explain those types of things to patients. (P15, doctor)*

#### - **Group therapy**

Group therapy was identified as the prominent strategy used for the delivery of rehabilitation of patients with CMSP and was presented in all three participating centres by physiotherapists and occupational therapists, and in one centre input from the psychologist was reported. Groups ran for three weeks in one centre and six weeks in the others. Participants reported high expectations for group therapy, regardless of whether they were involved in the group therapy or not. The aims of group therapy were reported to be provision of support, education, and empowerment for self-management. The participants had many positive recollections about the outcomes of group therapy sessions.

*We have support groups for different types of joint pains. We have an arthritis group, which is six weeks in duration. We teach them about joint management, pain management, relaxation, exercise and assistive devices. We work together with the occupational therapist. (P19, physiotherapist)*

*I think what the therapists do, the support groups, where they actually talk with the patients; it is very underestimated by a lot of people. I think it makes a huge difference; those support groups where they counsel the patient and explain how pain works. We referred a lot of patients*

*there, and we did not put those patients on medication. Some we could put on minimum medication and we could control their pain. (P4, doctor)*

#### **4.3.2.5 THEME 5: The patients' needs and roles in management**

##### **- Patients' need for psychological support**

The need for psychological support for patients with CMSP was strongly emphasised by participants. Participants reported that they deal with patients' emotional needs by listening to the patient and acknowledging patient's suffering. The majority of participants did not mention using coping skills for psychological and social concerns as part of therapeutic interventions. Significant barriers to the provision of psychological support were highlighted as limited access to psychologists and other mental health practitioners in PHC; mental health services were prioritised to those with diagnosed psychological conditions; the complex interaction of social circumstances influencing treatment options and priorities; furthermore, it was reported that patients do not often realise or accept the impact of psychosocial distress on their pain symptoms.

*Sometimes even before I start treating them, before I do any physical treatment on them, just allowing them to talk, allowing them just, you know, just open up a little bit, and while they are talking, then they will tell me: I am starting to feel better now, and I can see the faces ... Some will even say, you know what, my pain is gone. I don't even feel my pain anymore. (P19, physiotherapist)*

*No, we only have an intern psychologist that comes once a week for three hours so it is very difficult; she is seeing those that are at the top of the list. (P14, clinical nurse)*

*It is a blind spot for patients. Very few of them will say that if I am stressed, my headache starts, especially if the social issues are not sorted out. The totality of patients that we see, it is a way of communication. To me, pain started to look like a language, the patient can put it (suffering) in words, and it is an easier way to explain something. (P6, psychologist)*

*Many times, I found that patients with those psychological aspects that are negatively influencing them, I battle with that. I get very little results with them. It is very difficult. (P7, physiotherapist)*

##### **- Self-management**

Most participants emphasised self-management as essential in the management of CMSP, in resource-constrained environments. Patients' acceptance of the pain condition, as well as their adherence to and compliance with self-management was described as playing a central role in the

attainment of self-management. The development of skills towards self-management appeared to be allocated to rehabilitation therapists.

*I think understanding is a big part of it – if the patient understands they get much better acceptance for something that can't really be cured. You have to live with it and you need to accept it. I think it is here where the value of the multi-disciplinary team plays a role. There are a lot of patients that buy into that. They are not pain free, but they can manage their pain and they can get some of their functionality and life back. I think it is difficult, and it depends a lot on the patient, their disposition and how they understand it. (P3, doctor)*

*It's because they can take it (exercise) home. They can do it on their own. For people who are compliant, it's better for them, because they can do it at home, they cannot always come to the clinic every time they are sick. (P11, occupational therapist)*

*Self-management, I teach my patients, you need to take responsibility; you need to look after your joints and change your lifestyle. It is tough, because our patients are so used to: the doctor will sort me out, the nurse will sort me out, and the physiotherapist will sort me out. (P19, physiotherapist)*

#### - **Adherence**

Several individual factors were reported to influence pain management, which included patients' expectations and beliefs, patients' willingness to take ownership and to adhere to treatment, and the need for behaviour change. Participants reported that they activate this ownership by explaining the condition to the patient and building a relationship with the patient. Several participants commented on the need for behaviour change amongst patients, and acknowledged that behaviour change can be difficult.

*For a person really who wants to get better, they do get better. If patients are not compliant, then it doesn't work. (P11, occupational therapist)*

*You need to have a good therapeutic relationship with your patient. You can't just ask about their pain. You need to enquire about whom they are, you must get to know them, because then they will trust you so much more and they trust your treatment so much more. (P5, occupational therapist)*

*It is easier to drink the medication than to do exercise to prevent and help with the pain. Their mind-set is more directed to medication, than on anything else. That is why we refer them to physiotherapy, because when they get into that exercise programme, we see them less and their complaints are also less. (P2, clinical nurse)*

#### 4.3.2.6 **THEME 6: Negotiation of healthcare system factors in pain care**

Participants identified interconnected system barriers to care of CMSP, which includes that patients have to wait long periods of time for consultation, time constraints during the consultation, continuity of care, and limited access to care due to staff shortages.

##### - **Waiting times**

Long waiting times were seen to affect the provision of care as well as patients' follow-up and adherence to care. Practitioners described incidents where patients opted to default care due to long waiting times. The long waiting times with accompanying non-attendance were described as a causative factor in the pathway to the development of chronicity. The implementation of the lean system and triage was hoped to bring an improvement in waiting times at clinics.

*I think the patients also become despondent, because they have to wait so long. They might decide that they can live with the pain, and a few months later when the pain is worse, and it changed into chronic pain. (P16, doctor)*

*There are a lot of patients at the clinics. To provide quality care, it is a good thing to give the chronic pain appointments, some clinics have lean systems. I think those patients have a better chance of being seen by the doctor because they are not all there at the same time. There is no chaos, and there is more time, it is more organised, there is time for you to talk to the doctor. (P4, doctor)*

*It is very difficult, as you can see there are about a hundred people waiting here to be seen. We are under pressure to finish, because we know more will come. These are not all the people; there are more patients in the other waiting areas. (P16, doctor)*

##### - **Consulting time**

Participants verbalised the overwhelming feeling of time constraints, not having enough time to spend on holistic assessment, or for listening to and educating the patient. This constrained time was reported to be caused primarily by the number of patients that has to be cared for in one day, and was reported to impede the management options they could offer.

*I suppose you would have to do motivational interviewing but you know the thing is there is no – there is limited time. (P10, doctor)*

*Well, time is obviously a factor here in seeing patients. Patients need to be educated as to what the problem is, what causes it, what aggravates it, what they can do to make it better and so on and often we don't have enough time to explain those types of things to patients. (P15, doctor)*



- ***Continuity and access to care***

Continuity of care was considered to be hindered by staff shortages, high staff turnover and system overload. Participants discussed the barriers to follow-up and continuity of care by not being followed up by the same practitioner.

*But there are only so many doctors and only so many nurses for thousands of people. So you and I can do nothing about that. We try our best with it. But it would have been better; it would have helped if we could spend more time per patient. (P3, doctor)*

*I think continuity of care – patients don't come back and see the same doctor so often when they come back it's the same story explained again. (P15, doctor)*

*The physiotherapist is fully booked three months in advance. If somebody with low back pain is referred, she can only help them in three months' time. (P5, occupational therapist)*

**4.3.2.7 THEME 7: Social, environmental and family factors complicate pain care provision**

Participants highlighted some social realities that have an impact on families and communities, for example drug abuse, domestic violence and gangsterism. These factors were thought to be a major cause of stress for individuals that are affected by them and increased the burden on patients.

- ***Hardship***

Economic hardship was a reality and resulted in competing interests, leading patients to pursue disability insurance for their CMSP.

*A lot of our patients, there is a whole lot of social influence, there is a lot of parents that deals with children with drug problems and financial problems and stuff, and you can see those people they, you know ... it influences their life, it influences their pain. Stress influences their pain a lot. (P19, physiotherapist)*

*You can see it on their body language and everything about them, so I think yes, they might end up with body aches, but it might be because they're so tensed up of having to struggle to make a living. And I would refer those patients to the social worker for poverty or some sort of a social assistance, but I don't know how possible that is from the social worker. (P12, occupational therapist)*

*I think a huge proportion of our population in this area is unemployed, and there is no money for pain medication or anything else. They would rather buy food than pain medication. (P2, clinical nurse)*



### - **Occupation**

Occupation factors and hardship were reported as having an impact on patients' healthcare-seeking behaviour and compliance with treatment. Specific factors that played a role were the type of work patients do (labour) as well as employer expectations. Participants noted that occupational factors can lead to psychological stress and become a barrier to pain care if patients need to continue their normal work activities despite pain.

*Yes, definitely, the stress comes from the fact that most of the times, when the pain is severe; the patient can't go to work. If the patient can't work, then there is no money and no food in the house. That leads to a lot of stress. (P9, clinical nurse)*

*They wanted to come, but they couldn't come because they had to go to work because who is going to give them that work's pay? Even though you tell them you going to get a medical certificate, some of the people are on contract and that contract means no work no pay. (P13, clinical nurse)*

### - **Disability insurance**

With regard to disability insurance, participants identified two subsets of patients, namely (1) those who sought pain care to enable them to return to their activities and work, and (2) patients who sought care for pain, whilst also seeking disability insurance. The search for social-economic relief through the healthcare system was described as influencing patient compliance to treatment prescription, to disempower and demotivate patients, and to sustain the pain.

*And the one group of patients that tell you as they walk in, that they are struggling to get disability insurance, which the doctor does not want to approve, and they need a report. And that is why they came for physiotherapy. And in time, as they get better, they realise that they don't have to get disability insurance. But if they have already decided in their heads that they are not going to work, they already resigned at work, I am only here for the report, and then you struggle. You struggle to get past that barrier. (P7, physiotherapist)*

#### 4.3.2.8 **THEME 8: The use of evidence-based practice**

##### - **Clinical practice guidelines**

The participants appeared to have a wide-ranging understanding of what comprises a CPG. Their understanding of CPGs included the standard treatment guidelines and EML (2014), care pathways (for example the PACK/PULSA Plus), health policies and acts, textbook information, and the

principles of care as learnt in the under- and postgraduate training. A need for a chronic pain guideline was indicated.

*We use the PULSA PLUS as a guideline, and then we use our EML as standard guidelines for chronic care, then also most probably what you have learned in the basic training as your own guidelines. We haven't got specific guidelines saying let's put this type of pain with that type of – you use your clinical text book as your guidelines as well. (P13, clinical nurse)*

*We basically use the mental healthcare act and then all the policies and procedures pertaining to that. (P14, clinical nurse)*

*I realised that they have a need to get up-to-date information about what type of medication can be used for chronic pain; because it is a problem for everybody, for example, what medication for neuropathic pain? (P7, physiotherapist)*

#### - **Evidence-based practice**

Participants reported to keep up to date with new information and evidence-based practice using web based searches, continuing professional education courses and reading articles and textbooks. The lack of resources, internet access and time was discussed as barriers to the use of evidence-based practice.

*Over the past couple of years, I have assembled up a few websites that I trust and can obtain information from. That is my guidelines that I use. But if you want information that is based on evidence, which is based on experience and understanding, and that, is based on what works, that information is not so accessible. (P16, doctor)*

*I read a lot since I am still young in the profession. I go back to my books if I really don't know. And I ask my colleagues. (P5, occupational therapist)*

*Everything that we know we can use, is not always available here. Our resources are not the same as in private practice. (P3, doctor)*

**Table 4.2: Summary of barriers to and facilitators of pain management discussed by practitioners**

<b>THEME</b>	<b>Category</b>	<b>Barrier</b>	<b>Facilitator</b>
<b>Practitioner beliefs</b>	<b>Origin</b>	Biomedical model	Biopsychosocial model
<b>Clinical practice patterns</b>	<b>Assessment</b>	Time constraints Number of patients seeking care	Holistic approach Belief in thorough assessment
	<b>Interdisciplinary management</b>	Lack of awareness of value Organisational culture limiting teamwork Non-efficient referral system Availability/access to team Distance to team	Commitment to interdisciplinary management Awareness of team roles Collaborative communication Close proximity of team members
	<b>Referral</b>	Non-efficient referral systems Lack of access to team members Waiting lists Limited feedback after referral Patient role Staff capacity (system load) Reliance on analgesics	Efficient referral system Close proximity of team members
	<b>Pathway of care</b>	Patient delay in seeking care Delayed referral System overload	Early referral
<b>Interventions for pain</b>	<b>Medication</b>	Type of analgesics available Amounts allowed to prescribe Patient analgesic use	Essential medicines list Re-assessment practice Consideration of side-effects
	<b>Exercise</b>	Patient non-adherence/compliance	Benefits of exercise Patient adherence/compliance
	<b>Education</b>	Lack of education on analgesics Language differences Time constraints	Facilitates understanding Contribution to self-management
	<b>Psychological support</b>	Limited access to mental health practitioners Complex interaction of social factors Patient influence (acceptance)	Realisation of need
	<b>Group therapy</b>	No involvement of medical officer or nursing staff	Interdisciplinary involvement High expectations Observed positive outcomes
	<b>Self-management</b>	Patient adherence and compliance	Patient adherence and compliance
<b>System factors</b>	<b>Access to care</b>	Non-availability of practitioners Limited consultation times Staff shortages, staff turnover	Availability of practitioners
	<b>Waiting times</b>	System load Numbers of patients seeking care	Lean system Triage Explanation to patients
<b>Social and environmental factors</b>	<b>Family</b>	Major stressors (e.g. drug abuse, domestic violence, gangsterism)	Support
	<b>Social realities</b>	Economic hardship Disability grants Occupational influence	Positive occupational context
<b>Patient individual factors</b>	-	Patient not taking ownership Difficulty changing behaviour	Patient taking ownership Behaviour change
<b>Evidence based practice</b>	<b>Use</b>	Time Resources Internet access	Availability of guidelines

## 4.4 SUMMARY OF FINDINGS

This chapter explored practitioners' beliefs, perspectives and practice patterns for the management of CMSP in three public sector community health centres/clinics in the Western Cape of SA. The sample included a diverse group of healthcare professionals, who were mostly females and Afrikaans-speaking. Participating practitioners conveyed a partly developed biopsychosocial construction of CMSP; which was dominated by a structural model, with acknowledgement of the influence of psychological, social and environmental factors in the pain experience.

Participating practitioners identified a variety of factors that influenced pain care as barriers to, or facilitators for optimal CMSP management. These barriers and facilitators were largely congruent with the contextual factors that influenced pain management as identified by patients in Chapter 3, and were: individual characteristics of patients and clinicians, intervention (treatment) factors, healthcare system factors and social, environmental and occupational factors (summarised in Table 4.2). Patients' adherence to prescribed treatment and taking ownership for self-management were regarded as important aspects of pain management. Additionally, practitioners communicated their need for education and access to information to optimize evidence-based practice. The system factors that practitioners identified to that play a role in the provision of pain care is in accordance of those identified by participating patients (Chapter 3), namely long waiting times for consultation, limited time during consultation, lack of continuity of care and access to health professionals. There were indications that patients' healthcare pathways are influenced by delayed health care seeking, delayed referral to rehabilitation and reliance on analgesics.

A variety of strategies were reportedly used for pain management, which consists mainly of analgesics, advice, education and exercise. Participants acknowledged the importance of holistic and interdisciplinary care for CMSP, but admitted that several factors limited optimal interdisciplinary care. The EML (National Department of Health, 2014) and PACK Adult (Knowledge translation unit, 2016) (see section 2.3.4) were reported to play a central role to guide the practice pattern of nurses and doctors in this context. However, participants had a wide-ranging use and understanding of the concept of CPG's (theme 4.3.2.8). The management of CMSP was reported to be complex due to the many societal, psychological and system factors that influenced pain care. Practitioners recognized the patients' need for psychological support to cope with the challenges experienced as part of CMSP. However, there was a low reported use of cognitive therapies and psychologically based therapies; that could indicate a low use of psychosocial management options. Practitioner participants confirmed the tension that exists between working despite pain and unemployment that patient participants acknowledged in section 3.4.2.4.

## **PART 1: UNDERSTANDING THE CONTEXT**

### **SUMMARY**

The focus of Part 1 of the dissertation was on exploring and reporting on the authentic context within which CMSP is managed in PHC in selected resource-constrained community health care centres/clinics in the Western Cape of SA. The key informants were patients with CMSP and practitioners involved in the healthcare management of patients with CMSP.

The findings indicate that CMSP is relatively common complaint in PHC practice (Table 4.1). CMSP was reported to be experienced as a multidimensional phenomenon, which influenced the patients who participated in this study in multiple ways. Participants largely agreed on the type of contextual factors that influence pain management. These contextual factors nominated by participants in Chapters 3 and 4 are summarised in Figure Part1b and include personal characteristics of the patient, the social and environmental circumstances within which the patient lives, the healthcare interventions received, and healthcare system factors. These constructs are congruent with the conceptual framework of the ICF (WHO, 2013), in which activity limitations are viewed as the interaction between the individual, the health condition, and a range of environmental circumstances. Patients' social, environmental and family circumstances and the realities of their financial and social needs were reported to complicate the treatment of pain by influencing the management priorities. Allegretia et al. (2010), in a United Kingdom (UK)-based study, found similar complexities for pain management. Surprisingly, and in contrast to the literature about patient-centredness (Mead & Bower, 2000; Kidd et al., 2011), the personal characteristics of the practitioner were not reported to be a key determinant in the provision of care for CMSP.

The exploration and understanding of the context and the perspectives of stakeholders were needed to inform the development of a CPG for CMSP in this context. The findings indicated that patient participants' beliefs influenced their interaction with the healthcare system (e.g. health-seeking behaviours) and their interaction with the condition (e.g. coping skills). Contextually relevant education could play a vital role in quality care of patients with CMSP, to affect patients' belief systems about CMSP and its management. Similarly, there are indications that the perspectives of practitioners influenced their management choices, for example how they explained pain to patients. Practitioner participants elaborated on several context-specific barriers to the care of CMSP and the relevant facilitators, which can be utilised for the contextualisation and implementation of the CPG. Practitioners identified interdisciplinary care, empowerment for self-management, and occupational

enablement as important issues to be addressed in CMSP management. A similarity identified between participating patients and practitioners was the need for psychological support for patients with CMSP. The findings highlight the strengths and limitations in the primary healthcare provision for CMSP and attention to these factors may influence practice patterns, healthcare systems, education and CPG development and implementation.



**Figure Part 1b: Framework of contextual factors**

## PART 2: EVIDENCE SOURCING AND SYNTHESIS

### INTRODUCTION

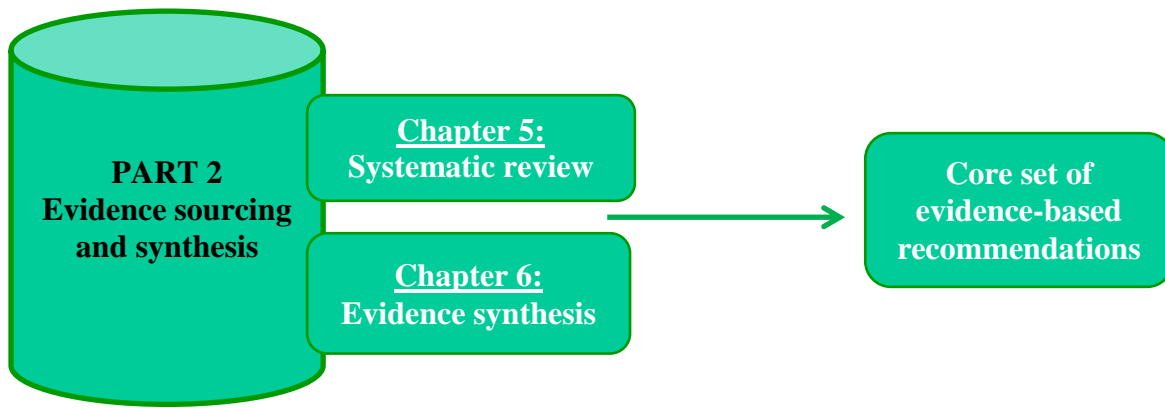
Part 1 provided a portrayal of the context in which the CPG for CMSP was envisaged to be implemented. The next step in the process was to source and summarise evidence-based strategies for the management of CMSP through a systematic review and synthesis (Figure Part2a).

The development and implementation of CPGs is an emerging concept in the healthcare sector in SA (section 2.3.4). When considering the development of a CPG for the management of CMSP in the SA context, it was important to consider whether such a guideline already exists, whether existing guidelines are of high quality and whether such guidelines represents the holistic and multimodal management for CMSP. Knowledge about the existence and quality of a CPG for CMSP in primary care would inform the choice between adoption, adaptation, contextualisation or *de novo* development of a CPG(s) (see section 2.3.3). A systematic review of existing CPGs was therefore conducted to address this knowledge gap (reported on in Chapter 5).

In Chapter 6, which is essentially an extension of Chapter 5, the process of extracting, evaluating and synthesising evidence-based recommendations from existing high-quality CPGs as identified in Chapter 5, was described. The crafting of recommendations by grouping, analysing and merging similar recommendations is described. Additionally, the criteria used to methodically analyse and merge the recommendations while retaining their underpinning evidence base are demonstrated. This adoption and transformation of the recommendations is a core process in CPG contextualisation. As part of contextualisation, particular attention is paid to phrasing synthesised recommendations. Gagliardi, Brouwers, Palda, Lemieux-Charles and Grimshaw (2009) and Woolf et al. (2012) argue that the content, format and wording of guideline recommendations can have an impact the use and uptake of a CPG in clinical practice. If a recommendation is worded appropriately, the end-users of the recommendation should be able to understand the foundational message, as well as the strength of the body of evidence underpinning the recommendation.

The end-product of the Part 2 of this dissertation was a core set of carefully worded evidence-based recommendations for the multimodal management of CMSP in PHC settings.





**Figure Part2a: Overview of Part 2: Evidence sourcing and synthesis**

## CHAPTER 5

# A SYSTEMATIC REVIEW OF CLINICAL PRACTICE GUIDELINES FOR THE PRIMARY HEALTH CARE OF CHRONIC MUSCULOSKELETAL PAIN

### 5.1 AIM

The aim of this systematic review was to methodically identify and appraise the available evidence-based clinical practice guidelines for the management of adults with chronic musculoskeletal pain in primary health care settings.

#### 5.1.1 Objectives

The objectives were the following:

- Identify profession-specific or inter-/multi-disciplinary CPGs on the management of CMSP in PHC settings.
- Critically appraise the quality of the included CPGs using the AGREE II tool.
- Determine the currency of the CPGs.
- Determine the grading systems used to define the level/quality of evidence and the strength of the recommendation in the CPGs.
- Summarise the content of the high-quality CPGs.

### 5.2 METHODS

#### 5.2.1 Study design

A systematic review for clinical practice guidelines regarding the primary care of CMSP was conducted, to systematically identify and appraise current, existing CPGs on the topic (Green 2005). The review protocol was registered on PROSPERO (registration number CRD42015022098).

#### 5.2.2 Study criteria

The study criteria were formulated using the PIPOH format (Population, Intervention, Professions, Health Outcomes and Health setting) for guideline reviews (ADAPTE II Collaboration, 2009). The types of studies eligible were CPGs available in full text and published from January 2000 to May

2015. The cut-off date was set to ensure up-to-date CPGs. The target population and disease characteristic for the review included adults with CMSP. It was anticipated that recommendations for CMSP would be included in CPGs for chronic non-malignant pain. CPGs that focused exclusively on chronic pain from non-musculoskeletal origin such as sickle cell disease, neuropathic pain and malignancy were excluded due to the differences in pathology, pain mechanisms and possible management strategies.

The types of interventions could include evaluation, diagnosis and management of CMSP. Examples of such interventions are pharmacological and non-pharmacological management, rehabilitative options and self-management. CPGs targeting any healthcare professionals involved in the management of CMSP were eligible for inclusion. The expected outcomes of CPGs could include patient outcomes, system outcomes or public health outcomes. For the purpose of this review, only CPGs focused on PHC settings were included. CPGs that focused solely on secondary, tertiary or specialist healthcare settings were excluded due to different management options offered.

### **5.2.3 Search strategy**

The PI searched the electronic databases of the following guideline clearinghouses: the US National Guideline Clearinghouse (US NGC); the Agency for Healthcare Research and Quality (AHRQ); the Guidelines International Network (G-I-N); the Scottish Intercollegiate Guidelines (SIGN); the United Kingdom's National Institute for Health and Clinical Excellence (NICE); the New Zealand Guidelines Group (NZGG); the WHO guidelines; the TRIP database; the National Institutes of Health (NIH); the Monash University Centre for Clinical Effectiveness; Australia's National Health and Medical Research Council (NHMRC); the Canadian Medical Association Clinical Practice Guidelines Infobase, and the Institute for Clinical Systems Improvement (ICSI). In addition, the following online databases were searched to include those guidelines that were peer reviewed and published in journals: CINAHL, PEDro; PubMed, EBSCO host and Medline. The broad search terms included: clinical practice guidelines; OR clinical guidelines; OR care pathway; OR clinical pathway; OR care protocol; AND chronic pain; OR chronic musculoskeletal pain; OR chronic non-malignant pain; OR chronic non-cancer pain; AND adults; AND primary care; OR primary health care.

The initial search was conducted from July 2014 to October 2014, and the search was updated during May 2015. The inclusion and exclusion criteria were applied by screening the identified CPG titles and objectives to select the eligible CPGs. The data were extracted in the PIPHOH format to enable this analysis. The process was verified by the co-authors on a random audit basis. A record of search yields and decision-making was kept.

#### 5.2.4 Data extraction

The PI extracted the following data into custom-built Excel data extraction sheets:

- The clinical question formulation using the PIPOH format
- Guideline currency: The publication date of the CPG and periods covered by the literature search in the guideline and date of revision
- General information: The developing organisation/authors; country of publication and language of publication
- Guideline content: The PI extracted all recommendations contained within the high-quality CPGs into an Excel spreadsheet to develop a comprehensive recommendation matrix (ADAPTE II Collaboration, 2009).

#### 5.2.5 Critical appraisal

The methodological quality of eligible CPGs was independently assessed by three reviewers using the AGREE II instrument. The AGREE II is an internationally developed, widely accepted, valid, reliable, easy to use and transparent instrument to assess the reported methodological rigour of the CPG (Vlayen et al., 2005; AGREE Enterprise, 2010; Brouwers, Kho, Browman, Burgers, Cluzeau, Feder, Fervers, Graham, Grimshaw, Hanna, Littlejohns, Makarski & Zitzelsberger, 2010). It contains 23 key quality items categorised in six domains, scored on a 7-point Likert scale. The AGREE II evaluates the process of CPG development and the quality of reporting. However, it does not evaluate the content of the CPG, nor the quality of evidence supporting the recommendations. Each AGREE II domain focuses on a separate aspect of guideline quality, namely scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability, and editorial independence.

The reviewers' AGREE II scores were entered into Excel by the PI. Any difference in score higher than two points was discussed amongst the project team to reach consensus. A quality score was calculated for each of the six AGREE II domains using the guiding principles and formula provided in the user manual. All item scores in a domain were summed and the total was standardised as a percentage of the maximum possible score for that domain. The data was nonparametric and therefore the median domain score and range for each domain was calculated (Kredo et al. 2012). The manual warns against aggregating all domain scores into one single quality score. The following formula was used:

Domain score =

$$\frac{\text{Obtained score} - \text{Minimum possible score}}{\text{Maximum possible score} - \text{Minimum possible score}} \times 100 = \%$$

## 5.3 RESULTS

### 5.3.1 Search results

The results of the systematic search are summarised in Figure 5.1. The search yielded two categories of CPGs, namely comprehensive CPGs and CPGs that were published in journal article format. Where indicated, contact was made with the authors to obtain full-text CPGs. Thirty-four eligible CPGs were considered for inclusion. After applying the inclusion/exclusion criteria, 12 CPGs were included. The main reasons for exclusions are summarised in Figure 5.1.

### 5.3.2 Included clinical practice guidelines

Table 5.1 summarises information about the included CPGs and their currency. Six out of the 12 included CPGs focused exclusively on the prescription of opioids (CPGs 1, 3, 6, 7, 8 & 10), and two focused specifically on the management of musculoskeletal pain (CPG 9 & 12). One CPG originated from SA (CPG 10).

### 5.3.3 Methodological quality

The AGREE II domain scores (median and range) are provided in Table 5.2. The domains with the lowest median score were domain 2 (stakeholder involvement), domain 3 (rigour of development) and domain 5 (applicability). Further analysis of each question within a domain is represented in Table 5.3.

CPGs consistently did not adhere to topic 5 in domain 2 (views and preferences of target population). Only 3 of the 12 included CPGs reported that they sought patient perspectives as part the CPG development. The methods used in these CPGs were focus groups with patients (CPGs 3 and 2), patients as part of the guideline development group (CPG 5), a literature search of patients' preferences (CPG 5), and an environmental scan through surveys, key informant interviews and focus groups (CPG 2). Some CPGs also did not identify the strengths and limitations of evidence (topic 9). Within domain 3, topic 14 had the lowest scores, indicating that few CPGs included a procedure for updating the CPG. All four topics in domain 5 (applicability) were challenging for the CPG developers, as indicated by the low scores.

