Competency framework development in healthcare: a physiotherapy perspective

Marieke Mocke

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Faculty of Medicine and Health Sciences

Department of Health and Rehabilitation Sciences

Stellenbosch University

Supervisor: Prof Marianne Unger
Co-supervisor: Prof Susan Hanekom

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Declaration

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Signature: Marieke Mocke **Date:** March 2023

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"Ek is tot alles in staat deur Hom wat my krag gee." Filippense 4:13
"I can do all things through Christ who strengthens me." Philippians 4:13

I am grateful and acutely aware of my dependence on Christ. All my abilities and achievements are gifts from above.

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Abstract

Background

Across the globe, countries are challenged to design healthcare systems that succeed in delivering equitable healthcare to their citizens. A competent health workforce has been cited as essential to address the burden of disease and improve the health of individuals and communities. Competency frameworks are important tools to describe such a workforce, reporting the skills, knowledge, behaviours and attitudes needed to meet the population's health needs. However, for the profession of physiotherapy, consensus on competencies is not clearly defined. This poses a challenge to the development of physiotherapy competency frameworks. Understanding the global perspectives on physiotherapy competencies may assist in the development of competency frameworks that are applicable to the local context.

Aims

The aims of this thesis are to identify and synthesise published physiotherapy competencies, and present a conceptual thematic framework which may guide the future development of contextually relevant physiotherapy competency frameworks.

Methodology

Two separate phases were undertaken to accomplish the research aims. In phase 1, a document review of all published physiotherapy competencies was conducted. All competencies from these documents were extracted and collated within the structures of the Canadian Medical Education Directions for Specialists (CanMEDS) and the World Health Organization Rehabilitation Competency Framework (WHO RCF). Phase 2 utilised an inductive approach to thematically analyse the competency statements from the WHO RCF dataset compiled in phase 1.

Results

The document review identified 20 documents for inclusion, with the first published in 2008 (Ireland) and the latest in 2021 (Latvia). The majority of current physiotherapy competency documents, and thus the descriptions of physiotherapy competencies, originate from high-income countries. The competencies extracted from all included documents could be accommodated within both the WHO RCF and the CanMEDS

framework, suggesting that either may be used for developing competency frameworks for the physiotherapy profession. From the WHO RCF dataset, a conceptual thematic framework was developed consisting of 17 themes and 59 sub-themes.

Conclusion

With the changing profile of the burden of disease, healthcare systems and the role of the physiotherapist must evolve. Adequately describing the competencies for physiotherapists to excel in their work is foundational to the credibility of the profession not only among health professions but within society. This thesis provides an updated perspective on physiotherapy competencies and serves as a springboard from which to define contextually relevant physiotherapy competencies. This conceptual thematic framework can aid in the development of a physiotherapy competency framework in any setting.

Keywords: Physiotherapy, Competencies, Competency frameworks, CanMEDS roles, WHO RCF domains.

Samevatting

Agtergrond

Wêreldwyd ervaar lande dit uitdagend om gesondheidsisteme te skep wat billike gesondheidsorg aan hul burgers kan verskaf. ‘n Bevoegde gesondheidsarbeidsmag word gesien as noodsaaklik om die druk van siektes aan te spreek en die gesondheid van individue en gemeenskappe te bevorder. Vaardigheidsraamwerke word as belangrike instrumente beskou om ‘n arbeidsmag te beskryf met betrekking tot die bevoegthede, kennis, gedrag en houdings wat benodig word om die bevolking se gesondheidsbehoeftes aan te spreek. Vir die fisioterapieberoep is sodanige vaardighede nog nie gedefinieer nie. Hierdie situasie hou ‘n uitdaging in vir die ontwikkeling van die beroep se vaardigheidsraamwerke. ‘n Begrip van wêreldperspektiewe aangaande fisioterapievaardighede kan die ontwikkeling van relevante vaardigheidsraamwerke bevorder.

Doelstellings

Die doelstellings van hierdie tesis was om gepubliseerde fisioterapievaardighede te identifiseer en te analiseer, asook om ‘n rigtingsgewende raamwerk daar te stel wat die ontwikkeling van vaardigheidsraamwerke vir hierdie beroep kan ondersteun.

Metodiek

Twee afsonderlike fases is uitgevoer om die navorsingsdoelstellings te bereik. In fase 1 is ‘n dokumentondersoek geloods om bestaande fisioterapie-vaardighede te identifiseer. Hierdie ondersoek het alle vaardighede uit die geselekteerde raamwerke onttrek, en dit noukeurig gesorteer binne die strukture van die Canadian Medical Education Directions for Specialists (CanMEDS) en die World Health Organization Rehabilitation Competency Framework (WHO RCF). ‘n Tematiese analise van die WHO RCF datareeks is in fase 2 gedoen. Tydens hierdie fase is ‘n induktiewe benadering gevolg om elke vaardigheidstelling te analiseer.

Resultate

Die dokumentondersoek het 20 dokumente ingesluit, waarvan die eerste in 2008 (Ierland) en die mees onlangse in 2021 (Latvië) gepubliseer is. Die meeste onderliggende fisioterapie-vaardighede vloei voort vanuit lande met bogemiddelde

hulpbronne. Die resultate stel verder voor dat die CanMEDS raamwerk en die WHO RCF albei van waarde kan wees vir gebruik in die ontwikkeling van ‘n fisioterapie vaardigheidsraamwerk, aangesien alle onttrekte vaardighede binne die twee raamwerke geakkommodeer kon word. Die tematiese analise het gelei tot ‘n rigtingsgewende raamwerk wat ‘n totaal van 17 temas en 56 subtemas oor die vyf domeine van die WHO RCF verteenwoordig.

Gevolgtrekking

Die veranderende las van siektes eis dat gesondheidsorgsisteme en die rol van die fisioterapeut voortdurend uitbrei and verbreed. Die geloofwaardigheid van die professie sal verseker word as fisioterapeute optimaal binne die nodige vaardighede vir fisioterapeute kan funksioneer. Hierdie tesis verskaf ‘n beginpunt waarvan hierdie vaardighede kontekstueel gedefineer kan word. Dit verskaf verder ‘n ingeligte perspektief op fisioterapievaardighede. Toekomstige navorsing sal hierdie resultate kan toepas in die ontwikkeling van fisioterapie-vaardigheidsraamwerke.

Sleutelwoorde: Fisioterapie, Vaardighede, Vaardigheidsraamwerke, CanMEDS rolle, WHO RCF domeine.

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List of Acronyms and Abbreviations

APFISIO	Associacao Portuguesa de Fisioterapeutas (Portuguese Association of Physiotherapists)
ASCOFI	Asociacion Colombiana de Fisioterapia (Colombian Association of Physiotherapy)
CanMEDS	Canadian Medical Education Directions for Specialists
CBE	Competency-Based Education
FEC	Future Economy Council
GHC	Global Health Competencies
ICU	Intensive Care Unit
KNFG	Koninklijk Nederlands Genootschap voor Fysiotherapie (Royal Dutch Society for Physiotherapy)
MS	Microsoft
NPAG	National Physiotherapy Advisory Group
PBNZ	Physiotherapy Board of New Zealand
PHC	Primary Healthcare
UK	United Kingdom
UNICEF	United Nations Children's Fund
USA	United States of America
WCPT	World Confederation for Physical Therapy
WHO	World Health Organization
WHO RCF	World Health Organization Rehabilitation Competency Framework

Definition of terms

Clinical setting: The clinical setting is where patient/client care and clinical activities are carried out. All components of the patient / client management model, including examination / assessment, evaluation, interventions/treatments, diagnosis and prognosis / plan of care, may be provided in clinical settings. These can include institutions, industrial, occupational, primary healthcare, and community settings (World Physiotherapy, 2011a).

Competency: This refers to the observable ability of a healthcare professional integrating knowledge, skills, values and beliefs in their performance of tasks (Frank, Snell & Sherbino, 2015; World Health Organisation, 2020a).

Competency Framework: An organising model that lists the competencies required for the effective performance in a specific occupation, organisation, function, or process. Individual competencies are organised into competency frameworks to enable understanding, discussion, and application of the competencies (Marrelli, Tondora & Hoge, 2005).

Context: The influence of different social, cultural and economic conditions found in specific countries or communities (World Health Organisation, 2021).

Core competencies: The values, attitudes, and beliefs that all healthcare professionals must uphold and consistently display are known as core competencies. They are an essential component of providing high-quality care and engaging in safe clinical procedures. They go beyond the confines of particular professions and provide clinical teams with the essential transparency to reduce mistakes and improve client outcomes and safety (Verma et al., 2009; Mohammed et al., 2021).

Domain: A broad thematic organisation for competency, activity, knowledge or skill statements (World Health Organization, 2020a).

Primary Healthcare: An approach to health that considers the entire society with the goal of maximising the level and distribution of health and wellbeing. It consists of three parts: (a) the foundational role of primary care and essential public health functions in integrated health services; (b) multisectoral policy and action; and (c) the empowerment of individuals and groups (World Health Organization, 2021).

Profession-specific competencies: Refers to technical competencies that define the specific professional expectations, skills and capabilities of healthcare workers to practise and perform interventions effectively (Verma et al., 2009; Mohammed et al., 2021).

Roles: Categories that characterise certain groups of activities (for example, leader, educator, manager, researcher) (Mills et al., 2020).

Supportive environments for health: Offer protection from health hazards and increased capacity to address health. Actions to create supportive environments for health can take a variety of forms, such as direct political action to establish and execute supportive laws and regulations, economic action, especially in relation to promoting sustainable economic development, and community action for health (World Health Organization, 2021).

Chapter 1: Introduction

Chapter 1 provides the background and context on competency framework development and highlights the need for the current study. It also gives a brief background on the unique challenges of providing nationwide physiotherapy services in Namibia, which inspired this thesis. The chapter ends with an overview of the research questions, aims and objectives, and concludes with a roadmap outlining the structure of this thesis.

1.1 Introduction to the thesis

Professional competency guidelines are increasingly being used by healthcare professions to encourage professional conduct and effective performance in a specific occupation (Sturt, Burge, Harding & Sayer, 2018). A competent health workforce is described as essential to address the burden of disease and improve the health of individuals and communities (Gruppen, Mangrulkar & Kolars, 2012; Batt, Tavares & Williams, 2020; Allen & Palermo, 2022). Although there are published physiotherapy competency frameworks, there is no global stance on the required competencies for the profession (Cassady, Meru, Chan, Engelhardt, Fraser et al., 2014; Vissers, Van Daele, de Hertogh, de Meulenaere & Denekens, 2014; Pechak & Black, 2016).

Competency frameworks are important tools, describing an attributes-based perspective referring to skills, knowledge, behaviours and attitudes needed to meet the population's health needs (Batt, Tavares & Williams, 2020; Child & Shaw, 2020; Jacobs, van Schalkwyk, Blitz & Volschenk, 2020; Lepre, Palermo & Mansfield, 2021). Competency frameworks may be used by regulatory and accreditation bodies to inform practice standards, guide educational programmes and evaluate performance (Mills, Cieza, Short & Middleton, 2021). It has been suggested that competency frameworks provide a roadmap for workforce development, since a skilled health workforce is considered a key element in responding to the health needs of a population and addressing the burden of disease (Lepre et al., 2021; Allen & Palermo, 2022).

However, the development of these frameworks remains a work in progress. There are conflicting views and a general lack of guidance on competency framework

development in healthcare (Lester, 2014; Batt, Tavares & Williams, 2020; Allen & Palermo, 2022). This thesis aimed to take the first step in describing the current global stance on the required competencies for the physiotherapy profession. The results may be used to enable the development of physiotherapy competency frameworks that will be valid and usable for different contexts.

1.2 Competency frameworks for physiotherapy

The global shift from curative to preventative healthcare necessitates healthcare competencies that extend beyond clinical skills (Kelland, Hoe, Mcguire, Yu, Andreoli et al., 2014; Jacobs, van Schalkwyk & Volschenk, 2020; Malmivaara, 2020). Physiotherapists should possess competencies that address contextual health needs of the population in supportive health environments. For example, humility and respect have been cited as essential attitudes to engage effectively with other cultures (Cassady et al., 2014). The Covid-19 pandemic highlighted the need for service delivery via online platforms. A physiotherapist may thus also need to be able to supervise and co-ordinate interventions using digital telehealth instead of providing face-to-face clinical consultations (Heine, Derman & Hanekom, 2022). Other competencies such as leadership and advocacy are also needed to advance health provision, especially for the vulnerable and previously disadvantaged persons and or communities (Kelland et al., 2014; Mcgowan, Martin & Stokes, 2016; Malmivaara, 2020).

To help inform the skills, knowledge, behaviours and attitudes of the healthcare professionals responsible for delivering on this mandate, professional competency frameworks are increasingly being used (Lepre, Palermo, Mansfield & Beck, 2021; Julé, Furtado, Boggs, van Loggerenberg, Ewing et al., 2017; Sturt et al., 2018). These frameworks are also used by many healthcare regulatory and accreditation bodies to inform practice standards, and evaluate performance in the workplace (Mills et al., 2021). Competency frameworks may also guide educational training programmes and could provide a roadmap for workforce development (Batt, Tavares & Williams, 2020).

1.3 Competency framework development

A skilled health workforce is considered a key element in responding to the health needs of a population and addressing the burden of disease (Lepre et al., 2021; Allen & Palermo, 2022). This implies that competency frameworks should be contextually informed (Batt, Williams, Brydges, Leyenaar & Tavares, 2021). In fact, literature cautions against adopting a competency framework without critical analysis of its development (Higgs, Refshauge & Ellis, 2001; Cassady et al., 2014). However, guidance on competency framework development in healthcare is insufficient (Lester, 2014; Batt et al., 2020; Allen & Palermo, 2022). Significant variations concerning the competency framework development process often make it difficult to determine whether the frameworks are fit for purpose (Batt et al., 2020).

Research on competency frameworks in the health sector largely come from high-income countries such as Canada, the USA, UK, Australia and New Zealand (Cassady et al., 2014). In physiotherapy, the published physiotherapy competency frameworks also generally come from these countries (The Chartered Society of Physiotherapy, 2013; Physiotherapy Board of Australia & Physiotherapy Board of New Zealand, 2015; Australian Physiotherapy Association, 2017; National Physiotherapy Advisory Group, 2017; American Physical Therapist Association, 2020).

Many of the physiotherapy frameworks are based on the well-known Canadian Medical Educational Directives for Specialists (CanMEDS), which was developed to enhance physician training. This framework has been adopted and adapted by others globally (Frank, Snell & Sherbino, 2015). More recently, the World Health Organization (WHO) developed the WHO Rehabilitation Competency Framework (WHO RCF) (World Health Organization, 2020a). This framework acknowledges the field of rehabilitation with the multi- and transdisciplinary nature thereof. It is reported to be useful for all rehabilitation professionals and may be relevant across both high- and low-resource settings (Mills et al., 2021). The acknowledged challenge of this framework is that it needs to be adapted to address the uniqueness of the local setting, and the specific professions or specialisations (World Health Organization, 2020b). The development group of the WHO RCF further proposes that local values, the local scope of practice, and the level of specificity required for its potential applications

should be considered when adopting the framework (World Health Organization, 2020b).

1.4 Background to the thesis: Physiotherapy in Namibia

Healthcare systems worldwide strive to provide optimum healthcare to their citizens, while healthcare research aims to improve the quality of care, reduce cost and make health systems more efficient (Jacobs & El-Sadr, 2012; Batt et al., 2020; Child & Shaw, 2020; Jacobs et al., 2020). The World Health Organization (WHO) promotes a primary healthcare (PHC) approach as an effective strategy to meet the healthcare needs of populations (World Health Organization, 2019). Physiotherapy plays an integral role in improving health and developing effective healthcare systems in lower- and middle-income countries (Naidoo, Barnes, Mlenzana, Mostert & Amosun, 2019). Rehabilitation workers are however often concentrated in urban areas, leaving large areas of their communities under- or un-serviced. This challenge to rehabilitation is echoed in the Namibian setting, where the budget and number of rehabilitation workers are both critically low (Christians, 2020).

In reviewing literature for this study, no data was found that describes the competencies needed by physiotherapists serving the Namibian population. Namibia has no formalised guidelines for setting the standards for professional practice, nor any clear guidelines informing physiotherapy education. Namibia is in the process of producing its first-ever physiotherapy graduates. Given the absence of a Namibian physiotherapy competency framework, it is difficult to ascertain whether these physiotherapists have been adequately prepared to be employed or work in the Namibian setting. The expectation is that a local education should equip graduates specifically for service to the Namibian population and to address context-specific health challenges (Gruppen et al., 2012).

Considering the background provided above, it has become increasingly evident that there is a need to develop a competency framework for physiotherapy, specific to the Namibian context. However, before embarking on the development of a Namibian framework, understanding the global perspectives on physiotherapy competencies is warranted.

Problem statement

Existing competency frameworks may not be adequate to inform physiotherapy practice in certain settings, based on their lack of inclusion or acknowledgement of local contextual factors. The limited guidance these frameworks provide to the physiotherapy workforce poses a potential threat to the credibility of the profession, if applied in setting different from those where they were developed. Currently, there is no global consensus on physiotherapy competencies, and research on physiotherapy competency frameworks is limited. This lack of research poses a challenge to the development of physiotherapy competency frameworks that are useful to guide the physiotherapy profession in a specific setting.

1.5 Research questions

RQ1: Which competencies are reported globally as essential for physiotherapists to be competent health practitioners?

RQ2: Can all physiotherapy competencies be accommodated within the well-known CanMEDS structure and the lesser-known WHO RCF structure?

RQ3: What are the main themes that warrant contextual exploration when developing a physiotherapy competency framework?

1.6 Aims of this thesis

The aims of this thesis were, firstly, to identify the physiotherapy competencies which have been reported in profession specific documents of World Physiotherapy members. Secondly, to synthesize the competencies into the CanMEDS and WHO RCF frameworks. Thirdly, to develop a conceptual thematic framework to guide the development of locally relevant competency frameworks. To achieve these aims, this thesis consisted of two phases – a document review and a thematic analysis.

1.7 Research objectives

The specific objectives of this thesis were therefore defined by the document review and the thematic analysis, respectively.

The research objectives of the document review were to:

1. Identify which countries have published physiotherapy competencies.
2. Explore the characteristics of the competency documents.
3. Identify all physiotherapy competencies as described in each document.
4. Determine whether these physiotherapy competencies can be accommodated in the CanMEDS role and WHO RCF domain definitions.

The research objectives of the thematic analysis, using the WHO RCF dataset from the document review, were to:

1. Identify themes pertaining to each domain of the WHO RCF.
2. Develop a conceptual thematic framework to inform each of the WHO RCF domains.