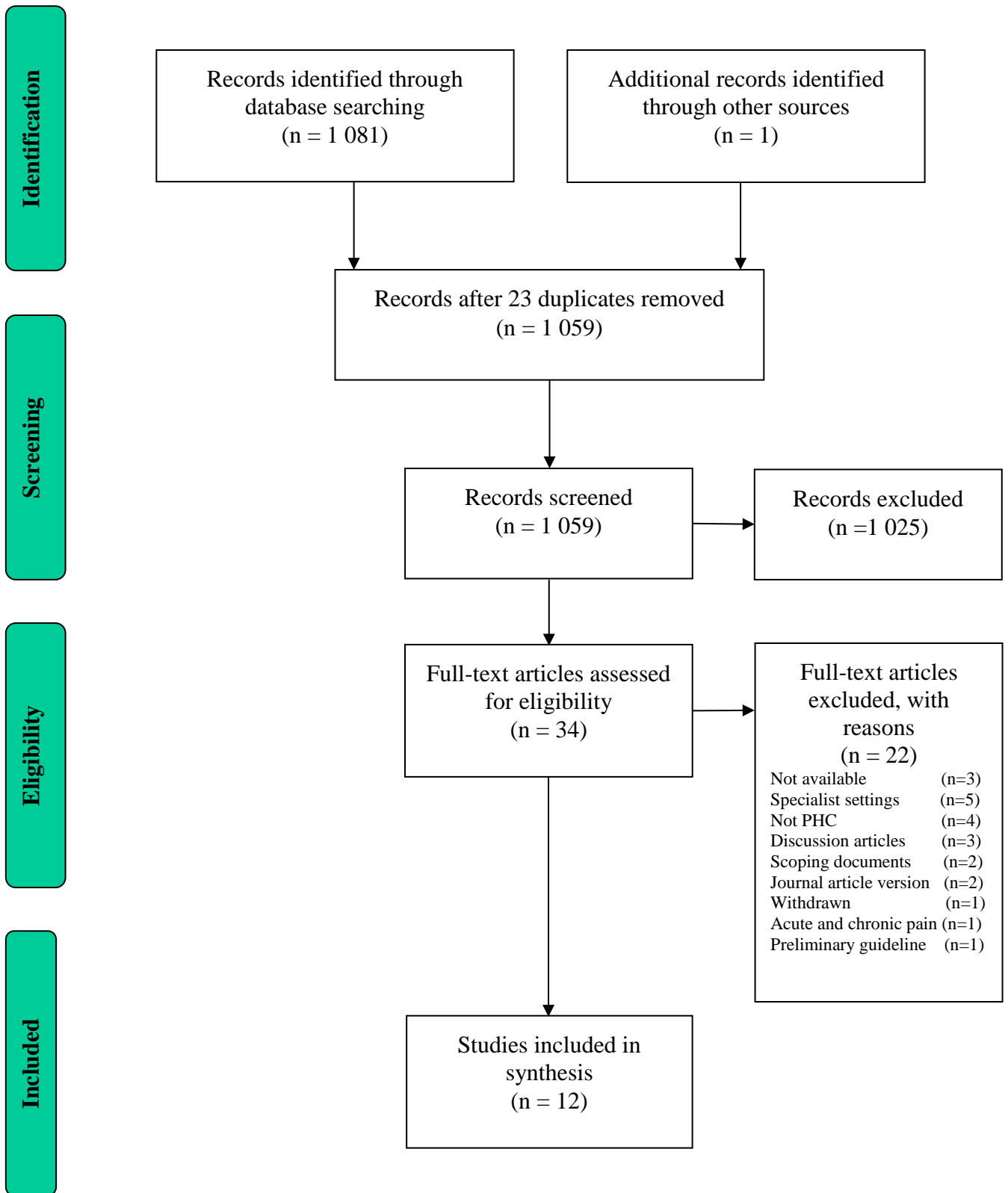


Figure 5.1: Diagram of search results (PRISMA format)

**Table 5.1: Included clinical practice guidelines (n = 12)**

CPG number	Title of guideline	Organisation/Authors	Country of origin	Guideline currency		
				Date for revision	Publication date	Search dates covered
<b>CPG 1</b>	Guidelines for responsible opioid prescribing in chronic non-cancer pain: Part 1 – Evidence; Part 2 – Guidance	American Society of Interventional Pain Physicians (ASIPP) (Manchikanti et al., 2012)	USA	June 2015	2012 (update on 2008 version)	Not stated
<b>CPG 2</b>	Assessment and management of chronic pain	Institute for Clinical Systems Improvement (ICSI) (Hooten et al., 2013)	USA	Every 24 months, i.e. December 2015	2013 (update on 2011 version)	August 2011- August 2013
<b>CPG 3</b>	Canadian guideline for safe and effective use of opioids for chronic non-cancer pain	National Opioid Use Guideline Group (NOUGG) (2010)	Canada	Not stated	2010	2005-July 2009
<b>CPG 4</b>	Assessment and management of pain	Registered Nurses' Association of Ontario (RNAO) (2013)	Canada	Every 5 years, i.e. 2018	2013 (update on 2002, 2007 versions)	2007-2012
<b>CPG 5</b>	Management of chronic pain: A national clinical guideline	Scottish Intercollegiate Guidelines Network (SIGN) (2013)	UK	In 3 years, i.e. 2016	2013	2007-2012
<b>CPG 6</b>	Managing chronic non-terminal pain in adults, including prescribing controlled substances	University of Michigan Health System (UMHS) (2011)	USA	Not stated (Previous was 2009, 2011)	2011	1995-2010; (search dates 1998-2002)
<b>CPG 7</b>	Interagency guideline on opioid dosing for chronic non-cancer pain: an educational aid to improve care and safety with opioid treatment	Washington State Agency Medical Directors Group (WSAMDG) (2010)	USA	Not stated	2010 (update on 2007 version)	Not stated
<b>CPG 8</b>	Clinical guidelines for the use of chronic opioid therapy in chronic non-cancer pain	American Pain Society (APS) – American Academy of Pain Medicine (AAP), (Chou, Franciullo, Fine & Adler, 2009)	USA	2012	2009	Through to July 2008 (not stated from when)
<b>CPG 9</b>	Managing musculoskeletal complaints with rehabilitation therapy: Summary of the Philadelphia Panel evidence-based	The Philadelphia Panel Members and Ottawa Methods Group, 2001 (Harris & Susman, 2002)	Canada and USA	Not stated	2002	Through to July 2000

CPG number	Title of guideline	Organisation/Authors	Country of origin	Guideline currency		
				Date for revision	Publication date	Search dates covered
	clinical practice guidelines on musculoskeletal rehabilitation interventions					
<b>CPG 10</b>	South African guideline for the use of chronic opioid therapy for chronic non-cancer pain	Raff et al. (2014)	SA	Not stated	2014	Not stated Four existing CPGs published between 2009 and 2012 were chosen (CPG 1, 2, 8 in this table)
<b>CPG 11</b>	Evidence-based clinical practice guidelines for interdisciplinary rehabilitation of chronic non-malignant pain syndrome patients	Sanders, Harden and Vicente (2005)	USA	Every 4 years	2005 (update on 1995, 1999 versions)	September 1999 (end-date not stated)
<b>CPG 12</b>	Update on guidelines for treatment of chronic musculoskeletal pain	Schnitzer (2006)	USA	Not stated	2006	Not stated

(CPG = Clinical Practice Guideline; USA = United States of America; UK = United Kingdom; SA = South Africa)



Table 5.2: Combined AGREE II scores in %

	CPG 1	CPG 2	CPG 3	CPG 4	CPG 5	CPG 6	CPG 7	CPG 8	CPG 9	CPG 10	CPG 11	CPG 12	Median	IQR
<b>Domain 1: Scope and purpose</b>	89	96	98	80	93	48	89	76	67	78	63	48	<b>79</b>	<b>24</b>
<b>Domain 2: Stakeholder involvement</b>	65	85	91	70	100	52	63	80	57	35	22	15	<b>64</b>	<b>34</b>
<b>Domain 3: Rigour of development</b>	72	85	94	88	94	47	40	84	60	30	51	30	<b>66</b>	<b>41</b>
<b>Domain 4: Clarity of presentation</b>	91	89	87	96	98	87	69	90	83	69	57	72	<b>87</b>	<b>19</b>
<b>Domain 5: Applicability</b>	60	79	75	92	79	53	32	43	21	14	15	7	<b>48</b>	<b>57</b>
<b>Domain 6: Editorial independence</b>	97	100	100	67	67	97	44	100	25	100	0	86	<b>91.5</b>	<b>39</b>
<b>TOTAL</b>	474	534	545	493	531	384	337	473	313	326	208	258		
<b>Overall score out of 7</b>	<b>5</b>	<b>5.6</b>	<b>6</b>	<b>5.3</b>	<b>6.5</b>	<b>4</b>	<b>3.6</b>	<b>5</b>	<b>3.6</b>	<b>3</b>	<b>3</b>	<b>3</b>		

**Table 5.3: All AGREE II domain scores**

	CPG 1	CPG 2	CPG 3	CPG 4	CPG 5	CPG 6	CPG 7	CPG 8	CPG 9	CPG 10	CPG 11	CPG 12	Total	%
<b>DOMAIN 1: SCOPE AND PURPOSE</b>														
1. Overall objectives specific	21	20	21	17	18	18	19	17	15	16	13	14	<b>209</b>	<b>83%</b>
2. Health questions specific	18	20	21	19	21	9	18	16	14	15	13	9	<b>193</b>	<b>77%</b>
3. Population specific	18	21	20	16	20	8	20	17	16	20	17	12	<b>205</b>	<b>81%</b>
<b>DOMAIN 2: STAKEHOLDER INVOLVEMENT</b>														
4. Guideline development group	19	18	20	15	21	15	18	19	20	7	6	10	<b>188</b>	<b>75%</b>
5. Views and preferences of target population	5	21	18	11	21	6	7	14	2	4	3	3	<b>115</b>	<b>46%</b>
6. Target users clearly defined	20	16	20	21	21	16	18	19	18	17	12	4	<b>202</b>	<b>80%</b>
<b>DOMAIN 3: RIGOUR OF DEVELOPMENT</b>														
7. Systematic methods	15	17	21	21	21	19	10	13	12	6	16	4	<b>175</b>	<b>69%</b>
8. Criteria for evidence selection	14	19	21	21	21	17	5	15	19	7	16	4	<b>179</b>	<b>71%</b>
9. Strengths and limitations of evidence	13	19	20	18	18	6	5	20	19	10	9	4	<b>161</b>	<b>64%</b>
10. Methods for formulating recommendations	19	17	21	18	19	8	10	21	17	5	8	11	<b>174</b>	<b>69%</b>
11. Health benefits, side-effects, risks were considered in formulating recommendations	20	19	19	17	19	19	21	21	9	18	12	20	<b>214</b>	<b>85%</b>
12. Explicit link between recommendations and evidence	19	17	21	20	21	12	10	19	17	11	12	12	<b>191</b>	<b>76%</b>
13. Externally reviewed prior to publication	15	18	21	16	21	6	16	18	15	7	10	9	<b>172</b>	<b>68%</b>
14. A procedure for updating guideline	13	20	15	20	19	5	4	18	3	3	14	3	<b>137</b>	<b>54%</b>
<b>DOMAIN 4: CLARITY OF PRESENTATION</b>														
15. Recommendations specific; unambiguous	20	19	21	20	20	18	17	20	17	15	13	18	<b>218</b>	<b>87%</b>
16. Different options for management	18	19	14	21	21	20	13	18	18	15	15	16	<b>208</b>	<b>83%</b>
17. Key recommendations easily identifiable	20	19	21	20	21	18	16	20	19	14	12	14	<b>214</b>	<b>85%</b>

	CPG 1	CPG 2	CPG 3	CPG 4	CPG 5	CPG 6	CPG 7	CPG 8	CPG 9	CPG 10	CPG 11	CPG 12	Total	%
<b>DOMAIN 5: APPLICABILITY</b>														
18. Barriers to and facilitators of application	15	16	19	20	17	11	6	8	11	4	4	5	<b>136</b>	<b>54%</b>
19. Advice/tools to put recommendations to practice	14	20	21	20	18	8	13	10	9	7	8	6	<b>154</b>	<b>61%</b>
20. Potential resource limitations have been considered	9	13	12	18	15	11	7	12	4	3	3	3	<b>110</b>	<b>44%</b>
21. Monitoring and audit criteria	15	20	14	20	19	20	9	13	3	8	8	3	<b>152</b>	<b>60%</b>
<b>DOMAIN 6: EDITORIAL INDEPENDENCE</b>														
22. Views of funding body vs guideline content	20	21	21	15	10	20	14	21	12	21	3	17	<b>195</b>	<b>77%</b>
23. Competing interests of guideline development group members have been recorded and addressed	21	21	21	15	20	21	8	21	3	21	3	20	<b>195</b>	<b>77%</b>

### 5.3.4 Evidence-grading systems used in clinical practice guidelines

The CPGs used a variety of grading systems to categorise the levels/quality of evidence and the strength of the recommendation. These grading systems are summarised in Table 5.4. Three CPGs did not grade the level of evidence or the strength of the recommendation. Four CPGs graded the level/quality of evidence, but not the strength of the recommendation.

### 5.3.5 Guideline content analysis

The recommendations contained in the good quality CPGs were extracted for further use to ensure soundness of recommendations. The AGREE Enterprise (Brouwers et al., 2010) does not provide cut-off scores to differentiate between high-quality and poor-quality guidelines. They advise that the decision of poor- and high-quality guidelines should be made by the user and taking the context into account. A range of criteria were therefore used to identify the CPGs that did not qualify for further content analysis for the purpose of the project (see below). CPGs 6, 7, 9, 10, 11 and 12 were excluded from further analysis based on a combination of the following criteria:

- No clear recommendation statements were identifiable (CPG 9, 10, 11 & 12). The writing style of these CPGs focused on a discussion of relevant information, and was less focused on making clear recommendations.
- The CPG median score for methodological quality was below 50% (CPG 6, 7, 10 & 12). This was a more conservative exclusion than Brosseau, Rahman, Toupin-April, Poitras, King, De Angelis, Loew, Casimiro, Paterson and McEwan (2014), who used a quality cut-off score of mean 60%.
- The CPG did not link their recommendations to the evidence base or references (CPG 6, 7, 9, 10, 11 & 12)
- Recommendations were condition specific or did not differentiate between acute and chronic pain (CPG 9 & 12).

A total of 156 recommendations were extracted from CPGs 1, 2, 3, 4, 5 and 8. The recommendations were grouped into similar health questions/topics which consisted of general assessment, approach to care, non-pharmacological management and pharmacological management. Table 5.5 provides an overview of the number of recommendations that were made per health topic and indicates from which CPG the recommendation originated.

**Table 5.4: Grading systems used to determine the level/quality of evidence and the strength of the recommendation**

Guideline		Name of grading system	Level/quality of evidence grading	Strength of recommendation
CPG 1	ASIPP 2012	United States Preventive Services Task Force (USPSTF) criteria	Good Fair Poor	None
CPG 2	ICSI 2013	In transition from ISCI system to GRADE Thus using a hybrid system	High-quality evidence Low-quality evidence	None
CPG 3	NOUGG 2010	-	I II-1 II-2 II-3 OR III	A B C
CPG 4	RNAO 2013	Adapted SIGN	Ia Ib IIa IIb III IV	None
CPG 5	SIGN 2013	SIGN	1++; 1+ 2++; 2+; 2- 3 4	A B C D Good practice point
CPG 6	UMHS 2011	-	A B C D	I II III
CPG 7	WSAMD G 2010	Rating scheme (not provided)	Not provided	None
CPG 8	APS AAP 2009	Adapted GRADE methodology.	High-quality Medium quality Low-quality	Strong Weak
CPG 9	Harris & Susman 2002	Modified Canadian Task Force Grading System	I, II-1 II-2 II-3 III	A, B, C
CPG 10	Raff et al. 2014	-	None	None
CPG 11	Sanders et al. 2005	-	None	None
CPG 12	Schnitzer 2006	-	None	None

**Table 5.5: Summary table of number of recommendations extracted from high-quality CPGs**

RECOMMENDATION TOPIC	TOTAL	Total %	CPG 1	CPG 2	CPG 3	CPG 4	CPG 5	CPG 8
<b>General assessment</b>	<b>11</b>	7%		5		4	2	
<b>Approach</b>	<b>6</b>	4%		1		4	1	
<b>Non-pharmacological options</b>	<b>27</b>	17%						
Physical therapy				7			5	
Psychology				2		1	3	
Education					1	1	1	
Multi-disciplinary							1	
Complementary therapies				1			1	
Self-management				1			2	
<b>Pharmacological options</b>	<b>112</b>	72%						
Pharmacology (non-opioids)	<b>26</b>	17%		10		1	15	
Pharmacology (opioids)	<b>86</b>	55%	22	4	25	1	9	25
<b>Total</b>	<b>156</b>	<b>100</b>	<b>22</b>	<b>31</b>	<b>16</b>	<b>12</b>	<b>40</b>	<b>25</b>

## 5.4 SUMMARY OF FINDINGS

This systematic review focused on identifying and appraising profession-specific or inter-/multi-disciplinary CPGs for the management of CMSP in the PHC context. Twelve up-to-date CPGs were included in the review; of which half contained multi-disciplinary recommendations. The publication dates of the CPGs ranged from 2002 – 2014. Eleven of the 12 guidelines originated from developed countries and one originated from SA.

The included CPGs varied in their scope, coverage, format and quality. One guideline focussed specifically on CMSP. Recommendations for the management of CMSP were mostly imbedded in the CPGs for the management of chronic non-malignant pain. Six out of the 12 CPGs were rated as high-quality using the AGREE II (2013) criteria. The lowest scores were obtained for the AGREE II domains of rigour of development, stakeholder involvement and applicability. The highest AGREE II scores were obtained for the domains of scope, focus and clarity of presentation. An important finding was the inconsistent use of frameworks to aggregate the level of evidence, quality of the body of evidence and the strength of the recommendation in the CPGs. The preliminary content analysis of the high-quality CPGs indicated that the recommendations for CMSP in primary care focussed on opioid prescription; there is little focus on non-pharmacological management options. In Chapter 6, the content analysis of the recommendations was further explored.

## CHAPTER 6

# WORD-SMITHING: CONTEXTUALISING RECOMMENDATIONS

### 6.1 AIM

The aim of this chapter is to describe the process of synthesising the recommendations extracted from the high-quality CPGs identified in Chapter 5.

#### 6.1.1 Objectives

The objectives of this chapter were the following:

- Merge compound (multiple but similar) recommendations extracted from the different CPGs into one recommendation/phrase.
- Write the recommendations in such a way that they reflect the combined level/quality of evidence and strength of the recommendation as extracted from the source CPGs.
- Develop a core list of evidence-based recommendations that incorporates multimodal strategies for inter-/multi-disciplinary care.

### 6.2 METHODS

#### 6.2.1 Methodology

The methodology of this chapter is an in-depth content analysis of recommendations that were extracted as part of the systematic review (Chapter 5). Additionally, this chapter describes the principles and procedures of merging CPG recommendations as a step in the CPG contextualisation process.

#### 6.2.2 Data extraction and analysis

The data consisted of the 156 recommendations that were extracted as part of the systematic review presented in Chapter 5. The PI extracted the following information in an Excel spreadsheet: The health question (topic), the exact wording of each recommendation, the level/quality of evidence assigned, the strength of the recommendation, and the references accompanying each recommendation. Similar recommendations were grouped in preparation for further

contextualisation. Each recommendation was evaluated according to the criteria developed for contextualising CPGs by the Philippine Academy of Rehabilitation Medicine (PARM) group (Gonzalez-Suarez et al., 2012; PARM, 2012) as outlined in Table 6.1. Due to the different frameworks used to evaluate the level of evidence (Table 5.4); a conversion table for the level of evidence between studies was developed to enable consistency (Table 6.1(b) and Appendix 18).

### **6.2.3 Merging of recommendations**





The wording and evidence level of each compound recommendation was merged using the adapted PARM writing guide (Table 6.2 and Appendix 19), to form a merged recommendation statement. The guide was adapted to include more evidence criteria and to provide either a strong or a weak recommendation. The approach of providing either a strong or weak recommendation provides greater clarity and is congruent with the approach of GRADE (Grading of Recommendations, Assessment, Development and Evaluation) (Woolf et al., 2012), NHMRC (Australian National Health and Medical Research Council) (Hillier, Grimmer-Somers, Merlin, Middleton, Salisbury, Tooher & Weston, 2011) and the United Kingdom's National Institute for Health and Clinical Excellence (NICE, 2016). The writing guide was used to categorise the level of evidence using specific criteria, in order to guide the phrasing of the recommendations. The faces in the writing guide were adopted from the PARM group and were thought to be an easy way to recognize the level of evidence underpinning a recommendation (Table 6.2 and Appendix 29). Final recommendations statements were created by applying these principles consistently to the recommendations. Due to the total number of recommendations that had to be merged, only examples are illustrated in Table 6.3 (and Appendix 20). The examples illustrate how similar recommendations were analysed and merged using the writing guide. If there was only one recommendation about a health topic, that recommendation was adopted and re-phrased using the writing guide. Once the full CPG document is produced, all original recommendation statement will appear verbatim as stated in the original CPG, and will be appropriately referenced.



**Table 6.1: Criteria for evaluating recommendation statements (PARM, 2012a; Gonzalez-Suarez, 2012)**

Criteria	Explanation of criteria
a) <b>Consistency of recommendations content</b>	Consistency of the recommendations relating to a health/clinical question within the different CPGs was compared for their level of <b>similarity/comparability</b> . This construct was labelled ' <i>uniformity of thought</i> '.
b) <b>Consistency within the levels of evidence</b>	<p>The consistency of the levels of evidence underpinning each recommendation was compared. The <i>level of evidence</i> was rated as <b>consistent or inconsistent</b> based on the homogeneity of the levels of evidence that CPG developers assigned to that recommendation.</p> <p>The quality level of evidence was graded high, moderate, or low.</p> <ul style="list-style-type: none"> <li>• High-quality evidence could be variously described as levels I or II; A or B in the guidelines.</li> <li>• If the evidence was graded as either level II or III/B or C, it was classified as moderate-quality evidence.</li> <li>• Low-quality evidence was described as level III or IV/C or D.</li> <li>• Recommendations based on expert opinion or the consensus of the guideline development group was identified as Good Practice Points (GPPs), and a level of evidence was not assigned.</li> </ul>
c) <b>Volume of literature</b>	<p>The <i>volume of literature</i> was assessed and graded according to the following principles:</p> <ul style="list-style-type: none"> <li>• low volume (3 references or less)</li> <li>• moderate volume (4-7 references)</li> <li>• high volume (8+ references)</li> </ul>
d) <b>Currency of literature</b>	<p>To determine the <i>currency of literature</i> for each recommendation, the age of the references was assessed. A six-year cut-off was used to determine currency, to allow for the lag in production to publication of CPGs:</p> <ul style="list-style-type: none"> <li>• Current: If 50% of the papers cited were published later than 2009</li> <li>• Non-current: If 50% of the papers cited were published prior to 2009</li> </ul>
e) <b>Strength of recommendation</b>	<p>The <i>strength of the recommendation</i> is influenced by contextual factors. For this part of the process, only the strength of the evidence and the balance between desirable and undesirable effects was considered. The <i>strength of the recommendation</i> was thus not used during the merging, due to the limited reporting of the strength of the recommendations in CPGs.</p>

**Table 6.2 Writing guide for merging the level of evidence**

Phrase for strength of evidence	Words for writing the endorsements	Symbol
<b>There is strong evidence.</b>	We strongly recommend.	
<b>There is evidence.</b>	We recommend.	
<b>There is limited/conflicting evidence.</b> <b>OR</b> <b>There is expert consensus that it is good practice.</b>	*We suggest that clinicians consider.	
<b>There is no evidence.</b>	We do not recommend.	

(Adapted from Gonzalez-Suarez et al., 2012)

*\*In the **absence** of a strong evidence base, but where plausible hypotheses exist for a particular recommendation (such as theoretical explanations, physiological rationale, expert consensus or other forms of such data), the clinician should use his or her own discretion by applying clinical reasoning to make a decision.*

#### 6.2.4 Quality assurance and data verification

The PI extracted the recommendations from the relevant CPGs. The analysis and merging of wording and evidence levels of recommendations was led by the PI, and it was verified by a member of the PARM contextualization innovation, a research assistant and the two supervisors. The tables of recommendations (as illustrated in Table 6.3 and Appendix 20), together with the analysis and merged statement was presented to the PARM member and the research assistant and discussed until consensus was reached. The two supervisors verified the accuracy of the statements.

**Table 6.3: Example of recommendation on approach: shared decision-making and goal-setting**

Recommendation	Source guideline	Quality level of evidence	Strength of recommendation	References (15)
Shared decision-making for treatment of chronic pain needs an understanding of the patient's ethnic and cultural background, age, gender and spirituality in order to work with the patient's chronic pain symptomatology.	ICSI, p23	High quality Moderate quality Low quality	-	4
Collaborate with the person to identify their goals for pain management and suitable strategies to ensure a comprehensive approach to the plan of care.	RNAO, p8	High quality Moderate quality Low quality	-	10
Clinicians <i>should</i> define the goals of therapy before prescribing medications, and tailor medications to meet the individual goals of each patient.	ICSI, p35	Low quality	-	1
<p><b>Criteria for evaluation:</b> there is uniformity of thought; with inconsistent levels of evidence and a high volume of non-current references.</p> <p><b>Merged level of evidence:</b> There is evidence.</p> <p><b>Merged endorsement statement:</b> We recommend collaborative decision-making which includes identifying patient goals; developing a comprehensive and patient-specific pain management strategy that considers the age, gender, ethnic and cultural background; and spirituality of the patient.</p>				

### 6.3 RESULTS

The original 156 individual recommendation statements were reduced to 43 individual statements, by merging statements and eliminating statements concerning opioids that were not relevant to the SA PHC policies (see section 2.3.4). Examples of merging recommendations are shown in Table

6.3 and Appendix 20. These examples illustrate the varying use of the strength of recommendation; the use of appropriate and non-appropriate phrasing to communicate the strength of the evidence.

A summary of the merged recommendations and their level of evidence are provided in Table 6.4. One statement had a strong recommendation, based on a strong body of evidence; and one statement could not be endorsed base on insufficient evidence for efficacy. Several other interventions were discussed in CPGs, for which no recommendations were made, perhaps due to insufficient evidence for or against their use (Woolf et al., 2012). The interventions for which no recommendations were the following: acceptance and commitment therapy; aromatherapy; dietary therapies; herbal medicine; homeopathy; hypnotherapy; Reiki; healing touch/therapeutic touch; mindfulness meditation; diaphragmatic breathing; imagery; autogenic training; progressive muscle relaxation training; music therapy; pain neurophysiology education; reflexology and traction.

**Table 6.4: Summary of merged recommendations and their level of evidence**

<b>Topic</b>	<b>Sub-topic</b>	<b>Recommendations merged into 1</b>	<b>Merged level of evidence</b>	<b>Endorsement</b>
<b>Approach</b>	Patient-centredness	3	There is evidence	We recommend
	Shared decision-making and goal-setting	3	There is evidence	We recommend
	Interprofessional collaboration	3	There is evidence	We recommend
<b>Assessment</b>	Holistic assessment	5	There is evidence	We recommend
	Assessment tools/instruments	2	There is evidence	We recommend
	Reassessment	2	There is some evidence	We recommend
<b>Classification of pain</b>	Classification of pain	2	There is some evidence	We recommend
<b>Special investigations</b>	Special investigations	2	There is evidence	We recommend
<b>Advise and educate</b>	Address concerns	1	There is evidence	We recommend
	Advice to stay active	1	There is some evidence	We recommend
	Brief education	1	There is evidence	We recommend
<b>Pharmacological management</b>	Education about analgesia	2	There is some evidence	We recommend
	Analgesic review	1	There is limited evidence/ There is expert consensus	We suggest that the clinician considers
	Paracetamol	3	There is some evidence	We recommend
	Oral NSAIDs	3	There is evidence	We recommend
	Topical NSAIDs	2	There is evidence	We recommend
	NSAIDs risks	3	There is evidence	We recommend
	Muscle relaxants	1	There is insufficient evidence	We do not endorse
	Topical rubefaciants	1	There is some evidence	We recommend
	Antidepressant therapy	2	There is some evidence	We recommend
	Antidepressant therapy review	1	There is limited evidence/ There is expert consensus	We suggest that the clinician considers
No Tricyclic antidepressants for CLBP	1	There is evidence	We recommend	

Topic	Sub-topic	Recommendations merged into 1	Merged level of evidence	Endorsement
	Tricyclic antidepressants for Fibromyalgia	1	There is some evidence	We recommend
	Anti-epilepsy/Anti-convulsants	2	There is some evidence	We recommend
	Selective serotonin re-uptake inhibitors	1	There is some evidence	We recommend
	Serotonin norepinephrine re-uptake inhibitors	1	There is strong evidence	We strongly recommend
	Informed consent for opioids	3	There is evidence	We recommend
	Opioid therapy	3	There is evidence	We recommend
<b>Physical therapy</b>	Manual therapy	3	There is evidence	We recommend
	Manual therapy and exercise	1	There is some evidence	We recommend
	Exercise	2	There is evidence	We recommend
	Delivery of exercise	2	There is evidence	We recommend
<b>Electrotherapy</b>	TENS	2	There is some evidence	We recommend
	Low-level laser therapy	1	There is some evidence	We recommend
<b>Psychological therapies</b>	Identification of comorbid psychological disorders	2	There is some evidence	We recommend
	Refer to psychologist	1	There is limited evidence/ There is expert consensus	We suggest that the clinician considers
	Operant behavioural therapies	1	There is some evidence	We recommend
	Cognitive behavioural therapies	3	There is evidence	We recommend
	Respondent behavioural therapies	1	There is evidence	We recommend
<b>Complementary medicine</b>	Acupuncture	2	There is evidence	We recommend
<b>Referral</b>	Pain management specialist	2	There is some evidence	We recommend
	Multi-disciplinary programmes	1	There is evidence	We recommend
<b>Self-management</b>	Self-management	3	There is evidence	We recommend

## 6.4 SUMMARY OF FINDINGS

Chapter 6 provided a description of the in-depth content analysis of the recommendations extracted from high quality CPGs identified through a systematic review (Chapter 5). One of the main findings was that there was congruence (consistency) in the guideline recommendations about similar health topics. However, although the recommendations content were congruent, the quality level of evidence underpinning each recommendation varied considerably. Only three of the six CPGs that underwent content analysis provided a rating for the strength of the recommendation. Furthermore, in certain instances, guideline developers chose not to make specific recommendations about the health topic investigated.

In this chapter the process of synthesising recommendations from different CPGs, through a stepwise process of merging the wording and level/quality of the underpinning evidence is described. The process of synthesizing led to the assembly of a core set of 43 clinical recommendations (see Appendix 29), which formed the basis of a multimodal approach for the contextualized CPG. The content of the core set included recommendations about the approach to care, assessment, advice and education, referral, pharmacological management, physical therapy, electrotherapy, psychological therapy, complimentary therapy and self-management.

## PART 2: EVIDENCE SOURCING AND SYNTHESIS

### SUMMARY

Part 2 of the dissertation focused on sourcing evidence-based practice recommendations for the management of chronic musculoskeletal pain in public health care, by systematically reviewing current existing clinical practice guidelines on the topic. Specific elements for improvement in the development and reporting of future CPGs for CMSP are highlighted in Chapter 5. These elements may play a role in the uptake of CPGs into practice and were the enhanced reporting of methodological aspects, the inclusion of patient preferences and values and the consideration of contextual factors. To date, CPGs for CMSP have focused on opioid prescription with a paucity of recommendations on non-pharmacological management. Given the limited number of CPGs with an inter-/multi-disciplinary approach and the lack of focus on multimodal recommendations, there is a need for more holistic CPGs about the management of CMSP. The latter is important as CPGs direct clinical decision-making about care, and may influence healthcare policy about CMSP. The inclusion of non-pharmacological strategies in CPGs may facilitate inter-/multi-disciplinary management to address the multiple dimensions of CMSP and optimise care for CMSP (WHO, 2007; Scascighini et al., 2008; Stein et al., 2010).

The findings of this review indicate that, due to the existence of high-quality CPGs on the topic of CMSP in PHC, existing CPGs can be adapted, adopted and contextualised to local contexts, instead of the *de novo* development of CPGs, particularly in resource-constrained environments. In this way, resources may be used to further the uptake of CPG recommendations with a rigorous implementation plan and sustainability strategy, instead of resources being spent on *de novo* CPG development (Gonzalez-Suarez et al., 2012). Furthermore, the majority of the included CPGs originated from Western countries with well-developed healthcare systems (Table 5.1). As illustrated in Chapter 3 (section 3.2.2), the intended setting for the CPG is a resource-constrained environment. CPGs developed for well-resourced healthcare settings needs to be contextualised for use in resource-constrained settings with different societal, political, environmental and economic contexts (Gonzalez-Suarez et al., 2012; Schünemann et al., 2006). Therefore, the process of CPG contextualisation was chosen and commenced.

In Chapter 6 a step-by-step formula for synthesising practice recommendations to their new form as part of the contextualisation process, was provided. Several aspects of guideline recommendation writing were highlighted in Chapter 6, for example, the importance of phrasing recommendations to



communicate a strong or weak recommendation. Wording of the recommendations was deemed important as it influences behaviour change (Michie & Johnston, 2004). Additionally, the importance of using a writing guide to ensure consistency in writing recommendations was underscored. The use of strength of the recommendation in future CPG was advocated. The study identified several interventions for which no recommendations were made, indicating a need for future primary and secondary research to address these topics in the management of CMSP.

The next step in the guideline contextualisation process was to authenticate the core set of multimodal recommendations derived from the synthesising process for the intended setting of community health centres in a SA context.

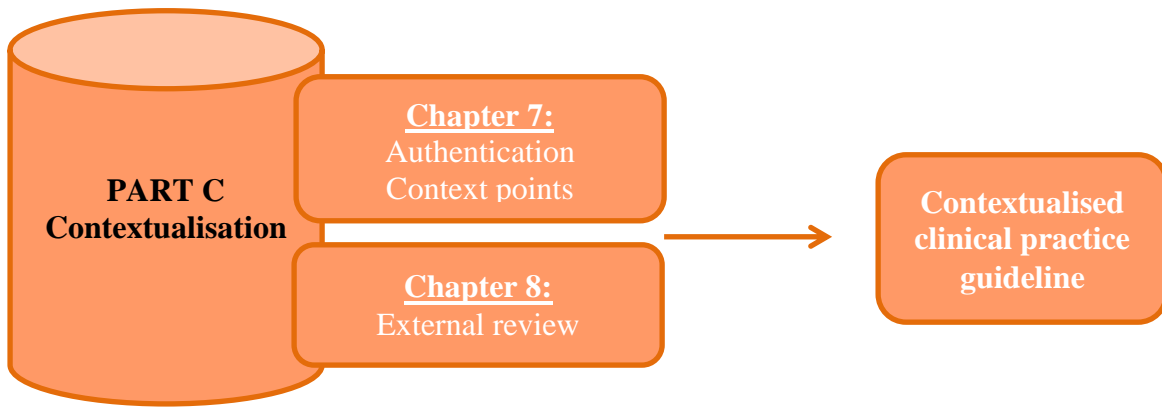
## **PART 3: ULTIMATE CONTEXTUALISATION**

### **INTRODUCTION**

In Part 3, of the research project, a multi-disciplinary group of healthcare professionals evaluated the merged evidence-based recommendations for their applicability in the SA context. The recommendations proposed for inclusion in the contextualised CPG were twice tested for validity in the intended setting, firstly by a group of experts using a consensus study (Chapter 7); and secondly, via a survey completed by external reviewers (Chapter 8) (see Figure Part3a).

During the final process of contextualisation, the information gained in Parts 1 and 2 of the dissertation were united to customise the CPG for the intended context. A modified Delphi approach was used to establish consensus about the inclusion of proposed recommendations. The consensus view of an expert panel was deemed important in enhancing decision-making, developing review criteria and synthesising professional norms (Campbell & Cantrill, 2001). It is postulated that the views of a group have greater validity and reliability than the judgement of an individual (Raine, Sanderson & Black, 2005). Additionally, the multi-disciplinary panel participated in a consensus meeting and generated key context and practice points for the implementation of the recommendations. Context points were defined as contextual (personal and environmental) factors that may have an impact on implementation, and practice points were defined as general practical matters for implementation of the recommendation. Context points form a core part of the contextualisation process.

The validated CPG recommendations with their context points were organised in a realistic patient-care pathway by the PI, using the information obtained in Part 1 of the dissertation. A short form of the guideline was compiled containing the background, process information, pathway and recommendations. This draft version was approved by the panel and reviewed by an external panel of reviewers (Chapter 8). The aim of the external review was to evaluate the applicability and feasibility of the proposed CPG.



**Figure Part3a: Outline of the final contextualisation process**

## CHAPTER 7

# VALIDATION AND CONTEXTUALISATION OF EVIDENCE-BASED RECOMMENDATIONS: A CONSENSUS STUDY

### 7.1 AIM

The aim of this study was for a multi-disciplinary group of experts to evaluate, endorse and contextualise the clinical guideline recommendations that were developed for the local context.

#### 7.1.1 Objectives

**The objectives of this study were the following:**

- Evaluate and validate the evidence-based recommendations that were generated, for their applicability to the local context.
- Identify context and practice points that represent standards for the implementation of the evidence-based recommendations.

### 7.2 METHODS

#### 7.2.1 Study design

There is an increasing trend to use formal consensus methods in CPG development (Halcomb, Davidson & Hardaker, 2008). In this study consensus methodology was used to enable a multi-disciplinary group of experts to make decisions about the evidence-based recommendations that were generated from the systematic review. The Delphi technique was used and combined with a consensus meeting. Von der Gracht (2012) and Hsu and Sandford (2007) describe the primary aim of the Delphi technique as the efficient structuring of a group communication process, to achieve convergence of opinion on a specific, real-life situation. The consensus meeting added benefit as it allowed discussion of best available information and concerns, as well as for consensus and validation between key stakeholders (Halcomb et al., 2008).

### **7.2.2 Participants**

Participants comprised of experts (panel members), who were defined as individuals who had practical experience and interest in CMSP. A diverse group of participants was invited to ensure a wide range of opinions and limit bias, as advocated by Hutchings and Raine (2006). In particular, potential end-users were invited to foster engagement and facilitate ownership of the CPG (Halcomb et al., 2008). Purposive sampling was used to define the consensus panel using the following key criteria:

- Different healthcare settings/sectors: a focus on PHC practitioners, but including government health subdivisions, academic institutions and private practitioners;
- A multi-disciplinary group of clinicians, namely medical doctors, clinical nurse practitioners; physiotherapists, occupational therapists, psychologists, managers and researchers;
- Skills, interest and experience in CMSP;
- Skills and experience in CPG development.

Panel members were identified through their contributions at the pain and public health conferences, and/or their involvement in the public healthcare sector in the Western Cape. Patients were not included in this part of the process as patients' views were incorporated during Part 1 of this study. Appendix 21 lists the professionals who participated in the consensus study.

### **7.2.3 Instrumentation and procedure**

The PI invited panel members via e-mail, explaining the purpose of the study, the process followed to construct recommendation statements, the process of consensus development, informed consent and conflict of interest (Appendices 22 and 23). The process involved three occasions of participation over three months. Firstly, the panel members were required to complete an online questionnaire as round 1 of the Delphi process (SUNsurvey, Checkbox, version 6). In the survey, the panel were presented with the 43 recommendation statements, accompanied by the evidence base for each recommendation. They were required to rate their agreement with each recommendation on a Likert scale for the applicability of the recommendation for the SA context. The scale had five points, with fixed statements that were represented by different ratings: strongly agree (1), partly agree (2), undecided (3), partly disagree (4) and strongly disagree (5). The participants could use the non-applicable (N/A) button if a statement was beyond their area of experience or expertise. The use of N/A was counted as a missing data point. The survey also enabled the participants to write comments, if desired.

One month after the survey opened and two weeks after it closed, a consensus meeting was held, where the results of the first round was presented and discussed, focusing on problematic statements. During the second session of the consensus meeting, the panel members worked in focused groups to generate and document context and practice points for each recommendation, using the format for contextualisation framed by Gonzalez-Suarez et al. (2012) (Appendix 24). The four focus groups were for general approach and assessment; pharmacological management, psychological management and physical therapy and other management. The PI chaired the consensus meeting, assisted by a research assistant. The meeting was audiotaped and the PI took notes during the discussion to create an audit trail. The panel were also provided with the framework of contextual factors that patients and practitioners reported in Part 1 of the dissertation (Appendix 25; Figure Part1b).

The meeting was followed up by a second-round electronic questionnaire one week after the panel meeting, where participants could rate their agreement with the reformulated statements that were discussed during the first session of the consensus meeting. Additionally, all pharmacological management recommendations were reviewed by a clinical pharmacologist. The PI organized the recommendations (Appendix 29) and drafted a report and a patient pathway which formed the short form of the CPG. The document was circulated to the panel to enable member checking and validation.

#### **7.2.4 Data management and analysis**

The PI extracted the data from the Delphi survey into an Excel spreadsheet. The method of aggregation for the two Delphi rounds was explicit (Halcombe et al., 2008). The median was used as a measure of central tendency to facilitate the presentation of collective judgements of respondents (Hsu & Sandford, 2007). The level of dispersion for the median was indicated by the IQR which consists of the middle 50% of the observations (Von der Gracht, 2012). Consensus could indicate the level of agreement or disagreement with a statement. An IQR of 1 or less was taken as consensus as this was found to be a suitable consensus indicator for 4- or 5-unit scales (Von der Gracht, 2012). All comments from the survey remained linked to its recommendation and the comments were analysed narratively (Appendix 26).

The context and practice points that were generated and documented by the consensus meeting participants were summarised and categorised by the PI. Context or practice points that had direct influence on the implementation of a single recommendation were added to the recommendation statement as specific context points. The full list of context points will be included as tables in the final CPG document (see Appendix 27 & 28 for examples).

## 7.3 RESULTS

Twenty-six professionals were invited to participate. Seventeen practitioners participated in round 1 of the online survey, and 14 in round 2. Thirteen participated in the consensus meeting. Table 7.1 provides an overview of the participants for each stage of the process. Table 7.2 presents the statements with consensus, and Table 7.3 indicates all statements with no consensus or undecided ratings. In the consensus meeting, participants nominated pain neuroscience education to be included in the CPG. Table 7.4 contains a summary of all context points as standards of care for implementation. Examples of the context points per health question are provided in Appendices 27 and 28.

**Table 7.1: Characteristics of the panel**

	Delphi Round 1		Consensus meeting		Delphi Round 2	
	17	%	13	%	14	%
<b>Total participants</b>	<b>17</b>		<b>13</b>		<b>14</b>	
<b>Gender</b>						
Female	13	76	12	92	12	86
Male	4	24	1	8	2	14
<b>Occupation</b>						
Clinical nurse practitioner	2	12	1	7	2	14
Medical doctor	4	24	1	7	2	14
Occupational therapist	2	12	1	7	2	14
Physiotherapist	5	29	9	47	5	36
Psychologist	3	18	0	0	2	14
Other	1 <sup>b</sup>	6	1 <sup>a</sup>	7	1 <sup>b</sup>	7

(<sup>a</sup>Social anthropologist) (<sup>b</sup>Medical Scientific Liaison: Pain)

**Table 7.2: Validated recommendation statements and their ratings received**

ROUND 1			Panel meeting	ROUND 2	
Statement	Median	IQR		Median	IQR
1. Patient centredness	1	0		-	-
2. Shared decision-making	1	0		-	-
3. Inter-professional collaboration	1	0		-	-
4. Holistic assessment	1	0		-	-
5. Assessment tools	1	0		-	-
6. Classification of pain	2	1		-	-
7. Special investigations	1	1		-	-
8. Addressing concerns	1	1		-	-
9. Brief education	1	1		-	-
10. Advice to stay active	1	0		-	-
11. Education about analgesia	1	1		-	-
12. Analgesic review	1	1		-	-
13. Paracetamol	1.5	1		-	-
14. NSAIDs	2	1		-	-
15. NSAIDs risks	1	0		-	-
16. Muscle relaxants	1	1		-	-
17. Anti-convulsants	1.5	1		-	-
18. Opioid (Tramadol) consent	1	1		-	-
19. Opioid (Tramadol) therapy	2	1		-	-
20. Manual therapy	1	0		-	-
21. Manual therapy (neck)	1	0		-	-
22. Exercise	1	0		-	-
23. Delivery of exercise	1	0		-	-
24. TENS (Trans-electrical nerve stimulation)	2	0.5		-	-
25. Acupuncture	2	0.25		-	-
26. Psychological comorbidities	1	0		-	-
27. Referral to psychologist	1	1		-	-
28. Operant behavioral therapy	1	1		-	-
29. Cognitive behavioral therapy	1	1		-	-
30. Respondent behavioral therapy	2	1		-	-
31. Antidepressant therapy	1	1		-	-
32. Antidepressant therapy review	1	0		-	-
33. Re-assessment	1	1		-	-
34. Referral to multi-disciplinary pain management programme	1	1		-	-
35. Referral to pain management specialist	1	1		-	-
36. Self-management	1	0		-	-
37. Pain neuroscience education	-	-		1	0

Key to rating: strongly agree (1), partly agree (2), undecided (3), partly disagree (4), strongly disagree (5)

$IQR \leq 1 = consensus$



**Table 7.3: Recommendation statements with no consensus or undecided ratings after Delphi round 1; and results of round 2**

ROUND 1			Panel meeting	ROUND 2		
Statement	Median	IQR		Modified statement and context points	Median	IQR
We recommend topical NSAIDs in the treatment of patients with chronic pain from musculoskeletal conditions.	3	1		We recommend topical NSAIDs for the treatment of inflammatory pain in patients with chronic musculoskeletal pain. <i>* Avoid the simultaneous use of oral and topical NSAIDs due to cumulative effects. Consider side-effects (skin irritation).</i>	2	1.25
We recommend topical rubefacients for the treatment of pain in patients with musculoskeletal conditions if other pharmacological therapies have been ineffective.	3	1		We recommend topical rubefacients for the treatment of pain in patients with musculoskeletal conditions. <i>* The research base focused on Capsaicin. These expensive creams are not available in SA.</i>	2	2
We recommend that tricyclic antidepressants are not beneficial for the management of chronic low back pain.	4	1.5		We suggest that the clinician considers tricyclic antidepressants for the management of chronic low back pain with concomitant depression. <i>* A thorough evaluation of health status is warranted. The dosage is dependent on numerous factors. Refer to the EML (2014).</i>	2	0.25
We recommend Amitriptyline for the treatment of patients with fibromyalgia.	2	1.25		<i>* Amitriptyline is recommended as an adjuvant for the management of chronic non-cancer pain in the EML (2014).</i>	2	1
We recommend Fluoxetine for the treatment of pain and depression in patients with fibromyalgia. (SSRI = Selective serotonin re-uptake inhibitor)	2	1.5		<i>* Fluoxetine is included in the EML (2014) for the treatment of major depression.</i>	2	0.5

ROUND 1			Panel meeting	ROUND 2		
Statement	Median	IQR		Modified statement and context points	Median	IQR
We strongly recommend Duloxetine for the treatment of patients with fibromyalgia or osteoarthritis. (SNRI = Serotonin norepinephrine re-uptake inhibitors)	2.5	1		We strongly recommend Duloxetine (where available) for the treatment of patients with fibromyalgia or osteoarthritis. <i>* Research studies on SNRIs for pain focused on Duloxetine. Cost and availability in SA limit its use. Duloxetine/Cymbalta is not included in the EML (2014). Cost and availability in SA limit its use.</i>	2	0.75
We recommend low level laser therapy as a treatment option for patients with chronic low back pain.	3	1		<i>* Consider the cost of apparatus, safety with application and training required; laser is not readily available in PHC.</i>	3	0.25

Key to rating: strongly agree (1), partly agree (2), undecided (3), partly disagree (4) and strongly disagree (5)

$IQR \leq 1 = consensus$

**Table 7.4: Key practice and context points for standards for implementation of recommendations in primary health care in a South African setting**

<b>Organisational</b>	<ul style="list-style-type: none"> <li>• An interdisciplinary team, which includes access to rehabilitation and mental health practitioners</li> <li>• A functioning referral system</li> <li>• An electronic communication system is essential for referral and feedback</li> <li>• Adequate consultation time per patient</li> <li>• Access to analgesia</li> <li>• A risk management system in place for adverse effects</li> <li>• Measures for continuity of care</li> </ul>
<b>Practice method</b>	<ul style="list-style-type: none"> <li>• The initial session is most important and requires good communication skills, patient-centredness, cultural sensitivity, and motivational interviewing</li> <li>• Thorough assessment to identify comorbidities, risks, precautions for interventions</li> <li>• Use short, validated screening tools and outcome measures</li> <li>• Classify pain (nociceptive, neuropathic, central sensitisation)</li> <li>• A combination of pharmacological and non-pharmacological management</li> <li>• Patient education and empowerment</li> <li>• The use of educational material such as leaflets, pamphlets, posters, multimedia</li> <li>• The delivery of chronic pain management groups in PHC settings to facilitate efficient interdisciplinary management</li> <li>• Work-based interventions</li> <li>• Supported self-management as a core part of management</li> <li>• Community-based support programme</li> <li>• An outcome-based approach</li> </ul>
<b>Staff (who)</b>	<ul style="list-style-type: none"> <li>• Prescribing clinicians (medical doctor or clinical nurse practitioner)</li> <li>• Chronic care nurse</li> <li>• Dispensing clinicians (pharmacist)</li> <li>• Therapy clinicians (physiotherapists, occupational therapist)</li> <li>• Mental health practitioners (psychologist, psychiatric nurse, psychiatrist)</li> <li>• Social worker</li> <li>• Support staff and community workers/volunteers may play an important role in adherence to prescribed treatment</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>• Availability of medicines as on EML</li> <li>• Rehabilitation services</li> <li>• Access to equipment (where indicated)</li> <li>• Room space to conduct group and individual sessions</li> <li>• Patient educational material (information leaflet, important for high risk medicines)</li> <li>• Screening tools available in different languages; and culturally relevant</li> </ul>

<b>Training</b>	<ul style="list-style-type: none"> <li>• Diverse, and may include: <ul style="list-style-type: none"> <li>○ Communication skills; motivational interviewing</li> <li>○ Chronic pain management programme</li> <li>○ Health promotion</li> <li>○ Occupational health</li> <li>○ Pain neuroscience education</li> <li>○ Cognitive behavioural therapy</li> <li>○ Risk screening</li> <li>○ Use of CPG</li> </ul> </li> </ul>
<b>Re-assessment</b>	<ul style="list-style-type: none"> <li>• Before and after specific interventions (outcome-based approach); 3/12 and later 6/12 earlier as required</li> <li>• Side-effects</li> <li>• Adherence to prescribed medication and treatment</li> <li>• Use of home remedies/over the counter medicines</li> <li>• Changes in social environment/physical symptoms</li> </ul>
<b>Referral</b>	<ul style="list-style-type: none"> <li>• Pharmacological and non-pharma management are needed</li> <li>• <b>If required/indicated</b> <ul style="list-style-type: none"> <li>○ Refer early for rehabilitation therapy</li> <li>○ Refer to Department of Social Services if social determinants affect health</li> <li>○ Refer for workplace-based interventions</li> <li>○ Refer to a community support structure</li> <li>○ Provide regular feedback to colleagues</li> <li>○ Refer to pain specialist</li> <li>○ Refer for special investigations</li> </ul> </li> </ul>
<b>Patient/family</b>	<ul style="list-style-type: none"> <li>• Patient should be empowered to take part in decision-making</li> <li>• Education/explanation needs to be delivered using appropriate language and providing appropriate information to aid understanding and improve adherence</li> <li>• Educate patient on the role of therapy; expected effects; adverse effects</li> <li>• Patient preference may play a role</li> <li>• Family education and workplace education to enhance support</li> <li>• Refer to or provide trustworthy information sources</li> <li>• Education for self-management</li> </ul>
<b>Policy</b>	<ul style="list-style-type: none"> <li>• An integrated approach as part of PACK Adult</li> <li>• Western Cape on Wellness (WoW) project</li> <li>• Healthcare 2030, integrated care</li> <li>• Standard treatment guidelines and EML</li> <li>• Linkages with Social Services</li> <li>• Mental health policy</li> </ul>

## 7.4 SUMMARY OF FINDINGS

Chapter 7 describes how a modified Delphi approach was used as part of the contextualisation process, to establish consensus about the applicability of the merged evidence-based recommendation statements for the SA PHC context. The electronic Delphi questionnaire allowed the participants to provide their opinion about the applicability of the proposed evidence-based recommendations for the SA context privately. The agreement of the experts was interpreted as validation for the applicability of a recommendation in the SA context and motivation for its inclusion in the CPG.

The multi-professional panel of experts, although from diverse backgrounds, professions and work sector, reached consensus on 41 statements after two Delphi rounds interspaced by a consensus meeting. At the end of round one of the Delphi, there were seven problematical recommendations, of which six was about pharmacological management and one about electrotherapy. After discussion at the panel meeting, modification of the statements and electronic re-voting, the panel still reached no consensus for topical NSAIDs and topical rubefacients; and the panel was undecided about the applicability of Laser therapy. The panel members offered context factors as reasons and were concerned about the safety, efficacy, cost and availability of these interventions in the SA context. Pragmatic factors were one of the main reasons why the panel were tentative about pharmacological management recommendations, such as Duloxetine and Fluoxetine. Duloxetine, for example, is not listed in the EML (National Department of Health 2014), and is not available for prescription in the public sector. The panel nominated an additional recommendation for inclusion, namely the use of pain neuroscience education. The end-result was thus a set of 42 recommendations to be included in the CPG.

During the consensus meeting, the panel discussed and agreed upon on context and practice points that would enable the implementation of the CPG recommendations in the intended context. The panel members generated a range of context points, using their own experience and contextual information generated in Part 1 of the research project. Important context and practice points were linked to the applicable recommendation as indicated in Appendix 29. Context points are summarized in Table 7.4 and were: the effective organization of care to enable integrative care and appropriate referral; the need for an electronic communication system to enhance communication between team members; focus on an outcome based approach; patient and family education; practitioners training; group therapy; resources; community integration and policy to practice integration. Panel members made their choices against the background of their scientific knowledge, their values and beliefs, their clinical expertise, their experience with patients and their

contextual knowledge. There are indications the quality of care for CMSP is not only dependent on the implementation of evidence-based interventions, but is also influenced by practice patterns, and healthcare system organization and governance. The findings indicate that the expert panel weighed up the available evidence against pragmatic considerations which included e.g. economic conditions; benefits vs harm ratio and staff training; policy and patient preference.

## CHAPTER 8

# ASSESSMENT OF THE APPLICABILITY AND ACCEPTABILITY OF THE CONTEXTUALISED CLINICAL GUIDELINE

### 8.1 AIM

The aim of the study was to evaluate whether the contextualised clinical practice guideline for primary health care of adults with chronic musculoskeletal pain is applicable and acceptable to the intended setting.

#### 8.1.1 Objectives

**The objectives of the study were the following:**

- Assess whether the recommendations within the contextualised CPG are applicable to Western Cape public PHC sector.
- Assess whether the recommendations within the contextualised CPG are acceptable to the Western Cape public PHC sector.

### 8.2 METHOD

#### 8.2.1 Research design

A descriptive study, using a small-scale survey, was conducted to obtain the views of different stakeholders about the CPG and its recommendations (Fink, 2003; ADAPTE II Collaboration, 2009; Gonzalez-Suarez et al., 2012). The feedback from the stakeholders was used to refine the CPG where indicated.

#### 8.2.2 Population and sample

In this external review, policy makers, decision makers, organisations and clinicians were targeted to appraise a short form of the CPG. This population was chosen as they would potentially have to endorse the CPG for further use in PHC, or would be end-users of the CPG during clinical practice (ADAPTE II Collaboration, 2009; Gonzalez-Suarez et al., 2012). Patients were not included in the external review, to limit creating expectations that cannot be met. Consultations with patients will

take place to inform the implementation plan and development of end-user documents when appropriate.

The sample strategy was multi-pronged to obtain diverse feedback. The first group of reviewers invited to participate consisted of:

- SA public health care sector divisions (Department of Health), whose involvement include governance of primary health care:
  - National Department of Health, SA (Directorate: Disease, Disability and Geriatrics)
  - Western Cape Department of Health (Sub Directorate: Chronic Disease, Geriatrics, Rehabilitation and Prevention of Blindness).
- An organisation involved in producing clinical guidance for public sector primary health care:
  - The Knowledge Translation Unit of the University of Cape Town
- The Chronic Pain Management Clinic at Groote Schuur Hospital (University of Cape Town), which is a multidisciplinary public sector pain clinic in the Western Cape.
- The Society of Pain in SA (PainSA), a SA professional body, whose mission is to improve pain management in all aspects in SA (PainSA, 2016).

The second group of reviewers was practitioners (doctors, nurses, physiotherapists, occupational therapists, psychologists) at a resource constrained semi-urban community health centre that did not participate in the study described in Chapter 4.

### **8.2.3 Instrumentation and procedures**

The summary of clinical recommendations and context/practice points (Addendum 29), together with the proposed patient pathway, formed the basis on which participants evaluated the CPG. The short version of the CPG was used to provide a concise version, and not to overburden the evaluators. A short questionnaire was developed to accompany the short form CPG (Appendix 31). The questionnaire focused on aspects of applicability and acceptability of the CPG for the intended setting, and was developed based on information from ADAPTE II Collaboration (2009) and Gonzalez-Suarez et al. (2012)

- The assessment of applicability covered cultural and organisational context, availability of health services and expertise, population characteristics, beliefs and value judgements.



- The assessment of acceptability covered strengths and weaknesses, suggestions for modification, impact on current routines, training required, barriers and facilitators, resource implication and practicality.

Participants were required to rate their agreement with each statement on a Likert scale. The scale had five points, with fixed statements that were represented by different ratings: strongly agree (1), partly agree (2), undecided (3), partly disagree (4) and strongly disagree (5). The content validity of the questionnaires was evaluated by the supervisors, a member of the consensus group (Chapter 7) and a clinician.

The PI contacted the government departments, units and professional bodies and invited them to participate. The CPG and informed consent letter (Appendix 30) was e-mailed to the institutional representatives, and they could provide anonymous feedback using an electronic survey (SUNsurvey, via checkbox, version 6), or complete the MS Word version of the questionnaire. Additionally, the PI attended the weekly clinical meeting at the selected healthcare centre. The PI explained the process and purpose of the study and the CPG was presented to the attendees. Each practitioner received a copy of the short form CPG and proposed pathway. Written informed consent was gained and the practitioners completed the questionnaire.