1.8 Significance of this thesis

If physiotherapists are to make a difference in the lives of their patients and contribute to better healthcare systems, competencies across many domains are needed besides their clinical skills. A broad understanding of multiple perspectives on physiotherapy competencies may be useful in developing a locally relevant framework. This will be of value to researchers, healthcare providers and policy-makers tasked with outlining the characteristics of a competent physiotherapy workforce.

Reflecting on the published guidance in literature on competency framework development, this thesis aims to take the first step to aid the development of contextually informed competency frameworks for the physiotherapy profession in any setting.

1.9 Structure of this thesis

This thesis is presented as follows:

Chapter 1: Introduction

This chapter introduces the context of the thesis and argues the value of the research. It also presents the research aims and objectives.

Chapter 2: Literature review

This chapter presents an overview of the literature that informed the thesis.

Chapter 3: Methodology

In this chapter, the methodology used to perform the two phases of the study is detailed.

Chapter 4: Document review: results and discussion (Phase 1)

This chapter presents and discusses the results of the document review.

Chapter 5: Thematic analysis of competency statements: results and discussion (Phase 2)

In this chapter, the thematic analysis of physiotherapy competencies as accommodated into the WHO RCF domains are presented and discussed. This chapter also presents the conceptual thematic framework according to the WHO RCF structure.

Chapter 6: Discussion and conclusion of the thesis

This chapter concludes the thesis by summarising the key research findings in relation to the research aims. The value and contribution of the research will be discussed. This chapter also presents the strengths and limitations of the study and outlines recommendations for future research.

Chapter 2: Literature review

2.1 Introduction

This chapter presents a review of the literature pertaining to professional competency and specifically, the varying perspectives of competencies in physiotherapy. This chapter also provides an overview of the utility of competency frameworks and how these frameworks have been developed in healthcare.

Using the main keywords “competence” and/or “competency” and/or “competency framework” and/or “physiotherapy” and/or “healthcare”, the following databases were searched through the Stellenbosch University library: MEDLINE, PubMed, ScienceDirect and CINAHL/EBSCOhost. Pearling, or secondary searching, was also employed, whereby the reference lists of retrieved articles and/or documents were searched to identify additional relevant literature. Finally, a general Google search was conducted using the same keywords, as competency frameworks are likely to be published on regulatory and/or professional physiotherapy association websites.

The first section of this chapter describes the challenges healthcare systems face in the provision of equitable healthcare for all. The notion of how a competent health workforce, and specifically, the physiotherapy workforce, can address these health challenges is highlighted. This is followed by an exploration of how a competent workforce is described in terms of its competencies and it describes the general purpose and use of competency frameworks. This chapter also provides a detailed account of specific physiotherapy competencies and frameworks. It provides a broad overview of the CanMEDS framework, a landmark and widely used framework for physicians. It then presents an overview of the more recently published World Health Organization Rehabilitation Competency Framework (WHO RCF), which is aimed at guiding rehabilitation professions. Finally, this chapter also explores how competency frameworks are developed, and it comments on the associated challenges thereof. This chapter concludes with a summary statement of the problem requiring further research.

2.2 Challenges in healthcare systems

Across the globe, countries are challenged to design healthcare systems that succeed in delivering equitable healthcare to all of their citizens. This challenge is not limited to resource-poor settings, as the worldwide change in the profile and burden of disease with its increasingly aged populations and the rise in non-communicable puts immense strain on health systems, even in the presence of ample resources (Gruppen et al., 2012; Jacobs & El-Sadr, 2012; Unger & Hanekom, 2014; Naidoo et al., 2019). In response to this strain, the World Health Organization (WHO) has advocated for a shift to primary healthcare (PHC) in the hope of achieving equitable access and ensure health security for all (World Health Organization, 2021). The WHO states that health systems should be fit for context, its people and its purpose. The WHO therefore strives to assist member countries to develop their health systems to achieve universal healthcare, sustainable development goals and health security for its citizens (World Health Organization & United Nations Children's Fund [UNICEF], 2020; World Health Organization, 2021). Equitable healthcare and social justice require the health workforce to be "*not only clinically competent but also critically conscious*" regarding their local contexts and health systems (Jacobs et al., 2020:112).

2.2.1 A competent health workforce to address the challenge

A competent health workforce, possessing the necessary skills and qualities to address community and health system needs, has been described as a key factor for effective health systems (Lepre et al., 2021; Allen & Palermo, 2022). Various other authors concur that improved global health can only be achieved when the health workforce has been educated with curricula that are matched to local health needs (Sturt et al., 2018; Batt, Tavares & Williams, 2020; Lepre et al., 2021). An understanding of the health system and the specific roles, in which individuals have to enact their competencies, has been recommended for system-level improvements (Tackett et al., 2022).

2.2.2 A competent physiotherapy workforce to address the challenge

The physiotherapy profession is well positioned to focus on the broader determinants of health relating to physical, mental and social wellbeing. This necessitates undergraduate qualifications to prepare physiotherapists for future employment at the

primary level of care (Eckler et al., 2016; Naidoo et al., 2019; World Physiotherapy, 2019). Physiotherapy has an integral role to play in healthcare that *"is sensitive to local cultural, socio-economic and political circumstances and provides equitable access to effective services"* (World Physiotherapy, 2019). Physiotherapists address holistic healthcare needs and can contribute to alleviating the burden of disease in the spheres of promotion, prevention, treatment, rehabilitation and palliative care across the lifespan (Naidoo et al., 2019).

2.3 Defining a competent health workforce

There is an increased focus on a competent health workforce, because of an increased societal interest in healthcare, as well as the growing expectation that such competent workforce will be accountable for professionalism (Verma, Paterson & Medves, 2006; Child & Shaw, 2020). The concept of becoming a competent professional includes "becoming" one's profession. There is an acute awareness that growing and adapting is what professional practice is all about. Professionals should acknowledge that they will never possess all the knowledge or skills required, and should thus embrace lifelong learning. The body of knowledge is constantly growing, and true professionals must learn to adjust in line with such development (Gruppen et al., 2012; Barradell, 2017).

The concept of lifelong learning has become more important than ever because of the rapidly evolving context within health. Healthcare roles and practice domains have expanded to include leadership and advocacy beyond the clinical setting, where practitioners affect the lives of their patients, the community and the systems in which they work (Kelland et al., 2014; Unger & Hanekom, 2014; Van Aswegen et al., 2017). A competent workforce needs more than clinical skills to remain relevant and affect change, as competence refers not only to what a professional must be able to *do,* but more to who the professional must *be* (Barradell, 2017). Such a workforce may be described in terms of a competency framework, which consists of grouped statements that relate the expected or aspired performance of a particular profession or workforce (Mills et al., 2021).

2.4 Competence and competency frameworks

Competency frameworks are frequently used as tools to express the complex phenomenon of professional competence, which infers that which is required of an individual to act competently within a professional discipline (Lester, 2014; Barradell, 2017; Child & Shaw, 2020). Competence may be internal or belonging to the individual, or external, referring to the acts required to be competent (Lester, 2014). Competence is often described in terms of knowledge, skills and attitudes, and the definition goes beyond clinical skills to include concepts such as moral and ethical reasoning, cultural sensitivity, creativity and resourcefulness (Verma, Paterson & Medves, 2006; Gruppen et al., 2012; Cassady et al., 2014; Lester, 2014; Sturt et al., 2018). To contribute to a high standard of care and to benefit professionals, educators, regulators and the public, the competencies deemed relevant to a profession must be adequately described (Gruppen et al., 2012; World Physiotherapy, 2011). A competency framework can thus be viewed as a model of the necessary attributes, which include knowledge, skills, attitudes and behaviours, for excellence in a specific role (Verma, Paterson & Medves, 2006; Mills et al., 2020).

2.4.1 Competency frameworks as tools for addressing the burden of disease

Competency frameworks describing these necessary attributes can serve a range of purposes. Historically, competency frameworks emerged to achieve two distinct aims: To support the development of capabilities (the primary concern of the education sector), and to help define standards of performance (the primary concern of the labour sector) (Mills et al., 2020; World Health Organization, 2020b). They also aid and inform various spheres, such as curriculum development, professional regulation and performance appraisal (World Health Organization, 2020b). Specific to rehabilitation, competency frameworks can facilitate increased efficiency and productivity of the healthcare workforce. They may also increase the accessibility of healthcare workers by equipping them to be effective in, and attracted to, roles in rural and remote areas with the confidence and desire to meet the challenges of underserved areas (Lin, Beattie, Spitz & Ellis, 2009). If educational outcomes are better aligned with the population's needs, undergraduate programmes can ensure their students exit with the necessary knowledge, skills and behaviours to address the needs of the local people. Setting standards or defining expectations of competence

of those coming through the education programme may also improve the quality of entry-level graduates (Donaghy & Morss, 2007; Ministry of Health and Social Services, 2010; Julé et al., 2017; Mills et al., 2020).

2.4.2 Core and specific competencies

Competency descriptors of a workforce need to be expanded into appropriate levels of detail, based the context, speciality or profession, to provide clear guidance (Gruppen et al. 2012; Van Der Lee et al., 2013; Lester, 2014; Batt et al., 2020; Child & Shaw, 2020). For example, a competency statement such as “demonstrates effective communication” will be applicable to almost any healthcare profession and any context. However, to be useful, it might need to be refined to include contextual specifications that answer the *who, what* and *how* (Gruppen et al., 2012; Allen & Palermo, 2022). A better statement might be “the dietician counsels clients clearly and concisely on a range of health risks related to poor nutrition”.

There is debate in the literature regarding the value of core healthcare competencies versus technical and profession-specific competencies. Discipline-only based competencies have been criticised for causing fragmentation and posing a barrier to broader healthcare workforce evaluation and planning (Verma, Broers, Paterson, Schrodr & Medves, 2009; Mills et al., 2021). Many have recognised or stated the overlap between professions regarding core competencies, and as such, advocate for the harmonisation of competencies for all health professionals. These authors argue that it can facilitate consistent professional standards and facilitate global workforce mobility (Verma, Paterson & Medves, 2006; Gruppen et al., 2012; Foo, Storr & Maloney, 2016; Barradell, 2017; Fennelly, Desmeules, O'Sullivan, Heneghan & Cunningham., 2020).

In contrast, attempts to address competencies across professions has been met with scepticism by those, who insist that competencies should be specific to independent professions (Verma et al., 2009). The need for profession-specific competencies is often not met in generic competency descriptors (Van Der Lee et al., 2013; Mills et al., 2021). It is further argued that competencies that are too broadly described, while widely applicable, risk being conceptually vague, and this can compromise their utility

(Child & Shaw, 2020). This has been demonstrated in the physiotherapy setting, where it was explored, whether nursing global health competencies (GHC) may be applicable to the physiotherapy profession (Pechak & Black, 2016). Participants in that study repeatedly called for modifications to make the competencies more applicable to physiotherapy, and additionally, identified other competencies specifically for physiotherapy that were not identified for nursing. These competencies related to factors contributing to disability, medical rehabilitation versus community-based rehabilitation, specific client risks and awareness of relevant major international organisations related to disability (Pechak & Black, 2016). Batt, Williams and colleagues (2021) state that the determining factor, when considering the appropriateness of core versus technical and specific competencies, should be the *purpose* for which such competencies are described. In light of this, there may be room for both − generic to allow for global mobility, and locally relevant to ensure local population needs are met.

2.5 Physiotherapy competencies

The current demands on the physiotherapy profession are very different compared to when physiotherapy first became a recognised profession. There is an increased expectation that universities should produce competent, work-ready graduates, but these competencies need to stem from the real-world roles that physiotherapists fulfil and should be responsive to professional practice (Unger et al., 2014; Vissers et al., 2014; Barradell, 2017). It has been commented that, while competency-based education (CBE) in the medical profession is well described, literature is lacking on CBE in physiotherapy (Vissers, Van Daele & Denekens, 2013). The intricate relationship between the roles a physiotherapist will have to fulfil, highlight the importance that undergraduate curricula should be informed by current trends of the profession to be effective in producing graduates that are prepared for these roles (Unger & Hanekom, 2014). These roles may be enacted across a range of environments and are not necessarily only clinical in nature (Cassady et al., 2014).

Physiotherapy roles will require knowledge, skills and attributes to be extended beyond the clinical setting, and these must be informed by the context. For example, a generic statement on cultural competence may be appropriately contextualised for

the New Zealand setting as follows: "*Physiotherapists in…Aotearoa New Zealand require a working knowledge of factors that contribute to and influence the health and wellbeing of Aboriginal and Torres Strait Islander and Maori communities, respectively. These factors include history, spirituality and relationship to land…"* (Physiotherapy Board of Australia & Physiotherapy Board of New Zealand, 2015:12).

Resource-poor settings often require health professionals to provide leadership and to advocate for transformation of health within their country, which transcends 'clinical competence' (Gruppen et al., 2012). Physiotherapists may need to be visionary and liberate the profession from long-established ways of doing things and relationships, to insure their status as autonomous and independent practitioners (World Physiotherapy, 2011b; Barradell, 2017). Competence in leadership includes the ability to optimise the healthcare systems, with the ability to communicate decisions and the ability to motivate the staff to implement the strategies (Mcgowan, Martin & Stokes, 2016; Malmivaara, 2020).

According to Unger and Hanekom (2014b), the changing and diverse scope of the burden of disease across the different levels of healthcare requires physiotherapists to become comfortable with the 'unknown' and thus, they should be competent in finding and critiquing information and be skilled in critical reflection. It is also recommended that healthcare professionals (including physiotherapists) engage not only within teams, but across discipline (transdisciplinary), if they are to affect change to improve healthcare and an improved health for all (Mayosi & Benatar, 2014; Unger & Hanekom, 2014). With physiotherapists' unique position to influence lifestyle and facilitate a changed behaviour, becoming a health educator is another competency required (Bodner et al., 2013; Unger et al., 2014; Naidoo et al., 2019).

With the continued emphasis on the restructuring of health systems to achieve equitable healthcare for all, leadership and managerial competencies in physiotherapy may be a critical factor in the success or failure of rehabilitation in these reforms (Jacobs & El-Sadr, 2012; Fletcher & Marchildon, 2014). In the role of health advocate, it is imperative to understand the context, in which one is advocating. Physiotherapists require context-specific knowledge on the funding and service delivery factors that have an impact on their ability to work with patients (Kelland et al., 2014). Social

responsibility and justice have also been highlighted as imperative inclusions in physiotherapy undergraduate education, to prepare physiotherapists for dismantling injustices and inequalities in specific systems, and advancing the health needs of their societies (World Physiotherapy, 2011b; Jacobs et al., 2020).

The examples above illustrate the dynamic nature of a contemporary physiotherapy practice. It also emphasises the importance of being competent to meet the evolving challenges of healthcare. However, research on physiotherapy competencies tends to be fragmented and siloed (Cassady et al., 2014; Pechak & Black, 2016; Barradell, 2017). Significant variability exists in the practice of physiotherapy between countries (Foo, Storr & Maloney, 2016). World Physiotherapy is the sole organisation representing the profession globally. The organisation provides member countries with a variety of services, policies and guidelines as part of its mission to advance the global physiotherapy profession (World Physiotherapy, 2022). However, despite its global representation, diversity of health systems, professional regulation and the history of the profession in the specific country remain reasons for differences in physiotherapy practices across the globe (Higgs, Refshauge & Ellis, 2001; Useh, 2021).

This diversity in practice also influences training standards. In Europe alone, there are notable differences in the credits and qualifications required to practise as a physiotherapist (Vissers et al., 2014). The lack of a global standard may impede physiotherapy workforce mobility and physiotherapists' ability to function effectively and collaboratively in an increasingly globalised world (Foo, Storr & Maloney, 2016; Pechak & Black, 2016; Fennelly et al., 2020). The practicality and value of applying common approaches are also hampered by marked variations within the profession in terms of scopes of practice and how the profession is regulated in different countries (Useh, 2021).

As the profession of physiotherapy continues to evolve, competencies need to be continually identified, developed and maintained to communicate the expected performance in different contexts (Sturt et al., 2018; Batt, Tavares & Williams, 2020). According to Vissers et al. (2014:57), *"An international position stand on key competencies for physiotherapists would be welcomed and could contribute to a more comparable level of physiotherapy education, ensuring graduates meet entry-level*

standards of physiotherapy throughout the world". This statement highlights the importance of investigating global perspectives on physiotherapy competencies to adequately describe the profession.

2.6 Competency frameworks in physiotherapy

Global perspectives on competencies for physiotherapy have not yet been adequately described. However, some countries have developed their own competency frameworks to guide the profession in their own contexts (Cassady et al., 2014). It seems evident that countries such as Australia, the United Kingdom and Canada have spent substantial resources on large-scale research projects in the field of physiotherapy (Australian Physiotherapy Association, 2017; National Physiotherapy Advisory Group, 2017; The Chartered Society of Physiotherapy, 2018). Thus, while a number of rehabilitation-related competency frameworks may exist, their applicability to other contexts should be carefully considered. Most published frameworks seem to be developed in high-resource settings, while lower- and middle-income countries are often underrepresented in the literature (Cassady et al., 2014; Mills et al., 2021).

2.6.1 Lack of research from low-resource settings

Under-representation of lower- and middle-income countries is also evident in the paucity of guiding health regulations in resource-poor countries, both in terms of legal and ethical frameworks (Cassady et al., 2014). It has been reported that lower- and middle-income countries often exhibit a tendency to emulate high-income countries in terms of educational, ethical and healthcare standards (Gruppen et al., 2012; Bello & Adegoke, 2018). In healthcare, this becomes problematic, as competencies are defined based on the presumption of a particular healthcare system, which may not be in place in low-resource settings (Gruppen et al., 2012). These settings often face unique challenges that can be attributed to budget constraints and shortages of rehabilitation staff (Shumba & Moodley, 2018; Christians, 2020). It is important to realise that the existing physiotherapy competency frameworks cannot simply be applied without their relevance being explored in a local context. The same core competencies may be very sensitive to the context of the individual and their culture. As such, they may be enacted quite differently in different settings (Verma, Paterson & Medves, 2006; Verma et al., 2009; Gruppen et al., 2012). Cassady et al. (2014)

demonstrated the limitations of the Canadian essential physiotherapy competencies in a low-resource setting. Their study identified new and additional physiotherapy competencies and a modification of existing competencies that were needed when engaging in low-resource settings. Other literature has also highlighted the lack of locally generated data to inform guiding documents for their physiotherapy professions (Cheung et al., 2015). Outdated and autonomy-hindering scopes of practice and other regulating documents further hinder the development and guidance of the physiotherapy profession in many African countries (Useh, 2021).

To overcome some these barriers related to resource discrepancies and settings, the WHO recently published a competency framework that attempts to capture the scope of rehabilitation practice (World Health Organization, 2020a; Mills et al., 2021). The competencies in this framework are viewed as applicable to all rehabilitation workers and being relevant to all rehabilitation disciplines and resource settings. Although developed for medical doctors and specialists, another prominent framework, the CanMEDS, has been widely applied and adapted for physiotherapy (Frank et al., 2015).