#### **8.2.4 Data management and analysis**

The data were recorded in a purpose-built data collection sheet in MS Excel. Ordinal data were summarised using the median and IQR, while interval data were summarised using the mean and SD (Kirkwood & Sterne, 2003). The open-ended questions were summarised narratively.

### **8.3 RESULTS**

Eighteen responses were received from the reviewers (six from the organisations and twelve from the community health centre). All representatives from group one accepted the invitation to participate, except the Society of Pain representative, who did not respond to the invitation, despite two follow up invitations. All clinicians who attended the clinical meeting (reviewer group two), participated in the survey. The response rate was therefore 95%. The completion of the survey was anonymous and therefore responses could not be linked to specific organisations. Tables 8.1 and 8.2 outline the feedback from the group.

**Table 8.1: Profile of external review participants**

Variable	Number (n=18)	%	Mean (SD)
<b>Profession</b>			
Anaesthesiologist / Pain management	1	6	
Clinical nurse practitioner	4	22	
Family physician	2	11	
Physiotherapist	2	11	
Medical doctor and guideline developer	1	6	
Medical doctor	8	44	
<b>Average years of practising profession</b>	-		8 (6)
<b>Work setting<sup>a</sup></b>			
Community clinic	3	17	
Community health centre	12	67	
Central/tertiary hospital	6	33	
District hospital	2	11	
Private practice	-	-	
Regional hospital	-	-	
University	3	17	
Organisation/professional body	-	-	
Other	1	6	
<b>Description of main professional roles<sup>a</sup></b>			
Continuing professional education	2	11	
Evaluation/assessment	14	78	
Diagnosis	12	67	
Follow up	9	50	
Mental health	5	28	
Patient education	11	61	
Pharmacological management	14	78	
Physical therapy	1	6	
Referral	8	44	
Rehabilitation	1	6	
Student education	2	11	
Other:			
• Research	1	6	
• Health policy	1	6	
• Consultant	4	22	

<sup>a</sup>More than one option possible

**Table 8.2: External review results**

Statement	Median	(IQR)	Verbatim comments
1. The recommendations in the guideline will address the needs and expectations of most patients in the primary health care setting.	2	1	
2. The patients will benefit from the recommendations in the guideline.	2	1	<i>I am surprised by the implied low level of evidence for the role of education in improving chronic pain. My impression is that the evidence warrants a stronger recommendation.</i>
3. The recommendations in this guideline allows for clinical decision-making for individualised management.	2	1	
4. The guideline recommendations will be culturally/socially acceptable to patients.	2	0	
5. There is a need for a guideline on chronic musculoskeletal pain.	1	0	
6. The recommendations in this guideline are suitable for the primary health care context.	2	1	<i>Access to medications may be a limitation</i>
7. It will be easy to apply the recommendations.	2	1	<i>Access to medications may be a limitation. Many recommendations (especially pharmacological options) are unavailable.</i>
8. Little re-organisation of services/systems will be required to implement this guideline.	2	1	<i>Need an evaluation of existing referral pathways and resourcing</i>
9. The recommendations will improve the use of resources.	2	0	
10. Primary care practitioners are adequately skilled to implement this guideline.	3	2	<i>Many primary care practitioners are naive to the proper management of chronic pain and may require additional training in addition to simply issuing of the</i>

Statement	Median	(IQR)	Verbatim comments
			<i>guideline.</i>
11. The patient journey (pathway of care) is relevant to primary health care.	1	1	
12. I agree with most of the recommendations in the guideline.	1	1	
13. I already implement some of these recommendations.	2	1	
14. I think that the recommendations will improve patient outcomes.	2	1	
15. The recommendations in this guideline are specific and unambiguous.	1.5	1	
16. The recommendations in this guideline are easy to understand.	2	1	
17. The patient pathway is a useful visual tool.	2	1	<i>Purpose and user of pathway is unclear.</i>

Scale: 1 = strongly agree    2 = agree    3 = undecided    4 = disagree    5 = strongly disagree

IQR = interquartile range

**Box 8.1: Summarised narrative feedback from participants**

- **Missing information**

Scope of practice implications and limitations (who does what)

The role of the physiotherapist in counselling

More guidance needed on undetected psychological distress and depression

Elaborate on psychological treatment and support

More information on pharmacological prescription needed (efficacy and drug interactions)

The role and management of co-morbidities

The level of evidence for patient education should be higher

A more comprehensive classification system for pain is required

- **Anticipated skills training required**

Counselling skills

Screening for psychologic distress

Classification of pain

Accurate detection of pain conditions

Expand training for the multidisciplinary team at primary health care

- **Unclear**

The symbols for the levels of evidence

The “do not offer” box in the pathway

The applicability of acupuncture in this context

- **Suggestions**

The words “regular” and “short term” are not specific enough

Correction of formatting and language used

We need a specific quick easy way to manage the patient

- **Resources**

The amount of patients far exceeds the amount of resources (e.g. psychologists, physiotherapists)

- **Other feedback**

Great work

Long overdue

Excellent guideline

Much needed in primary healthcare

Thank you for doing it

**8.4 SUMMARY OF FINDINGS**

The results from the small scale external review by potential end-users and stakeholders indicate that the CPG can be applicable to and acceptable in the intended context. However, several key topics, as indicated below, need be further developed to enhance the successful uptake of the proposed CPG. Training of primary care practitioners to use the CPG and to implement its recommendations is a key prerequisite for ensuring successful implementation and achieving important outcomes. Training in classification of pain, psycho-social evaluation and management

and information about pharmacological prescriptions was mentioned. Additionally, the use of the patient pathway needs to be clarified during training. The implementation of the CPG will require re-organisation of services; which includes role clarification of the professions involved. The inclusion of recommendations regarding acupuncture and certain medications should be re-evaluated due to their unavailability in PHC.

While the authentication of the CPG recommendations is a starting point; and the context factors highlight uniquely SA circumstances, the external review underscored the need to develop and test a thorough and multilevel implementation plan to ensure the successful uptake of the CPG for CMSP.

## **PART 3: ULTIMATE CONTEXTUALISATION**

### **SUMMARY**

A multidisciplinary group of experts validated a list of 43 evidence-based recommendations for the management of CMSP in the SA context. Two recommendations were not validated due to limited evidence for efficacy; unclear benefit vs harm relationship and context factors such as cost and availability of resources. The panel identified several context factors that positioned the recommendations within the context of application for SA PHC. Practical applications as minimum standards for implementing the CPG were provided. An important practice point is that the outcome of healthcare for a patient with confirmed CMSP should be an empowered patient, who is equipped with the skills for supported self-management. To accomplish this outcome, inter-/multi-disciplinary care with multimodal and patient-centered management is a requirement. The management options contained in the CPG may not be acceptable to all patients. Collaborative decision making with the patient is thus imperative; and tools to assist patients in making decisions about their care are needed. Cross cultural adaptations of internationally developed outcome measures and interventions are needed to be applicable to the diverse SA population (Table 7.4). The panel emphasized the importance of community involvement in the discharge plan to ensure adherence and continuity of care through a supported self-management program. These suggestions are supported by policy (Western Cape Government: Health, 2014), indicating the urgency of moving beyond policy to dissemination in practice.

The findings of the external review in chapter 8 confirm the findings of chapter 7, indicating that the recommendations in the CPG can be applicable to and acceptable in the intended context, but that a thorough implementation plan is required. Additionally, external reviewers highlighted the importance of training of practitioners to enable successful uptake of the CPG. The findings from the part 3 of the study indicate that changes in practice patterns, healthcare system organisation and governance will need to be considered for the successful implementation of the evidence-based CPG.

The end-product of part 3 was an evidence-based CPG, containing 44 recommendations, with context and practice points and a patient pathway for the management of CMSP in community health centres in the Western Cape of SA (Appendix 29 and Figure P3b).

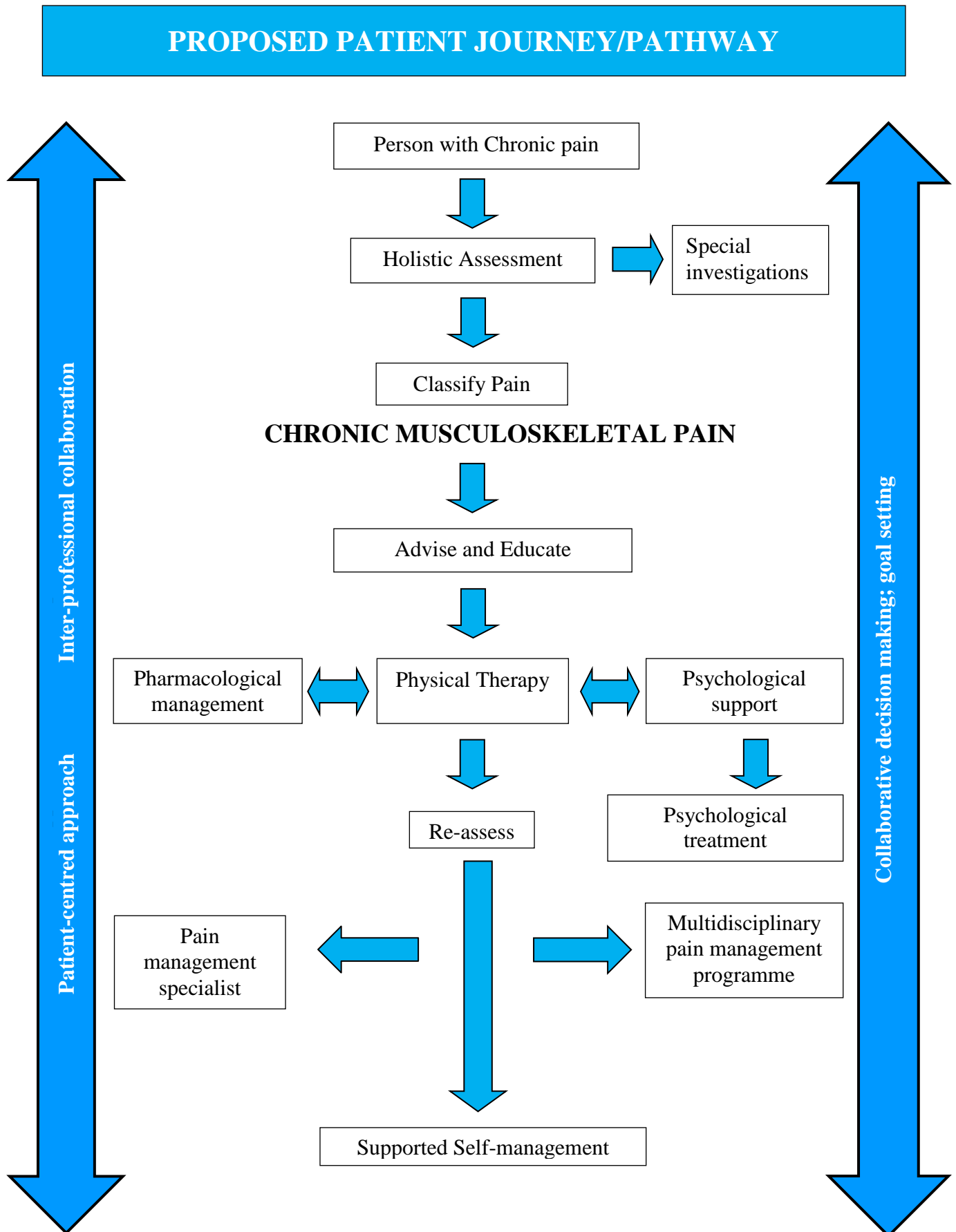


Figure Part3b: Proposed patient pathway



## CHAPTER 9

# DISCUSSION

### 9.1 INTRODUCTION TO THE CHAPTER

The overall aim of the study was to develop a contextualised, evidence-based, multimodal clinical practice guideline for the primary health care of adults with chronic musculoskeletal pain in the Western Cape province of South Africa. To achieve the overall aim of the study, five interlinked studies were performed which are presented in three parts in the dissertation:

- Part 1: Two qualitative studies were conducted to discover patient and practitioner perspectives about CMSP and its management in selected public sector community health centres in the Western Cape province of SA. The findings aided understanding of the authentic context within which CMSP is managed in this setting.
- Part 2: A systematic review was undertaken to source and synthesise evidence-based recommendations from high-quality CPGs for the PHC of CMSP. Evidence-based clinical recommendations were extracted from the different high-quality CPGs and these were synthesised to form a core set of multimodal recommendations to be included in the contextualisation process.
- Part 3: A consensus study and external review were conducted to validate the synthesised evidence-based recommendations for the SA PHC context. A multi-professional panel of experts validated the recommendations via consensus methodology, and developed context and practice points relevant to the framework of contextual factors that were identified in Part 1. The validated evidence-based recommendations were organised and aligned within a realistic patient journey, and was externally reviewed for its applicability and acceptability to the local context using a survey.

The purpose of this chapter is to provide an integrated discussion highlighting the most important findings and contributions of the research project. This chapter was therefore structured in three units, namely optimising CMSP care through a clinical guideline, contextual challenges and opportunities, and strengthening of healthcare systems for optimal CMSP care.

## 9.2 A CLINICAL PRACTICE GUIDELINE TO OPTIMISE CHRONIC MUSCULOSKELETAL PAIN CARE

The outcomes of this project showed that there is great potential to optimise and improve the management of CMSP at primary care level in the Western Cape province of SA. While the current care of CMSP is not ideal, both practitioners and patients reported on the use or at least the awareness of evidence-based strategies for the management of CMSP as reported in Part 1 of this dissertation. Due to numerous contextual factors, evidence-based strategies as recommended in high-quality CPGs are not efficiently applied in the SA context to optimise patient outcomes in the way that it should. The main contextual factors found to be hindering evidence-based care in PHC include a combination of features, namely individual beliefs, social factors, delivery mode of interventions, fragmented care delivery and health systems issues such as overload and a lack of continuity of care (Figure Part1b; Table 4.2). The fragmented and delayed patient care pathways reported in Chapters 3 and 4 (sections 3.4.2, 3; 4.3.2.2 & 4.3.2.3); reflect some of the contextual complexities. The existence of the many contextual complexities indicates the need for a multipronged and multisystem approach to optimise outcomes for patients with CMSP (Commission on Social Determinants of Health, 2008; IASP, 2009a; Hoy et al., 2014). Although system factors may be difficult to change, there is a tangible opportunity to improve the care of people with CMSP by addressing the mode and type of healthcare delivery in this context.

One strategy to improve the mode of care of CMSP at PHC level in SA is the development of a CPG which is context-specific. As part of the research project, the framework of an evidence-based CPG, which takes into consideration local, social, healthcare organisational and system factors, was developed. Lau et al. (2016) contend that context-specific interventions will maximise the uptake of CPGs in primary care and will facilitate the implementation and outcome of interventions. In this project, a novel approach to develop such a contextually relevant CPG was followed. The approach was adapted from the contextualisation approach developed by Gonzalez-Suarez et al. (2012) in the Philippines. The *de novo* development of CPSs is often not feasible and possible in a low- or middle-income setting; hence the need for alternative methodologies such as the contextualisation of existing CPGs.

While there have been prolific efforts to advance the methodological rigour of *de novo* CPG development in high-income regions, there have been minimal efforts to advance understanding and methods to further the contextualisation and implementation of evidence in lower income regions (Schünemann, Brożek, Guyatt & Oxman, 2013; Dizon et al., 2016). The approach followed in this projects, builds on the current body of knowledge about contextualisation by refining and

enhancing the features of the contextualisation process. The exploratory approach in this research has enhanced the field of CPG contextualisation by proposing a feasible way to integrate multi-stakeholder qualitative evidence. The qualitative evidence was used to frame the clinical recommendations to be sensitive to the local context (Appendix 29) and to incorporate the recommendations in a locally applicable clinical pathway (Figure Part3b). The findings indicated that the recommendations within the CPG addresses to a large extent, the needs of patients as who participated in this study (Chapter 3). The project also highlighted a need in the current care provision, namely the need for integrated psychosocial interventions. Additionally, the approach highlighted potential lacks in the CPG, which should be further addressed, for example, the need for a vocational interventions identified in this study. In the study, the process of merging recommendations was refined and a stepwise method was provided (Chapter 6). This merging process is fundamental in the contextualising process. The inclusion of formal consensus methodology to endorse the clinical recommendations further enhanced the authenticity of the contextual integration process (Halcomb et al., 2008). This approach to incorporate contextual evidence is expected to facilitate the implementation and uptake of the CPG recommendations into practice.

The contextualised approach followed in my project provided a unique blend of evidence-based practice and patient-centredness within the context of SA. The blended approach is in harmony with the Healthcare 2030 Strategic Framework of the Department of Health (Western Cape Government: Health, 2014), which emphasises integrative care, patient-centredness, an outcomes-based approach and efficiency of care through the C<sup>2</sup>AIR<sup>2</sup> (Care, Competence, Accountability, Integrity, Responsiveness, Respect) approach. Integrated management for CMSP is strongly emphasised in the clinical recommendations and the pathway of care, to address the burden of the condition and to contribute to quality care for CMSP in the local SA context.

### **9.3 CONTEXTUAL CHALLENGES AND OPPORTUNITIES**

An intricate mesh of complex factors was found to influence the local context in which CMSP is managed; and has acted as barriers to and facilitators of optimum CMSP care (Figure Part1b; Table 4.2). The identified contextual factors cannot be viewed in isolation as they represent the interaction between the individual, features of the health condition and the overall context in which the person lives (IASP, 2009a; WHO, 2013). Contextual factors within historically disadvantaged communities in the SA context often stem from broad societal issues such as economic and social factors, injustices of the past, levels of education, health literacy and multi-culturalism (Kagee, 2004; Kagee, Le Roux & Dick, 2007). The complex factors are multi-sectoral; and may indicate that an

inter-sectoral approach beyond the health system and including political support is needed for successful implementation of the guideline. The SA Strategic plan for the prevention and control of non-communicable diseases motivates that a politically enabling environment is important for inter-sectoral collaboration; and advocates that different departments need to work together to achieve the positive outcomes for non-communicable diseases, such as musculoskeletal conditions (National Department of Health, 2013:35). Collaboration with other sectors will need to be sought to address contextual influences. Considering the framework of contextual factors presented in Figure Part1b, an evidence-based, contextually sensitive CPG for CMSP pain management is likely to meaningfully influence individual factors, organisational factors and, in part, healthcare systems.

An important contextual factor that spans across individual and organisational contexts relates to education. In Chapter 3 and 4, the education provided to empower patients emerged as an important factor, influencing individual patient beliefs, coping skills and adherence to prescribed management, such as taking medication and regular physical activity. Educational interventions, which include providing information and advice, and training for self-care, can lead to behaviour change and enhanced healthcare literacy (Engers, Jellema, Wensing, Van der Windt, Grol & Van Tulder, 2008; Hayes & Hodson, 2011). However, practitioners participating in this research said they do not have sufficient time or educational tools to provide adequate education which could lead to improved outcomes (section 4.3.2.6). This lack of time for consultation is in agreement with published literature in a similar context where patients reported inadequate consultation time for LBP (Mayor-Helsloot et al., 2014). Therefore, feasible strategies for education are needed to optimise outcomes for the management of CMSP. The prescription of analgesics is one example of the need for feasible educational strategies to enhance beliefs and adherence to care. While the prescription of analgesics *per se* was well aligned with policy and evidence-based strategies, practitioners mentioned that there was limited time to educate and advise patients about the appropriate use of analgesics (section 4.3.2.4). Consequently, practitioners and patients reported poor adherence to analgesics as patients feared the potential side-effects of medication (sections 3.3.2.2 & 4.3.2.4). Several other studies found that patients with CMSP were reluctant to take analgesics (Woolf et al., 2004; Crowe et al., 2010; Cowan et al., 2003); which lead to the under-use of analgesics as a major barrier to adequate pain management. These negative consequences could perhaps have been minimised with appropriate education and advice about analgesics. In the example provided, patient knowledge about analgesia influenced their beliefs and adherence to evidence-based treatments.

In the presence of a high system burden and limited consultation times, there is an impetus to develop educational material that is culturally sensitive and at a suitable level of language to ensure

that the patients understand the message. Additionally, Kagee (2004) advises that health literacy in SA is not only about patients understanding the biomedical conceptions of disease and illness, but also the influence of personal and cultural beliefs. The aspect of suitable educational material to improve health literacy is indicated, as more than half of the patients in this research completed only primary school (Table 3.1), and population studies show that less than 40% of the population in the communities studied completed high school (Appendix 5; City Statistics and Population Census, 2013).

A locally relevant educational toolkit for patients can enhance patients' understanding of CMSP and address the current barrier of limited time for education, as the educational content can be delivered in ways which would complement individual education. Such an educational toolkit would need to contain a diverse approach to include patient and family education, for example written, visual, social media, multi-media education and group information sessions (Table 7.4). A combination of individual and group education and additional resources may play an important role in empowering patients for self-management (Du, Changrong, Xiao, Chu, Qiu & Qian, 2011; Davies, Quintner & Parsons, 2011). However, the importance of individual education should not be neglected; it was clear in this research that participants trusted practitioners to provide them with advice, guidance and opportunities for collaborative decision-making. This trust relationship may indicate a power imbalance, also influenced by contextual factors, such as healthcare literacy. Kagee (2004) explains that in the SA context, practitioners are often seen as persons in authority, with specific expertise, which may explain the trust patients place in practitioners. Practitioners in this context can use their authority to develop a therapeutic alliance with the patient, for empowerment towards self-management (Skuladottir & Halldorsdottir, 2008). The practitioner remains an important part of the educational toolkit for patients to assist them in understanding and coping with persistent pain.

In Chapter 3, the majority of participating patients had a biomedical understanding of pain and most practitioners communicated a partly developed biopsychosocial understanding in Chapter 4. Although the patients and practitioners were not matched pairs, the reasons for the mismatch between their understandings may indicate that practitioners did not transfer their understanding to the patients. One explanation may be that practitioners did not explain persistent pain to patients due to time limits or inadequate training (Meyer et al., 2007; Hoy et al., 2014; section 4.3.2.8; table 8.2). Practitioners may furthermore have omitted the psychosocial explanation to patients, as they believed that patients may not accept this explanation (section 4.3.2.5). Parsons et al., (2007) in a UK based review, similarly found that practitioners limited their explanation to the patient when they thought it would affect outcomes negatively. However, the multi-disciplinary panel (Chapter 7) underscored the importance of explaining persistent pain to patients, and in addition to the four

educational recommendations in the contextualised CPG, they nominated pain neuroscience education (Moseley & Butler, 2015) as an option (see Tables 7.2 & 7.4). Given the diversity of patients and variety of cultures in SA, the panel accordingly framed a context point that pain neuroscience education needs to be cross-culturally validated and available in different languages to form a culturally appropriate framework to educate patients about CMSP (Table 7.4). None of the participants in Chapter 4 disclosed the use of pain neuroscience education, and the minority indicated that they used a biopsychosocial approach to explain CMSP, indicating that the implementation of the CPG may require training in models to explain CMSP to patients. The importance of cultural sensitivity of explanatory frameworks to address patients' understanding of CMSP is emphasised (Kagee, 2004; Nijs & Meeus, 2015). Such explanatory models may be useful to assist patients with coping and leading a meaningful life, despite CMSP (Allegrettia et al., 2010).

The patients participating in this study had trouble coping with CMSP, despite having received treatment for it. Coping mechanisms were complicated by their hope of finding a cure for pain, which was rooted in their biomedical understanding of CMSP (section 3.4.2.1). Additionally, patients were not active self-managers of CMSP. Chapter 3 (section 3.4.2.2) presents evidence that the patients' toolkit for self-management was limited, and that they used self-management when in pain and not as part of a daily routine. The IASP (2015) states that CMSP cannot be cured, but indeed optimally managed, therefore, the outcome of a CMSP management programme should be an empowered patient, equipped with skills for supported self-management, as indicated by the clinical pathway of the contextualised CPG (Figure Part1b). The management strategies employed by practitioners who participated show the components of what could be a self-management programme, but lacked the outcome-directedness for supported self-management. The self-management programme for patients in this context can be enhanced by including the judicious use of analgesics, cognitive strategies, relaxation, stress management, self-tailoring and a flare-up plan (Du et al., 2011). Du et al. (2010) advocates that a holistic self-management program for CMSP should include the core skills of problem solving, decision making, resource utilization, a patient-provider partnership, action planning and self-tailoring. The findings indicate a new focus for the management of CMSP in this context, namely equipping patients as active self-managers, with knowledge on when to seek help for their condition. Such an approach is congruent with the proposed new definition of health as "the ability to adapt and self-manage in the face of social, physical and emotional challenges" (Huber, Knottnerus, Gree, Van der Horst, Jadad, Kromhout, Leonard, Lorig, Loureiro, Van der Meer, Schnabel, Smith, Van Weel & Smid, 2011:1). An empowered patient may have enhanced resilience to adapt to and cope with CMSP (Ramirez-Maestre, Esteve & López (2012).



The outcome of an empowered patient can be achieved if practitioners work as a coordinated team. The needs of patients (section 3.3.2.3) and the practice patterns of practitioners (sections 4.3.2.2 & 4.3.2.3) indicated the need for coordinated care and particularly early and appropriate referral for rehabilitation. Strategies to foster inter-disciplinary referral in this context should be implemented to address the multiple dimensions of CMSP to affect short- and long-term outcomes (Stein et al., 2010; Scascighini et al., 2008; Major-Helsloot et al., 2014). A lack of collaboration may leave therapeutic interventions for CMSP underutilised or unutilised (Hayes & Hodson, 2011). Inter-professional collaboration is a recommendation in the contextualised CPG and the realistic patient pathway that was developed as part of this research project may guide early referral and facilitate collaboration between different healthcare practitioners (Figure Part3b). Additionally, the multi-disciplinary panel nominated Data Harmonising in PHC as a context strategy to enhance inter-professional collaboration (Table 7.4). Data Harmonising involves the transparent sharing of information and avoidance of duplication (WHO, 2016). The process of implementing an information and communication technology system to document patient information is one of the strategic objectives for Healthcare 2030 (Western Cape Government: Health, 2014:xxi). The goal of Data Harmonising is to provide integrated information about patients' health care journey in the public health care sector, to improve continuity of care. A coordinated care approach to CMSP in this context, whether multi-disciplinary or interdisciplinary, and using electronic communication systems, may assist in addressing the system burden by minimising the duplication of assessment, administration and care interventions (Wagner, Bennet, Austin, Greene, Schaefer & Vonkorf, 2005; Balasubramanian & Spurgeon, 2012; Scascighini et al., 2008). Such an approach would contribute to time, cost and quality efficiency. However, the manner in which care is organised (multi- or interdisciplinary) will depend on the resources available at the health centre. Not all community healthcare centres have access to rehabilitation practitioners; therefore alternative care models, such as trained assistants, will have to be sought in those circumstances. Based on the information presented in Chapters 3 and 4, a coordinated system of care is urgently needed to prevent a disconnected, delayed patient care pathway, to facilitate efficient practice methods and interdisciplinary collaboration towards strengthening the healthcare system.

#### **9.4 STRENGTHENING THE HEALTHCARE SYSTEM FOR CHRONIC MUSCULOSKELETAL PAIN CARE**

The successful implementation of a holistic, multimodal CPG for CMSP is dependent on the availability of and access to a multi-professional team. An important human resource aspect that needs to be addressed in the SA PHC context is the shortage of therapists (physiotherapists,

occupational therapists, psychologists) (sections 3.3.2.3 & 4.3.2.6; Scheffler, Visagie & Schneider, 2015). The limited access to rehabilitation professionals was identified as a barrier to early referral in this research and that of Scheffler et al., 2015. Indeed, the findings from this research indicate the intense awareness of the service load on rehabilitation practitioners in an overloaded system (section 4.3.2.6). Scheffler et al., (2015), reports that one PHC center/clinic may service up to 1500 per day, demonstrating the sheer volume of patients needing care. Upshur et al., 2006 and Matthias et al., 2010 were similar to those identified in this study. Sufficient staff may have an impact on the service delivery challenges identified in this study, namely the lack of continuity and regularity of care, and lengthy waiting times for consultation. Policy and organisational change to employ more rehabilitation staff is therefore warranted (Scheffler et al., 2015). Hoy et al. (2014) argue that the burden of musculoskeletal conditions can only be addressed with support and investment from health policy to provide adequate human resources and training of personnel. The Western Cape Government: Health (2014:48) acknowledges that rehabilitation services have been historically under-developed in PHC, with resulting limited access to rehabilitation in the PHC sector. The Healthcare 2030 framework and the Framework and Strategy for Disability and Rehabilitation Service in SA (Western Cape Government: Health, 2014; National Department of Health, 2015) consequently intend to increase the number of therapists for the provision of rehabilitation services at all levels of care to improve access to rehabilitation services, integrated care and quality of care.

The access to and provision of psychological rehabilitation was a particular concern raised by patients and practitioners in this research project (Chapters 3, 4, 7 & 8). The need for psychological interventions in this small sample of patients potentially reflects the contextual topic of the burden of mental health in SA. Mental health conditions in SA are prevalent and are one of the top conditions for YLDs in sub-Saharan Africa (Demyttenaere et al., 2007; Global Burden of Disease 2015 Disease and Injury Incidence and Prevalence Collaborators, 2016). The high prevalence of mental conditions and the reported lack of mental health management is a global issue; also in SA (Sorsdahl, Stein & Lund, 2012). In Part 1 of this inquiry, the patients' needs for psychological support seemed to have exceeded the practitioners' offering. Accordingly, psychological support and management are noted as evidence-based recommendations in the contextualised CPG, to address to needs of patients with CMSP in the intended context. The implementation of a validated screening tool for psychological distress is included as a recommendation and could facilitate early, appropriate referral and management of psychological distress (Hill, Whitehurst, Lewis, Bryan, Dunn, Foster, Konstantinou, Main, Mason, Somerville, Snowden, Vohora & Hay, 2011). However, it is uncertain which practitioner would take ownership for this missing component in the current care offering for patients with CMSP. Mash et al. (2012) highlight the need for training on



psychological and social aspects for practitioners in SA PHC. Likewise, a UK-based systematic review by Parsons et al. (2007) indicates that practitioners often had little time and little training to assess and manage both the physical, and the psychological aspects of pain. Current practitioners involved in CMSP care already face several constraints to provide care (Table 4.2). While the training of doctors, nurses and other rehabilitation practitioners in PHC is an option to address the psychological support needs of patients, this may not be the solution in an already constrained system of care provision. The most significant barriers to the provision of psychological support in this study appear to be the limited involvement and access to psychologists and other mental health practitioners (section 4.3.2.4 & 4.3.2.5). In the SA context, with limited availability of trained personnel, task shifting has been proposed to address the burden of mental health conditions. Task shifting involves community-based workers who are trained to deliver contextually relevant mental health services under supervision of mental health practitioners (Sorsdahl et al., 2012). However, the efficacy of such an innovation needs to be confirmed. Innovative ways to include mental health practitioners in the pain care team and to provide access to mental health services in the SA PHC is needed and needs to be further explored.

In countries with well-developed health care systems, with adequate resources and workforce, physiotherapists are at the forefront of musculoskeletal health, which includes the integration of psychosocial interventions in physical therapy practice. Such a management approach can enhance patient outcomes as well as health system outcomes (Foster & Delitto, 2011). Indeed, there is evidence that psychologically informed practice delivered by physiotherapists led to positive patient and healthcare system outcomes in Ireland and the UK (O'Keeffe, Purtill, Kennedy, O'Sullivan, Dankaerts, Tighe, Allworthy, Dolan, Bargary & O'Sullivan, 2016); Hill et al., (2011). Additionally, physiotherapist as primary contact practitioners was shown to reduce waiting times and treatment duration in an Australian study (Bird, Thompson & Williams, 2016). If physiotherapists are to assume these roles in future SA health care, training in such therapies and availability of the workforce would be prerequisites. Physiotherapists has the potential to play an important role addressing integrated management for CMSP in future SA health care systems, by an approach that integrates contextual information into therapy.

The contextual information on how psychological, social, environmental and occupational variables influence the patient and the management of CMSP (Figure Part1b) indicates the need for a stronger link between the PHC system, social services and the occupational sector. Patients may thus need the involvement of a social worker or counsellor as part of holistic pain care. Additionally, there is a strong need for workplace interventions in this context. The inability to work and generate an income was seen to be a substantial stressor for patients in this study (section 3.3.2.4). Practitioners

and patients agreed that a tension exists between CMSP and work, where some patients continued working despite the pain, and others left employment due to pain, regardless of the negative consequences of unemployment. Patients' beliefs about work influenced their willingness to return to work and productive activity (sections 3.3.2.1 & 3.3.2.4). Workplace interventions may be an important strategy to address patients' beliefs about work and CMSP pain, to prevent musculoskeletal pain, and to counteract the dilemma of pain and work (Fisher, Emerson, Firpo, Ptak, Wonn & Bartolacci, 2007; De Vries, Brouwer, Groothoff, Geertzen & Reneman, 2011). However, workplace interventions are currently not included as a component of CPGs for CMSP, and were not a feature of practitioners' practice patterns (Chapter 4). Patients benefit from occupational activities when they find meaning in their work (De Vries et al., 2011); therefore there is a strong impetus to integrate work-based interventions with healthcare management and in a CPG for CMSP. It is important to consider that several factors play a role in the individual's ability to continue work despite CMSP, which includes individual characteristics, work environment, the social grant system, the healthcare system as well as social circumstances (De Vries et al., 2011). Such an integrated systems approach requires advocacy in relevant policies.

There are indications in this research that healthcare policies need to recognise CMSP as a chronic condition and include it in the policies for non-communicable conditions, together with other chronic diseases such as hypertension and diabetes. While the Strategic Plan for the Prevention and Control of Non-Communicable Diseases (National Department of Health, 2013), recognize musculoskeletal conditions as a chronic non-communicable condition, this recognition are not yet integrated in policies, health systems and practice patterns. CMSP, although chronic, is currently not conceptualised as a chronic condition by patients (sections 3.4.2.1 & 3.4.2.2); this may limit patients' motivation to self-manage. The proposition of CMSP as a chronic non-communicable condition is supported by Lalkhen and Mash (2015), who classified osteoarthritis as a non-communicable condition, and found it to be the third most common non-communicable condition after hypertension and diabetes in SA primary care. The Global Burden of Disease study 2013 Collaborators (2015) and Hoy et al. (2014) also support a more comprehensive inclusion of non-communicable conditions for burden of disease studies. Hoy et al. (2014) contend that a better integration of musculoskeletal conditions in healthcare systems and policies will lead to a more streamlined, cost-effective approach. If CMSP is conceptualised as a chronic condition, and consequently managed within the chronic care model, the focus of PHC management would be shifted towards an informed and actively involved patient who takes responsibility for supported self-management. Additionally, the healthcare team would need to be prepared and proactive, working in an integrated team to collaborate with the patient towards a specific goal (Wagner et al.,

2005). The implementation of the contextualised CPG may provide a sound foundation to prepare the healthcare team with evidence-based and outcome-focused management options for CMSP as a chronic non-communicable condition.

The management of chronic non-communicable condition requires multipronged, integrative systems approach (Mayosi et al., 2009). The findings of this research indicate that an implementation of the CPG for CMSP will require a multipronged approach to address the contextual factors that influence pain management. The SA Strategy for the Prevention and Control of non-communicable diseases advocates for the management of chronic conditions through the Integrated Chronic Disease Model (National Department of Health, 2013). The core components of the model are the patient and family, the health care team, community partners, that is supported by optimal health care organisation and a positive policy environment. The findings of this research support the notion of an Integrated Chronic Disease Model for the management of CMSP. The inclusion of CMSP as a non-communicable condition may enable more prioritised care for CMSP and facilitate access to chronic care practice methods and community resources. Community-based care and support groups are justified means to enable chronic care provision (Wagner et al., 2005), having advantages of peer support and community integration (Du et al., 2011). The aspect of linkages with the community is one of the key development domains targeted by the National Core Standards for Health Establishments in SA (National Department of Health, 2011). PHC in SA is currently in a transition from a curative approach to a prevention and wellness paradigm to provide chronic care for the rising burden of non-communicable diseases (Western Cape Government: Health, 2014:xiv). Congruently, one of the action plans of the Healthcare 2030 framework is to implement community wellness centres to target the collective modifiable risk factors for non-communicable conditions. The focus will be on increasing physical activity, promoting healthy eating and reducing smoking, including the recently launched WoW (Western Cape on Wellness!) community programme (Western Cape Government: Health, 2014:22; Western Cape Government: Health, 2016). Community care was found to be effective for chronic pain management in women with HIV/AIDs in a community-based programme led by peer leaders in a SA PHC setting similar to Part 1 of this research (Parker, Jelsma & Stein, 2016). Peers, near-peers and community care workers can play an important role in the provision of community-based CMSP programmes. Iwelunmor, Blackstone, Veira, Nwaozuru, Airhihenbuwa, Munodawafa, Kalipeni, Jutal, Shelley & Ogedegebe (2016) found that community involvement plays an important role toward sustainability of health interventions in sub-Saharan Africa. Community support may be part of the development of an innovative SA PHC system that is advocated by Kautzky and Tollman (2008) and the Global Burden of Disease study 2013 Collaborators (2015) (section 2.4.2).

In summary: the findings of this research project indicate that the challenge of providing quality care to patients with CMSP can be addressed through an evidence-based approach using a contextualised CPG, a multimodal and inter-sectoral approach, and the way the healthcare system is organised and governed. Implementation of the CPG will require foundation work, to align it with organisational structures and to equip the workforce. The CPG forms a sound foundation to provide information about evidence-based pharmacological and non-pharmacological management strategies for CMSP. The importance of early appropriate referral and inter-/multi-disciplinary care, the need for more comprehensive educational interventions, work-based interventions, the inclusion of psychological interventions, empowerment towards structured self-management and prevention of the condition is emphasised. A broad public health approach is indicated, with a need for policy support. Policy aspects to enhance the provision of quality care using a CPG for CMSP identified in my study include human resource provision, policies on non-communicable conditions and community initiatives. The CPG with its evidence-based recommendations is in alignment with key policies in the Western Cape as SA policies. The impetus for the SA PHC sector is to move beyond policy frameworks, towards realisation in practice.

## **9.5 LIMITATIONS**

The studies conducted as part of this research project has limitations, which should be taken into account when interpreting the findings. The limitations are discussed below.

The findings of the qualitative studies can only be generalized to similar contexts. Additionally, the sample of patients is not representative of all patients in the SA context. The consideration of patient values and beliefs in the CPG development process should not replace collaborative decision-making with the individual patient. The findings provide indications of where patient preference and choice may play a role. The propositions made regarding patients' views and preferences will need to be tested in different contexts, such as the deep rural areas of SA. The study relied on the participants' reports of practice patterns. The findings about practice patterns and referral should be verified by prospective observation and mixed-method studies to limit the use of recall of information.

The patient sample consisted of mostly females and people older than 40 years, which is congruent with previous studies on chronic pain. The inability to sample for more male participants, and younger participants, despite efforts made, might indicate that men and young adults with CMSP are not presenting to PHC clinics for management. For future studies, an alternative sampling strategy, such as quota sampling, a community or occupational sample, may be considered.

The practitioner sample included various members of the multidisciplinary team, with good representation of those practitioners who patients identified in their patient journey. Although two practitioners (one doctor and one nurse) declined to participate, the final sample was typical of the practitioners employed at community health care centres in SA.

The role of the interviewer in qualitative research is acknowledged. The interviewer is a physiotherapist and participants' knowledge about the occupation of the interviewer could have influenced their responses. The participants' honest discussions about positives and negatives of treatment, and the agreement with international literature indicate that the interviewer as physiotherapist had little effect on this aspect. The second interviewer, who conducted interviews in isiXhosa, enabled participants to speak comfortably in their first language, which was envisaged to enhance communication. However, the research assistant was a male and this aspect could have hindered disclosure by female participants, due to cultural aspects.

It is acknowledged that the meaning of sentences may alter during translations of transcripts; therefore, the analysis was conducted in the language of the transcription. Quotes were translated for validation and for the purpose of this documented version (the dissertation). The isiXhosa interview had to be translated into English to enable analysis by the PI.

In the systematic review, the focus of the search strategy was specific to PHC settings and this may have excluded some guidelines that are applicable in this setting, but not stated overtly to be so. Additionally, CPGs in other resource constrained environments may have been excluded if they were not available in English; and were not published. Recommendations were extracted only from high-quality CPGs; however, the AGREE II evaluates the reported rigour of development and this is affected by the quality of reporting. Permission was requested from CPG developers to use CPGs as part of the contextualisation process. However, few responded. Due to the relative novelty of CPG contextualisation, there might be a need to communicate with recognised CPG development bodies (e.g. NICE, SIGN) about the process and purpose of contextualisation.

The Delphi study focused on consensus and did not include an analysis of the level of stability over Delphi rounds (Von der Gracht et al., 2012). Only two Delphi rounds were done due to the intensity of the three consensus activities. Additional Delphi rounds could have provided indications about stability of the scoring for each recommendation. Additionally, not all panel members could participate in the consensus meeting due to travel distance and work responsibilities. The choice of panel members may play a role in the consensus generation (Hutchings & Raine, 2006) and may lead to bias. The consensus participants were dominantly rehabilitation practitioners. However, the findings of the external review, where the sample consisted of mostly doctors and nurses, concurred

with the findings of the consensus process, indicating that bias may not have played a significant role.

## 9.6 RECOMMENDATIONS

It is recommended that a multi-level implementation plan be developed and tested/piloted to ensure the successful uptake of the contextualised CPG for CMSP. This multilevel implementation plan should address the contextual factors influencing pain management identified in this study as patient factors, practitioner factors, the social and environmental circumstances within which the patient lives, the healthcare interventions received, and healthcare system factors. The implementation of the contextualized CPG for CMSP would necessitate training of the key stakeholders to support and facilitate a change in practice patterns. Additionally, a range of end-user support documents is envisaged to facilitate the implementation of the CPG for quality chronic pain care. Examples of these end-user documents are: evidence summaries; guidance for inter-/multi-disciplinary referral; a classification system of CMSP with matched treatment approaches and patient information/decision material. The implementation plan for the contextualized CPG would need a staff development plan. Furthermore, there is a need for more information on the inclusion of work based interventions as part of the care plan for CMSP. The tension between work and pain identified in this study and in particular the facilitators of, and barriers to staying at work despite CMSP in this context warrants further investigation, to develop appropriate work-based interventions. Additionally, the delivery and feasibility of coordinated integrated pain care management programmes, which combines a biopsychosocial approach in this context, should be investigated. Clinic/centre-based and community-based CMSP intervention programmes, needs to be developed and their feasibility investigated.

Novel ways to address system challenges such as prolonged waiting times, continuity and regularity of care should be developed and investigated, for example the lean system, development of authentic care pathways, clear lines for referral and community support groups. Additionally innovative ways on how to integrate management of CMSP within policies and initiatives for non-communicable diseases needs to be advocated, developed and evaluated. CMSP needs to be included in the priority non-communicable diseases to address its considerable burden on the healthcare system and on the patient.

The theories proposed by this research, for example that patient perspectives and beliefs influence their healthcare utilisation, and that practitioner perspectives and beliefs influence their practice choices and patterns, should be further tested in different contexts. Further studies can elaborate on

the content and adequacy of education and training about chronic pain care in undergraduate healthcare curriculums.

The findings of the Part 2 of this research signpost several indicators for guideline development. For example, the scarcity of CPG recommendations on aspects of non-pharmacological options for CMSP indicates that guidelines developers could extend the scope and coverage of the CPG, possibly by inclusion of the diverse professions in the guideline development team to ensure multimodal and holistic CPGs on CMSP management. Additionally, there is a need to include contextual factors during guideline development, to develop and document strategies to facilitate the successful uptake and implementation of CPGs into the intended setting. Guideline developers are encouraged to use well developed frameworks, such as GRADE and FORM, to communicate the level of evidence and strength of the recommendation. The list of topics for which no recommendations were made provides clear direction for suggested future primary and secondary research.



## CHAPTER 10

### CONCLUSION

The study achieved its overall aim by developing a contextually relevant, evidence-based, multimodal CPG for the PHC of CMSP in public sector community healthcare centres/clinics in the Western Cape of SA. The aims were achieved in a stepwise process by determining contextual factors that influence CMSP management and integrating them with a core set of evidence-based clinical recommendations. This study is important as it contributes to the knowledge base about how to address the burden of musculoskeletal conditions within the current constraints of a transforming healthcare system. The findings of the study indicate that the delivery of optimum health care for CMSP by implementing of the CPG will require patient empowerment, changes in practice patterns, changes in the content of current healthcare offerings and changes in healthcare organisation and policy.

Optimal management of CMSP requires an understanding of the multiple contextual and non-contextual factors that influence the occurrence and persistence of pain. The findings confirm CMSP as a multidimensional phenomenon which necessitates that management include pharmacological and non-pharmacological strategies. The current practice patterns of practitioners were partially aligned with evidence-based management options, indicating that the implementation of the CPG will contribute to optimising practices to be more comprehensive and efficient. There are indications that managing CMSP as a chronic non-communicable condition may enable a focus on empowering the patient for supported self-management and may provide access to various support systems in SA.

The project findings confirmed that CPG contextualisation as opposed to the adoption, adaption or *de novo* development of CPGs is a feasible process in resource constrained environments. As part of the contextualising process, a framework of contextual factors that was developed should be tested in different PHC contexts. The contextual framework has contributed to the body of knowledge on potential facilitators of, and barriers to applying evidence-based practice in resource-constrained settings. This information on the context and barriers and facilitators can be used to develop an implementation plan, which should be piloted in different contexts to determine the acceptability and feasibility of the CPG.



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## APPENDIX 1: ETHICS APPROVAL



UNIVERSITEIT•STELLENBOSCH•UNIVERSITY  
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### Approval Notice New Application

12-Feb-2014  
Ernstzen, Dawn DV

**Ethics Reference #: S14/01/018**

**Title:** The development of contextualised evidence-based clinical guidelines for the management of chronic musculoskeletal pain in primary health care in the Western Cape

Dear Mrs. Dawn Ernstzen,

The **New Application** received on **23-Jan-2014**, was reviewed by Health Research Ethics Committee 1 via Committee Review procedures on **05-Feb-2014** and has been approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: **05-Feb-2014 -05-Feb-2015**

**Present Committee Members:**

Kearns, E  
Weber, Franklin CFS  
Unger, Marianne M  
Sprenkels, Marie-Louise MHE  
Els, Petrus PJJS  
Potgieter, Sunita S  
Hendricks, Melany ML  
Ferris, William WF  
Pillay, Mershen M  
Mukinda, Fidele FK  
WELZEL, Tyson B  
Burgess, Lesley  
Whitelaw, David DA  
Botha, Paul JP  
Valentine, Terence TA  
de Cloedt, Eric E

Please remember to use your **protocol number** (S14/01/018) on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

**After Ethical Review:**

Please note a template of the progress report is obtainable on [www.sun.ac.za/rds](http://www.sun.ac.za/rds) and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

Translation of the consent document to the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372  
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

**Provincial and City of Cape Town Approval**

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health ([healthres@pgwc.gov.za](mailto:healthres@pgwc.gov.za) Tel: +27 21 483 9907) and Dr Helene Visser at City Health ([Helene.Visser@capetown.gov.za](mailto:Helene.Visser@capetown.gov.za) Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.  
For standard HREC forms and documents please visit: [www.sun.ac.za/rds](http://www.sun.ac.za/rds)

If you have any questions or need further assistance, please contact the HREC office at 0219389156.

**Included Documents:**

- KNO Evaluation Committee Report
- Consent Forms
- Declaration - Hiller
- Declaration - Louw
- KNO Feedback
- Protocol Synopsis
- Application Form
- Budget & Contract
- CV - Louw
- KNO HREC Template Full review
- CV - Hiller
- Declaration - Ernstzen
- Protocol
- CV - Ernstzen
- Checklist

Sincerely,



Franklin Weber  
HREC Coordinator  
Health Research Ethics Committee 1



## APPENDIX 2: PROVINCIAL GOVERNMENT OF THE WESTERN CAPE (DEPARTMENT OF HEALTH) PERMISSION



Western Cape  
Government

Health

### STRATEGY & HEALTH SUPPORT

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REFERENCE: RP 038/2014

ENQUIRIES: Ms Charlene Roderick

**P O Box 19063  
Division Physiotherapy  
Faculty of Medicine and Health Sciences  
Stellenbosch University  
Tygerberg  
7505**

For attention: **Dawn Ernstzen, Prof Quinette Louw, and Prof Susan Hillier**

**Re: The development of contextualised evidence-based clinical guidelines for the management of chronic musculoskeletal pain in primary health care settings in the Western Cape.**

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact the following people to assist you with any further enquiries in accessing the following sites:

<b>Elsiesriver CHC</b>	<b>R Julius</b>	<b>Contact No. 021 931 0211</b>
<b>Robertson CHC</b>	<b>D. Marais</b>	<b>Contact No. 023 626 8536</b>
<b>Michael Mapongwana CHC</b>	<b>T Mpu</b>	<b>Contact No. 021 361 3353</b>
<b>Hanover Park CHC</b>	<b>Ms S Mc Cloen</b>	<b>Contact No. 021 692 4972</b>
<b>Crossroads CHC</b>	<b>D Binza</b>	<b>Contact No. 021 386 1121</b>

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final report within six months of completion of research. This can be submitted to the provincial Research Co-ordinator ([Health.Research@westerncape.gov.za](mailto:Health.Research@westerncape.gov.za)).
3. The reference number above should be quoted in all future correspondence.

We look forward to hearing from you.

Yours sincerely

DR J EVANS

ACTING DIRECTOR: HEALTH IMPACT ASSESSMENT

DATE:

CC

DR L BITALO

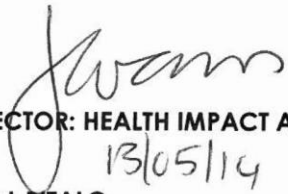
TONY HAWKRIDGE

MRS P OLCKERS

DIRECTOR: NORTHERN/ TYGERBERG

DIRECTOR: EASTERN/KHAYELITSHA DISTRICT

DIRECTOR: KLIPFONTEIN/MITCHELL'S PLAIN DISTRICT



13/05/14

## **APPENDIX 3: SUMMARY OF ETHICS PRINCIPLES APPLIED IN THE PROJECT**

**Autonomy:** Written informed consent was obtained from all participants. The informed consent forms were available in Afrikaans, English and isiXhosa, and each participant received a copy. Participation was voluntary and the participant could withdraw from the study at any point. The PI/assistant explained the research aims and procedures to the participants. Separate consent (within the consent form) was requested for audio-taping the interview. The participants had the right to request that the audio-recorder be switched off during the interview, if they felt the need to do so.

**Confidentiality:** The participants' personal information remained confidential and measures were taken to assure confidentiality. All questionnaires used were coded and the content did not ask for identifying particulars from the participants. During the Delphi part of the consensus study, voting was anonymous. During the survey, feedback was provided anonymously. The voice recordings were assigned unique serial numbers, which were also allocated to the corresponding transcript. No personal particulars were used in the serial number. The audio files were stored on the PI's personal computer which is password-protected. Personal, identifiable information about the participants will not be divulged when documenting findings or publishing the research. The participating healthcare centres are not named in this report and were deleted from transcripts. No individualistic feedback will be provided about the participating healthcare centres, to protect the participants and each participating healthcare centre.

**Non-maleficence:** All questionnaires and forms were made available to the patient participants in English, Afrikaans and isiXhosa. It was anticipated that due to the nature of the topic, sensitive information might be shared during interviews, which may lead to emotional responses and inner conflict, especially by participating patients. The participants were warned about this aspect beforehand. The researcher had a list of mental health practitioners to which the patient could be referred to if needed. Three patients had significant psychosocial distress and had received counselling for it. The power relationship between the interviewee and interviewer was respected at all times by focusing on the perspectives of the interviewee and by establishing trust prior to the interview and communication of a willingness to learn from the participant. The impact of the study on service delivery and on work burden was minimal, as clinicians participated in single interviews which were not foreseen to last more than one hour. Only one consensus meeting was conducted, supported by the Delphi procedure, to limit impact on service delivery of clinicians. Participating

clinicians and professional body representatives could complete the Delphi survey as well as the external review in their own time (at a time convenient to them).

**Beneficence:** No advice was provided during or after the patient interviews, as this may have compromised the research relationship and turned it into a counselling/therapy relationship (Pope & Mays, 2006). In cases where a participant requested more information on therapeutic aspects, the researcher provided basic information after the interview and motivated the participant to discuss these issues with their healthcare practitioner. Patient participants were reimbursed for their time and/or travel expenses (R120). Each practitioner who participated in the interviews received a small SU corporate gift. Panel members who participated in the consensus meeting received lunch and a monetary gift for travel expenses or points for continuing professional education). Written and verbal feedback on the study was provided to participating clinicians involved in the process, as part of the final phase of this study. Written feedback to centre management will be provided when appropriate.

**APPENDIX 4: TABLE COMPARING ADAPT, CONTEXTUALISE 1 AND CONTEXTUALISE 2**

Process	ADAPT	CONTEXTUALISE 1	CONTEXTUALISE 2
Reference	ADAPTE (2009)	Gonzalez-Suarez et al. (2012)	My study
<b>Getting started</b>	<ul style="list-style-type: none"> <li>• Establish development committee.</li> <li>• Select a topic.</li> <li>• Establish if adaptation is feasible.</li> <li>• Identify skills and resources needed.</li> <li>• Complete tasks for set-up.</li> <li>• Write adaptation plan.</li> <li>• Determine the health questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Form development group.</li> <li>• Decide scope and purpose.</li> <li>• Group constructs patient journey.</li> <li>• Identify working groups.</li> </ul>	<ul style="list-style-type: none"> <li>• PI selected topic.</li> <li>• Determine the health questions.</li> <li>• Write contextualisation plan (protocol).</li> <li>• Identify skills and resources needed.</li> </ul>
<b>Contextual analysis</b>	-	-	<ul style="list-style-type: none"> <li>• Sample patients' perspectives and preferences.</li> <li>• Sample practitioners' perspectives and preferences.</li> <li>• Develop contextual framework.</li> </ul>
<b>Systematic search, appraisal and synthesis of evidence</b>	<ul style="list-style-type: none"> <li>• Search for CPGs and other relevant documents.</li> <li>• Screen retrieved CPGs.</li> <li>• Reduce number of retrieved CPGs.</li> <li>• Assess CPG quality, content, currency, consistency.</li> <li>• Assess applicability and acceptability of recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>• Search for CPG.</li> <li>• Screen for relevance to scope and patient journey.</li> <li>• Appraise CPGs</li> <li>• Retain high-quality CPG.</li> <li>• Request permission to use CPG.</li> <li>• Extract and analyse recommendations for wording, underpinning evidence and strength of the evidence.</li> </ul>	<ul style="list-style-type: none"> <li>• Search for CPG.</li> <li>• Assess CPG quality and currency.</li> <li>• Retain high-quality CPG.</li> <li>• Extract and analyse recommendations for wording, underpinning evidence and strength of the evidence.</li> <li>• Request permission to use CPG.</li> </ul>

Process	ADAPT	CONTEXTUALISE 1	CONTEXTUALISE 2
Reference	ADAPTE (2009)	Gonzalez-Suarez et al. (2012)	My study
<b>Decision and selection</b>	<ul style="list-style-type: none"> <li>Review assessments made.</li> <li>Select between CGPs and recommendations to create and adapt CPG.</li> </ul>	<ul style="list-style-type: none"> <li>Identify recommendations relevant to specific steps in patient journey.</li> </ul>	<ul style="list-style-type: none"> <li>Decide to adopt, adapt or contextualise.</li> <li>Identify recommendations relevant to policies in the setting.</li> </ul>
<b>Contextualise</b>		<ul style="list-style-type: none"> <li>Collate a table of recommendations.</li> <li>Develop the writing guide.</li> <li>Write endorsements for each recommendation in the steps of the patient journey.</li> <li>Assess the generalisability and acceptability of the recommendations using the NHMRC FORM and context points.</li> <li>Map endorsements and context points into patient journey.</li> </ul>	<ul style="list-style-type: none"> <li>Collate a table of recommendations.</li> <li>Adapt the writing guide.</li> <li>Merge similar recommendations to form endorsements.</li> <li>Multi-professional panel assesses the generalisability and acceptability of the recommendations for the intended setting, using consensus.</li> <li>Multi-professional panel generates context and practice points using contextual framework.</li> <li>Develop an ideal patient care pathway.</li> <li>Map endorsements and context points into patient journey.</li> </ul>
<b>Finalisation</b>	<ul style="list-style-type: none"> <li>Prepare a draft adapted CPG.</li> <li>External review–target audience of the CPG.</li> <li>Consult with endorsement bodies.</li> <li>Consult with source CPG developers.</li> <li>Acknowledge source documents.</li> </ul>	<ul style="list-style-type: none"> <li>Collate chapters for draft guideline and edit for consistency.</li> <li>Develop implementation plan.</li> <li>Present guideline to the association at national meeting.</li> <li>Send completed guidelines for comment to included CPG</li> </ul>	<ul style="list-style-type: none"> <li>Prepare a short-form draft contextualised CPG.</li> <li>Acknowledge source documents.</li> <li>External review–target audience and professional organisations.</li> <li>Adjust draft CPG.</li> <li><i>To be done:</i> prepare full guideline</li> </ul>

Process	ADAPT	CONTEXTUALISE 1	CONTEXTUALISE 2
Reference	ADAPTE (2009)	Gonzalez-Suarez et al. (2012)	My study
	<ul style="list-style-type: none"> <li>Plan for aftercare of the adapted CPG.</li> <li>Produce final guidance document.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake focused public consultations, including seeking additional context points.</li> </ul>	document and end-user material.
Dissemination and implementation		<ul style="list-style-type: none"> <li>Plan and evaluate CPG dissemination.</li> <li>Plan with key health organisations and policy makers.</li> </ul>	<ul style="list-style-type: none"> <li><i>To be developed</i></li> </ul>

## APPENDIX 5: CONTEXT OF THE SELECTED COMMUNITY HEALTHCARE CENTRES/CLINICS

The three healthcare centres included had several similarities and differences in their environmental context. The information on the communities that are served by the healthcare centres is summarised in the table below (City Statistics and population Census, 2013).