In the following section, the CanMEDS is discussed and compared with the newer, and lesser-known WHO Rehabilitation Competency Framework (WHO RCF).

2.6.2 The CanMEDS framework

Since being launched in 1996, the CanMEDS framework has become the most widely accepted and widely applied physician competency framework in the world (Frank et al., 2015). The CanMEDS framework emerged in the 1990s and was first launched by the Royal College in 1996 and subsequently updated in 2005. It has undergone many revisions, each driven by empirical research and wide consultation, to arrive at the current CanMEDS 2015 version, which is the third revision and represents in many ways the most significant revision. Not only physicians, but many other professions, including physiotherapy, have used the CanMEDS structure as a basis and adapted it to their respective professions (Physiotherapy Board of Australia & Physiotherapy Board of New Zealand, 2015). The CanMEDS framework describes the necessary competencies for areas of medical practice to be effective in meeting the needs of the

people they serve. These competencies are grouped systematically under seven thematic roles, which the healthcare worker should be able to integrate successfully, namely, *medical expert, professional, communicator, collaborator, leader, health advocate* and *scholar* (Frank et al., 2015)

However, the CanMEDS framework has been criticised as failing to adequately address and define technical skill, as this is often obscured under the "medical expert" subcategory. The reliable assessment of technical skill remains important in many specialities, and other disciplines (Grober, 2008). While it provides relevant building blocks for education, training and assessment, critics argue it should be combined with speciality-specific competencies to remain aligned with practice (Van Der Lee et al., 2013).

2.6.3 The WHO RCF

In 2017, the WHO Member States recognised the global increase in rehabilitation needs and in response, launched the *Rehabilitation 2030* initiative (World Health Organization, 2017). Under this initiative, the WHO Rehabilitation Competency Framework was designed as a tool for identifying the requirements of the rehabilitation workforce (World Health Organization, 2020a). It aims to provide a framework that harmonises rehabilitation competencies, provides a common language and is applicable in high- and low-resource settings (Mills et al., 2021). The rehabilitation workforce is diverse and includes multiple disciplines that must together meet the needs of their communities / populations. This diversity is necessary and valuable, but it may be challenging when attempting to build a rehabilitation workforce, especially in low-resource settings. Thus, this new competency framework is a valuable resource that was designed specifically for rehabilitation professions and may report their diverse range of activities more accurately (World Health Organization, 2020a). The terminology of this framework is based on the conceptualisation as proposed by Mills et al. (2020) and thematically categorises the competencies under the domains of p*ractice, professionalism, management and leadership, learning and development* and *research* (World Health Organization, 2020a). To the best of our knowledge, the usefulness of this framework to inform the development of a locally relevant physiotherapy competency framework has not yet been explored.

2.7 Competency framework development in healthcare

The final section of this literature review focuses on how competency frameworks are developed in healthcare. It highlights factors to be considered in the development process and explores current guidance on the subject.

2.7.1 Developing competency frameworks

To be “fit for purpose”, a competency framework must be designed to align with its intended purpose, as well as its context (Batt et al., 2020; Child & Shaw, 2020). Only once the purpose and context have been clearly defined, it becomes possible to articulate the framework’s development process (Child & Shaw, 2020). As mentioned, many healthcare professionals, including physiotherapy, have developed their own competency frameworks. However, the processes they followed are unclear or absent in the literature (Sturt et al., 2018).

This was confirmed in a recent scoping review by Batt et al. (2020) who investigated the methods and strategies used in the development of existing competency frameworks in healthcare. Significant variation within the conduct and reporting of the development process was reported (Batt et al., 2020). This scoping review also identified current development guidelines and methodologies employed in competency framework development in healthcare. The review commented that developers of competency frameworks often do not elaborate on their justification for the methodological choices they made, thus portraying frequency and popularity of methods, but not necessarily superiority. For example, despite the importance of “context” frequently being cited as an important consideration, it was rarely explored. Only 12% of the included studies employed practice analysis as method to determine context. The study concluded that although guidelines exist, they are inconsistently adhered to, indicating that the guidance is lacking or incomplete (Batt et al., 2020).

It is evident that “context” is an important driver for competency framework development. Although the context in which client care is enacted is heavily influenced by historical, political and societal forces, many competency frameworks largely omit these considerations (Batt, Williams, Brydges, et al., 2021). When one is developing competency frameworks, choices have to be made about which of these influences

are relevant by considering the complex interactions between individuals and the broader healthcare system (Jacobs & El-Sadr, 2012; Batt et al., 2021a). Considering the broader systems that have an impact on healthcare adds to the views one uses in global health, and provides the opportunity to continually test and revise one's understanding of healthcare complexities. This informs how to intervene to improve people's health (Jacobs & El-Sadr, 2012; Peters, 2014).

While no competency framework can ever fully capture all the competencies needed for professional practice, the shortcomings identified in the existing guidance on competency framework development may be addressed by embracing the complexities of context-specific practice (Batt et al., 2021a). 'Healthcare' concerns both theory and practice, and competency frameworks need to match the complex conditions in which 'healthcare' occurs (Peters, 2014). Systems-based care is considered a core competency for client safety and quality care, as it shows an awareness and responsiveness to the larger context and system of healthcare (Malmivaara, 2020; Batt et al., 2021a). Thus, common models such as CanMEDS and the WHO RCF should allow room for the exploration thereof.

Informed by the results of the abovementioned scoping review, Batt et al. (2021b) synthesised the existing guidance on competency framework development. This was then integrated into a theoretically informed approach that explores professional practice and includes the consideration of the broader systems that have an impact on healthcare (Batt et al., 2021a). Their renewed guidance was presented as a six-step model for developing competency frameworks in healthcare (Batt, Williams, Rich & Tavares., 2021). From this model, other researchers explored critical questions to address each step and how this approach might be applied in the field of health research ethics education (Tackett et al., 2022). While presenting each step in turn, they reiterate that the framework development process is non-linear, and earlier steps may need to be revisited, as and when later steps are considered (Batt et al., 2021b; Tackett et al., 2022).

Another study explored stakeholder engagement in the competency development process, and concludes on the importance of involving a diverse range of stakeholders (Lepre et al., 2021). They deduced that the complexity of healthcare and the needs of

significant stakeholder groups may not be adequately captured by limiting the conceptualisation of competence to the perspectives of the profession. To link professional education to healthcare service demands, they recommend that future methodologies should attempt to involve a variety of key stakeholders, such as the community and external health professions (Lepre et al., 2021).

Identifying the context in which practice occurs, includes understanding the health system in which the individuals work, as well as the roles they must fulfil. Exploring professional practice involves gathering evidence that can inform on the competencies required to perform such roles within a context or health system (Batt et al., 2021b; Tackett et al., 2022). Analysing profession-specific policy documents may also be useful to inform on the context of practice (Batt et al., 2020; Batt et al., 2021a; Allen & Palermo, 2022; Tackett et al., 2022). These documents could provide information on the systems, in which professionals work, as well as the roles, jobs and positions they hold in that system (Tackett et al., 2022).

2.7.2 The challenge of terminology

Harmonised terminology is needed to optimise health interventions and enable effective functioning of inter-professional teams (Harden, 2006; Verma, Paterson & Medves, 2006; Verma et al., 2009; Gruppen et al., 2012; Mills et al., 2021; Mohammed et al., 2021). Terminological and conceptual confusion may pose a challenge to communication across settings in an increasingly globalised world (Harden, 2006; Mills et al., 2020). The way in which competencies are described and the terms used vary considerably across competency frameworks. Although it remains necessary to describe profession-specific competencies for specialised roles in clinical practice, it has been argued that a common language and the application of common competency models may facilitate comparability regarding the maintenance of competence and the understanding of professional expectations (Verma et al., 2009).

To address this challenge, a recent scoping review investigated the underlying reasons for these terminological differences. The review proposes a glossary of mutually exclusive terms for use in the health sector. It further suggests that the linkage between competencies (knowledge, skills, attitudes and behaviours) may vary,

depending on the preferred framework structure and required level of granularity (Mills et al., 2020).

The use of clear terminologies for defined concepts facilitates healthcare transformation and integration, a mutual understanding among healthcare professionals and it may have an impact on effective communication and teamwork (Mills et al., 2020). Developing a competency framework for a profession is no singular task, because of the differences across geographic, political, cultural and institutional contexts (Tackett et al., 2022). When acknowledging these diversities, it illuminates the appropriateness, as well as the need, to define competencies on a local level.

2.8 Summary

Competency frameworks may be used by regulatory or accreditation bodies to communicate the standards expected of a profession, and by education institutions to shape the learning outcomes of qualifications. This is to ensure that the knowledge and skills of a workforce are aligned with the broader population's needs. Different countries have developed documents guiding the profession of physiotherapy, driven by the needs, growth and development of the profession and their healthcare systems. Guidance on competency framework development in healthcare is varied and not always clear or specific, but recent advancements in the field have offered renewed guidance on their development. For a competency framework to be fit for purpose, it must strike a balance between universal and specific competencies – both in terms of the profession and context specificity. Competency frameworks, such as the CanMEDS framework and the WHO RCF, may be well suited to adaptation for a specific profession, such as physiotherapy, and the specific context of a country.

Currently, there is no global consensus on physiotherapy competencies. Despite the availability of competency frameworks for physiotherapy, these were developed in high-income countries and therefore, they may lack inclusion or acknowledgement of local contextual factors.

The following chapter will present the methodology that was followed to answer the research questions.

Chapter 3: Methodology

3.1 Introduction

This chapter commences with a brief discussion of the research philosophy informing the overall thesis. The discussion of which research paradigm this thesis is positioned in is aimed at increasing its methodological rigour and also at clarifying the research principles and theoretical assumptions that aid the understanding of the work (Brown & Dueñas, 2020; Braun & Clarke, 2021). The role of the researcher is discussed under this heading to declare positionality and to be transparent on the assumptions that inform this thesis.

To accomplish the research aims, two separate phases were undertaken, namely a document review and a thematic analysis. This chapter is structured under the following headings: Phase 1 – the document review, and Phase 2 – developing the conceptual framework through thematic analysis.

The chapter then proceeds to present the ethical considerations and concludes with a section describing the rigour of the study.

3.2 Research philosophy

3.2.1 Research paradigm

Explicitly acknowledging the selection of a research paradigm has been described as increasingly important when striving for improved methodological rigour. The research philosophy adopted by the researcher guides how problems are solved, which methods are selected, and it also has an impact on the interpretation of results (Brown & Dueñas, 2020). The approach towards this research on physiotherapy competencies was pragmatic and driven by the desire to create usable knowledge for public health practice. Pragmatism focused on this research's outcomes and thus allowed the researcher the freedom to pursue the research questions in a way that seemed most meaningful – in this case, by employing a document review and a thematic analysis (Morgan, 2007, 2014; Brown & Dueñas, 2020).

The inherent motivation or reason for this study was to explore physiotherapy competencies. Axiological reflection – reflecting on the worth of the research − revealed the main motivation for this study to be a belief that the physiotherapy profession is inherently valuable, which provides justification for research that informs its quality (Brown & Dueñas, 2020). No competing interests or affiliations were identified with this reflection.

Pragmatism focuses on research outcomes and, as such, it is generally not concerned with specifically defining either epistemology or ontology. For this thesis, however, it is acknowledged that the nature of knowledge is subjective and, in this case, is socially constructed by documents (Brown & Dueñas, 2020; Dalglish, Khalid & McMahon, 2021). True to the concept of subjectivism, the researcher acknowledged the impossibility of remaining truly impartial to the phenomenon under study.

3.2.3 The role of the researcher

A qualitative researcher always has an influence on the research process (Korstjens & Moser, 2017a). For this reason, it is especially important to reflect upon and declare one's ontological assumptions in qualitative research. At this point, it must be declared that the primary researcher is a practising physiotherapist living in a low-middle-income country, serving on a regulatory advisory committee, and physiotherapy competencies were inherently viewed through this lens. Therefore, professional and personal experience could influence the knowledge generated and the findings could be influenced by the researcher's interpretation of the literature (Arksey & O'Malley, 2005). While it is accepted that a researcher interprets and assigns meaning to the phenomena under study through the lens of their own experience, researchers must strive to remain as neutral as possible, while still acknowledging potential assumptions (Adom, Yeboah & Ankrah, 2016; Brown & Dueñas, 2020). For achieving neutrality as far as was possible, a research team was employed to perform the quality appraisal and independent review to ensure transparency. This will be discussed in depth under 3.7.

3.3 Study setting

This study used a desk-based approach in the form of online research and desktop analysis, which allowed the researcher to have access to the global database of

physiotherapy competency documents. This approach also avoided the significant resource limitations typically associated with academic research (Mills et al., 2021; Allen & Palermo, 2022).

3.4 Phase I: The document review

3.4.1 Objectives of phase 1

The objectives of phase 1 were to:

1. identify published documents containing physiotherapy competencies from World Physiotherapy members.
2. explore the characteristics of the competency documents.
3. extract the physiotherapy competencies reported in the documents.
4. determine whether these physiotherapy competencies could be accommodated within the CanMEDS and WHO RCF role and domain definitions.

3.4.2 Research design

A document review was an ideal tool to determine the scope of the literature on the topic of physiotherapy competencies and provide the researcher with an indication of the volume of relevant publications (Munn et al., 2018). Using a document review allowed the researcher to take stock of the competencies currently covered in physiotherapy documents by reviewing the relevant publications (Rohwer, Schoonees & Young, 2014). There seems to be no definitive procedure prescribed for undertaking document reviews in the literature. The rigorous review process undertaken is presented below, which was informed by several authors, and is explained thoroughly in the following steps to enable the study to be repeated by others (Arksey & O'malley, 2005; Rohwer, Schoonees & Young, 2014; Munn et al., 2018; Dalglish, Khalid & McMahon, 2021; Kayesa & Shung-King, 2021).

Step 1: Search strategy

The first step in conducting the document review involved finding and selecting the documents for the study (Dalglish, Khalid & McMahon, 2021). A preliminary search (Gross, 2018) on Google with the entered keywords “physiotherapy competency framework” confirmed that such documents were typically obtainable on official physiotherapy society or association websites, or so-called “grey literature”, and not in conventional peer-review databases. This informed the proposed search strategy, which required searches of specific websites (Kayesa & Shung-King, 2021).

Since this study was interested in identifying professional level competencies, the World Physiotherapy database was used to identify the websites. Founded in 1951, World Physiotherapy is the sole international voice for physiotherapy. It represents more than 660 000 physiotherapists worldwide through its 125 member organisations. Member countries must meet set criteria before they are admitted and they have to comply with specific requirements, rights, and duties of being a World Physiotherapy member organisation, as set out in their constitution (World Physiotherapy, 2022). Based on these stated factors, World Physiotherapy was chosen as a legitimate database, from which to conduct the search.

A 3-pronged search strategy was employed, as summarised in Figure 1 below.

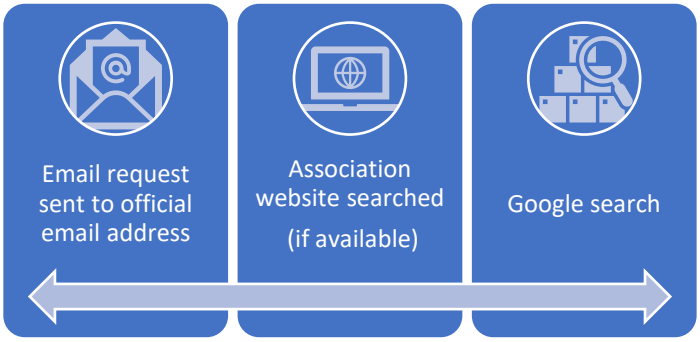

Figure 1 Simultaneous search strategies carried out per member country

The search strategies were completed between 10 June 2021 and 12 Dec 2021. The full record of this process can be viewed in Appendix 1.

a) Email call to professional associations

An email request for competency frameworks was sent to all member physiotherapy associations that were published on the World Physiotherapy's website. Moving alphabetically though the list of 125 member countries on the World Physiotherapy website, members were contacted via the associations' official email addresses as published on this website. Full disclosure about the study and the intended use of documents received, were clearly communicated to the recipients. An example of the email template can be viewed in Appendix 2.

b) Website searches

Physiotherapy websites, if available, of the member countries on the World Physiotherapy's website were searched for competency publications. Non-English websites were searched with the translation functionality of the web browser (Google Chrome).

c) Google search

A Google search for each member country was performed with the terms "country name" + "competency" + "competencies". For each search, the first two results pages were screened for possible documents (Mills et al., 2021). The website and Google search were conducted simultaneously. If a different email address was discovered during these searches, it was documented, and the email template re-sent to the alternative address.

The main barrier to document access was language, although as far as possible, the Google Translate functions of website, webpages and documents were utilised in an effort by the researcher to be as thorough with the search strategy as possible. The quality of the translations was verified as described under section 6.3 of this thesis.

Sampling technique

Based on the very specific type of documents searched for, it was appropriate to employ a purposive sampling method for the document review (Morgan, 2022). All documents found through the search process were eligible for review.

Inclusion and exclusion criteria

Competency frameworks, although no singular definition currently exists, often describe behaviours, referring to how performance is achieved, or functions,

describing what performance looks like, in the context of an occupation (Mills et al., 2020). As the researcher became more familiar with the literature, the inclusion and exclusion criteria were refined through an iterative process, which allowed for the dataset to be representative of the research topic (Arksey & O'malley, 2005; Van Zyl et al., 2021). The iterative process to determine the final inclusion and exclusion criteria was employed to avoid inadvertently excluding documents that may have contained useful information (Kayesa & Shung-King, 2021).

The evaluation of documents obtained on the internet from sources other than peer-reviewed journals, called for careful consideration. This remains a crucial recommendation to establish the validity of any document included in a review. These documents need to be subjected to a quality audit with the same rigour typically applied to books and journals. Therefore, the inclusion criteria of the documents were considered against the following quality assessment criteria of authenticity, representativeness and credibility, as described by Morgan (2022).

The following criteria were thus used in this study:

Inclusion criteria

- Authenticity – All documents were official publications and included authentic logos and publication details, guarding against forgeries.
- Representativeness – Documents that contained (wholly or within sections) organised statements on physiotherapy competencies that describe the expected performance of the physiotherapy (and/or physical therapy) profession were included. All formats and layouts were closely considered to ensure that the documents did, indeed, talk to physiotherapy competencies.
- Credibility – As the documents were sourced from national physiotherapy associations and many included detailed accounts on how the document was created, they were assumed to be free from error.
- All documents were included, irrespective of the language.
- All publication dates were included.

Exclusion Criteria

- Draft versions of documents were excluded, as these had not gone through any validation process.
- Documents were also excluded, if they were developed for sub-specialities or extended scope of practice, such as intensive care unit (ICU) specific competencies – these specialised skillsets are usually technical skill specific and beyond the scope of this study.
- Previous versions of documents, which are no longer in use were also excluded, as they are not representative of contemporary physiotherapy competencies.

Selection process

The document review involved both superficial reading and thorough examination. The researcher skimmed all documents in their entirety, including annexes, to determine whether they met the inclusion criteria (Arksey & O'malley, 2005; Bowen, 2009; Kayesa & Shung-King, 2021).

Documents were sourced as described in the search strategy and all included documents were saved with a country-specific prefix serving as a unique identifier of where it came from. Documents published in other languages were translated with the aid of Google Translate and used to supplement the data. All translated versions were sent back to the country of origin via email, for an opinion whether the true essence of the document was preserved in the translated version.

The researcher reviewed all documents and compiled a final set of documents based on the inclusion criteria. Where uncertainty existed on whether to include or exclude a document based on the screened content, the supervisors were consulted.

Step 2: Extraction of data

Using appropriate software for data extraction and management has been recommended to save time and effort (Rohwer, Schoonees & Young, 2014). This study used the qualitative data analysis software programme Atlas.ti (v22) for extraction purposes. The included documents were imported into Atlas.ti and data were extracted as described below.

The documents were read line-by-line and every statement that met the following definition of competency, was extracted: *"The observable ability of a healthcare professional integrating knowledge, skills, values and beliefs in their performance of tasks.*" This definition was derived by combining those contained in the WHO RCF and CanMEDS documents (Frank et al., 2015; World Health Organization, 2020a).

All documents were then thoroughly examined in their entirety, including annexes, to extract all competencies mentioned in the document. However, as the research interest was in competencies described and it excluded advanced or specialised scopes of practice, extraction did not include competencies specified for advanced levels of performance.

The statements were exported to MS Excel for sorting, analysis and review processes. Only the competency statements were exported, without reference from the country or document where it originated from. This was done to prevent bias in the subsequent steps, as the researcher at this stage had reasonable familiarity with the different documents.

Step 3: Collating the data

From the MS Excel data sheet, each competency statement was read and then allocated by the primary researcher under both the appropriate CanMEDS role and WHO RCF domain, as per the definitions contained in these documents (Frank et al., 2015; World Health Organization, 2020a). The reasoning for selecting these two frameworks was discussed in detail in Chapter 2. Each statement could only be allocated to one "best fit" role or domain, to avoid recurrences of the same statement in other roles or domains.

Upon completion, two additional researchers undertook an independent review by randomly selecting 20% of the statements each, to determine whether they agreed with the statement's placement under the respective framework role or domain. Where allocation differed, consensus was reached through discussion among the three reviewers by referring to the definitions of the roles and domains. After this quality appraisal, any systematic errors identified were corrected, and exact duplicate statements were removed from the raw data set.

3.5 Phase 2 – Developing the conceptual framework through thematic analysis

3.5.1 Objectives for phase 2

The objectives for the thematic analysis were:

1. To develop themes from each of the five domains of the WHO RCF. The data set from phase 1 (WHO RCF collated competencies) was used for analysis.
2. Develop a conceptual thematic framework to inform each of the WHO RCF domains.

3.5.2 Research design

Analysing existing profession-specific policy documents has been recommended as appropriate to inform on the context of practice (Allen & Palermo, 2022; Batt et al., 2021a). A thematic analysis approach within the context of the WHO RCF framework was applied to the collated data from the document review. While the same process could have been followed to analyse the CanMEDS dataset from phase 1, it was decided to use the WHO RCF structure to draft the conceptual thematic framework (World Health Organization, 2020a). The WHO RCF has been specifically designed for rehabilitation professions, and as such, was considered appropriate to explore the data in terms of physiotherapy competencies.

Thematic analysis

Since publication of their seminal paper in 2006, Braun and Clarke's approach has arguably become one of the most thoroughly delineated methods of conducting thematic analysis (Braun & Clarke, 2006). They have since published widely on the topic, and the methodological steps presented below were largely informed by their work (Braun & Clarke, 2006, 2014, 2016, 2020, 2021; Maguire & Delahunt, 2017; Byrne, 2022).

Step 1: Familiarisation with data

The MS Excel data sheet was sorted and saved as five separate documents, according to the five WHO RCF domains and uploaded into Atlas.ti (v22) for analysis. As recommended in the literature, the entire data set was read through once, before

moving on to subsequent “steps” (Fereday & Muir-Cochrane, 2006; Nowell et al., 2017). Each document of competencies reflecting the five domains of the WHO RCF was read separately by the researcher. This step immersed the researcher in the data and facilitated familiarisation therewith. This is described as a crucial step before coding, and involved reading and re-reading the data (Byrne, 2022). Ideas about coding and emerging theories were noted down on memos to return to later, once the researcher became more familiar with the data.

Step 2: Generating initial codes

Coding is a cyclical and iterative exercise, and perfect coding is rarely achieved the first-time round, even less so by novice researchers (Kalpokaite & Radivojevic, 2019). This phase applied an inductive analysis and used line-by-line coding, which enabled the researcher to code every single competency statement, giving each data item equal consideration (Byrne, 2022). Open coding was applied, meaning there were no pre-set codes, but codes were developed and modified throughout the coding process (Maguire & Delahunt, 2017).

Step 3: Generating initial themes

Once all the data had been coded, the next phase aimed to generate categories or themes. The process of generating themes and sub-themes involved merging or clustering codes together that seemed to share similar underlying ideas, so that they portrayed and described a clear and meaningful pattern in the data. It also involved splitting codes into more distinct entities, and re-labelling or promoting certain codes as sub-themes or themes as appropriate (Saldaña, 2016; Maguire & Delahunt, 2017; Nowell et al., 2017; Byrne, 2022).

Step 4: Reviewing themes

Themes and sub-themes were reviewed by considering key questions about them. This included reflection on the quality of the theme and whether it conveyed useful information about the data; the boundaries of the theme and what it included and excluded; the amount of data supporting the theme and whether it was “thick” or “thin”; and whether the themes worked together and were coherent within the data set. In this study, “thin” themes were not removed, as the research objectives demanded thorough reporting of all themes within physiotherapy competencies. At this stage, it

was important to start considering the relationship between the themes, the story they would tell about the data, and how it would be best presented in the conceptual thematic framework. Several iterations of the above steps occurred (Appendix 5), by which previous stages were closely scrutinised by the researcher to ensure the analyses remained representative of the initial data (Fereday & Muir-Cochrane, 2006).

Step 5: Defining and naming themes

Themes were reviewed together with the data segments they represented to ensure that the data really supported the theme. The themes were also reviewed in relation to the entire domain data set, to confirm whether they provided an apt interpretation of the data in relation to the research question (Braun & Clarke, 2006; Maguire & Delahunt, 2017; Byrne, 2022). Defining the themes required a deep analysis of the data items underlying each theme. During this step, the researcher considered which data extracts to use when writing up, to vividly illustrate and support the themes.

Step 6: Producing the conceptual thematic framework

The end product of this analysis allowed the presentation of findings relative to the research objectives for this study, which included identifying themes that describe the competencies of the physiotherapy profession and/or practitioner, as per the WHO RCF domains.

The overview developed through the analysis was intended to display the data in an easily accessible way, providing a comprehensive picture of the research (Kalpokaite & Radivojevic, 2019). The results of this analysis will be reported in Chapter 5, section 5.7, headed “Figure 6 The conceptual thematic framework”.

3.6 Ethical considerations

The ethical concerns associated with other qualitative methods are greatly reduced when conducting a document review (Morgan, 2022). No ethical approval was required, because this thesis involved only secondary analysis of existing data. Save for the email call, there was no further engagement with human subjects during the study or after its completion.

3.6.1 Anonymity

The email addresses used for this study are published on the World Physiotherapy website and they are freely accessible. Data sheets and documents used for analysis had no personal identification attached to them, which would have identified from where they were received, and all statements were delinked from authors and origin country during data extraction.

3.6.2 Informed consent

Full disclosure about the study and the intended use of documents received, were clearly communicated in the email template. The template can be viewed under Appendix 2.

3.6.3 Confidentiality

The documents used in this study were public records and as such, freely available for examination. This removed the ethical issues associated with the use of materials not intended for public use.

3.6.4 Risk/Benefit ratio

Minimal risks were identified while this study was conducted, as the authors of these documents were unlikely to be harmed by the analysis of the published content. The benefits of this study are that it could allow for improved stakeholder engagement and contextual consideration when drafting future physiotherapy competency frameworks. The results may be applied to influence policies or processes for the furthering of the physiotherapy profession.

3.7 Rigour in qualitative design

This thesis dealt with a unique data set and required unique, adopted methodologies to adequate answer the research questions. Specific mention has been made throughout this chapter outlining and emphasising rigour in a document review and when thematic analysis is applied, mitigating against the critique towards these methods in the literature (Maguire & Delahunt, 2017; Braun & Clarke, 2021; Dalglish, Khalid & McMahon, 2021; Kayesa & Shung-King, 2021; Byrne, 2022; Morgan, 2022).

In qualitative data, the question is about the 'trustworthiness' of the data, and a standard criterion applies to all qualitative designs. Reference is generally made to four criteria: credibility, transferability, dependability and confirmability (Korstjens & Moser, 2017b). A fifth concept to be considered is that of reflexivity, which will also be discussed as part of this section on rigour (Korstjens & Moser, 2017b; Brown & Dueñas, 2020; Morgan, 2022). Every attempt was made to incorporate these strategies into the study, to ensure trustworthy results.

3.7.1 Credibility

Credibility can be equated to the internal validity of a study and informs on the confidence that can be placed on the truth-value thereof. It determines whether sound interpretation was done on the original data (Korstjens & Moser, 2017b).

- Document quality: A strict inclusion criteria was applied to ensure the authenticity, representativeness and credibility of the documents used (detailed under Step 1 of the document review).
- Investigator triangulation: Coding and analyses were mainly done by the principal researcher. To validate the primary researcher's identification of competencies and themes, the data was reviewed separately by two reviewers at various stages.
- Detailed evidence: Documents were considered in their entirety, including annexes, and the detailed data allowed the researched to develop a thorough understanding of physiotherapy competencies.
- The researcher underwent additional training in qualitative data analysis software (Atlas.ti V22) to improve coding and data analysis skills.

- Persistent observation: The researcher read and re-read the data many times and refined the coding system continually. The data was studied until the final result depicted the intended depth of insight.

3.7.2 Transferability

Establishing transferability relies on meticulously detailed descriptions of factors such as the sample, setting and results of research, to inform readers of research whether the results of a study will likely transfer to a different setting (Hanson, Balmer & Giardino, 2011). The researcher aimed to provide a 'thick description' of the context of the study and the documents, to enable transferability judgement from readers without assumptions having to be made (Korstjens & Moser, 2017b).

3.7.3 Dependability

The extent to which the results are reliable in relation to the context, in which they were generated, is described as the dependability of the study and evaluates the consistency of the evidence (Korstjens & Moser, 2017b).

- Iterative data collection and analysis: Data extraction and analysis were iterative processes. Extraction templates and coding structures were continually refined.
- Saturation: Data was analysed until no new themes emerged.
- Emergent research design: The research process remained flexible and open towards the process and the topic.
- Rigorous procedures: Systematic document sampling, data collection and analysis were described and informed by the literature.
- Multiple reviewers: Analysis was discussed with supervisors and allowed for scrutinising and addressing concerns as they occurred.
- An advantage of using Atlas.ti was the software's ability to create "snapshots" of the work, thus the evolving stages of the coding could be clearly documented and tracked, and this enabled the researcher to return to previous versions of coding (Appendix 5).

3.7.4 Confirmability

Evidence reported must achieve neutrality from the researcher and not reflect personal preferences or viewpoints (Hanson, Balmer & Giardino, 2011; Korstjens & Moser, 2017b). An audit trail assists to ensure confirmability by recording procedures and their motives. The research process and findings were discussed with supervisors and all steps taken were documented. The methodology chapter is presented with detailed steps to enable repeatability of the two studies.

3.7.5 Reflexivity

Reflexivity reiterates the importance of reflecting on the researcher's role and influence on the study (Korstjens & Moser, 2017b). The role of the researcher is discussed in detail in a previous section (section 3.4). A parallel process of critical self-reflection and its effect on the study accompanied the research process. Using the "memo" function on Atlas.ti, reflections could be recorded and linked to the various stages of the project.

3.8 Summary

In summary, this chapter provided a detailed account of the methodologies chosen to conduct this research study. An in-depth document review of published physiotherapy competency documents, and a thematic analysis exploring the physiotherapy competencies, was conducted.

The results of the two studies will be presented in separate chapters. Chapter 4 will present and discuss the results of the document review and Chapter 5 will present and discuss the thematic analysis and conclude with the presentation of the conceptual thematic framework.

Chapter 4: Document review: results and discussion (Phase 1)

4.1 Introduction

The physiotherapy competency documents that exist currently lack contextualisation and representation from many world regions. Currently, there is no global consensus on physiotherapy competencies, and research in the area is fragmented and siloed.

This chapter will outline the results from the document review and is presented according to the study objectives. It will also include the discussion of these results. The first section will detail the outcomes of the search strategy, reporting which countries have published physiotherapy competency documents and discussing the characteristics of the body of documents. The second section will report on the competencies extracted and display how these were allocated within the CanMEDS framework and the WHO RCF.

4.2 Results

4.2.1 Search results and study selection

The search yielded 59 documents through email correspondence, website searches and Google searches. After elimination of duplicates, 31 documents were screened for consideration (Appendix 3). Eleven documents were excluded after screening of the documents based on the exclusion criteria: The document did not describe physiotherapy competencies (n = 6), the document was developed for a sub-speciality (n = 2), the document was an unpublished/draft version (n = 1), or the document was a previous version (n = 2). The final list of included documents comprised a total of 20 documents, of which 18 were country-specific and 2 were region-specific (European region) (Appendix 4).

Figure 2 illustrates these findings, and Table 1 contains a full list of included studies.

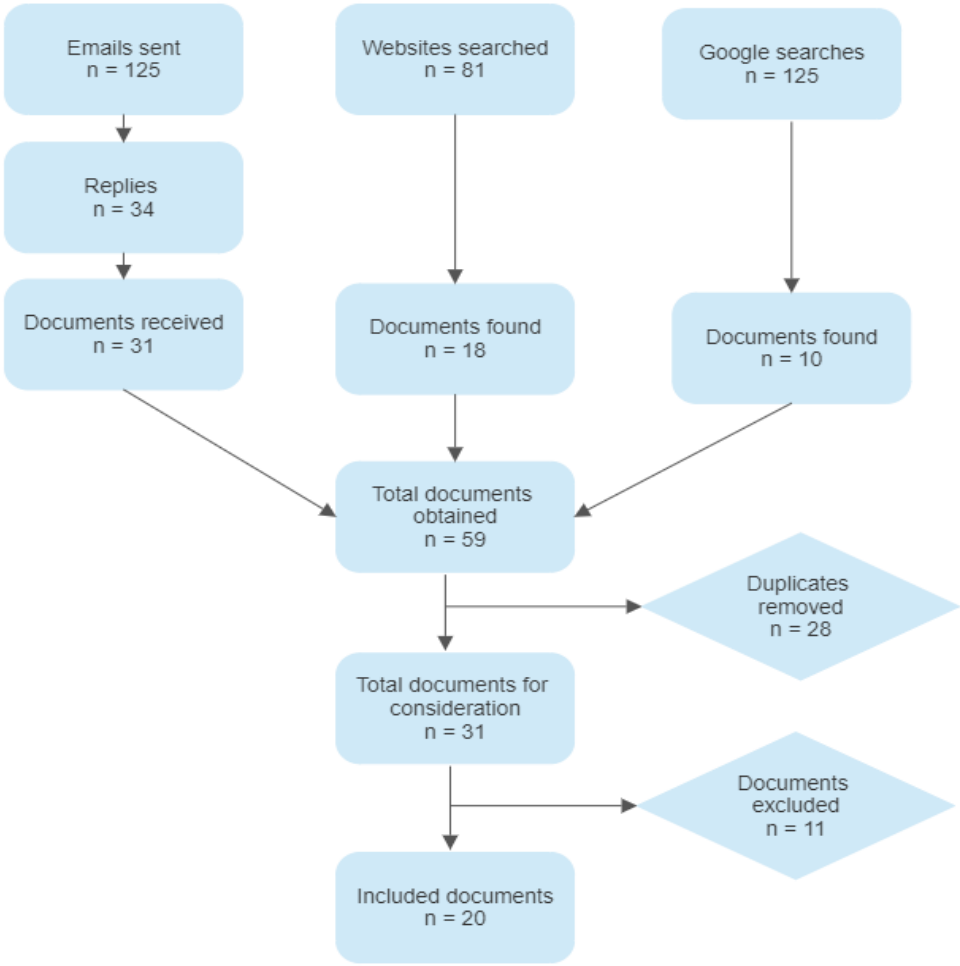

Figure 2 Summary of results from the search strategy

4.2.2 Characteristics of included documents

Publication dates of the included documents ranged from 2008 (Ireland) to 2021 (Latvia). The documents were published by different authors and at different levels. Most commonly were official group / society / association level publications (n = 12); however, ministerial level (n = 1), board level (n = 2), council level (n = 3) and tertiary education level (n = 2) publications were also included (Table 1).

In terms of income classification, the published documents came from high-income (n = 16) and upper-middle income (n = 2) countries (Table 1).