	<b>CENTRE 1</b>	<b>CENTRE 2</b>	<b>CENTRE 3</b>
<b>Geographical area</b>	<b>Semi-urban (township)</b>	<b>Semi-urban (Cape Flats)</b>	<b>Rural</b>
<b>District</b>	<b>Khayelitsha</b>	<b>Tygerberg</b>	<b>Cape Winelands</b>
<b>Population size</b>	391 749 people	90 574 people	97 724 people
<b>Population characteristics</b>	<ul style="list-style-type: none"> <li>The population is predominantly Black African (99%).</li> <li>36% of those aged 20 years and older have completed Grade 12 or higher</li> <li>The predominant language is isiXhosa.</li> </ul>	<ul style="list-style-type: none"> <li>The population is predominantly Coloured (89%), Black African (7%) and Asian (3%).</li> <li>28% of those aged 20 years and older have completed Grade 12 or higher.</li> <li>The predominant language is Afrikaans.</li> </ul>	<ul style="list-style-type: none"> <li>The population is predominantly Coloured (89%), Black African (16%) and White (12%).</li> <li>81% of inhabitants speak Afrikaans, 10% speak isiXhosa and 3% speak English.</li> <li>26% of those aged 20 years and older have completed Grade 12 or higher.</li> </ul>
<b>Employment</b>	<ul style="list-style-type: none"> <li>62% of the labour force (aged 15 to 64 years) is employed.</li> </ul>	<ul style="list-style-type: none"> <li>76% of the labour force (aged 15 to 64) is employed.</li> </ul>	<ul style="list-style-type: none"> <li>66% of the labour force (aged 15 to 64) is employed.</li> </ul>
<b>Income</b>	<ul style="list-style-type: none"> <li>74% of households have a monthly income of R3 200 or less.</li> </ul>	<ul style="list-style-type: none"> <li>50% of households have a monthly income of R3 200 or less.</li> </ul>	<ul style="list-style-type: none"> <li>40% of households have a monthly income of R3 200 or less.</li> </ul>
<b>Housing</b>	<ul style="list-style-type: none"> <li>45% of households live in formal dwellings.</li> <li>62% of households have access to piped water in their dwelling or inside their yard.</li> <li>72% of households have access to a flush toilet connected to the public sewerage system.</li> <li>81% of households have their refuse removed at least once a</li> </ul>	<ul style="list-style-type: none"> <li>84% of households live in formal dwellings.</li> <li>95% of households have access to piped water in their dwelling or inside their yard.</li> <li>89% of households have access to a flush toilet connected to the public sewerage system.</li> <li>95% of households have their refuse removed at least once a</li> </ul>	<ul style="list-style-type: none"> <li>91% of households live in formal dwellings.</li> <li>95% of households have access to piped water in their dwelling or inside their yard.</li> <li>83% of households have access to a flush toilet connected to the public sewerage system.</li> <li>72% of households have their refuse removed at least once a</li> </ul>



	week. <ul style="list-style-type: none"><li>• 81% of households use electricity for lighting in their dwelling.</li></ul>	week. <ul style="list-style-type: none"><li>• 95% of households use electricity for lighting in their dwelling.</li></ul>	week. <ul style="list-style-type: none"><li>• 94% of households use electricity for lighting in their dwelling.</li></ul>
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## APPENDIX 6: INTERVIEW SCHEDULE FOR PARTICIPATING PATIENTS

**Introduction:** Aim, informed consent, the participant's rights  
Thank you for your willingness to participate in the interview.

**1. Please tell me the story of how your pain started.**

*Source of injury/pain*

**2. In your opinion, what are the reasons why the pain did not go away?**

*What do you think is the source of pain now – where is the pain coming from?*

**3. Please describe to me how the pain influences your life.**

*Does it have an impact on your work?*

*How does it influence you to do things for yourself, your everyday function?*

*Does it have an impact on your family?*

*Does it have an impact on your social life?*

*Does it have an impact on your feelings?*

**4. Could you tell me about the treatment that you have received for the pain?**

**Pathway of care:**

- *When did you first seek help for the pain?*
- *Where?*
- *All the medical and non-medical personnel involved?*
- *Patient journey (what happened first and what happened next)?*

**Efficacy/usefulness:**

- *Which treatment helped you the most? In what way did it help?*
- *Did the treatment bring any change/relief – possible reasons?*
- *Which treatments did not work for you (unsuccessful) – possible reasons?*
- *What do you do to cope with the pain?*

**Satisfaction with treatment**

- *With which aspects of treatment are you satisfied: reasons?*
- *With which aspects of treatment are you not satisfied: reasons?*

**5. What do you hope to gain from the treatment at the clinic – what are your goals for treatment?**

**6. What are your main expectations about how you would want to be treated at the clinic/hospital?**

**In your opinion, what can be done at the clinic to optimise/improve the treatment of pain?**

- *Individual characteristics – what role do the people that work there play? How would you describe a good doctor/nurse/physio?*
- *Treatment characteristics – which treatments would you prefer?*
- *Healthcare system issues – are there issues at the clinic or hospital that could change?*

**7. Community issues – which factors in the community influence your pain?**

- *Aspects of family*
- *Aspects of work*
- *Aspects of finances*
- *Aspects of culture*
- *Aspects of religion*

**8. Could you share with me your opinion (concerns/plans) for your pain at this stage?**

**Thank you for your contribution!  
Explain what will happen next.**

## APPENDIX 7: PATIENT GENERAL INFORMATION QUESTIONNAIRE

Please respond to each question by ticking the appropriate box with an X or ✓,  
OR by supplying the missing information.

---

The aim of the questions in this section is to obtain general information about you.  
The information will be kept confidential.

---

1. Age: \_\_\_ years

2. Gender:

Male		Female	
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3. Home language:

Afrikaans	English	isiXhosa	Other (please specify):
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4. Ethnic group:

Asian	Black African	Coloured	White	Other (please specify):
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5. Marital status:

Married	In a relationship	Single	Divorced or separated	Widowed
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6. Number of children: \_\_\_\_

7. Highest level of schooling:

Primary school	Secondary (high) school	University, college or technikon	Other (please specify):
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8. Employment:

Full-time work		Part-time work		Housewife	
Retired/pensioner		Student		On sick leave	
Unemployed		Disability grant		Other (please specify):	

9. If you do have work, what is your occupation (job description)?

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10. If you are a student, what are you currently studying?

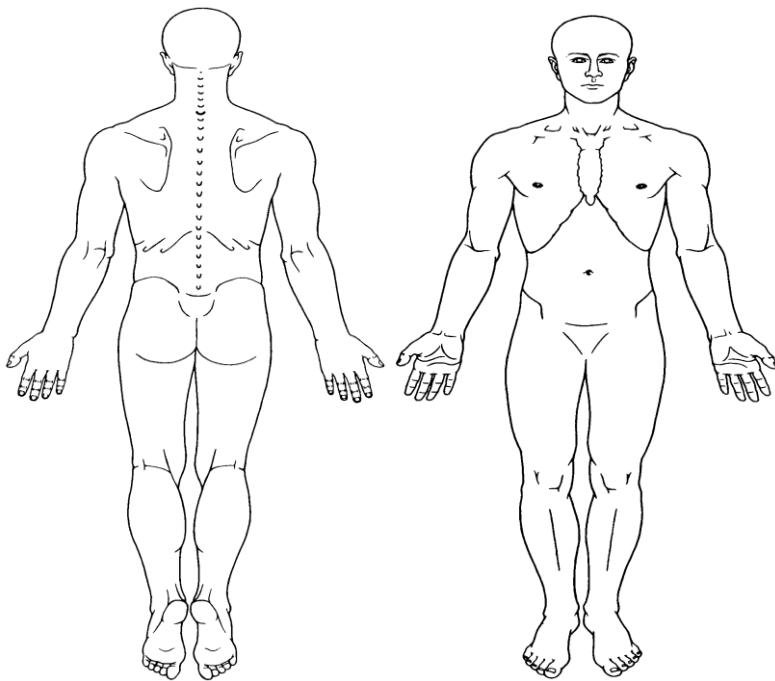
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11. If you receive a disability grant, what is the reason for that?

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**The purpose of the next section is to obtain information about your health.  
The information will be kept confidential.**

**12. On the body chart below, please shade the area or areas where you have pain.**



**13. Please circle the area that hurts the most.**

**14. How would you rate the pain you are experiencing **today** – on a scale from 0 to 10, where 0 is no pain and 10 is unbearable pain?**

0      1      2      3      4      5      6      7      8      9      10

**No pain**

**Unbearable pain**

**15. How would you rate the pain you have experienced on average **during the past three months** – on a scale of 0 to 10, where 0 is no pain and 10 is unbearable pain?**

0      1      2      3      4      5      6      7      8      9      10

**No pain**

**Unbearable pain**

**16. How would you rate the **worst pain** you have experienced in the past three months – on a scale of 0 to 10, where 0 is no pain and 10 is unbearable pain?**

0      1      2      3      4      5      6      7      8      9      10

**No pain**

**Unbearable pain**

**17. How would you rate the **least amount of pain** you have experienced in the past three months – on a scale of 0 to 10, where 0 is no pain and 10 is unbearable pain?**

0      1      2      3      4      5      6      7      8      9      10

**No pain**

**Unbearable pain**

**18. Since when have you been experiencing the pain?** \_\_\_\_\_

**19. Have you received a diagnosis or explanation for your pain?**

Yes		No	
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**20. If some-one did tell you, what is the name of your condition?**

\_\_\_\_\_

**21. Which of the following chronic conditions do you have, if any?**

a) Hypertension/high blood pressure	
b) Tuberculosis (TB)	
c) Osteoarthritis	
d) Fibromyalgia	
e) Scleroderma	
f) Stroke	
g) Peptic ulcer	
h) Anxiety	

i) Heart disease	
j) Asthma	
k) Rheumatoid arthritis	
l) Systemic lupus	
m) Epilepsy	
n) Diabetes (Sugar)	
o) Depression	
p) Post-traumatic stress	

Other (please specify): \_\_\_\_\_

**22. Which of the following health carers have treated you for your pain?**

a) Biokineticist	
b) Chiropractor	
c) Homeopath	
d) Nurse	
e) Naturopath	
f) Occupational therapist	
g) Osteopath	
h) Physiotherapist	
i) Psychologist	
j) Pain clinic	

k) Acupuncturist	
l) Reflexologist	
m) Traditional healer	
n) Anaesthetist	
o) General medical doctor (GP)	
p) Neurologist	
q) Occupational health doctor	
r) Orthopaedic doctor	
s) Psychiatrist	
t) Rheumatologist	

Other (please specify): \_\_\_\_\_

**23. What medication are you using for your pain?****Name of medication:****How much/many per day (dosage):**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Thank you for participating!***Development of the general information questionnaire for patient participants**

The test-re-test reliability of the NPRS is moderate to high (0.67 to 0.96) (Kahl & Cleland, 2005); it has a convergent validity of 0.79–0.95 to the VAS (visual analogue scale); the minimal detectable change is 3 points (Kahl & Cleland, 2005).

## APPENDIX 8: K10 QUESTIONNAIRE FOR PSYCHOLOGICAL DISTRESS

The aim of this questionnaire is to determine how you have been feeling during the last month.

The following questions ask about how you have been feeling over the **past 4 weeks**.  
For each question, mark the block under the option that best describes the amount of time you felt that way.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. During the last 4 weeks, about how often did you feel <b>tired</b> out for no good reason?					
2. During the last 4 weeks, about how often did you feel <b>nervous</b> ?					
3. During the last 4 weeks, about how often did you feel so <b>nervous</b> that nothing could calm you down?					
4. During the last 4 weeks, about how often did you feel <b>hopeless</b> ?					
5. During the last 4 weeks, about how often did you feel restless or fidgety?					
6. During the last 4 weeks, about how often did you feel so <b>restless</b> you could not sit still?					
7. During the last 4 weeks, about how often did you feel <b>depressed</b> ?					
8. During the last 4 weeks, about how often did you feel that everything was an <b>effort</b> ?					
9. During the last 4 weeks, about how often did you feel so <b>sad</b> that nothing could cheer you up?					
10. During the last 4 weeks, about how often did you feel <b>worthless</b> ?					

*Thank you for participating!*

### **The use of the K10 questionnaire for psychological distress:**

Spies et al. (2009) evaluated the validity of the K10 in 129 healthy pregnant women in Cape Town, SA, using the Structured Clinical Interview for the DSM (SCID) as the gold standard for clinical validation. A Receiver Operating Characteristics (ROC) curve analysis indicated that the K10 showed agreeable sensitivity and specificity in detecting depression (0.66), post-traumatic stress disorder (0.69), panic disorder (0.71), and social phobia (0.76). Additionally, Anderson et al. (2011) evaluated the performance of the K10 in screening for depression and anxiety in a multi-cultural SA population, using the translated versions of the K10 in English, Afrikaans, isiZulu, isiXhosa, Northern Sotho and Setswana. The K10 demonstrated moderate discriminatory ability in detecting depression and anxiety in the general population (ROC curve 0.73). The K10 had lower discriminating abilities for depression and anxiety among the Black group (0.71) and Andersen et al. (2011) concluded that further cross-cultural investigations and additional validation studies are needed.

## APPENDIX 9: THE PAIN DISABILITY INDEX

This questionnaire helps us to see how much your pain influences your life. We want to learn more about the influence that your pain has on your activities. Please indicate the general impact of pain on your life, not just when the pain is at its worst.

Please circle the number on the scale that describes how seriously pain typically influences your activities.

A score of 0 means that pain has no influence on your activities at all, while 10 means that your pain prevents certain activities or affects them severely.

### 1. Family/household responsibilities:

How does pain influence your activities at home or in the family? This includes chores or duties that you do around the house as well as errands or favours for other family members, for example working in the garden, taking children to school, making beds or sweeping.

0	1	2	3	4	5	6	7	8	9	10	
<b>No influence</b>											<b>Severely affected</b>

### 2. Recreation:

How does pain influence your hobbies, sports, exercise and other leisure activities?

0	1	2	3	4	5	6	7	8	9	10	
<b>No influence</b>											<b>Severely affected</b>

### 3. Social activity:

How does pain influence activities that involve social contact with friends and acquaintances other than family members, such as church activities, parties, concerts or going out and other social functions?

0	1	2	3	4	5	6	7	8	9	10	
<b>No influence</b>											<b>Severely affected</b>

### 4. Occupation:

How does pain influence activities that are part of or relate to your job? This includes non-paying jobs, such as being a volunteer or housewife.

0	1	2	3	4	5	6	7	8	9	10	
<b>No influence</b>											<b>Severely affected</b>



**5. Sexual behaviour:**

How does pain influence the frequency and quality of your sex life?

0      1      2      3      4      5      6      7      8      9      10  
**No influence** **Severely affected**

**6. Self-care:**

How does pain influence your personal appearance and independent daily living – for example, taking a bath or shower, getting dressed, grooming yourself or driving a car?

0      1      2      3      4      5      6      7      8      9      10  
**No influence** **Severely affected**

**7. Life-support activities:**

How does pain influence the basic things you have to do to stay alive, such as eating, sleeping and breathing?

0      1      2      3      4      5      6      7      8      9      10  
**No influence** **Severely affected**

*Thank you for participating!*

**Pain Disability Index**

The construct validity of the PDI is sufficient with significant correlations with the Beck Depression Inventory and the State-Trait Anxiety Inventory (Tait, Chibnall & Krause, 1990; Tait & Chibnall, 2005). The internal consistency of the two subscales was sufficient (for factor 1, Cronbach  $\alpha = 0.85$ ; for factor 2, Cronbach  $\alpha = 0.70$ ) (Tait et al., 1990). Mewes, Rief, Stenzel, Glaesmer, Martin and Brähler (2009) found a very good internal consistency as a measure of reliability (Cronbach alpha  $\alpha = .93$ ). Soer et al. (2012) evaluated the PDI in a sample with chronic low back pain and found the ROC curve values for sensitivity and specificity to be 0.76 and 0.77.

## APPENDIX 10: INFORMED CONSENT (PATIENTS)

### INFORMATION LEAFLET AND CONSENT FORM FOR TAKING PART IN A RESEARCH STUDY

#### Title of the research project:

Study1: The perspectives of patients with chronic musculoskeletal pain about patient-centred primary health care

**Reference number:** S14/01/018

**Principal investigator:** Dawn Ernstzen

**Address:** Division of Physiotherapy, Faculty of Medicine and Health Sciences, Stellenbosch University, PO Box 19063, Tygerberg 7505

**Contact numbers:** 021 938 9300

I would like to invite you to participate in a research study. Please take some time to read through the information, because it explains the study. Please ask the study staff any questions about anything that you do not understand fully. It is very important that you must be happy and that you understand clearly what this study is about and how you could participate. **Please remember:**

- Whether you participate or not is **entirely your choice**.
- If you say no, this will not affect you negatively in any way whatsoever.
- You are free to withdraw from the study at any point, even if you did agree initially to take part.

This study was approved by the Health Research Ethics Committee of Stellenbosch University and will be conducted according to ethical guidelines and principles (the guidelines of the International Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research).

#### What is this research study all about?

The **aim of this study** is to determine what people who suffer from persistent joint and muscle pain think of the medical treatment they receive at their community health centres. The research will focus on describing patients' experiences and opinions, and will explore the care patients would like from healthcare personnel. The information can help us to plan future treatments.

About 20 patients who visit their community health centres will be invited to take part. The study will take place at various community health centres in the Western Cape. The researcher or assistant researcher will ask each patient some questions. It will take 30 to 60 minutes. Each conversation will be private. It will take place at your home or in the library of the healthcare centre. With your permission, I would like to record the interview. The recording will be copied to paper and later studied by researchers at Stellenbosch University.

In a later study, patients will be invited to participate in a follow-up study. The follow-up study will be to hear your comments about the treatment path that was developed.

#### Why have you been invited to participate?

You have been invited because you experience persistent pain in your muscles and joints, and because you have been attending the community health centre to have your condition treated. You have experience of the factors that the researcher wants to examine, so you can make a valuable contribution to the study.

### **What will your responsibilities be?**

The researcher will ask you to share your experiences, feelings and expectations about your medical condition and the treatment that you have received for it. You will be asked to complete a short questionnaire with general information about you. The researcher needs your permission to look at your medical records at the community health centre in order to see what treatment you have received.

### **Will you benefit from taking part in this research?**

You will not benefit directly in the short term. However, future patients (including you) may benefit once the study is completed. The information gained from this research will help healthcare workers to understand the needs of patients with persistent pain better.

### **Are there any risks involved in your taking part in this research?**

There are no direct risks, as the research consists of a conversation about your joint and muscle pain. However, this may put you in a position where you share some sensitive information that may make you emotional. If you experience such emotions, please tell the researcher and ask for a break from the interview if you need it. The researcher can also refer you to a trained counsellor.

### **If you do not agree to take part, what alternatives do you have?**

If you prefer not to participate, we respect your choice.

### **Who will have access to your information?**

Only the research team will be able to see your information. Approved external examiners or funders may also inspect the research records. Your identity will remain private, even when we report on the research. Your name will appear on none of the forms or on the recording, because we will use only numbering codes. The interviews will be recorded with a voice recorder and later be written down by someone who does not know you personally. No names will be used in the original recordings or in the written versions. Only the research group will do the interviews and study the documents. The voice recordings will be destroyed after the research has been completed.

Your information will be treated as confidential and will be protected.

### **What will happen in the unlikely event that some form of injury occurs as a direct result of your taking part in this research study?**

This research entails only an interview (conversation). Therefore, we foresee no injuries that may result from the research process.

### **Will you be paid to take part in this study and are there any costs involved?**

No, you will not be paid to participate. However, you will receive a small gift to show our gratitude. There will also be no costs involved for you.

### **Is there anything else that you should know or do?**

If you have any further questions or problems, please call the main research investigator, Dawn Ernstzen, on 021 938 9300. The study is financially supported by the National Research Foundation and no conflict of interests has been reported.

If you have any concerns or complaints that the research team has not adequately addressed, you can call the Health Research Ethics Committee on 021 938 9207.

You will receive a copy of this information and consent form to keep.

### Declaration by participant

By signing below, I ..... agree to take part in a research study entitled: *The perspectives of patients with chronic musculoskeletal pain about patient-centred primary health care.*

I declare that:

- I have read or had read to me this information and consent form and it is written in a language in which I am fluent and with which I am comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

### Informed consent for recording the interview

The reason for recording the interview and later destroying the voice recordings has been explained to me. I understand these procedures and agree that they may be performed.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

### Declaration by investigator

I (*name*) ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*)

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

**Declaration by interpreter**

I (*name*) ..... declare that:

- I assisted the investigator (*name*) ..... to explain the information in this document to (*name of participant*) ..... using the language medium of Afrikaans/isiXhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of interpreter

.....  
Signature of witness

## APPENDIX 11: CODEBOOK FOR PATIENT STUDY

### Code-Filter: All

HU: Ernstzen Patient Interviews CPG
File: [C:\Users\acer i5\Documents\ATLAS docs\Ernstzen Patient Interviews CPG.hpr7]
Edited by: Super
Date/Time: 2015-10-01 10:22:35

<p><b>Acceptance</b></p> <p><b>ASSESS: Investigations</b></p> <p><b>COPING</b></p> <p>COPING: self-talk</p> <p>COPING: act strategy</p> <p>COPING: decision</p> <p>COPING: pass strategy</p> <p>COPING: locus control</p> <p>COPING: spiritual</p> <p><b>HEALTH</b></p> <p>Health: diagnosis</p> <p>Health: comorbidities</p> <p><b>EXPLAIN: cause</b></p> <p><b>FINANCE</b></p> <p>FINANCE: disability grant</p> <p>FINANCE: unemployment</p> <p><b>IMPACT</b></p> <p>IMP: hope</p> <p>IMP: emotions</p> <p>IMP: function</p> <p>IMP: move</p> <p>IMP: participation</p> <p>IMP: relationships</p> <p>IMP: sleep</p> <p>IMP: stress</p> <p><b>INJURY: Mechanism</b></p> <p><b>MANAGEMENT</b></p> <p>MAN: advice</p> <p>MAN: effectiveness</p> <p>MAN: herbs</p> <p>MAN: exercise</p> <p>MAN: group</p> <p>MAN: injection</p> <p>MAN: OT</p> <p>MAN: Physio</p> <p>MAN: Psycho</p> <p>MAN: refer</p> <p>MAN: rubefacients</p> <p>MAN: self</p> <p>MAN: self-meds</p> <p>MAN: side effects</p> <p>MAN: specialist</p> <p>MAN: surgery</p> <p>MAN: meds</p> <p><b>Migration</b></p>	<p><b>OCCUPATION</b></p> <p>OCC: effect</p> <p>OCC: employer attitude</p> <p>OCC: type</p> <p><b>PATIENT</b></p> <p>Patient collaboration</p> <p>Patient communication</p> <p>Patient knowledge</p> <p>Patient pathway</p> <p>Patient education</p> <p><b>PERSON:</b></p> <p>PERSON: advocate</p> <p>PERSON: perseverance</p> <p>PERSON: Resilience</p> <p>PERSON: tenacity</p> <p><b>PERSPECTIVE</b></p> <p>PERSP: assessment</p> <p>PERSP: belief</p> <p>PERSP: practitioner</p> <p>PERSP: pain cause</p> <p>PERSP: treatment</p> <p><b>SATISFACTION</b></p> <p>SATISF: ambivalent</p> <p>SATISF: positive</p> <p>SATISF: negative</p> <p><b>SOCIAL</b></p> <p>SOCIAL: family</p> <p>SOCIAL: gangsterism</p> <p>SOCIAL: hardship</p> <p>SOCIAL: violence</p> <p><b>SUPPORT</b></p> <p>SUPPORT: family</p> <p>SUPPORT: practitioner</p> <p><b>HEALTH CARE SYSTEM</b></p> <p><b>SYSTEM: belief</b></p> <p>SYSTEM: continuity</p> <p>SYSTEM: gen</p> <p>SYSTEM: pathway</p> <p>SYSTEM: patient-centred</p> <p>SYSTEM: private health</p> <p>SYSTEM: refer</p> <p>SYSTEM: resources</p> <p>SYSTEM: understand</p> <p>SYSTEM: wait</p> <p><b>Transport</b></p>
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## APPENDIX 12: EXAMPLES OF TRANSLATED QUOTES (PATIENT STUDY)

Afrikaans	English
<p><i>En die x-strale wys toe hier is sulke kussinkies agter by my rug, toe sê hulle my kussinkies was gedamage. Ek weet nie wat is dit wat op my nerve druk nie, sê hulle, dis hoekom die pyn so erg is. Ek weet van die kussinkies, daar het van die joints ook uitgehaak, nou hulle kan mos nie mens se rug joints weer terug dingese nie, en dis daai wat maak dat my rug so ernstig pyn. P18, 51y, LBP</i></p>	<p><i>And the X-rays showed that there are cushions in my back. They told me that those cushions were damaged. I don't know what is pressing on my nerve, so they say. That is why my back pain is so severe. I know about the cushions, and some of the joints were also displaced. Now they can't fix that displacement, and that is why my back pain is so severe. P18, 51y, LBP</i></p>
<p><i>Maar dan is ek baie moeg. So verskriklik moeg uit myself uit en dan is die pyn verskriklik, maar dan gaan ek net 'n bietjie lê weer en dan relax en dan staan ek weer op en so aan. P14, 43y, Joint pain</i></p>	<p><i>Then I am so tired. So terribly tired from inside myself and the pain is dreadful. But then I lie down and relax, and later I get up again. P14, 43y, Joint pain</i></p>
<p><i>Nou baie keer vra hulle vir my hoe gebruik ek my pille. Ek sê suster nie gereeld nie; soos suster vir ons sê soos nodig. Wanneer ek voel daar is pyn en hy wil nie verdof of so nie. Dan sal ek 'n pilletjie drink maar dis nie dat ek graag nie. Al wat ek gereeld gebruik is my hoë bloed pilletjie en die water pilletjie P6, 66y, LBP</i></p>	<p><i>And many times they ask me how I use my pills. Then I say, not often, as you say, as needed. When I feel there is pain and it is not getting less. Then I will drink the pill, not that I really want to. The only pills I take regularly are my hypertension and water pills. P6, 66y, LBP</i></p>
<p><i>As ek dit nou glad nie kan hanteer nie, dat ek voel nou wil ek moed opgee, dan maak ek 'n afspraak by haar. Dan gaan ek so vir twee, drie keer en dan voel ek weer 'n bietjie beter. Maar dan kom dit mos weer. Al haar pasiënte dink ek moet maar weer teruggaan. Dis nou maar ongelukkig so. P10, 69y, LBP leg pain</i></p>	<p><i>If I can't take it anymore, and I become despondent, I make an appointment with the physiotherapist. Then I go for two or three times, and then I feel better. But it comes back again. I think all her patients must go regularly, That is the unfortunate case. P10, 69y, LBP, leg pain</i></p>
<p><i>Ek was by 3 verskillende dokters gewees en die een dokter het vir my gesê dit kan moontlik wees. Maar vir 3 maande het ek Voltaren en inspuittings gekry en die 4de maand toe's ek net mooi dik. Aanmekaar Voltaren pille, Voltaren inspuiting en die 4de maand toe sê ek vir die suster maar genoeg is genoeg. Ek kan nie aanmekaar inspuittings en pille en dan verwys julle nie vir my êrens na haar toe nie, toe vra ek vir haar watter kant toe kan ek gaan, want ek weet my sigselwers nie watter kant toe nie. P 1, 47y LBP, leg pain</i></p>	<p><i>I went to three different doctors, and the one told me what this could be. But for three months I received Voltaren pills and injections, and by the fourth month I had enough. I told the sister, I can't get injections and pills all the time and you don't refer me. And I asked her; where I should go for this, because I also did not really know what to do. P 1, 47y LBP, leg pain</i></p>
<p><i>Toe't ek maar weer begin met fisio, maar uit die aard van my werk kan ek nou nie so baie gaan nie want ek wil nie so baie af vra by die werk nie. So as ek dit nou regtig, as ek tande kners, dan gaan ek maar weer vir 'n bietjie fisio. P11, 53F, Neck, shoulder pain</i></p>	<p><i>I started with physiotherapy, but due to the nature of my job, I can't come regularly. I can't take off so much time from work. So if I can't take it anymore and I gnash on my teeth, then I go for some more physiotherapy. P11, 53F, Neck, shoulder pain</i></p>

## APPENDIX 13: INTERVIEW SCHEDULE FOR HEALTHCARE PRACTITIONERS

**Introduction:** aim, informed consent, rights of the participant  
Thank you for being willing to participate in the interview.

### Opening question:

1. Please tell me about your experiences when treating patients for chronic musculoskeletal pain (CMSP).

*A typical story*

*Emotions (e.g. satisfaction, frustration)*

*Typical problems when treating patients with CMSP*

2. In your experience, what are the aspects that cause musculoskeletal pain to become chronic?

*Prompt: physical, personal, environmental or social, or organisational factors*

3. What management route or method do you usually use in the case of patients with CMSP?

*Prompt: How do you manage them – possible reasons?*

*Evidence-based practice or clinical guidelines in your practice?*

*Discharge plan?*

4. In your opinion, what are the factors that hamper patients in gaining control of their pain?

5. To which healthcare practitioner do you refer CMSP patients?

*Rehabilitation (e.g. physiotherapist or occupational therapist)*

*Specialist (e.g. neurologist, rheumatologist or orthopaedic surgeon)*

*Pain clinic (Tygerberg or Groote Schuur)*

*Psychologist or social worker*

Your reason for referring to that specific practitioner?

6. Which factors in your current working situation hamper you in applying evidence-based practice in the case of patients with CMSP?

*Prompts: factors on personal, organisational, patient and family, or systemic level*

7. Which factors in your current working situation help you to apply evidence-based practice in the case of patients with CMSP?

*Prompts: factors on personal, organisational, patient and family, or systemic level*

8. What aspects in your current working situation need to change to enable you to manage people with CMSP conditions optimally?