Table 1 Summary of included documents

Country	Document	Date	Publisher	Income Classification	Region
Australia	Physiotherapy Career Pathway Competence Framework Version 6.0	2017	Australian Physiotherapy Association (Group / Association / Society)	High income	Oceania
Austria	The Physiotherapist Profile of Competencies	2017	Phyioaustria Association (Group / Association / Society)	High income	Europe
Belgium	Het Beroepscompetentieprofiel van de Kinesitherapeut in België anno 2020	2016	Federal Council for Physiotherapy (Council)	High income	Europe
Canada	NPAG Essential Competency Profile for Physiotherapists in Canada (2017)	2017	National Physiotherapy Advisory Group (Group / Association / Society)	High income	North America
Colombia	Perfil profesional y competencias	2015	Colombian Association of Physiotherapy (ASCOFI) (Group / Association / Society)	Upper-middle income	Latin America & Caribbean
Costa Rica	Perfil Profesional de Terapia Fisica 2019	2019	College of Therapists of Costa Rica (Tertiary Education)	Upper-middle income	Latin America & Caribbean
Finland	The core competences of a physiotherapist	2018	Finnish Association of Physiotherapists (Group / Association / Society)	High income	Europe
France	Order of September 2, 2015 relating to the state diploma of physiotherapist	2015	Ministry of Social Affairs, Health and Women's Rights (Ministerial)	High income	Europe

Germany	PT Kompetenzkatalog Hochschule PT Stand 05072019	2019	Physio Deutschland: German Federal Association for Physiotherapy (Group / Association / Society)	High income	Europe
Ireland	Physiotherapy Competencies Therapy Project Offices 2008	2008	Therapy Project Office (Group / Association / Society)	High income	Europe
Latvia	Fizioterapeita Profesijas Standarts	2021	Sub-Council for Vocational Education and Employment (Council)	High income	Europe
Netherlands	KNGF Beroepsprofiel Fysiotherapeut 2021	2021	Royal Dutch Society for Physiotherapy (KNGF) (Group / Association / Society)	High income	Europe
New Zealand	Physiotherapy Board Physiotherapy Thresholds	2015	Physiotherapy Board of Australia (PhysioBA) and the Physiotherapy Board of New Zealand (PBNZ) (Board)	High income	Oceania
Portugal	APFISIO Perfil Compet Fisio rev2020	2020	National Board of Directors of the Portuguese Association of Physical Therapists (Board)	High income	Europe
Singapore	Skillsfuture-skills frameworks	2018	Skills Future (Future Economy Council (FEC)) (Council)	High income	Asia
Switzerland	Abschlusskompetenzen BSc Physiotherapie	2017	Zurich University of Applied Sciences (Tertiary Education)	High income	Europe

United Kingdom	Physiotherapy framework (2013)	2013	Chartered Society of Physiotherapy (Group / Association / Society)	High income	Europe
United States	Core Competencies of a Physical Therapy Resident 2020	2020	American Physical Therapy Association (Group / Association / Society)	High income	North America
European Region	Expected Minimum Competencies for an Entry-Level Physiotherapist (European Region)	2018	European Network of Physiotherapy in Higher Education (Group / Association / Society)	-	Europe
European Region	European Network of Physiotherapy Higher Education	2017	European Region of the WCPT (Group / Association / Society)	-	Europe

Figure 3 illustrates which World Physiotherapy member countries and regions have published physiotherapy competency documents. The geographical location of the documents based on the six major areas are as described by the United Nations (United Nations, 2022): Europe (n = 14), Asia (n = 1), Latin America and the Caribbean (n = 2), North America (n = 2), Oceania (n = 2) and Africa (n = 0).

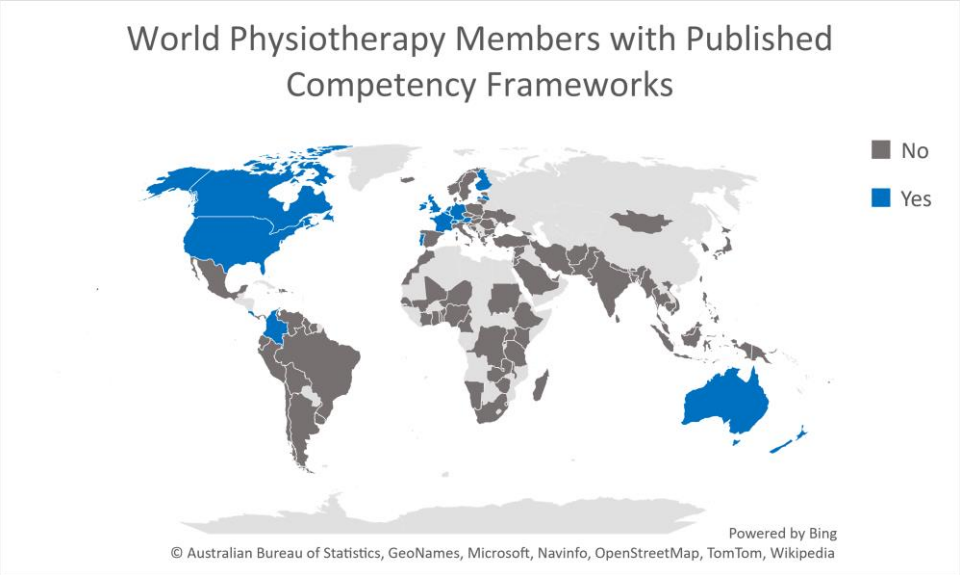

Figure 3 Geographic representation of World Physiotherapy members with published competency documents.
(Light grey indicates non-members countries.)

4.2.3 Results of the competencies extracted

Data extraction from the documents yielded a total of 2001 competency statements for analysis. Each statement was individually considered against the definitions of the seven CanMEDS roles and allocated where it fitted best. This process was repeated for the roles of the five WHO RCF domains, respectively. The allocation of the extracted competencies and the results presented in this chapter answered the research objective of exploring how these physiotherapy competencies could be accommodated in the CanMEDS framework and the WHO RCF. After allocation and quality appraisal, the statements were distributed across the two frameworks as depicted in Table 2 and Figure 4.

Table 2 Distribution of competency statements across CanMEDS roles and WHO domains

CanMEDS	Statements	WHO RCF	Statements
Collaborator	181	Research	100
Communicator	252	Professionalism	488
Health Advocate	98	Practice	882
Leader	228	Management & Leadership	315
Physiotherapy Expert	623	Learning & Development	216
Professional	304	Total Statements	2001
Scholar	315		
Total Statements	2001		

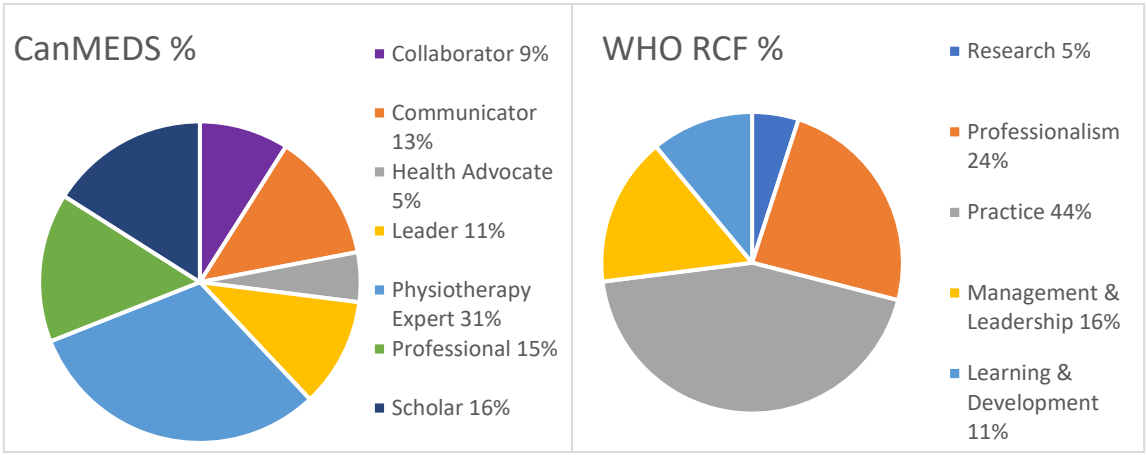

Figure 4 Percentage allocation of statements to CanMEDS roles and WHO RCF domains

4.3 Discussion

4.3.1 Characteristics of included documents

Document accessibility

In terms of advantages of a document review, the access to data is paramount. Documents can contain vast amounts of data which, depending on the type of document in question, is usually easy and inexpensive to access. The exactness of documents, regarding publication dates, names, and references, are advantageous to research. As a source of data, documents are relatively permanent, which allows the data to be checked by others. The stability of documents thus allows for repeat reviews. Documents may also be described as non-reactive, which addresses the concern for reflexivity in qualitative research. The researcher's influence on the original data collected is negligible (Bowen, 2009; Denscombe, 2010).

The included documents for this study were generally easy to find and access, as most of them were published online in the public domain and were obtained via the search strategy described in the methodology chapter. All 125 member countries of World Physiotherapy were contacted via email. The response rate was low (n = 34), but this was still a valuable strategy, as many access links and documents were obtained via email, leading to documents that might otherwise have been missed. Given that World Physiotherapy currently has 125 members, this implies that 14.4% of member countries have published competency documents. The search strategy did not yield any documents from Africa, and very few from Asia and South America (Table 1). This raises the question of whether physiotherapy competency information from these regions should be sourced otherwise.

While physical access to the documents did not pose a significant barrier, language certainly did. Foreign languages are often cited as a barrier, rendering documents inaccessible to research (Kayesa & Shung-King, 2021). The search keywords employed were in English (for example "competency" and/or "framework") and were consequently most successful in locating English documents. However, overlooking non-English knowledge would lead to a bias in the understanding of the phenomenon and decrease the generalisability of results (Foo, Storr & Maloney, 2016). For this

reason, every effort was made to obtain, translate and include all documents that met the inclusion criteria. Many of the non-English versions of documents were rather obtained via email.

Given the low email response rate, future research may aim to employ more strategies to make direct contact with World Physiotherapy members, such as telephonic consultation, as this may ensure a more complete document sample.

Authors and Publication dates

The different authors and publication levels indicate the different voices that are represented in the overall body of documents. In the healthcare professions, the competency framework development is typically guided by professional associations or societies (organisations that represent the profession's members or regulatory bodies), with potential input from other stakeholders, such as academics (Lepre et al., 2021). Where these documents lie in terms of authority may have implications on their upstream and downstream impacts. For example, a midstream competency framework may translate directly onto professional practice (upstream), whereas its downstream implications may affect curriculum and regulatory policy development and policy (Jacobs & El-Sadr, 2012; Batt, Williams, Brydges, et al., 2021; Lepre et al., 2021).

The data spans more than a decade. The oldest document included was 2008 (Ireland), and the newest 2021 (Latvia). Contemporary physiotherapists are presented with challenges different to their predecessors, and their roles have expanded beyond the clinical setting (Unger et al., 2014; Vissers et al., 2014; Barradell, 2017). Also, context and knowledge change over time, which necessitates frameworks to be updated for them to remain fit for purpose (Tackett et al., 2022). This raises questions as to the relevancy of older frameworks and suggests a need to define the intervals at which a competency framework should be reviewed and updated (World Health Organization, 2020b).

Updated versions

The majority of included documents were the first version of the respective competency document. Only Australia, Belgium, Canada and the Netherlands had published previous versions. Canada has the oldest initial publication, dating back to 1998.

If a previous version was mentioned in the included document, an attempt was made to locate it. Although previous versions were excluded for the analysis phase of the study, they are considered and referred to in this discussion of the overall body of documents to report the reasons for updates and changes deemed necessary. The reasons cited were as follows:

Australia – The current framework in use (Australian Physiotherapy Association, 2017) aimed to describe physiotherapy competencies that moved beyond those of the Physiotherapy Practice Thresholds in Australia and Aotearoa New Zealand (2015). It now includes the different stages of possible advancement in a physiotherapist's career.

Belgium – In response to a ministerial decree, the 2010 version of the competency framework was reviewed and updated as appropriate aimed at taking a future-oriented perspective. In the present 2016 version of the document (Federale Raad voor de Kinesitherapie, 2016), the focus has shifted to client/person centred care, the autonomy and empowerment of the client, and how this relates to quality, safety, and prevention in terms of professional physiotherapy practice.

Canada – Canada has a fourth-generation competency profile (National Physiotherapy Advisory Group, 2017). This document is foundational to describe the essential competencies (previously referred to as key competencies) required by a physiotherapist in Canada. It now includes specific milestones (previously referred to as enabling competencies) that are expected of a physiotherapist at the beginning of their career, or at "entry-to-practice" level.

Netherlands − In the previous Professional Profile Physiotherapist (2014), separate areas of competence within physiotherapy were discussed. These areas of competencies were updated to the roles of the physical therapist in the current Professional Profile (Mutsaers et al., 2021), which corresponds to the CanMEDS framework.

Income representation

The results lacked representation of documents from low- and middle-income countries. Current competencies have been designed in resource-rich settings and may be projected or perceived as the 'gold standard', given the vast resources invested in research related to the field (Gruppen et al., 2012; Cassady et al., 2014). However, this may inherently exclude other necessary competencies that are more likely to address local health needs in low-resource settings (Gruppen et al., 2012). While it is not possible to conclusively comment on the completeness of the set of documents, the results clearly highlighted the need for these regions to define their physiotherapy competencies.

Geographic representation

As with income representation, most of the physiotherapy documents obtained in this document review originated from the European region. North America and Oceania were also well represented. Similarly, these regions have also been reported in the literature to produce the majority of research in physiotherapy competency, mainly from the UK, Canada, the USA and Australia (Cassady et al., 2014; Alonge et al., 2019). These results demonstrated an under-representation of competency frameworks in the African, South American and Asian member countries of World Physiotherapy. The validity of GHC for physiotherapists may remain questionable, while large regions of the world remain absent in competency framework research (Cassady et al., 2014; Vissers et al., 2014; Useh, 2021).

Terminology, Structure and Content

It must also be kept in mind that when using secondary sources of data, such as documents, the information may come from a source produced for a purpose other than that of the current research's aim (Denscombe, 2010; Morgan, 2022). For example, some documents were complete competency frameworks, typically authored by a professional physiotherapy association, while others contained only sections on competency as part of broader publications, such as the ministerial publications. Despite these differentiations, the intended purposes of the documents describe a potential flaw rather than a true disadvantage. Document review remains

an efficient and cost-effective method, where the advantages clearly outweigh the limitations (Bowen, 2009; Morgan, 2022).

The results indicated a lack of familiarity of the concept of physiotherapy competencies, as many of the documents received via email were rather codes of conduct, stipulations regarding professional education or registration requirements. As mentioned in the literature, the use of uncontemporary and inconsistent terminologies hamper a possible consistent comparison between documents (Mills et al., 2020). Reviewing the structure and wording of frameworks may improve competency research and development (Allen & Palermo, 2022). Although huge variations occurred in terms of terminology used, similar content could be compared across the body of included documents. Most of the documents depicted a typical hierarchical structure, although a few were written in a more narrative style, for example the document from Finland (Hynynen et al., 2016). Common language may lead to better collaboration between countries. Countries may learn from each other to examine their assumptions and more explicitly, address the context in which they are defining such competencies (Gruppen et al., 2012).

4.3.2 Competency extraction and allocation

Profession-specific competency statements were allocated under the “Physiotherapy Expert” role and “Practice” domain and made up the bulk of distribution. These results suggest that, despite the arguments for the expansion of the physiotherapy profession beyond the clinical setting, the competencies for this role or domain may still be prioritised within the current competency documents. Future developments may need to investigate and define other competencies more thoroughly, considering the arguments made in literature of how those competencies assist in achieving equitable healthcare systems (Jacobs et al., 2020; Jacobs & El-Sadr, 2012; Kelland et al., 2014; Malmivaara, 2020).

Many statements included a variety of concepts, making allocation challenging. However, it should be borne in mind that the competencies were not necessarily designed according to the CanMEDS and WHO RCF definitions; thus, some statements did not fit “neatly” into a domain or role. The contrasts in definitions for

similar roles and domains made for interesting consideration on where a statement was to be allocated. For example, comparing the definitions below in Table 3, it illustrates how the different definitions might result in the same statement being allocated under “Collaborator” within CanMEDS, but under “Professionalism” in the WHO RCF, depending on whether communication occurs with a client, or a colleague. This again highlights the differences that the language and structure of a document can have in presenting competencies (Gruppen et al., 2012; Mills et al., 2020).

Table 3 CanMEDS vs WHO RCF definitions
(from Frank et al., 2015; World Health Organization*, 2020a)*

CanMEDS DEFINITIONS
MEDICAL EXPERT “As Medical Experts, physicians integrate all of the CanMEDS roles, applying medical knowledge, clinical skills, and professional values in their provision of high quality and safe patient-centred care. Medical Expert is the central physician’s role in the CanMEDS Framework and defines the physician’s clinical scope of practice.”
COMMUNICATOR “As Communicators, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective healthcare.”
COLLABORATOR “As Collaborators, physicians work effectively with other healthcare professionals to provide safe, high quality and patient-centred care.”
LEADER “As Leaders, physicians engage with others to contribute to a vision of a high-quality healthcare system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.”
HEALTH ADVOCATE “As Health Advocates, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand their needs, speak on behalf of others when required, and support the mobilisation of resources to effect change.”

SCHOLAR “As Scholars, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.”
PROFESSIONAL “As Professionals, physicians are committed to the health and wellbeing of individual patients and society through their ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.”
WHO RCF DEFINITIONS
PRACTICE “Competencies and activities related to the interaction between the rehabilitation worker and the person and their family. Competencies and activities include those necessary for establishing appropriate working relationships, assessment, planning, delivering interventions, communication and decision-making.”
PROFESSIONALISM “Competencies and activities related to professional integrity, collaboration, safety and quality of care that enable the performance of a professional role.”
MANAGEMENT AND LEADERSHIP “Competencies and activities related to teamwork, strategic thinking, management, service development and evaluation, and resource management.”
LEARNING AND DEVELOPMENT “Competencies and activities related to the professional development of the rehabilitation workers themselves and others. Competencies and activities within this domain involve professional development, teaching, and learning.”
RESEARCH “Competencies and activities related to the generation, dissemination and integration of rehabilitation research.”

The results suggest that both these frameworks may be suitable structures to present physiotherapy competencies, and the choice on preferred structure may be influenced by local opinions as to which structure best captures their local contextual factors (Van Der Lee et al., 2013; Batt, Tavares & Williams, 2020; World Health Organization, 2020b).

4.4 Conclusion

This chapter presented the results of the document review and included a discussion on the characteristic of the body of included documents. The bulk of published physiotherapy competency-related documents originates from Europe, North America and Oceania. The documents obtained all originated from high-income countries, which corresponds with the geographic representation of the documents. The results thus suggest an under-representation of certain global regions within the field of physiotherapy competency.

Publication dates ranged from 2008 to 2021, and only four countries have published updated or revised versions. These are Australia, Belgium, Canada and the Netherlands. Given the changes and developments the physiotherapy profession has undergone, older frameworks may require revision to address the extended roles of the physiotherapist.

From the 20 included documents, 2001 competency statements were extracted, and all of these statements could be accommodated within both the CanMEDS and WHO RCF frameworks. These results suggest that both these frameworks may be suitable for use in physiotherapy competency framework development.

In the following chapter, the results of thematic analysis of all competency statements as accommodated in the WHO RCF are presented and discussed.

Chapter 5: Thematic analysis of competency statements: results and discussion (Phase 2)

5.1 Introduction

This chapter presents and discusses the results of the thematic analysis of all the competency statements extracted during Phase 1 for each of the five domains of the WHO RCF (Figure 5). The themes and sub-themes identified for each of these domains are presented and briefly discussed below. Examples of statements or parts of statements are provided *in italics* in support of each theme and/or sub-theme. The number of statements, in which themes or sub-themes were reported, are mentioned throughout. The number thus represents the number of statements coded by each theme or subtheme. These numbers add value, as they illustrate how commonly (or not) a sub-theme was reported in the data, however within the scope of this study they were not further interpreted. This chapter concludes with a guiding document presenting themes relevant to the profession of physiotherapy. These could be considered when developing a locally relevant competency framework to guide practice and curriculum development.

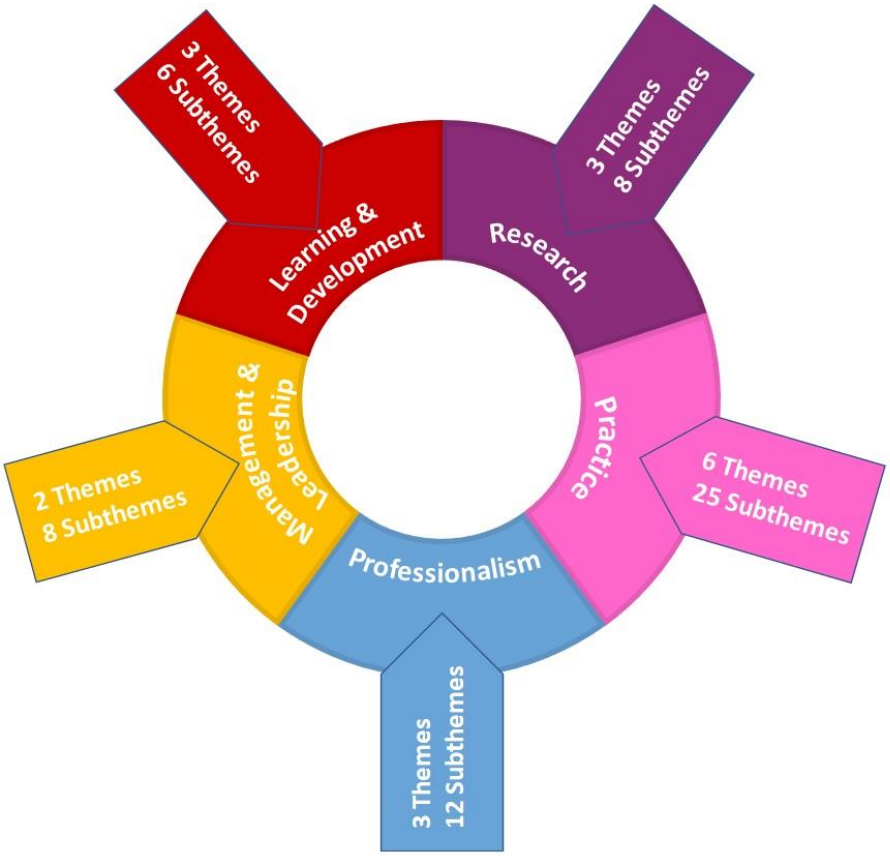

Figure 5 Summary: number of themes and sub-themes per WHO RCF domain

5.2 Domain: Practice

The Practice domain was by far the most densely described, with 882 statements linked to this domain (Chapter 4, section 4.2.3). These statements referred predominantly to the physiotherapeutic process and client interactions. Six main themes were identified as can be seen in Table 4.

Table 4 Themes and sub-themes for domain: Practice

Domain Practice	
Sub-themes	Themes
Interview and observation Objective examination and special investigations Broad knowledge base	Diagnosis / formulating a hypothesis
Clinical reasoning Identification of risk and contraindications Personal and environmental considerations Collaboration and shared decision-making	Planning intervention and /or management
Evidence-informed interventions Education Monitoring and adapting Technology Consultation Safety	Implementing interventions
Multi-/inter-/transdisciplinary Referral Discharge planning Empowerment (self-management)	Continuum of care
Ways of communication Language Ethical considerations Conflict management Respect / cultural humility	Client-centredness
Client records / documentation Sharing information and feedback Storage & data safety	Information and data management

5.2.1 Diagnosis / formulating a hypothesis

Thirty statements referred to a physiotherapy diagnosis. These statements imply that a **broad knowledge base** and understanding of human anatomy, physiology, pathology as well as psychosocial aspects, global health, burden of disease and environmental factors are needed. This informs what to observe, which questions to ask during the **interview** and which **tests** to perform (or refer for) as part of the objective examination, to formulate a hypothesis or physiotherapy diagnosis.

D1:Q192
"Conduct a structured client-centred interview, gathering relevant biomedical and psychosocial information in the context of common presentations …"

D4:Q18
"Interview client to obtain relevant information about health conditions, and personal and environmental factors."

5.2.2 Planning intervention and/or management

Four sub-themes were linked to this theme. They included clinical reasoning, identification of risk and contra-indications, personal and environmental considerations and collaboration and shared decision-making.

Eighty statements referred to **clinical reasoning**. The ability to synthesise findings is important for diagnosing, differentiating and identifying and prioritising clients' problems.

D1:Q140
"Demonstrate clinical reasoning ability in identifying main problems and developing hypotheses for determining a differential diagnosis for common presentations."

D9:Q13
"In clinical reasoning, the physiotherapist will analyse and assess the signs and symptoms, and will make a synthesis of these findings, considering the opinions of the client."

D19:Q4
"Practice within complex and generally predictable contexts which requires the application of current physiotherapy knowledge."

There was acknowledgement that advanced or expert clinical reasoning is needed in more complex client presentations.

D1:Q7
"Recognise and respond to the complexity, uncertainty, and ambiguity inherent in clinical practice."

D20:Q53
"Accurately, comprehensively, and efficiently performs a specialty-specific evaluation in simple and complex clinical situations to establish a diagnosis and prognosis."

Client safety is paramount as was evidenced in the 17 statements that referred to evaluating **risk** and establishing any **contra-indications**.

D1:Q159
"Conduct a client interview and physical examination safely and effectively."

D4:Q12
"Identify client-specific precautions, contra-indications and risks."

D7:Q13
"Demonstrate the ability to screen appropriately for serious underlying pathologies (red flags)."

Personal factors such as access to resources, home and other **environmental factors** can have an impact on compliance and intervention outcomes. These factors necessitate skilled adaptability from the physiotherapist to ensure success in their interactions with their clients. These should be considered when setting goals or planning intervention / management of a person.

D1:Q163
"Describe the individual factors that can affect human performance."

D1:Q183
"Recognise when the values, culture, biases, or perspectives of clients, physiotherapists, or relevant others may have an impact on the quality of management and modify the approach accordingly."

Another strong sub-theme relates to **shared decision-making** and **collaboration**. What the person wants must be acknowledged and considered. Similarly, when consultation with (or referral for further management) are needed, these are discussed with the person and their caregivers.

D15:Q105
"Collaborate and participate in shared decision-making with the client and relevant others."

5.2.3 Implementing interventions

Most of the statements in the Practice domain related to physiotherapy interventions and the implementation thereof (290 statements). Six sub-themes formed part of this theme (Table 4). Also of note are the varying terminologies when referring to interventions. The terms treatment, interventions, management and therapy, as well as treatment plans, programmes or strategies are used. Some statements refer to specific interventions, while others are more generic. The contrast and granularity of statements is demonstrated in the below examples.

Examples of detailed statements:

D16:Q31
"It implements therapeutic approaches that include, but are not limited to, education about the condition, therapeutic exercise in land and water environments, manual therapy, structural protection techniques, neurodevelopment stimulation, motor control, balance and gait training, training functional, respiratory control training, sensorimotor modalities, electrotherapy modalities, biophysical agents and mechanical modalities."

D7:Q65
"A physiotherapist relieves pain and treats or prevents physical conditions associated with injury, disease or other impairments."

Examples of generic statements:

D3:Q44
"His duties include informing/informing, guiding/coaching, advising/motivating, educating /training, performing physiotherapeutic treatments and undertaking preventive interventions."

D19:Q25
"Profession-specific practice skills: These relate to physiotherapy's scope of practice and primary aim of maximising individuals' movement potential."

All interventions performed must be **evidence informed**, and this was specifically emphasised in eight statements.

D13:Q21
"Ability to perform patient needs treatment with evidence-based physiotherapy technologies and methods."

The **monitoring** and **evaluating** effectiveness of intervention(s) using standardised outcome measures was reported in only eight statements. Responsiveness, such as the ability to **modify** interventions and adapt as necessary, was also reported in 54 statements. If necessary, the physiotherapist should be able to modify and/or **adapt** the treatment in response to their client's reactions.

D17:Q6
"Select appropriate and specific outcome measures to enable evaluation of therapy progress and outcomes."

D10:Q56
"Analyse the progress of the session, evaluate the results obtained and integrate the necessary adaptations into the therapeutic plan."

D12:Q46
"Monitoring and evaluating effectiveness of interventions through the use of evidence-based practice and outcome measures and modifying practice accordingly."

Forty-seven statements refer to using **technology** to support and enhance interventions and to utilise these responsibly. The physiotherapist is expected to remain current with technological advancements in the field of physiotherapy skills.

D3:Q25
"The physiotherapist closely follows medical scientific and technological developments and implements innovations in her physiotherapeutic actions and her quality assurance."

D4:Q131
"Maintain awareness of emerging technologies, and advocate for their application to enhance physiotherapy services."

"D4:Q69
Use electronic technologies appropriately and responsibly."

The physiotherapist is tasked with the responsibility to lead the client through the **consultation** process in an appropriate and collaborative manner. The timing of consultations, as well as prioritising the issues to be addressed in current and future sessions, should be carried out in a structured and systematic way and was described in 41 statements.

D1:Q32
"Provide a clear sequence for and manage the flow of the entire client encounter."

D1:Q9
"Identify and prioritise issues to be addressed in a client consultation."

D16:Q25
"Defines the duration and frequency of the intervention and assessment of intermediate and final results."

Fourteen statements specifically referred to the importance of **safety** when carrying out interventions. The concept of safety is reported across many domains, highlighting its importance.

D1:Q159
"Perform interventions safely and effectively for an individual or a group of clients."

D4:Q13
"Employ safe client handling techniques."

5.2.4 Continuum of care

To ensure successful rehabilitation referral to others, **empowerment** and knowing when to **discharge** a person from physiotherapy are important. Four sub-themes were identified and informed this theme (Table 4).

The concept of **multi-disciplinarity** and of functioning within a multidisciplinary team to optimise therapy and ensure continuity of care was reported in 17 statements. For a physiotherapist to know when to refer, knowledge not only of their own scope of practice, but also that of colleagues is needed.

D1:Q230
"Describe the roles and scopes of practice of other health professionals related to the area of practice."

D8:Q16
"Refer patient / clients to other healthcare practitioners, as appropriate, and communicate directly with them on the outcomes of the physiotherapy assessment and/or treatment, especially when recognising that additional healthcare intervention is required or where physiotherapy is not indicated."

D1:Q243
"Describe common transitions in management and the process of safe delegation."

Timely and appropriate **referral** of clients to ensure they obtain the correct care was mentioned in 39 statements. Physiotherapists should know the limits of their own

expertise and be able to facilitate the transfer of management to another healthcare professional or others as needed.

D1:Q56
"Determine when management should be transferred to another physiotherapist, healthcare or other professional or allied health assistant."

D1:Q55
"Effectively and safely delegate or transfer management to another professional."

D14:Q17
"The physical therapist assesses and indicates which support a patient needs and weighs this against his/her own knowledge and expertise."

D1:Q242
"Describe how scope of practice can trigger delegation or transfer of management."

D1:Q151
"Discuss with the client referral to another physiotherapist or health practitioner when indicated."

Physiotherapists should also know when to **discharge** their patients and patients should be adequately prepared for their discharge and/or transition of care, if needed, to ensure the continuation of the appropriate therapy or care.

D2:Q104
"Assesses the current situation of the patient at the time of terminating the treatment."

D4:Q42
"Develop a discharge or transition of care plan."

D4:Q43
"Prepare client for discharge or transition of care."

Empowerment of self to prevent secondary complications and to promote health is important to ensure the continuum of care. Various strategies suited to the client should be considered to help persons better understand their condition and be compliant with **self-management** and/or self-care. Fifty-four statements emphasised the importance of assisting the client with self-management, so that the client maintains autonomy and control in dealing with their health.

D8:Q49
"Physiotherapists empower patients and their carers to manage the condition outside clinical settings."

D14:Q28
"He/she also supports the patient's self-management with respect to movement-related functioning, as a condition of maintaining and improving the patient's control of his/ her own life, including a healthy lifestyle."

5.2.5 Client-centredness

Five sub-themes informed this theme, namely ways of communication, language, ethical considerations, conflict management, and respect / cultural humility. A number of assumptions underpin the approach of putting the client at the centre of one's practice. These inform and influence how physiotherapy care should be enacted. One-hundred-and-ninety statements referred to the importance of **person-centred care** during all stages of the physiotherapeutic intervention. Additionally, it was reported that the client should be involved in the **decision-making** about their care. This includes discussing referral or involvement of other healthcare practitioners. As partners, the physiotherapist and the client must build a professional relationship based on trust, **respect** and empathy.

D1:Q14
"Establish and implement a client – centred management plan that includes plans for ongoing management, referral and discharge."

D4:Q3
"Employ a client-centred approach."

D18:Q15
"You build a client-centred therapeutic relationship and engage in effective dialogues with respect, active listening and empathy."

D4:Q9
"Build and maintain rapport and trust with the client."

Effective **communication** with the client is essential and was reported in 102 statements. It leads to optimal management and facilitates the care relationship. It also challenges the physiotherapist to determine the best communication strategies for each client encounter.

D4:Q62
"Adjust communication strategy consistent with purpose and setting."

D1:Q41
"Communicate effectively with client to optimise management."

D15:Q57
"Use clear, accurate, sensitive and effective communication to support the development of trust and rapport in professional relationships with the client and relevant others."

Communication may occur in various ways and necessitates the physiotherapist to be observant to the client's non-verbal cues, as well as demonstrating the skill to listen and respond to the client's words appropriately. Communication also includes active listening and written communication.

D1:Q193
"Actively listen and respond to client cues, clarifying client responses as required."

D1:Q184
"Identify non-verbal communication on the part of clients and its impact on physiotherapist– client communication."

D15:Q63
"Adapt their written, verbal and non-verbal communication to reflect the culture, language proficiency, comprehension, impairments, age and health literacy of the client and relevant others."

The use of **language** was reported in 14 statements. Terminology, jargon and level of language should be professional, yet understandable and appropriate when dealing with colleagues, clients and others.

D13:Q42
"Ability to communicate correctly with colleagues, using professional terminology and to communicate with patients and their relatives both orally and in writing, ensuring the provision of information in accordance with the norms of the literary language in the official language."

D5:Q18
"Use scientific terminology and appropriate jargon to communicate (oral or written) any type of report, protocol, procedure or situation that your professional practice demands."

Various **ethical considerations** underpin person-centredness. During the development and maintenance of a therapeutic alliance or relationship with the client, the physiotherapists should always consider safety, confidentiality and respect the client's privacy. This was described in 23 statements. Informed consent was another ethical consideration, appearing in four statements.

D4:Q14
"Apply assessment and intervention procedures in a manner that enhances the client's safety and comfort."

D4:Q173
"Maintain confidentiality and privacy as appropriate."

D1:Q196
"Obtain informed consent for assessment and interventions, explaining the indications, risks, benefits, and alternatives for the proposed options."

Surprisingly, only two statements referred to dealing with **conflict** when engaging with a patient / client. Most statements related to conflict referred to it only in relation to colleagues (refer to section 5.3). The competent physiotherapist must also be able to negotiate potential conflict situations with their clients.

D1:Q28
"Manage disagreements and emotionally charged conversations."

D20Q23
"Discriminates and incorporates appropriate strategies to engage in challenging encounters with patients and others, and negotiates positive outcomes."

The physiotherapist must be sensitive to the **culture** of the client, educate as needed and ensure that the physiotherapy intervention is tailored to the client's preferences and expectations. The person-centred approach results in individualised management that is underpinned by **respect.** These concepts were reported in 64 statements.

D1:Q39
"Use communication skills and strategies that are respectful, non-judgemental, and culturally safe to facilitate discussions with clients and relevant others."

D3:Q56
"He involves the patient in the care process, provides targeted and patient-oriented information and care that is respectful and responsive to the patient's individual possibilities, preferences, wishes and expectations."

D4:Q5
"Act in a manner that respects client uniqueness, diversity and autonomy, and is in the client's best interest."

D15:Q102
"Engage in an inclusive, collaborative, consultative, culturally responsive and client-centred model of practice."

5.2.6 Information and data management

Within the 122 statements referring to information and data management, three sub-themes were identified. These were client records / documentation, sharing information and feedback, and storage and data safety. Regarding information and data management, seven statements specifically included reference to both written and electronic information.

Any encounter and all information gathered from the client / patient must be **documented**, the most commonly reported in the form of a person's **health records**. Referral and/or communication with colleagues in the form of written **reports** was also listed. Writing medico-legal reports was also reported.

D1:Q45
"Share information with clients and, where appropriate, with authorised others in a manner that respects client privacy and confidentiality and enhances understanding."

D4:Q121
"Manage health records and other information in paper and electronic format."

D10:71
"Write a report or issue an opinion in a medico-administrative setting."

The final sub-theme in this domain, and referred to in five statements, relates to **security** and **storage** of client **data** and sensitive information.

D4:Q123
"Maintain confidentiality of records and data, with appropriate access."

D4:Q122
"Ensure secure retention, storage, transfer and destruction of documents."

5.3 Domain: Professionalism

The domain of Professionalism describes concepts related to professional integrity, safety and quality of care, as well as factors enabling the performance of a professional role (World Health Organization, 2020a). This domain yielded 488 statements, from which the following three themes and twelve sub-themes were derived (Table 5).

Table 5 Themes and sub-themes for domain: Professionalism

Domain Professionalism	
Sub-themes	Themes
Ethical dilemmas Standards, rules and regulations Quality and safety Diversity & cultural sensitivity	Ethical conduct
Ways of communicating Empathy Client-centredness Referral Conflict resolution	Collaboration
Promoting the profession Self-care Scope of practice	Professional responsibility

5.3.1 Ethical conduct

The profession of physiotherapy is morally sound and the physiotherapist must exhibit high ethical standards. Two-hundred-and-sixty statements reported on the standards of ethical conduct and 4 sub-themes were identified (Table 5).

D1:Q327
"Exhibit professional behaviour in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality."

D1:Q327
"Exhibit appropriate professional behaviours in all aspects of practice."

D15:Q162
"Share a culture of professionalism and ethical practice and are generally regarded by the community as socially responsible, trustworthy and credible."

D1:Q241
"Respond to requests and feedback in a respectful and timely manner."

The physiotherapist's responsibility to act where unethical or unprofessional conduct and other **ethical dilemmas** are encountered was also mentioned in 69 statements. Unethical conduct, whether personal, financial or institutional, requires mature and professional insight to manage such situations appropriately, while continuing to perform professional physiotherapy activities.

D19:Q85
"Identify discriminatory behaviour and take appropriate action to challenge this behaviour."

D1:Q331
"Describe the implications of…conflicts of interest, including conflicts of interest with the industry."

D9:Q38
"The identification of demanding situations requiring ethical reflection is central to every physiotherapist's work."