**Thank you for your contribution.  
Explain what will happen next.**



## APPENDIX 14: HEALTHCARE PRACTITIONER GENERAL QUESTIONNAIRE

The aim of the questions in this section is to obtain general information about you.  
The information will be kept confidential.

Please respond to each question by ticking the appropriate box with an X or ✓,  
OR by supplying the missing information.

1. Age: \_\_\_ years

2. Gender:

Male		Female	
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3. Home language:

Afrikaans	English	isiXhosa	Other (please specify):
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4. Ethnic group:

Asian	Black African	Coloured	White	Other (please specify):
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5. Please indicate your profession:

Community health centre manager	
Community health worker	
Dietician	
Medical doctor	
Nurse	
Occupational therapist	
Physiotherapist	
Psychologist	
Social worker	

Other (please specify): \_\_\_\_\_

6. Please state your qualification(s)                      Year in which qualification(s) was/were obtained

.....	.....
.....	.....
.....	.....

7. How many years have you been practising your current occupation? \_\_\_\_\_ years

8. How many years have you worked at the community health centre? \_\_\_\_\_ years

9. Approximately what percentage of your patients or clients per week has chronic pain?

\_\_\_\_\_ %

10. In your context, approximately what percentage of your patients or clients has chronic pain that is musculoskeletal in origin?

\_\_\_\_%

11. Please rate your satisfaction with treating patients with chronic musculoskeletal pain.

Very satisfied	Satisfied	Slightly satisfied	Not at all satisfied
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12. Do you currently use clinical practice guidelines for managing chronic musculoskeletal pain?

Yes	Sometimes	No
-----	-----------	----

13. Approximately how often do you treat the following chronic conditions per month?

	Not at all	Occasionally	Very often
Carpal tunnel syndrome			
Chronic widespread or generalised pain			
Complex regional pain syndrome			
Fibromyalgia			
Migraine			
Myofascial pain			
Osteoarthritis			
Rheumatoid arthritis			
Rheumatic pain			
Sciatica			
Tendonitis			
Overuse injuries			
Regional pain			
Head			
Neck			
Thoracic			
Shoulder			
Arm			
Elbow			
Wrist and hand			
Abdominal			
Pelvic			
Lower back			
Leg			
Hip			
Knee			
Ankle			
<b>Other (please state):</b>			

*Thank you for participating!*

## **APPENDIX 15: INFORMED CONSENT (PRACTITIONERS)**

### **INFORMATION LEAFLET AND CONSENT FORM FOR PARTICIPATION IN A RESEARCH STUDY**

#### **Title of the research project:**

Study 2: Healthcare providers' perspectives about the primary healthcare management of patients with chronic musculoskeletal pain regarding their management pathway

**Reference number:** S14/01/018

**Principal investigator:** Dawn Ernstzen

**Address:** Division of Physiotherapy, Faculty of Medicine and Health Sciences, PO Box 19063, Tygerberg 7505

**Contact numbers:** 021 938 9300

I would like to invite you to participate in a research project. Please take some time to read the information presented here, because it explains the details of the study. Please ask the study staff anything about this study that you do not understand fully. It is very important that you must be completely satisfied that you understand clearly what this research is about and how you could be involved. Please remember:

- Participation is **entirely voluntary**, so you are free to say that you do not want to participate.
- If you say no, this will have no negative effect on you in any way whatsoever.
- You are free to withdraw from the study at any point, even if you did agree initially to take part.

This study has been approved by the Health Research Ethics Committee of Stellenbosch University and will be conducted according to the ethical guidelines and principles of the International Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

#### **What is this research study all about?**

The **main aim** of this phase of the study is to determine what different healthcare providers experience and think regarding the management of patients with chronic musculoskeletal pain in the context of primary health care. Therefore, the research will focus on describing the experiences and views of healthcare providers. The information will be used to inform the overall study which will focus on the development of clinical guidelines and a care pathway for chronic musculoskeletal pain in the Western Cape. About 20 healthcare providers in 4 purposefully selected community healthcare centres will be invited to participate (e.g. medical doctors, nursing practitioners, physiotherapists, occupational therapists, social workers and psychologists).

Individual interviews will be conducted at the healthcare centre where you work and each interview will last 30 to 45 minutes. With your permission, I would like to record the interview for it to be transcribed and later analysed by researchers at Stellenbosch University. A follow-up session will be arranged to share the results of the study.

#### **Why have you been invited to participate?**

You have been invited because you work at a healthcare centre and provide care to patients with chronic musculoskeletal pain; therefore, you can contribute valuable information to the study.

### **What will your responsibilities be?**

You are requested to share your experiences and views regarding the provision of care to patients with chronic musculoskeletal pain. You will also be required to complete a short questionnaire with general information about yourself, which will help me to describe the research context.

### **Will you benefit from taking part in this research?**

You will not benefit directly from this research in the short term. However, future benefit lies in the fact that the information gained from this research may inform healthcare practitioners about issues and strategies for treating chronic musculoskeletal pain in the local context.

### **Are there any risks involved in your taking part in this research?**

There are no direct risks; only interviews will be conducted. However, you may be put in a position of sharing sensitive information that may evoke emotional responses. Please inform the researcher should you be experiencing such emotions, and if you need a break from the interview.

### **If you do not agree to take part, what alternatives do you have?**

If you prefer not to participate, we respect your choice.

### **Who will have access to your medical records?**

Only the research team will have access to your records. Approved external auditors or funders may also inspect the research records. The information collected will be kept confidential. Your name will not appear on any records, as only numbering codes will be used. Your identity will remain confidential throughout the conducting and reporting of the research.

The interviews will be recorded with a digital voice recorder and will be documented by a professional, independent transcriber. The recordings will be password protected. No names will be used in the transcriptions. Once the transcriptions are completed, the voice recordings will be destroyed. Only the research group will conduct the interviews and analyse the transcriptions.

If the information obtained is published (e.g. in a report or journal article), the participants' identities or the names of the community health centres will not be disclosed.

### **What will happen in the unlikely event of some form of injury occurring as a direct result of your taking part in this research study?**

This part of the research project consists of interviews. Therefore, no injuries resulting from the research process are anticipated.

### **Will you be paid to take part in this study and are there any costs involved?**

No, you will not be compensated for participating, but you will receive a small gift of appreciation. Also, you will incur no costs if you do take part.

### **Is there anything else that you should know or do?**

Should you have any further queries or encounter any problems, please call the principal investigator, Dawn Ernstzen, on 021 938 9300. The study is financially supported by the National Research Foundation and no conflict of interests has been reported.

Should you have any concerns or complaints that the research team has not addressed adequately, you may call the Health Research Ethics Committee on 021 938 9207.

You will receive a copy of this information and consent form for your own records.

**Declaration by participant**

By signing below, I ..... agree to take part in a research study entitled: *Health care providers’ perspectives about the primary health care management of patients with chronic musculoskeletal pain regarding their management pathway.*

I declare that:

- I have read or had read to me this information and consent form and it is written in a language in which I am fluent and with which I am comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

**Informed consent for recording of the interview**

The reason for recording the interview and later destroying the voice recordings has been explained to me. I understand these procedures and agree that they may be performed.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

**Declaration by investigator**

I (*name*) ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*)

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

**Declaration by interpreter**

I (*name*) ..... declare that:

- I assisted the investigator (*name*) ..... to explain the information in this document to (*name of participant*) ..... using the language medium of Afrikaans/isiXhosa.
- We encouraged him/her to ask questions and took adequate time to answer them.
- I conveyed a factually correct version of what was related to me.
- I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of interpreter

.....  
Signature of witness

**APPENDIX 16: CODEBOOK FOR PRACTITIONER STUDY****Code-Filter: All**

HU: Ernstzen HCP Interviews CPG

File: [C:\Users\acer i5\Documents\Scientific Software\ATLAsTi\TextBank\Ernstzen HCP Interviews CPG.hpr7]

Edited by: Super

Date/Time: 2016-08-17 16:53:53

<p><b>BARRIER</b> Barrier: continuity of care Barrier: meds available <b>CPG: Use and Need</b> <b>Culture</b> <b>Diagnosis</b> <b>EBP</b> EBP: barrier facilitator EBP: use <b>Employer</b> <b>HEALTHCARE PRACTITIONER</b> HCP: education development HCP: feeling HCP: roles HPC beliefs <b>Language</b> <b>MAN: efficacy</b> <b>OCCUPATIONAL</b> Occupational: barrier Occupational: facilitator Occupational: employer <b>Pathway</b> <b>PATIENT</b> PATIENT: education needs PATIENT: empowerment PATIENT: expectations PATIENT: health literacy PATIENT: psychosocial PATIENT: role <b>PERSPECTIVE</b> PERSP: care PERSP: causes chronicity PERSP: causes pain PERSP: change PERSP: community PERSP: Compliance PERSP: patient PERSP: pt beliefs meds PERSP: pt beliefs physio <b>Trauma</b> <b>Typical patient</b></p>	<p><b>PRACTICE</b> PRACTICE: Ass devices PRACTICE: assessment PRACTICE: CBT PRACTICE: Coping PRACTICE: Diet PRACTICE: discharge PRACTICE: education PRACTICE: electro-physical PRACTICE: exercise PRACTICE: group therapy PRACTICE: meds PRACTICE: interdisciplinary PRACTICE: physio PRACTICE: psycho PRACTICE: psychiatry PRACTICE: refer PRACTICE: self-management PRACTICE: social worker PRACTICE: support PRACTICE: work assessment <b>Satisfaction</b> <b>SOCIAL</b> SOCIAL: disability grant SOCIAL: drugs SOCIAL: environment SOCIAL: finances SOCIAL: lifestyle SOCIAL: psychosocial SOCIAL: relationships SOCIAL: transport SOCIAL: violence <b>SYSTEM</b> SYSTEM: access SYSTEM: continuity SYSTEM: health care system SYSTEM: Interdisciplinary care SYSTEM: load SYSTEM: management SYSTEM: meds available SYSTEM: refer SYSTEM: resources SYSTEM: time SYSTEM: wait</p>
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## APPENDIX 17: EXAMPLES OF TRANSLATED QUOTES (PRACTITIONER STUDY)

Afrikaans	English
<p><b>P 3, Doctor:</b> <i>En mens moet meer dink ek meer 'n holistiese benadering ten opsigte van kroniese pyn hê. Ek bedoel aan die artritis, die eindstadium van artritis kan ons dalk iets doen. Ons moet 'n diagnose kan hê, wat die rede vir die pyn is dat ons die regte diagnose het. Ons het regtig 'n multidissiplinêre span nodig om die pyn te hanteer. Want daar is verskeie redes vir pyn. So ek dink nie daar word genoeg, daar is genoeg altyd tyd en aandag wat daaraan spandeer word nie.</i></p>	<p><b>P 3, Doctor:</b> <i>I think we need a more holistic approach for chronic pain. We can do something for arthritis, the end-stage also. But we must have a diagnosis; we must know the reason for the pain to make the right diagnosis. We definitely need a multi-disciplinary team to manage pain. Because there are different reasons for the pain. So I don't think that enough time and attention is spent on it.</i></p>
<p><b>P 4, Doctor:</b> <i>Dit sisteem is nie perfek nie, maar ons probeer so ver moontlik accommodating te wees. Die IDL maak 'n huge difference in ons werk. Ek kan nie vir jou genoeg sê nie. En toe ek in XXX gewerk het, jy moet 'n afspraak maak om die physio te sien, die physio reis rond. Dis 'n moeilike, moeilike, moeilike konsep.</i></p>	<p><b>P 4, Doctor:</b> <i>The system is not perfect, but we try to be accommodating. The interdisciplinary approach makes a huge difference in our work. I can't tell you enough. When I worked at XXX, you needed to make an appointment to see the physiotherapist, because she travels to other clinics. That is a very difficult concept.</i></p>
<p><b>P 5, Occupational therapist:</b> <i>Ek dink definitief pasiënte moet vinniger by ons uitkom, want 'n pasiënt loop dalk baie lank met 'n arm of 'n hand wat seer is, of selfs 'n rug, dan kom hulle hier by XXX, dan sê hulle oe, ek loop nou al vir drie weke met my rug, maar ek het nou maar uitgehou. Waar as ons weereens gaan oor opvoeding, dat die pasiënte kan leer as jy pyn het, kom. As dit vir twee of drie dae seer is, kom dadelik in en kom vra dadelik vir hulp, want hoe vinniger jy dit stop, hoe beter.</i></p>	<p><b>P 5, Occupational therapist:</b> <i>I really think patients need to get to us sooner. Because a patient will have pain for some period of time; a hand or an arm or a back; they present to XXX after three weeks of having pain; and say they have endured the back pain for three weeks. Once again, it is about education, so that the patient knows, if I have pain, I need to seek help. If it is painful for two or three days, come immediately and ask for help, because the sooner you stop it, the better.</i></p>
<p><b>P 7, Physiotherapist:</b> <i>Ek en die sielkundige, ons het saamgegaan, ons het verduidelik die hele anatomie rondom pyn, die fisiologie, ons het alles gedoen en dit het baie goed gewerk, die mense het fantasties gereageer en gereeld gekom en saam met dit, die oefengroepie. Die pasiënte het nooit weer teruggekom kliniek toe nie. Glad nie. Hulle het nooit weer gekom vir 'n gewone behandeling nie.</i></p>	<p><b>P 7, Physiotherapist:</b> <i>The psychologist and I, we went together and explained comprehensively to patients the anatomy and physiology of pain. We did that and it worked very well, the people reacted very well to it. They came regularly and with that to the exercise group. Afterwards, the patients did not attend the clinic again, not at all. They did not return for the usual treatment.</i></p>



## APPENDIX 18: CONVERSION OF THE LEVELS OF EVIDENCE TO A SINGLE SYSTEM

Single system: Level of evidence	As described in various guidelines
High level of evidence	Level 1 Levels I or II Levels A or B Good
Moderate level of evidence	Level 2 Levels II Levels B or C Fair
Low level of evidence	Level 3 Levels III Levels C Poor
Expert consensus	Level 4 Level IV (in some CPG also III) Levels D Good practice point

High levels of evidence can be variously described as Levels I or II, A or B.

Moderate levels of evidence can be variously described as Levels II or III, B or C.

Low levels of evidence can be variously described as Levels III or IV, C or D. Expert consensus was also taken as low level.

## APPENDIX 19: ADAPTED PARM GUIDE FOR ENDORSEMENTS

Phrase for strength of evidence	Description of type level of evidence	Guide for writing endorsements
<b>There is strong evidence</b>	Consistent grades of high-quality evidence with uniform thought <sup>a</sup> , and at least a moderate volume of references to support the recommendation	We strongly recommend
<b>There is evidence</b>	A mix of moderate- and high-quality evidence with uniform thought and at least a low volume of references, A mix of high- and low-quality evidence with uniform thought and high volume of references, High-quality evidence coupled with GPPs, and at least moderate volume of references, Consistent grades of high-quality evidence with uniform thought, and at least a low volume of references, One level I paper (SR) and at least a moderate volume of references	We recommend
<b>There is some evidence</b>	Single level II paper (RCT), Inconsistent grades of high and low evidence with uniform thought and a moderate volume of references, Inconsistent grades of moderate and low evidence with uniform thought and a moderate volume of references, Consistent grades of moderate level evidence and GPP with uniform thought and at least a moderate volume of references, Consistent grades of low-level evidence with uniform thought and at least a moderate volume of references	We suggest that clinicians consider
<b>There is conflicting evidence</b>	A mix of levels of evidence with non-uniform thought, irrespective of the volume of references	
<b>There is limited evidence</b>	A mix of levels of evidence with non-uniform thought, irrespective of the volume of references with or without GPPs, Consistent grades of moderate level evidence with uniform thought and a low volume of references	
<b>There is expert consensus that it is good practice</b>	GPP only (no evidence): based on expert consensus	
<b>There is insufficient/no evidence</b>	Low or inconsistent levels of evidence with a low volume of references with or without GPPs, <u>OR</u> Absence of evidence	We do not endorse

<sup>a</sup> Where only one recommendation is present, the criterion of **uniformity of thought** cannot be adhered to and therefore does not apply. <sup>b</sup> In the **absence** of a strong evidence base, but where plausible hypotheses exist for a particular recommendation (such as theoretical explanations, physiological rationale, expert consensus or other forms of such data), the clinician should use his/her own discretion by applying clinical reasoning to make a decision.

(Adapted from Gonzalez-Suarez et al., 2012)

## APPENDIX 20: EXAMPLES OF MERGING RECOMMENDATIONS

**Table 20.1. Example of recommendation on pharmacological management: NSAIDs**

Recommendation	Source guideline	Quality level of evidence	Strength of recommendation	References (2)
NSAIDs should be considered in the treatment of patients with chronic non-specific low back pain.	SIGN, p10	High quality	B (moderate)	1
NSAIDs should be used for periodic flare-ups of mild to moderate inflammatory or non-neuropathic pain. NSAIDs should be used for periodic flare-ups rather than for long-term chronic use.	ICSI, p35	High quality	-	1
<p><b>Criteria:</b> <i>Uniform thought – Consistent level of evidence – Low volume references – Non-current</i></p> <p><b>Merged level of evidence:</b> There is evidence.</p> <p><b>Merged endorsement statement:</b> We recommend that NSAIDs can be effective in the short term for chronic musculoskeletal pain such as chronic non-specific low back pain and arthritis pain.</p>				

**Table 20.2. Example of recommendation on self-management**

<b>Recommendation</b>	<b>Source guideline</b>	<b>Quality level of evidence</b>	<b>Strength of recommendation</b>	<b>References (8)</b>
Self-management resources <i>should be considered</i> to complement other therapies in the treatment of patients with chronic pain.	SIGN, p8	High quality x6	C	6
Self-management insures active patient participation in the care plan is essential.	ICSI, p23	Low quality	-	1
Healthcare professionals should signpost patients to self-help resources, identified and recommended by local pain services, as a useful aide at any point throughout the patient journey. Self-management may be used from an early stage of a pain condition through to use as part of a long term management strategy.	SIGN, p5	High quality	GPP	1
<p><b>Criteria:</b> <i>Uniformity of thought – Inconsistent level of evidence – High volume –Current</i></p> <p><b>Merged level of evidence:</b> There is evidence.</p> <p><b>Merged endorsement statement:</b> We recommend self-management resources to complement other therapies in the treatment of patients with chronic pain to ensure active patient participation during early management as well as part of long-term management.</p>				

**Comment:**

As can be seen in Table 19.1, SIGN (2013) assigns a B (moderate) rating, which is also displayed in the phrasing of the recommendations, amidst a high quality of evidence, indicating that factors other than the quality of evidence played a role in this recommendation. ICSI (2013) did not use strength of the recommendation grading, and the wording suggests a strong recommendation. A similar finding is presented in Table 19.2. The reason for the B and C strength of recommendation ratings in the examples are indistinct. However, SIGN (2013) mentions that the evidence indicates small improvements in outcomes for the intervention, and that the long-term effectiveness is unclear. The latter two reasons could explain the strength of the recommendation rating.

## APPENDIX 21: GUIDELINE CONTRIBUTORS

Thank you to the expert panel who evaluated and validated the recommendations, and the expert panel who produced relevant context and practice points:

Dr Debbie Alexander	Principal Clinical Psychologist, Senior Lecturer, Department of Psychiatry, Stellenbosch University
Ms Jacqui Armstrong	Physiotherapist, Government sector
Dr Sean Chetty	Anaesthesiologist, Senior Lecturer, School of Clinical Medicine, University of the Witwatersrand and Rahima Moosa Mother and Child Hospital
Prof Hoffie Conradie	Former Director, Ukwanda Centre for Rural Health
Ms Caroline de Wet	Physiotherapist, Manager, Government sector
Dr Janine Dizon	Centre for Evidence-based Health Care, Stellenbosch University and Centre for Health Research and Movement Science, University of Santo Tomas, Manila, Philippines
Ms Magda du Preez	Physiotherapist, Government sector
Ms Christa du Toit	Medical Scientific Liaison: Pain
Ms Marlie Enright	Clinical lecturer, Physiotherapist, Stellenbosch University
Ms Dawn Ernstzen	Physiotherapist, Senior Lecturer, PhD candidate, Stellenbosch University
Ms Charlyn Goliath	Occupational therapist, Manager, Government sector
Ms Danine Kitshoff	Lecturer in Nursing, Stellenbosch University
Ms Jacqui Koep	Physiotherapist, Private practice
Prof Quinette Louw	Professor in Physiotherapy, Stellenbosch University
Prof Helgard Meyer	Professor, Department of Family Medicine, University of Pretoria
Ms Hameedah Parker	Medical Anthropologist, Research Intern, Stellenbosch University
Prof Romy Parker	Associate Professor in Physiotherapy, University of Cape Town
Ms Hilary Rhode	Lecturer, Family Medicine and Primary Care, Stellenbosch University
Ms Michelle Smith-Venter	Occupational therapist, Certified hand therapist (USA), Private practice
Ms Herculene van Staden	Occupational therapist, Private practice
Ms Erica Venter	Former Consultant Clinical Psychologist in Pain Management, NHS UK & PMC Jersey

Dr Klaus von Pressentin      Family Physician, Senior Lecturer, Family Medicine and Primary  
Care, Stellenbosch University

Thank you to Prof Marc Blockman, Division of Clinical Pharmacology, Department of Medicine,  
Faculty of Health Sciences, University of Cape Town, for his valuable feedback on the  
recommendations for pharmacological management.

## **APPENDIX 22: INFORMED CONSENT (CONSENSUS STUDY)**

### **INFORMATION LEAFLET AND CONSENT FORM FOR PARTICIPATION IN A RESEARCH STUDY**

**Title of the research project:**

Study 4: Contextualisation of evidence-based clinical guideline recommendations for the management of chronic musculoskeletal pain in a South African primary healthcare setting

**Ethics reference number: S14/01/018**

**Principal investigator:** Dawn Ernstzen

**Address:** P O Box 241, Cape Town, 8000 , South Africa

Physiotherapy Division, Faculty of Medicine and Health Sciences, Stellenbosch University

**Contact number:** 021 938 9300

I would like to invite you to participate in a research project. Please take some time to read the information presented here, which will explain the details of the study. Please ask me any questions about any part of the study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you could be involved. Please remember:

- Your participation is **entirely voluntary** and you are free to decline to participate.
- If you say no, this will not affect you negatively in any way whatsoever.
- You are free to withdraw from the study at any point, even if you did agree to take part.

This study has been approved by the Health Research Ethics Committee at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

**What is this research study all about?**

The study focuses on **chronic musculoskeletal pain AND primary/community health care**

**The main aim** of this research is to contextualise evidence-based clinical guideline recommendations that were identified through a systematic review on user-friendly recommendations for clinical practice that are applicable to the local, South African context.

This part of the study will take the form of a **consensus study**, during which a group of experts will provide feedback about evidence-based practice recommendations and their applicability to a South African context. This will be done as follows:

- firstly, by **rating** their agreement with each evidence-based recommendation through a survey, and
- secondly, by attending a **consensus meeting** to discuss SA contextual factors that might have an impact on the implementation of the recommendations.

A multi-disciplinary group across government health sectors and academic institutions will be invited to participate in a study. The consensus group will meet once, for between one and two hours at the Faculty of Medicine and Health Sciences, Stellenbosch University. Using a specific agenda, the group will discuss the guideline recommendations and provide suggestions on how to contextualise and use it in the local context. The principal investigator will chair the meeting and document the decisions made.

### Why have you been invited to participate?

You have been invited to participate because you have distinctive experience in

- health care management and/or
- pain management and/or
- guideline development

in the South African context. Sharing your experiences and views about the providing care to patients with chronic musculoskeletal pain in your unique context will be vital in sketching a management pathway for these patients.

### What will be expected of you? And how long will it take?

The table below outlines each step of the process:

Step		When?	How long will it take you?
<b>Step 1</b>	You will receive an e-mail with the baseline information <i>to orientate</i> you: <ul style="list-style-type: none"> <li>• A “writing guide” that was developed to guide decision-making</li> <li>• 3 sample clinical recommendations</li> </ul>	September 2015	15 to 20 minutes
<b>Step 2</b>	You will receive an e-mail link to complete a <b>Delphi survey</b> that contains all clinical practice recommendations. <ul style="list-style-type: none"> <li>• You need to <i>indicate your agreement</i> with each recommendation, and</li> <li>• Provide comments if you like.</li> </ul>	October 2015	30 minutes
<b>Step 3</b>	<b>Consensus conference</b>  <i>The group meets to discuss:</i> <ul style="list-style-type: none"> <li>• Any disagreements in evidence-based recommendations as identified in step 4, and</li> <li>• South African contextual factors that might impact implementation.</li> </ul>	<b>Proposed date:</b> Wednesday, 11 November. <b>Time:</b> 10:00–12:30 <b>Lunch:</b> 12:30–13:30 <b>Venue:</b> Faculty of Medicine and Health Sciences, Stellenbosch University	2½ hours
<b>Step 4</b>	<b>Delphi survey Round 2</b>	December 2015	10–20 minutes

### Will you benefit from taking part in this research?

You will not benefit directly from this research in the short term. However, future healthcare providers and patients may benefit once the research has been concluded. The benefit lies therein that the information gained from this research may inform healthcare practice about a relevant management pathway and clinical guideline recommendations for the treatment of chronic musculoskeletal pain in the Western Cape.



### **Are there in risks involved in your taking part in this research?**

There are no direct risks involved in the study. A conflict of interest form will be provided to identify any conflict of interest. Should there be any voting about decisions, your vote will remain confidential. You will also have the opportunity to change your vote, should this be necessary.

### **If you do not agree to take part, what alternatives do you have?**

If you prefer not to participate, we respect your choice, and it will not disadvantage you.

### **Who will have access to the records?**

- Your responses to the survey responses will be kept anonymous, as an electronic survey system will be used.
- During the consensus conference, your opinion will be shared in the group. However, only the consensus decision will be communicated in the outcome of the study and individual comments will thus not be identifiable. The conference will be recorded with a digital voice recorder to aid in the documentation and motivation for decisions. When the study is completed, the voice recordings will be destroyed.
- Should there be voting, your vote will remain confidential, and you will have an opportunity to change your vote.
- If you give permission, your name will appear as a contributor in the documentation of the study results. If you do not give permission for you name to appear, a general non-identifying description of your career profile will be given.

Only the research team will have access to the study records. Approved external examiners or funders may also inspect the research records.

### **What will happen in the unlikely event of some form of injury occurring as a direct result of your taking part in this research study?**

The research involves a survey and a discussion group. No injuries resulting from the research process are thus anticipated.

### **Will you be paid to take part in this study and are there any costs involved?**

No, you will not be compensated to take part in the study but you will receive a small gift of gratitude. There will be no costs involved for you, if you do take part.

I would like to offer you the following:

- A small honorarium OR CPD points will be applied for;
- Your contribution will be acknowledged in the final product;
- Authorship in the final product;
- A copy of the final product (after external review);
- Should a journal article result, you may also be listed as an author.

### **Is there anything else that you should know or do?**

You can contact the principal investigator, Dawn Ernstzen, at telephone 021 938 9300 if you have any further queries or encounter any problems. The study is financially supported by the National Research Foundation and no conflict of interest has been reported.

You can contact the SU Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the research team. You will receive a copy of this information and consent form for your own records.

**Declaration by participant**

By signing below, I ..... agree to take part in a research study entitled:

*Contextualisation of evidence based clinical guideline recommendations for the management of chronic musculoskeletal pain in a South African primary healthcare setting*

I declare that:

- I have read or had read to me this information and consent form and it is written in a language in which I am fluent and with which I am comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

**Informed consent for recording of the discussion:**

The reason for recording the interview, transcribing it and later destroying the voice recordings have been explained to me. I understand these procedures and give consent for them to take place.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of participant

.....  
Signature of witness

**Declaration by investigator**

I (*name*) ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did/did not use an interpreter. (If an interpreter was used then the interpreter must sign the declaration below.

Signed at (*place*) ..... on (*date*) .....

.....  
Signature of investigator

.....  
Signature of witness

## APPENDIX 23: CONFLICT OF INTEREST

### Contextualising clinical practice guidelines for chronic musculoskeletal pain

#### Disclosure of conflict of interest

We would like to ensure balance, independence, impartiality and scientific rigour in the contextualising of the guideline by experts from across the Western Cape.

You are asked to declare any real or potential conflicts of interest that may have a direct influence on the content of the guidelines. This includes relationships with pharmaceutical companies who may manufacture or distribute pharmaceutical products mentioned in this guideline; or relationships with insurance companies or workers' compensation agencies.

The intent of this disclosure is not to prevent any reviewer from participating, but rather to be transparent about possible conflicts, and to identify potential bias.

The final guideline will include all the names of the advisory group as well as the named conflicts of interest.

**Name:**

**Address/Affiliation:**

**Please choose the appropriate option:**

	I have no actual or potential conflicts of interest.	
	I have/had financial interests, arrangements, affiliation with the following organisations:	
	<b>Affiliation/financial interest</b>	<b>Name of organisation</b>
	Grant or research support	
	Shareholder	
	Other	
	Other	

#### **Publication interest**

I am interested in participating in a publication that might result from this contextualisation (Delphi) process.