D1:Q6
"Carry out professional duties in the face of multiple, competing demands."

Professional conduct is often governed by **policies** and **regulations** stipulating certain duties and behaviours, and physiotherapists are required to adhere to these to remain professionally free from reproach. Specific reference to such standards was made in 71 statements.

D1:Q111
"Demonstrate a commitment to the profession by adhering to regulation and standards."

D14:Q33
"Physical therapists act in line with pertinent laws and regulations and norms and standards, including professional and quality standards."

Professionalism drives the physiotherapist to value excellence and **high-quality** care, as reported in 37 statements. This is enacted by continuously reflecting on their own competence and striving to improve their own professional performance.

D9:Q106
"Physiotherapeutic services should be of high quality and relevant to the customer."

D1:Q4
"Demonstrate a commitment to excellence, high quality care and culturally responsive management of their clients."

D3:Q111
"The physiotherapist determines through systematic registration, evaluation, critical self-reflection and peer consultation to what extent his professional actions meet the applicable standards of professional practice."

A client's **safety** is a central concept to professionalism and was raised in 132 statements. Risk should be identified, addressed and mitigated to ensure a safe client-

physiotherapist interaction. Risks may arise from various external sources, such as the physical environment, human factors or resource availability. It is the physiotherapist's professional duty to protect and safeguard the client.

D1:Q169
"Describe human factors that can affect practitioner and client safety."

D1:Q175
"Describe system factors that can affect practitioner and client safety, including resource availability and physical and environmental factors."

D4:Q11
"Ensure physical and emotional safety of client."

Professional conduct requires the physiotherapist to be sensitive towards others' beliefs, perspectives and **cultures** and was reported in 24 statements. Bias and differing opinions may hamper therapy, but having the insight to value differences and embrace **diversity** is likely to result in constructive encounters with clients and colleagues.

D1:Q26
"Recognise when the values, culture, biases, or perspectives of clients, physiotherapists, or relevant others may have an impact on the quality of management and modify the approach to the client accordingly."

D19:Q84
"Work constructively with people of all backgrounds and orientations by recognising and responding to individuals' expressed beliefs, preferences and choices."

D9:108
"In multicultural encounters, there is a need for an absence of prejudice, along with sensitivity and understanding, as well as interaction and work community skills."

D16:140
"Interact with others in order to promote inclusion."

D4:Q183
"Behave in a manner that values diversity."

5.3.2 Collaboration

A collaborative culture was mentioned in 227 statements and referred to the building of positive relationships between colleagues, and/or the behaviours and attitudes that underpin these relationships when interacting with each other in a professional setting.

Five sub-themes were linked to this theme, namely ways of communicating, empathy, person-centredness, referral and conflict resolution.

D7:Q39
"Recognise autonomy and individuality of team members, while respecting diversity."

D14:Q77
"The physical therapist works proactively together with collaborators, while keeping in mind mutual relationships with the goal of offering good, inter-professional care."

Good **communication** should exist between colleagues, facilitating the transfer of information and this should be underscored by respect, **empathy** and other attributes fitting to a collaborative culture. This extends to all forms of communication, including the written, electronic and other ways of communication and/or sharing of client information. Ethical considerations, including respect, anonymity and/or confidentiality, must be upheld when communicating with others concerning a client.

D1:Q235
"Communicate effectively with other colleagues in the healthcare professions."

D15:Q47
"Show compassion, empathy and respect for clients, relevant others and professional colleagues."

D1:Q108
"Exhibit professional behaviour in the use of technology-enabled communication."

D1:Q219
"Comply with the legal requirements for privacy and confidentiality, and organisational protocols of written and electronic communication."

The **client** is part of the healthcare team and should not be a passive recipient of care. Engaging and informing the client on all aspects of their journey is an ongoing process, which has to ensure that management remains **client-centred** and that the client is an active part of the decision-making process, being respected and involved. All actions taken by healthcare professionals, including physiotherapists, should be judged against the client's best interest.

D9:97
"Physiotherapists meet every individual on an equal footing, to make ethically informed choices, to guide and assess their own and other therapists' activities and to justify their actions."

D15:Q36
"Provide ongoing opportunities for the client to make informed decisions and consent to physiotherapy."

D1:Q51
"Engage in respectful shared decision-making with clients and relevant others and with other colleagues in the health care professions."

D19:Q62
"The process of working with others to achieve shared goals."

As mentioned in section 5.2 (continuum of care), **referring** and collaborating with members of the healthcare team must be done to ensure optimal rehabilitation and health outcomes.

D1:Q51
"Engage in respectful shared decision-making with colleagues involved in client management."

The importance of skilful and professional **conflict resolution** and managing different professional opinions was evident across 23 statements.

D1:Q240
"Communicate clearly and directly to resolve conflicts."

D1:Q52
"Work with physiotherapists and other colleagues in health care and other professions to prevent misunderstandings, manage differences, and resolve conflicts."

5.3.3 Professional responsibility

Professional physiotherapists accept the responsibilities associated with their role, such as working independently and being accountable for decisions made. Three sub-themes informed this theme, namely promoting the profession, self-care and scope of practice.

Some statements included reference to the autonomy of the physiotherapist, the ability to diagnose conditions in their scope and predict the prognosis thereof. They also emphasised the responsibility that comes with being front-line or first-contact.

D8:51
"Physiotherapists are autonomous health care professionals who assess, diagnose, plan, treat and evaluate clients and are responsible for their own actions."

A professional physiotherapist is a loyal ambassador to physiotherapy and feels obligated to act in ways that **promote** and protect the **profession**. Ninety-eight statements reported competencies related to being driven to develop the profession, and advocate for it with the best available evidence.

D2:Q77
"As professionals, physiotherapists feel obliged to adhere to social and professional values."

D2:Q36
"Professional conduct when dealing with stakeholders to represent the physiotherapy profession."

D4:136
"Engage in activities to support advancement of the physiotherapy profession."

Thirty-one statements recognised the importance of maintaining **personal health**, and the detrimental effects ill-health can have on client care. Being alert to the effect of job stressors and taking appropriate action to remedy these are important factors to consider to maintain professional integrity.

D1:344
"Describe the connection between self-care and client safety."

D1:Q345
"Identify and implement strategies to support personal well-being, a healthy lifestyle and appropriate self-care."

Professionalism also entails awareness of limits and recognising when management exceeds their **scope of practice**. It also includes navigating areas of where scopes may overlap.

D15:Q49
"Practise physiotherapy within the limits of their scope of practice and expertise."

D16:Q138
"Negotiate shared and overlapping roles and responsibilities."

5.4 Domain: Learning and Development

Two hundred and sixteen statements were analysed in this domain. Statements were more coherent and focused, and six sub-themes and three main themes were easily identified (Table 6).

Table 6 Themes and sub-themes for domain: Learning and Development

Domain: Learning and Development	
Sub-themes	Themes
Identification of gaps Seeking and sourcing credible information Implementation and reflection	Continuous Professional Development
Sharing information Collaboration	Developing the profession
Supervision & mentorship	Role in other's learning

5.4.1 Continuous professional development (CPD)

Identifying own gaps, seeking and sourcing credible information, implementing new knowledge and skills, and reflection, were the sub themes identified concerning CPD, and that this is a lifelong (ongoing/continuous) process.

D1:Q289
"Describe the obligations and benefit of lifelong learning and ongoing enhancement of competence."

D3:Q112
"He makes use of current scientific insights and guidelines for practice and takes national and international developments into account. To this end, he keeps abreast of scientific and technical innovations in the profession."

The ability of physiotherapists to **identify knowledge gaps** appeared in 48 statements. Physiotherapists should be able to self-assess and identify where their own competence may be lacking and then actively seek opportunities and source **credible information** to address those gaps or identify 'unknown' gaps. Through

reflection and measuring one's own practice against the feedback of peers also provides valuable input to one's personal learning journey.

D1:Q284
"Through their engagement in evidence-informed and shared decision-making, they recognise uncertainty in practice and formulate questions to address knowledge gaps."

D15:Q128
"Seek opportunities and engage in relevant activities to address their identified learning needs and maximise their learning."

D1:Q82
"Identify opportunities for learning and improvement by regularly reflecting on and assessing their performance, using various internal and external sources of information."

D1:Q296
"Use critical self-reflection and seek peer review to improve their own practice."

How to engage with continuous development was described in varying levels of detail, with some statements highlighting the importance of having a **learning plan** or schedule.

D1:Q81
"Develop, implement, monitor, and revise a personal learning plan to enhance professional practice."

Statements further referred to the value of ongoing learning and **integration** of evidence-based interventions, including technological innovations, into their daily practice.

D1:Q285
"Physiotherapists are able to identify relevant evidence, critically evaluate it and apply it in their practice and scholarly activities."

D9:Q102
"Changes to the occupational and functional environment and tele informatics are reshaping the world of work. In the future, physiotherapists will incorporate these innovations into their work for the benefit of the individual client, the healthcare system and society."

5.4.2 Developing the profession

The compounded effect of collective 'improvements' allows the profession to develop and advance. Development of the physiotherapy profession was reported in 21 statements. When individual physiotherapists embrace the notion of continuously improving and upskilling themselves, **sharing** their experiences and participating and/or engaging in research, it will benefit not only the patients / clients, but also the profession.

D10Q21
"Identify the areas of personal training to be developed aimed at improving the profession."

D1:Q83
"Engage in collaborative learning to continuously improve personal practice and contribute to collective improvements in practice."

The sub-theme **collaborative** learning, in that physiotherapists have much to learn from each other and other professionals, was described distinctly in nine statements.

D1:Q224
"It involves sharing knowledge, perspectives and responsibilities, and a willingness to learn together."

D1:Q298
"Participate effectively in collaborative group learning."

5.4.3 Role in others' learning

Physiotherapists have an influence on others' education and learning experience, not just through formal instruction, but also informally, by either serving in a supportive role and/or being a role model. **Mentorship** and **supervision** were the two main sub-themes identified. Mentorship and coaching to help developing young physiotherapists can contribute to others' development.

D1:Q85
"Recognise the influence of role-modelling and the impact of the formal, informal, and hidden curriculum on learners."

D1:Q290
"Discuss and create a learning plan and strategy for ongoing self-monitoring with a mentor, advisor or learning coach."

D15:Q132
"Encourage and motivate others to engage in critical reflection and self-directed learning."

Physiotherapist also have an educator role and may be tasked with a **supervisor** role in physiotherapy training. Similarly, physiotherapists engage in educational interactions not only with physiotherapy students, but also with interns, other health professional students and professionals, as well as their clients/patients and relevant others, for example, carers.

D1:Q287
"As teachers physiotherapists facilitate, individually and through teams, the education of students, colleagues, co-workers, clients, the public and others."

D10:Q123
"Train and inform professionals and trainees."

D2:74
"Attending and supporting learning processes of students."

5.5 Domain: Management and Leadership

This domain contained 315 statements, from which two main themes and eight sub-themes were identified (Table 7). Management and leadership were interchangeably used, but the two dominant themes emerging from these statements referred to service delivery and advocacy.

Table 7 Themes and sub-themes for domain: Management and Leadership

Domain Management and Leadership	
Sub-themes	Themes
Strengthening systems Sustainability and growth Resources and cost Collaboration (multi-stakeholder engagement) Quality and safety	Physiotherapy service delivery
Community upliftment Promoting the profession Social justice / accountability	Advocacy

5.5.1 Physiotherapy service delivery

Physiotherapists fulfil many roles to build capacity and **strengthen** the health **systems** (133 statements). They function as individual practitioners, as multidisciplinary team members, and as managers or leaders in the various health sectors / systems. Physiotherapists can contribute and strengthen these systems by developing new rehabilitation service models of care to better address the needs of the local population.

D7:Q59
"Understand and promote the role of the physiotherapist within the function and structure of the health system."

D1:Q251
"They function as individual care providers, as members of teams, and as participants and leaders in the health and other sectors."

D1:Q259
"Compare and contrast local health and human services systems with other models around the world."

D4:Q179
"Maintain awareness of issues and advances affecting the health system locally, nationally and globally."

A physiotherapist may be responsible for managing staff and this can include mentoring, coaching and identifying opportunities for staff development and capacity building.

D16:Q114
"[He] knows the team members, identifies their strengths and aspects for improvement, directs them to provide tasks suited to their profile and promotes their professional development."

Embracing change and **growing** the organisation or practice was a recurring sub-theme, reported in 38 statements. As a leader, or manager, the physiotherapist is involved in planning to ensure appropriate availability of services and promoting the efficient operation of services.

D3:Q16
"The physiotherapist interacts with various discussion partners at various strategic working and thinking levels, with the aim of aligning demand (problem) and supply (therapeutic action)."

D15:Q31
"Advocate for adequate resources to meet service goals and achieve positive outcomes of physiotherapy for their clients."

A further 35 statements referred to the role of a physiotherapists in ensuring **sustainability** and avoiding the waste of resources, as well as keeping services **affordable** for all.

D1:Q62
"Engage in the responsible utilisation and management of available resources."

D3:Q61
"When making decisions, the physiotherapist will have to consider social and financial-economic aspects in addition to many professional aspects."

D8:Q25
"Collaborate in budget planning processes, including cost of supplies needed for adequate physiotherapy services and management."

D3:Q29
"They offer affordable, accessible and person-centred healthcare. Physiotherapy practices are geographically well-distributed, provide care that meets design and accessibility standards, while also providing ambulatory home care in specific situations."

Twelve statements reported the requirement of **collaboration** between the physiotherapist and various partners – both within the health sector and beyond it. Strategizing with **multiple stakeholders** aims to balance supply and demand of the physiotherapy service within the system.

D1:Q249
"Physiotherapists demonstrate collaborative leadership and management within the health and other sectors."

D3:Q16
"The physiotherapist interacts with various discussion partners at various strategic working and thinking levels with the aim of aligning demand (problem) and supply (therapeutic action)."

Eighteen statements referred to the responsibility of a physiotherapist as a manager or leader to take on the responsibility and ensure a risk-free workplace, both in terms of environmental and cultural **safety**. The physiotherapist is responsible for delivering quality services to the community they serve. The idea that physiotherapists in

leadership or management positions demonstrate a commitment to **quality** improvement was reiterated throughout the data.

D16:Q86
"Understands the impact of social and health policies on physiotherapy practice."

D16:Q213
"Recognises and reports workplace hazards and is proactive in promoting a safe environment for everyone involved. "

D15:Q146
"Recognise and report risks within the workplace, including those associated with cultural safety, and work proactively to promote a risk-free environment for clients and relevant others."

5.5.2 Advocacy

This is a strongly benevolent theme, where providing for the health needs of others is described as a priority role of a physiotherapist. Advocating for clients is not only limited to the scope of the physiotherapy practice, but extends further to community upliftment, promoting the profession and being socially accountability (Table 7).

D1:Q74
"Respond to the needs of the groups, communities or populations they serve by advocating with them for organisational or system-level change to achieve improved health outcomes."

D1:Q263
"Physiotherapists leverage their position to support clients in navigating the healthcare system and to advocate with and for them to access appropriate resources in a timely manner."

At leadership level, the physiotherapist is involved in health promotion, as well as strategies to prevent disease and illness. This was reported in 76 statements. This may transcend the individual client encounter, and target interventions and involvement at a system level to address the **population and community's** health interests.

D1:Q265
"Physiotherapists promote healthy communities and populations by influencing the system (or by supporting others who influence the system), both within and outside of their work environments."

D7:Q46
"Contribute to planning and implementation of health promotion and prevention activities to improve population and individual health."

Understanding their community enables the physiotherapist to address behavioural attitudes to health appropriately and effectively. It enables them to relate with their clients and select counselling and educational approaches that facilitate positive health behaviour changes.

D16:Q86
"Recognises the antecedent factors and health policies that involve health care in general, and Physiotherapy in particular, being able to adapt to changes in the context of care provision."

D1:Q267
"Define individual and social determinants of health and explain their implications."

D3:Q8
"The physiotherapist provides information, advice and education about health-promoting behaviour and measures aimed at preventing health problems."

Eleven statements reported the physiotherapist's responsibility for the future of the profession and the needs to **promote the profession** at different levels. First, the physiotherapist as a manager and leader must inspire physiotherapy colleagues to innovate and assume leadership responsibilities within the profession. Second, the physiotherapist needs to legitimise the importance of their profession and ensure that rehabilitation (physiotherapy) is evident in healthcare policies and regulation. Lastly, the community or population needs to be informed of the profession, its scope and the benefit thereof.

D3:Q99
"He stimulates other physiotherapists to clinically implement the acquired knowledge and skills."

D4:Q134
"Contribute to leadership within the profession."

D16:Q214
"Promotes the importance of physiotherapy in the definition of public policies and participates in the regulation and political decision-making in physiotherapy."

D2:Q82
"Taking over responsibility to form a better understanding of the profession within society."

Being a morally charged profession, the physiotherapist in leadership should identify and address factors that contribute to inequities in healthcare. Twenty-nine statements reported on physiotherapists' **accountability** to the community they serve and their commitment to **social justice**.

D1:Q110
"Demonstrate accountability to clients, the community…."

D1:Q276
"Identify groups, communities or populations they serve who are experiencing health inequities and identify opportunities to contribute to local efforts to address contributing factors."

5.6 Domain: Research

Research to evidence physiotherapy's effectiveness, contribute to better healthcare and develop the profession is imperative for the legitimacy of any profession. This domain analysed 100 statements, from which three main themes were developed (Table 8).

Table 8 Themes and sub-themes for domain: Research

Domain Research	
Sub-themes	Themes
Finding credible information Critical review Integrating evidence into practice and reflection	Consumer of research
Research methods Ethical review Dissemination of new knowledge	Conducting research
Sharing information Contributing to research	Participating in research

5.6.1 Consumer of research

Quality practice cannot exist separate from quality research, and to inform themselves, physiotherapists must know where to locate such quality research. Sixteen statements pertained to locating **credible information** (Table 8).

D7:Q48
"Demonstrate the ability to search and retrieve relevant scientific literature and information sources to underpin practice."

D4:Q151
"Access reliable sources of information."

D10:Q91
"Identify, select and use scientific databases."

To identify credible literature, a physiotherapist must be able to **critically review** the paper and research conducted. Judging the quality of research was reported in thirteen statements.

D1:Q94
"Critically evaluate the integrity, reliability, and applicability of health-related research and literature."

D18:Q74
"Judge a study in an appreciative and critical manner."

D10:Q93
"Analyse and synthesise scientific articles and assess their potential impact on their professional practice or on the research conducted."

Twenty-seven statements reported on **integrating research** into practice. A competent physiotherapist implements new understandings into practice, and also reflects on the outcome thereof and where it differs from the evidence that is possibly caused by varying personal and contextual factures. The physiotherapist has the responsibility to contribute new understanding by informing others.

D3:Q113
"He translates these new insights into practice and implements them in his own professional practice as a physiotherapist."