Please circle your choice:      YES                      NO

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## APPENDIX 24: CONTEXTUALISATION CRITERIA

<b>We endorse</b> performing a complete and holistic patient evaluation which includes history, physical examination, functional status, psychosocial risk factors and contextual factors in the evaluation, diagnosis and management of patients with CMSP.		
Evidence base: There is evidence		
<b>PHC Contextual factors: contextual factors that may affect the implementation of this recommendation</b>		
<ul style="list-style-type: none"> <li>• See framework</li> </ul>		
<b>What is needed to implement this intervention?</b>		
<b>What is needed?</b>	<b>Minimum standards</b>	<b>Additional standards</b>
Organisational		
Practice method (how)		
Staff (who)		
Resources		
Training		
Timing (when)		
Re-assessment		
Referral		
Consumer/patient /family		
Policy		
Other?		

## APPENDIX 25: FRAMEWORK OF CONTEXTUAL FACTORS

<b>Patient-specific (personal) factors</b>	<b>Social and environmental factors</b>
Beliefs about chronic musculoskeletal pain <ul style="list-style-type: none"> <li>• Knowledge and understanding of pain</li> <li>• Biomedical or biopsychosocial beliefs</li> </ul> Impact of chronic pain <ul style="list-style-type: none"> <li>• Movement and function</li> <li>• Emotions</li> <li>• Relationships</li> <li>• Participation</li> </ul> Coping with chronic pain <ul style="list-style-type: none"> <li>• Active or passive coping strategy</li> <li>• Spirituality</li> <li>• Resilience</li> <li>• Acceptance</li> </ul> Adherence to management Treatment goals	Family <ul style="list-style-type: none"> <li>• Family support</li> <li>• Concerns about family</li> </ul> Financial circumstances Disability insurance Occupational influences Personal loss Physical environment Community influence <ul style="list-style-type: none"> <li>• Community support groups</li> <li>• E.g. drug abuse, violence, gangsterism</li> </ul>
<b>Healthcare management/interventions factors</b>	<b>Healthcare system factors</b>
Practitioner beliefs Practitioner attributes Access to interdisciplinary care Pharmacological management <ul style="list-style-type: none"> <li>• Effectiveness of analgesia</li> <li>• Beliefs about analgesia</li> <li>• Adherence to prescribed medication</li> </ul> Self-medication/use of traditional medicines Non-pharmacological management <ul style="list-style-type: none"> <li>• Effectiveness of exercise/other therapies</li> <li>• Beliefs about exercise and other therapies</li> </ul> The need for advice and education Treatment goals	Pathway of care (patient journey) <ul style="list-style-type: none"> <li>• Private and/or public healthcare sector usage</li> <li>• Referral</li> </ul> Waiting time/waiting lists Continuity of care Regularity of care Patient interaction with healthcare system <ul style="list-style-type: none"> <li>• Satisfaction with care</li> <li>• Understanding the system</li> </ul> Access to care/access to rehabilitation Staff capacity Consultation time System load Analgesics available

## APPENDIX 26: TABLE OF COMMENTS ABOUT RECOMMENDATIONS DURING THE DELPHI ROUND 1 & 2

Recommendation	Comment
<b>Approach</b>	A patient-centred approach is good, but ‘compassionate’ can be interpreted as ‘sympathetic’ which can enhance the fear-avoidance behaviour. A ‘pro-active’ approach used by all members or the multi-disciplinary team has a better outcome.
<b>Collaborative decision-making</b>	Which also considers the behavioural, cognitive and emotional status of the patient
<b>Inter-professional collaboration</b>	Unfortunately, there is no time to develop a thorough individual plan for every patient. But that is the ideal!!
<b>Holistic assessment</b>	Without a proper holistic evaluation, you cannot plan and treat appropriately. Must also include quality of life and level of participation/participation restrictions.
<b>Tools</b>	It makes it easier to compare your results and for evidence-based treatment regimes. As an adjunct to a thorough clinical evaluation. It is also important to get a clinical sense of the person, as well as using instruments to measure distress.
<b>Classification</b>	Classification is important relating to educating client on underlying pathology/reason for pain, but it is uncertain how it will influence further management strategies of chronic pain. Will need extra training in terminology. Would you include pain of psychological origin?
<b>Special investigations</b>	We would have to clarify the standardised process/guidelines of defining and choosing appropriate information investigated/shared as each client has individual interpretation/understanding/needs in regards to their health status. This can also become an ethical dilemma as we withhold access to certain special investigations or information. Consider patient right to information.
<b>Brief education</b>	It would depend on the patient whether this will be brief or elaborate, depending on his/her beliefs, past experiences of pain, secondary gain, early referrals and working conditions. I am not sure what ‘to continue to work’ means. Does it mean to continue with daily activities and working towards being more active? If so I agree. I would include the family in this brief education.
<b>Therapeutic neuroscience education</b>	Xhosa and other African translations needed.
<b>Education about analgesia</b>	I would like to know more about the side effects of medications.
<b>Analgesic review</b>	These patients should preferably be seen every 4–6 months and the aim

<b>Recommendation</b>	<b>Comment</b>
	remains to reduce pharmacological therapies whenever possible. Reviewed more often, on step 3 at least monthly.
<b>Antidepressant therapy fibromyalgia</b>	But most important lifestyle adaptation programme Most FMS patients respond to 10-25 mg at night and can't tolerate higher doses. Tramadol is the primary drug of choice.
<b>Anti-convulsants (Pregabalin)</b>	This is also very effective for patients post lumbar surgery with residual radiculopathy. Most patients respond to lower dosages such 50-75 mg. Not available in primary care therefore not an option in state practice.
<b>SNRI (Duloxetine)</b>	Yet again as co-analgesia but patient needs to improve lifestyle to decrease the use of these drugs. Evidence base for OA is much smaller than in FMS and neuropathic pain. Not available in primary care therefore not an option in state practice. Not available at hospital. Knowledge can be made known to patients who can afford to source internationally.
<b>Opioids consent</b>	The doctors don't do informed consent – it is used a lot.
<b>Opioid therapy</b>	Criteria for long-term opioid therapy should emphasise appropriate patient selection for e.g. risk of abuse, etc. more emphatically.
<b>Exercise</b>	Patient subjective
<b>Acupuncture</b>	Limited evidence
<b>TENS</b>	Evidence is limited and clinical experience often disappoints.
<b>Psychological comorbidities</b>	I am not sure which clinicians you have in mind to do this.
<b>Cognitive behavioural therapy</b>	Indications for cognitive behavioural therapy should be better described. Depending on the person's ability to be aware of their cognitions and to challenge them.
<b>Refer to psychologist</b>	A psychologist and I had a chronic pain group for a couple of weeks. It delivered fantastic results, but the psychologist was transferred to a different region before we could complete the programme. Psychologists do not always understand the physical components of pain and if not trained psychologists can enhance fear-avoidance behaviour.
<b>Antidepressant therapy</b>	Start low go slow not optimised. Not all patients with pain will be clinically depressed.
<b>No antidepressant therapy CLBP</b>	Tricyclic antidepressants are in particular beneficial in chronic LBP patients with sleep disturbances and also with underlying fibromyalgia. Some medication, like Trepiline in small dosages, can be beneficial in chronic low back pain, when combined with pain management techniques.
<b>SSRI (Fluoxetine)</b>	If an assessment of the psychosomatic factors is conducted with patients with low back pain and shows that the person is 'at risk', the use of Depramil has shown to be effective. Only until lifestyle adaptation programme can be more effective.

Recommendation	Comment
	The treatment of Fluoxetine for fibromyalgia has been discontinued. Unlike to benefit the primary pain complaint but very valuable for comorbid depression.
<b>Multi-disciplinary pain management programme</b>	Such programmes are very limited in our country and a general statement like this is not only inappropriate but also impractical, most chronic pain patients are managed by primary care doctors and nurses.
<b>Pain management specialist</b>	<p>Early referrals can address misbeliefs, prevents fear-avoidance behaviour and start with pain management from the start. With late referrals as recommended, a pain syndrome could have established itself, and this will prolong treatment.</p> <p>There are no pain specialists in SA. Most doctors who call themselves ‘pain specialists’ do not work from a biopsychic-social framework and are often procedural orientated which has the potential to lead to unnecessary procedures which often worsens the prognosis. If there is a collaborative approach would this be necessary?</p>
<b>Muscle relaxants</b>	<p>Anxiolytics have their place to get the patient to be more cooperative for other treatment plans.</p> <p>There is a small subset of patients who respond to muscle relaxants such as cyclobenzaprine and this may limit the use of more toxic alternatives such as NSAIDs.</p> <p>Short-term use.</p>
<b>Laser</b>	<p>Safety is really an issue regarding adverse events.</p> <p>No Laser available.</p> <p>Can be done in private but not applicable for the government setting because of limited results and being time-consuming.</p> <p>Not enough experience with this modality.</p> <p>We don’t have Laser.</p>
<b>Rubefacients</b>	<p>Topical rubefacients are sometimes effective as first-line therapy and the rubbing action has been shown to be beneficial by stimulating the thicker Beta fibres. It is unlikely to be beneficial if used as a ‘last resort’.</p> <p>If people can afford it, it must be made known to them.</p>
<b>Topical NSAIDs</b>	<p>The absorption ability through the skin is little and it can cause skin irritation if the patient is sensitive to NSAIDs. Perhaps oral plus paracetamol, then NSAID &amp; NSAID. Then topical application could be another option specifically in chronic pain. You need to have various options in a longer time frame.</p> <p>It is not absorbed in the same manner through the intestinal tract.</p> <p>If a topical NSAID is going to facilitate rubbing the area of chronic pain. It may be more beneficial and can be used instead than normal NSAIDs.</p>



## APPENDIX 27: EXAMPLE – CONTEXT POINTS FOR APPROACH TO CARE








Criterion	Context point
<b>Organisational</b>	To enable this approach, more time per patient and an interdisciplinary team is required. A solution of the system overload is imperative.
<b>Practice method (how)</b>	Applying patient-centredness is very important at the first visit to build rapport and gain patient's trust. Communication skills are important to identify the real main problem and contributing factors (e.g. social). Cultural appropriateness will enhance approach. Important to take cognisance of language influences.
<b>Staff (who)</b>	All clinicians The interdisciplinary team should have regular meetings (monthly) to enhance communication, collaboration, contact and early referral.
<b>Resources</b>	Use patient decision aids/educational material. An electronic communication system is essential to provide feedback to the team. A care plan for each patient with chronic pain is essential.
<b>Training</b>	Skills training may be required to use the approach, for example communication skills training and chronic pain management training.
<b>Timing (when)</b>	Very important at first visit, but needs to be ongoing.
<b>Re-assessment</b>	Patient should be re-assessed at follow-up by the same treating clinician, to enhance continuity of care. Check for change in social environment/physical symptoms.
<b>Referral</b>	Within the interdisciplinary team
<b>Patient/family</b>	Patient should be empowered to take part in decision-making.
<b>Policy</b>	As part of CAIRR (Healthcare 2030). This approach needs to be emphasised in the undergraduate curriculum. Curriculum needs to focus more on cultural sensitivity and social determinants of health.









## APPENDIX 28: EXAMPLE – CONTEXT POINTS FOR ASSESSMENT











<b>Criterion</b>	<b>Context point</b>
<b>Organisational</b>	To enable holistic assessment, more time per patient is required. An outcome-orientated approach is needed – outcomes should be measured.
<b>Practice method (how)</b>	Conduct a thorough interview. Simple, short and validated screening tools and outcome measures will ease holistic assessment and interdisciplinary communication. One holistic tool relevant for the context would be ideal. Risk stratification is important. Important to identify type of pain – may also use a diagnostic tool.
<b>Staff (who)</b>	An interdisciplinary approach is essential. However, holistic assessment is important at the first contact clinician which can be the nurse, medical doctor or in some cases the physiotherapist.
<b>Resources</b>	Printed copy in the folder Electronic information system, available to all clinicians
<b>Training</b>	Staff may initially need training to use assessment tools. Additional training in a chronic pain management may be required.
<b>Timing (when)</b>	Important at first visit
<b>Re-assessment</b>	On follow-up visit or at the end of a 6-week intervention programme, using the same outcome measure. For stabilised patients, a chronic pain club, once a month is advisable.
<b>Referral</b>	Clinicians may need guidelines for referral. Within the interdisciplinary team, depending on findings of the holistic assessment. A social worker and psychologist should be included. For special tests if needed To specialist centres if needed
<b>Patient/family</b>	Explain findings to the patient using appropriate language. Patient education is important to foster adherence to treatment. Family education may enhance support.










## APPENDIX 29: CLINICAL PRACTICE GUIDELINE RECOMMENDATIONS

### RECOMMENDATIONS (with practice/context points\*)







TOPIC	LEVEL OF EVIDENCE	RECOMMENDATION STATEMENT
<b>APPROACH</b>		
<b>Patient-centred</b>		<p><i>We recommend</i> the use of a compassionate, patient-centred approach for the assessment and management of chronic musculoskeletal pain. This includes the exploration of the patient's beliefs, knowledge and understanding of pain and pain management to positively influence outcomes.</p> <p><i>* Enhanced continuity of care if the same clinician is involved in follow-up.</i></p>
<b>Shared decision-making</b>		<p><i>We recommend</i> collaborative decision-making which includes identifying patient goals; developing a comprehensive and patient-specific pain management strategy that considers the age, gender, ethnic and cultural background; and spirituality of the patient.</p>
<b>Inter-professional collaboration</b>		<p><i>We recommend</i> inter-professional collaboration and the development of an individualised and comprehensive plan of care based on the biopsychosocial model for the effective assessment and management of chronic musculoskeletal pain.</p> <p><i>*Early referral for rehabilitation therapy is important.</i></p>
<b>ASSESSMENT</b>		
<b>Holistic assessment</b>		<p><i>We recommend</i> performing a holistic patient evaluation, which includes history, physical examination, functional status, psychosocial risk factors and contextual factors in the evaluation, diagnosis and management of patients with chronic musculoskeletal pain.</p>
<b>Assessment tools</b>		<p><i>We recommend</i> the use of appropriate, validated assessment tools to establish functional and psychological status and quality of life.</p> <p><i>*Where available, use the tools in appropriate languages.</i></p>
<b>CLASSIFICATION</b>		
<b>Classification of pain</b>		<p><i>We recommend</i> the classification of chronic pain according to the type of pain as neuropathic, inflammatory, mechanical, nociceptive (or mixed picture), to guide management.</p> <p><i>*Also consider central sensitisation.</i></p>
<b>SPECIAL INVESTIGATIONS</b>		
<b>Special investigations</b>		<p><i>We recommend</i> that clinicians be cautious in ordering various imaging and other evaluations; and provide relevant and appropriate information about imaging to the patient. This information may play a role in avoiding increased fear,</p>

TOPIC	LEVEL OF EVIDENCE	RECOMMENDATION STATEMENT
		activity restriction, maladaptive behaviours and requests for increased opioids. <i>*Consider red flags and refer when appropriate. Ensure that the patient has had the necessary investigations done. Do not withhold basic, required investigations.</i>
<b>ADVISE AND EDUCATE</b>		
<b>Address concerns</b>		<b>We recommend</b> that clinicians address the patient's concerns and misbeliefs and teach the person, their family and caregivers about pain management strategies. <i>*Involve the family in education to enhance support. Use patient education material.</i>
<b>Brief education</b>		<b>We recommend</b> that brief education be given to patients with chronic musculoskeletal pain to enable patients to continue to work. <i>*Brief education is described as: examination, information, reassurance and advice to stay active.</i>
<b>Advice to stay active</b>		<b>We recommend</b> advice to stay active in addition to exercise therapy for patients with chronic low back pain to improve disability in the long term. Advice alone is insufficient. <i>*Encourage occupational activities where indicated.</i>
<b>Therapeutic neuroscience education</b>		<b>We suggest that the clinician consider</b> pain neuroscience education to assist the patient in understanding their condition, change their conception about pain and improve their ability to cope with pain. <i>* Use narratives and language that are applicable to the local context and culturally appropriate.</i>
<b>PHARMACOLOGICAL MANAGEMENT</b>		
<b>Education about analgesia</b>		<b>We recommend</b> that the clinician: - educate patients about the risks and benefits of all medications and - monitor and manage side-effects. <i>*Use patient educational material. Consider advice about concomitant use of over-the-counter medicines and herbal remedies.</i>
<b>Analgesic review</b>		<b>We suggest that the clinician consider</b> reviewing a patient with chronic musculoskeletal pain using analgesics at least annually. More frequent review is necessary if medication is changed, or if the pain and/or underlying comorbidities alter.
<b>Paracetamol</b>		<b>We recommend</b> Paracetamol (alone and in combination with NSAIDs); and in combination with non-pharmacological treatments in the management of chronic musculoskeletal pain, such as hip or knee osteoarthritis.
<b>NSAIDs</b>		<b>We recommend</b> NSAIDs in the short term for chronic

TOPIC	LEVEL OF EVIDENCE	RECOMMENDATION STATEMENT
		musculoskeletal pain such as chronic non-specific low back pain and arthritis pain. <i>* Consider individual risk profile; avoid the simultaneous use of oral and topical NSAIDs due to cumulative effects.</i>
Topical NSAIDs		<b>We suggest that the clinician consider</b> topical NSAIDs for the treatment of inflammatory pain in patients with chronic musculoskeletal pain. <i>* Avoid the simultaneous use of oral and topical NSAIDs due to cumulative effects. Consider side-effects (skin irritation).</i>
NSAIDs risks		<b>We recommend</b> that clinicians consider cardiovascular, gastrointestinal and renal risk when prescribing NSAIDs, especially for older adults.
Opioid consent		<b>We recommend</b> that clinicians obtain informed consent before starting opioid therapy by advising the patient about potential benefits and risks. <i>*The opioid Tramadol is listed in the EML for chronic non-cancer pain.</i>
Opioid therapy		<b>We recommend</b> opioid therapy for patients with moderate to severe chronic musculoskeletal pain (such as chronic low back pain or arthritis). Careful patient selection and regular review is required. Therapeutic benefits need to outweigh potential harms. <i>*The opioid Tramadol is listed in the EML for chronic non-cancer pain.</i>
<b>PHYSICAL THERAPY</b>		
Manual therapy		<b>We recommend</b> manual therapy, integrated with other interdisciplinary treatments for the short-term relief of chronic pain.
Manual therapy (neck)		<b>We recommend</b> manual therapy in combination with exercise for the treatment of patients with chronic neck pain.
Exercise		<b>We recommend</b> exercise and exercise therapies, regardless of their form, in the management of patients with chronic pain.
Exercise adherence		<b>We recommend</b> the following approaches to improve adherence to exercise: <ul style="list-style-type: none"> <li>• supervised exercise sessions</li> <li>• individualised exercises in group settings</li> <li>• provision of a combined group and home exercise programme with the addition of supplementary material</li> </ul>
TENS		<b>We recommend</b> transcutaneous electrical nerve stimulation (TENS) for the relief of chronic pain. Low or high frequency TENS can be used.
<b>PSYCHOLOGICAL SUPPORT</b>		
Psychological		<b>We recommend</b> that clinicians identify, manage and monitor

TOPIC	LEVEL OF EVIDENCE	RECOMMENDATION STATEMENT
comorbidities		comorbid psychological conditions such as depression in patients with chronic pain.
Operant Behavioural conditioning		<b>We recommend</b> that clinicians be aware that the clinical environment and their own behaviour influence their responses to, and interaction with the patient. These aspects may reinforce patients' behaviour negatively or positively.
Cognitive behavioural therapy		<b>We recommend</b> cognitive behavioural therapy for functional restoration and reduction of pain in patients with chronic pain.
Respondent Behavioural therapy		<b>We recommend</b> progressive relaxation or electro-myographic biofeedback for the treatment of patients with chronic pain. <i>*Described as the reduction on muscle tension to modify the physiological response to pain. Can be used as a self-regulatory strategy.</i>
<b>PSYCHOLOGICAL TREATMENT</b>		
Refer to psychologist		<b>We suggest that clinicians consider</b> assessing and addressing any concerns the patient may have about referral for psychological assessment by indicating that the approach to pain management is a holistic one and therefore the management includes the involvement of a psychologist to enhance coping skills. <i>*Psychologists are not readily available in this context; may need to seek alternatives.</i>
Antidepressant therapy		<b>We recommend</b> optimised antidepressant therapy for the treatment of patients with chronic pain and moderate depression. <i>*Pharmacological and non-pharmacological management is needed for optimised treatment.</i>
Antidepressant therapy chronic lower back pain		<b>We suggest that the clinician consider</b> tricyclic antidepressants for the management of chronic low back pain and concomitant depression. <i>* A thorough evaluation of health status is warranted. The dosage is dependent on numerous factors. Refer to the EML.</i>
Antidepressant therapy fibromyalgia		<b>We recommend</b> the tricyclic antidepressant Amitriptyline for the treatment of patients with fibromyalgia. <i>* Amitriptyline is recommended as an adjuvant for the management of chronic non-cancer pain in the EML (2014).</i>
Antidepressant therapy review		<b>We suggest that the clinician consider</b> reviewing patients with chronic musculoskeletal pain using antidepressants regularly to assess the on-going need for antidepressants and to ensure that the benefits outweigh the risks.
SSRI: Selective		<b>We recommend</b> Fluoxetine for the treatment of patients with fibromyalgia.







TOPIC	LEVEL OF EVIDENCE	RECOMMENDATION STATEMENT
serotonin re-uptake inhibitor		<i>*Fluoxetine is included in the EML for the treatment of major depression.</i>
<b>RE-ASSESSMENT</b>		
Re-assessment		<i>We recommend</i> regular re-assessment of the physical, psychological and social domains of the patient to determine the person's response to pain management interventions.
<b>MULTI-DISCIPLINARY PAIN MANAGEMENT</b>		
Multi-disciplinary pain management programme		<i>We recommend</i> referral to a multi-disciplinary pain management programme for patients with chronic pain. <i>*Few multi-disciplinary pain management programmes are available in SA. Interdisciplinary collaboration and a good referral system in primary health care are advocated.</i>
<b>PAIN MANAGEMENT SPECIALIST</b>		
Pain management specialist		<i>We recommend</i> referral to a pain management specialist when: There is failure to achieve treatment goals; chronic pain is poorly controlled; intolerance of therapies; there is significant distress; there is a need for multi-disciplinary treatment or a need for interventional management. <i>*Access to pain clinics at tertiary centres is limited in the context.</i>
<b>SUPPORTED SELF-MANAGEMENT</b>		
Self-management		<i>We recommend</i> self-management resources to complement other therapies in the treatment of patients with chronic pain to ensure active patient participation during early management as well as part of a long-term management. <i>*A community-based support group is advocated.</i>
<b>DO NOT OFFER</b>		
Rubefacients		<i>We do not recommend</i> topical rubefacients for the treatment of pain in patients with chronic musculoskeletal conditions. <i>* Salicylate creams are available in SA, though their use are not supported by evidence. The research base supports the use of Capsaicin creams, however these expensive creams are not readily available in SA.</i>
Muscle relaxants		<i>We do not recommend</i> the chronic use of muscle relaxants.

*\*EML: Please refer to the Standard Treatment Guidelines and Essential Medicines List for Primary Health Care in SA (National Department of Health, 2014) for recommended dosages.*

*\*\*Off-label use should be used within ethical and legal guidelines or safety regulations. (Please see SIGN 2013, pp. 3-4 for guiding principles.)*

**Other options not readily available in SA PHC.**

Anti-convulsants**		<i>We recommend</i> the use of Pregabalin for pain management in fibromyalgia. <i>* The cost of these medicines limits its use in SA. Research focused on Pregabalin and Gabapentin. This medication is</i>
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		<i>not listed in the EML (2014).</i>
<b>SNRI ** antidepressants Serotonin norepinephrine re-uptake inhibitors</b>		<b><i>We strongly recommend</i></b> Duloxetine (where available) for the treatment of patients with fibromyalgia or osteoarthritis. <i>* Research studies about SNRI's for pain focused on Duloxetine. Cost and availability in SA limits its use. Duloxetine is not included in the EML (2014).</i>
<b>Acupuncture</b>		<b><i>We recommend</i></b> acupuncture for the short-term relief of pain in patients with certain pain conditions, such as chronic low back pain or osteoarthritis. <i>* Consider safety with application and training required; not readily available in the context.</i>
<b>LASER</b>		<b><i>We suggest that the clinician consider</i></b> low-level Laser therapy as a treatment option for patients with chronic low back pain. <i>* Consider the cost of apparatus, safety with application and training required; Laser is not readily available in primary health care.</i>

## UPDATING THIS GUIDELINE

This guideline will be updated in 2018. The procedure for updating will involve forming a guideline development team, updating the evidence and re-writing recommendations where indicated.



## **APPENDIX 30: INFORMED CONSENT (EXTERNAL REVIEW)**

Dear Healthcare practitioner

### **Invitation to participate in a research study**

I would like to invite you to participate in a survey about the appropriateness of a newly developed clinical practice guideline for the Primary Health Care Management of Chronic Musculoskeletal Pain in the Western Cape of South Africa.

I am a PhD student at Stellenbosch University (SU), and this survey forms part of the research project entitled: *The development of a contextualised evidence-based clinical practice guideline for the management of chronic musculoskeletal pain in primary health care centres in the Western Cape, South Africa.*

(SU Health research ethics approval number: S14/01/018)

(Western Cape Provincial Research Health Committee permission number: RP038/2014).

The main aim of this study is to determine if the clinical guideline recommendations that were developed, are applicable and acceptable to use in the primary health care of patients with chronic musculoskeletal pain in the Western Cape (community health care centres). Feedback from different stakeholders will be obtained. The information will be used to inform the revision of the clinical guideline recommendations. The detail of the study is provided in the accompanying documents.

The feedback is gathered through an electronic survey to ensure confidentiality. It will take about 20 minutes to read guideline (short form) and 5-10 minutes to answer the survey. **Please read the accompanying short form of the proposed CPG. There-after, please answer the survey using the following link:** <https://sunsurveys.sun.ac.za/External-review-Clinical-guideline.aspx>

Please contact me, should you have any questions about the study or the clinical guideline.

Your feedback about the clinical practice guideline is highly appreciated!

**Kind regards**

**Principal investigator:** Dawn Ernstzen

**Research supervisors:** Prof Quinette Louw; Prof Susan Hillier

**Address:** Division Physiotherapy, P O box 241, Cape Town 8000

**Contact number:** 021 938 9300

## APPENDIX 31: EXTERNAL REVIEW SURVEY

**Clinical practice guideline recommendations for the management of  
Chronic Musculoskeletal pain in Primary Health Care in the Western Cape**

**AIM of this questionnaire:**

To obtain your views about appropriateness of the proposed clinical guideline recommendations for management of Chronic Musculoskeletal pain in Primary Health Care in the Western Cape, South Africa.

Thank you for participating in this survey. We value your feedback. Please read the accompanying short form of the proposed CPG. There-after, please answer the following questions by circling or ticking [✓] your response.

**Do you provide informed consent to participate in the study?    YES \_\_\_                      NO \_\_\_**

**GENERAL INFORMATION:**

**What is your main role/s in the care of patients with musculoskeletal pain? (Multiple options possible)**

<input type="checkbox"/> Evaluation/Assessment	<input type="checkbox"/> Diagnosis	<input type="checkbox"/> Referral
<input type="checkbox"/> Rehabilitation	<input type="checkbox"/> Physical therapy	<input type="checkbox"/> Mental health
<input type="checkbox"/> Patient Education	<input type="checkbox"/> Student Education	<input type="checkbox"/> Follow up
<input type="checkbox"/> Continuing Professional Education		
<input type="checkbox"/> Pharmacological management		
<input type="checkbox"/> Other (please provide details):		

**WORK SETTING: (You may tick more than one option)**

**Do you work at a:**

<input type="checkbox"/> Community Clinic	<input type="checkbox"/> Community Health Centre
<input type="checkbox"/> Central/Tertiary Hospital	<input type="checkbox"/> District Hospital
<input type="checkbox"/> Private Practice	<input type="checkbox"/> Regional Hospital
<input type="checkbox"/> University	<input type="checkbox"/> Organisation/Professional Body
<input type="checkbox"/> Other (please provide details):	

**PROFESSION:**

Please state your profession \_\_\_\_\_

How long have you been practising this profession? \_\_\_\_\_ Years

**FEEDBACK:**

Please tick the box that most closely reflects your opinion about the guideline recommendations:

1 = strongly agree    2 = agree    3 = undecided    4 = disagree    5 = strongly disagree

<b>The patient</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The recommendations in the guideline will address the needs and expectations of most patients in the primary healthcare setting.					
The patients will benefit from the recommendations in the guideline.					
The recommendations in this guideline allows for clinical decision-making for individualised management.					
The guideline recommendations will be culturally/socially acceptable to patients.					
<b>Primary health care</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
There is a need for a guideline on chronic musculoskeletal pain.					
The recommendations in this guideline are suitable for the primary health care context.					
It will be easy to apply the recommendations.					
Little reorganisation of services/systems will be required to implement this guideline.					
The recommendations will improve the use of resources.					
Primary care practitioners are adequately skilled to implement this guideline.					
The patient journey (pathway of care) is relevant to primary health care.					
<b>My practice</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
I agree with most of the recommendations in the guideline.					
I already implement some of these recommendations.					
I think that the recommendations will improve patient outcomes.					
I recommend that this guideline should be approved for use in primary care.					
<b>Format</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The recommendations in this guideline are specific and unambiguous.					
The recommendations in this guideline are easy to understand.					
The patient pathway is a useful visual tool.					

*(Based on the ADAPTE II Collaboration, 2009; Gonzalez-Suarez et al., 2012)*

**Please indicate any aspect of the guideline that you think should be revised or changed?**

**Do you have any other comments about the guideline?**

*Thank you for participating!*