D19:Q156
"Physiotherapy maintains strong links between clinical & academic settings. This means that the profession responds to developments in practice, education or research, & actively ensures its workforce continues to be fit for purpose."

5.6.2 Conducting research

Forty statements referred to the physiotherapists' role in having to conduct research and **disseminate findings**. Understanding **research methods** is a skill that is needed for the physiotherapist to design a study that will be of a high standard, appropriate to what it is meant to study, and the findings will be generalisable to a broader population.

D1:Q92
"Recognise practice uncertainty and knowledge gaps and generate focused research questions that address them."

D3:Q24
"The physiotherapist can formulate scientific objectives and questions, develop a scientific experimental design, conduct scientific research, interpret research results and frame these within the current state of affairs with regard to the research concerned (fundamental or clinical)."

D16:Q174
"…respecting ethical principles and using appropriate methodologies (qualitative and/or quantitative) for data collection and analysis."

Besides a good understanding of research methods, a strong theme evident in this domain is that the physiotherapist must be open to the research receiving an external **ethical review**.

D1:Q97
Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in healthcare.

D1:Q317
Describe the ethical principles applicable to research and scholarly inquiry.

It is the responsibility of a physiotherapist to **disseminate** all / any **new knowledge** to all their colleagues, as well as the communities they serve. This was only reported in six statements. However, it is the collective responsibility of all physiotherapists to educate themselves, the colleagues and the broader public, and demonstrate that physiotherapy is an innovative and ever-advancing discipline.

D19:Q135
"Identify and…promote the practical and professional applications of completed work and seek opportunities to share / disseminate findings to both specialist and non-specialist audiences."

D3:Q120
"Be responsible for the dissemination of research results through lectures at national and international conferences and through publications in national and international scientific journals."

D1:Q101
"Summarise and communicate to professional and lay audiences, including clients, the findings of relevant research and scholarly inquiry."

5.6.3 Participating in research

Volunteering and **contributing** to research are as important as conducting one's own research. This sub-theme was evident in 19 statements.

D4:Q153
"Contribute to research activities."

D3:Q121
"The physiotherapist can participate in research and contribute critically and constructively in every phase of it."

D3:Q123
"Knows how to enter into a substantive debate about this with colleagues and representatives from other disciplines."

5.7 Discussion

5.7.1 Analysis process of the competency statements

The analysis proved challenging for many reasons. Complex statements were encountered, which merged multiple themes into one statement. For example:

D15:Q101
"As collaborative practitioners, physiotherapists work in partnership with clients, relevant health professionals and relevant others to share decision-making and support achievement of agreed goals through inclusive, collaborative and consultative approaches within legal, ethical and professional frameworks."

These were often summary statements, that were aiming to capture the essence of a domain. In some competency frameworks, "collaboration" or "collaborator" were often described as one role or domain (Frank et al., 2015). In contrast, in the WHO RCF, collaboration with colleagues was absorbed into the domain of *professionalism*. Client-

physiotherapist interactions and communication were described within the *practice* domain. The distinguishing feature from the WHO RCF in this case, was the consideration of the parties involved (World Health Organization, 2020a). Such complex statements were challenging to analyse, as the overlap of themes required frequent merging or splitting of codes over multiple reiterations. The evolving of codes to sub-themes to themes is recorded in Appendix 5.

Various authors advocated for a harmonised terminology to facilitate comparability on competencies and the understanding of professional expectations (Harden, 2006; Verma et al., 2009; Gruppen et al., 2012; Mills et al., 2020). The existing varied terminology was observed during the analysis process. For example, wording regarding the "interventions" included various terms, such as treatment, interventions, management and therapy, as well as treatment plans, programmes or strategies. Different frameworks also referred to key competencies, enabling competencies, milestones and even performance criteria. Thus, emphasis, terminology and choice of descriptors may be context dependent when drafting statements for a specific purpose. It remains important to properly define terms to ensure comparability.

5.7.2 Themes and sub-themes across domains

Themes were often repeated across the five domains, requiring analysis as to the different features of the same theme.

Client safety is a concept that was reported across many domains and is so central that some competency frameworks cite safety as an assumption upon which other statements are based. For example, the Competency Profile for Physiotherapists in Canada includes the statement "client safety is paramount" across all domains of physiotherapy (National Physiotherapy Advisory Group, 2017).

As reported in the literature review (Chapter 2), communication may be viewed as a core competency (Verma et al., 2009; Mohammed et al., 2021). In the results of this study, communication was also reported in many domains, including in the domains of *practice* and *professionalism*. Colleague-physiotherapist communication was described within the *professionalism* domain, and client-physiotherapist

communication within the *practice* domain. In the literature, the ability to communicate decisions and motivate the staff has been described in the domain of leadership roles (Mcgowan, Martin & Stokes, 2016; Malmivaara, 2020). The results also implied that communication was present in themes across in other domains, such as *management and leadership* (within physiotherapy service delivery) and *research* (within sharing information and disseminating new findings). Statements often referred only to communication "skills". These skills may need to be contextualised or specified, as appropriate.

Similar overlap has been reported in competencies concerning advocacy, management and leadership (Kelland et al., 2014). In the results, leadership and management were used interchangeably across statements, demonstrating the differing perceptions that may be held regarding a leadership position. Many statements referred to the management of self, of services and of others. Other statements were clear in that leadership implied leading by promoting innovation and being an agent for change. True leadership has been described as being critical to be able to efficiently address health system challenges, especially in resource-poor settings, to achieve equitable healthcare for all (Jacobs & El-Sadr, 2012; Fletcher & Marchildon, 2014). The results indicate that physiotherapy leadership and managerial competencies may need clearer and more specific definitions and greater emphasis to contribute to the success of rehabilitation in health system reforms.

Social responsibility and justice have been highlighted as critical inclusions in physiotherapy curricula, to enable physiotherapists to address inequalities and meet the needs of their societies (World Physiotherapy, 2011b; Jacobs et al., 2020). PHC should also align with and contribute to universal healthcare and the achievement of the sustainable development goals (SDGs) (WHO & UNICEF, 2020). Failure to achieve these goals have been linked to rising social issues, which are drivers of poverty and inequality, not being adequately addressed (Jacobs & El-Sadr, 2012; Jacobs et al., 2020). Social responsibility and accountability had a low rate of reporting in the results, indicating that these topics may not feature top of the mind in many of the current physiotherapy competency frameworks. Given the worldwide agenda on equality and this includes health equality, this concept may need greater

acknowledgement in physiotherapy competency frameworks (Jacobs et al., 2020). As such, this theme warrants careful contextual consideration.

Another theme that spanned across multiple domains is that of technology integration. The fast pace of technological development and advancement requires smooth integration of new technology into many aspects of physiotherapy, from interventions, such as tools needed for efficient communication, research and data processing and storage, tele-rehabilitation and management tools, to name a few (Jacobs & El-Sadr, 2012; Child & Shaw, 2020; Heine, Derman & Hanekom, 2022). The fast pace of technological advancement is also apparent in healthcare, and together with improved technology, there is a wide range of challenges and responsibilities that needs to be addressed. Using any technology in the management of clients requires it to be done professionally, respecting and adhering to ethical standards and the relevant regulations that are in place.

Certain themes may not be applicable in all contexts. For example, some statements included referred to the autonomy of the physiotherapist, the ability to diagnose conditions in their scope and predict the prognosis thereof. How this is worded will depend on the practitioner status of a physiotherapist within the respective health system. While World Physiotherapy advocates for first-line practitioner status, this may not be the case across the globe (World Physiotherapy, 2011a; Useh, 2021). Such concepts would thus have to be omitted, if not applicable in a particular setting.

Within the *research* domain, many statements left it open to interpretation what research “contributions” might look like, which may need to be more concretely described or contextualised in order to be relatable (Batt et al., 2021).

The variability in physiotherapy training and practice has been described as a barrier to the physiotherapy’s workforce mobility and collaboration in an increasingly globalised world (Foo, Storr & Maloney, 2016; Pechak & Black, 2016; Fennelly et al., 2020). This training may refer to undergraduate or postgraduate studies and as such, the exact wording of such a competency statement will be dependent on the structure of physiotherapy education in context. Only a few statements specifically referred to additional training being needed to be able to conduct research or collaborate in

research. In some cases, this sub-theme may even be omitted, if such training is assumed and therefore not specifically described in a framework. Publishing research was another “outlier” concept, but it was included, as it may stimulate important discussion and consideration when contextualising a competency framework. The expectations of a physiotherapist as an independent researcher may vary greatly in different settings.

In order to provide clear direction, competency descriptors of a workforce need to be expanded into the proper degrees of depth, dependent on the context, specialisation, or profession (Gruppen et al. 2012; Van Der Lee et al., 2013; Lester, 2014; Batt et al., 2020; Child & Shaw, 2020). In some frameworks, the handling of complex situations was described as an advanced level of performance and may not necessarily be considered an “entry level” competence. As mentioned earlier (Chapter 3, section 3.3.2), levels of performance were not extracted or indicated in this study. Therefore, the results made no distinction concerning quality descriptors or level of performance. Advanced skills topics will nevertheless be informed by the context, where a framework is to be implemented, and its granularity expanded as appropriate. Overall, it became evident that competencies for physiotherapy had not yet been adequately described (Cassady et al., 2014). The results of this study add to the literature by informing on themes that are reported globally in physiotherapy competencies. While this synthesis presents many themes and sub-themes, most will now require further contextual exploration to make them locally relevant, while still being comparable to other frameworks across the globe.

5.8 Conclusion

The results of this study offer an updated perspective for describing competencies relevant to the physiotherapy profession (Figure 6). The purpose of synthesising all the competency statements extracted into the five domains of the WHO RCF was to provide a conceptual thematic framework to guide competency framework development in physiotherapy.

The results illuminated certain “outlier” concepts, such as social accountability and conducting or partaking in research. Unpacking these concepts and including them across domains may help to shift the focus onto the importance of these elements.

The presented themes and sub-themes are intended to give guidance as to relevant content that needs to be included when drafting a physiotherapy competency framework for a particular context or setting.

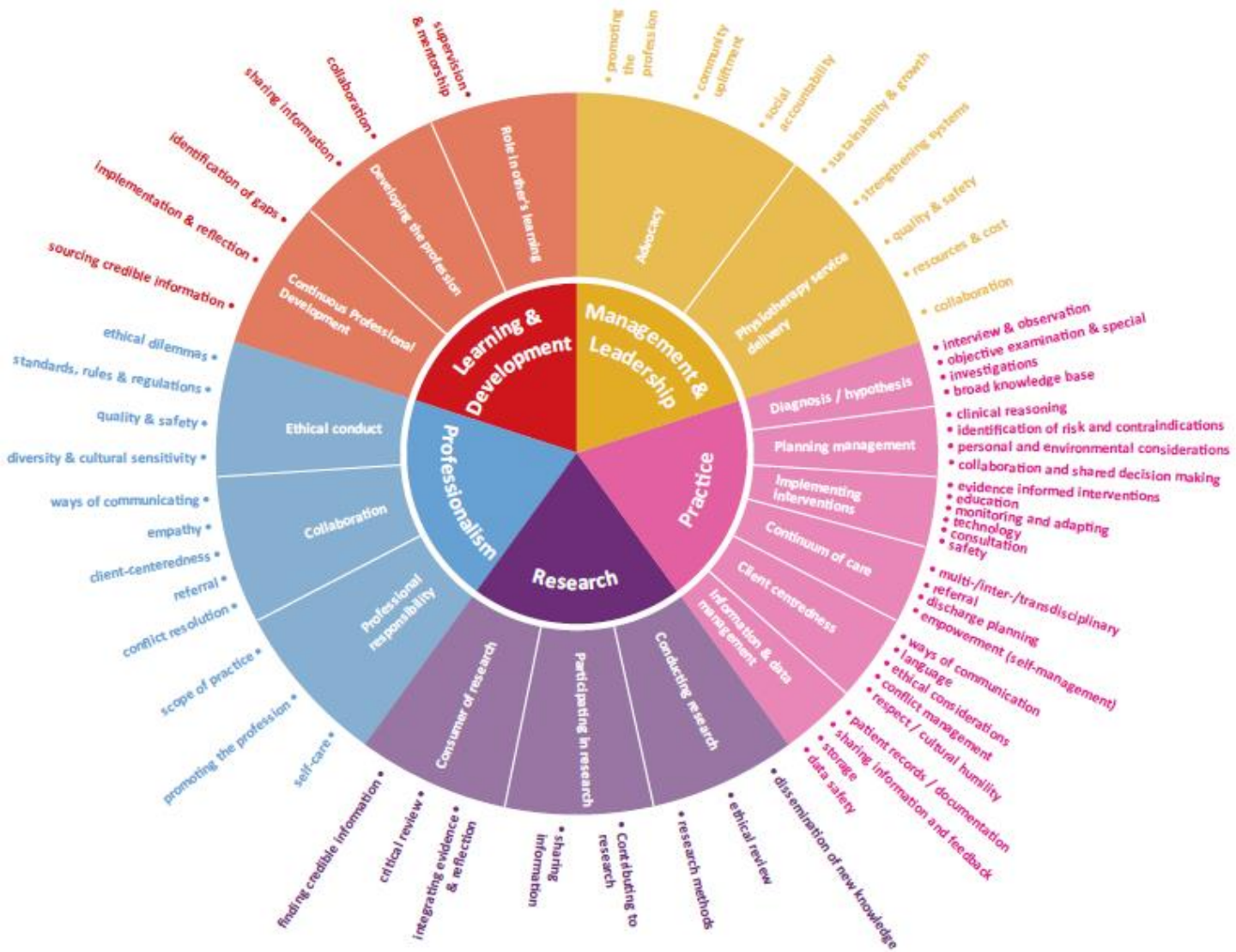

Figure 6 The conceptual thematic framework

Chapter 6: Discussion and conclusion of the thesis

The aims of this thesis were to identify and analyse physiotherapy competencies from across the globe, and to present a conceptual thematic framework to guide the development of competency frameworks for the profession that are locally relevant.

This chapter will briefly recap the key research findings in relation to these research aims. It then discusses the impact of the study by comparing the results to relevant literature. The chapter also recommends the next steps to be taken in future research. It presents the strengths and limitations of the study design, and concludes with a closing summary.

6.1 Key findings

This is the first report summarising physiotherapy competency statements which have been documented in World Physiotherapy affiliated professional documents. This review identified only 20 documents for inclusion, indicating that a rather small percentage (14.4%) of World Physiotherapy members have published competency documents. From these documents, 2001 competency statements were extracted for analysis and all could be accommodated within both the CanMEDS and the WHO RCF structures, suggesting that both the CanMEDS framework and the WHO RCF may be suitable for use in physiotherapy competency framework development. A detailed discussion of these results was presented in Chapter 4.

The results of the thematic analysis, presented in the form of a conceptual thematic framework (Figure 6), suggested themes and sub-themes for consideration that may be contextualised in physiotherapy competency framework development. This framework may be a valuable tool which can be applied in any setting. The in-depth presentation of these results was reported in Chapter 5.

6.2 Discussion

A general lack of research on physiotherapy competencies from low-resource settings has been reported in the literature (Gruppen et al., 2012; Cassady et al., 2014; Alonge et al., 2019). The majority of documents in this study, and thus competencies extracted, originated mainly from high-resource settings. The results of this thesis thus highlight the perceived lack of availability and/or accessibility of physiotherapy competency documents from low-resource settings. The current search strategy did not identify many competency documents from these settings. The under-representation of competency documents from low-resource settings in this study aligns with the notion that paucity of information and research from these settings, both in traditional literature and within grey literature sources, is unhelpful in understanding global issues. Furthermore, a lack of clear and valid guidance for physiotherapists could pose a threat to the profession's credibility, as it may lead to inconsistencies in standards and ways of practice (Hanekom et al., 2015; Barradell, 2017). The lack of a globally informed understanding of the profession may thus result in varying competencies that is likely to hamper workforce mobility across borders (Foo, Storr & Maloney, 2016). Low-resource settings often face unique challenges in terms of lacking financial, material and human resources, as well as unstable health systems (Gruppen et al., 2012; Cassady et al., 2014; Alonge et al., 2019). Thus, competencies from high-income countries may not be readily applicable without some adaptation, as it may result in discrepancies between a published guideline and the real-world scenario of physiotherapy practice in the local context.

However, despite the criticism against applying data from high-resource settings to low-resource settings (Cassady et al., 2014; Alonge et al., 2019), this thesis aimed to capture the breadth and essence of physiotherapy competencies from the relevant documents thematically. As such, the argument is made that these themes hold relevance to the profession in both low- and high-resource settings, since these themes are intended to be appropriately contextualised. The potential of the results to transcend the resource-setting barrier was aided by using the WHO RCF structure (World Health Organization, 2020a). The decision to use this framework was deliberate, as this it was developed by the WHO specifically for rehabilitation professions across all settings. As such, the WHO RCF could allow for the

representation and comparison of competencies across the rehabilitation disciplines (Mills et al., 2021), as opposed to the CanMEDS framework, which is more medically focused (Frank et al., 2015). The results did however indicate that the CanMEDS framework may also be suitable for physiotherapy competency framework development. Although we did not also analyse the dataset of the CanMEDS framework, the competency statements have been categorised into the seven different "roles". Analysis thereof could potentially result in another conceptual framework. It would be interesting to compare the two conceptual frameworks.

A key factor to achieve equitable health care for all and to address the challenges of the burden of disease, is a competent health workforce (Gruppen et al., 2012; Jacobs & El-Sadr, 2012; Naidoo et al., 2019; Unger & Hanekom, 2014b). Meeting these challenges will require healthcare workers to possess competences that extend beyond their clinical skills. These include competencies related to leadership, advocacy and research, as well as a number of other skills (Kelland et al., 2014; Mcgowan, Martin & Stokes, 2016; Jacobs et al., 2020; Malmivaara, 2020). The literature suggests that the physiotherapy profession is aware of the extension of their influence beyond the clinical setting, as demonstrated in the reporting of competencies enacted in other environments and settings (Verma, Paterson & Medves, 2006; Gruppen et al., 2012; Cassady et al., 2014; Sturt et al., 2018). The results of this study concur, as demonstrated by the allocation of competency statements in various domains beyond those relating to clinical skills.

Despite this, the results still suggested a dominance of the *practice* domain, which reported a range of physiotherapy-specific skills. Rapidly changing local and global conditions necessitate healthcare workers to be responsive to the needs of the patients or clients, as well as the communities they serve (Jacobs et al., 2020). While explicit professional practice competence is important, further consideration may be warranted to develop other skills and avenues, such as leadership and health advocacy. The competencies related especially to these roles are cited as being necessary for physiotherapists to be able to influence health systems and become capable of achieving sustainable development goals (Gruppen et al., 2012; Jacobs & El-Sadr, 2012; Unger & Hanekom, 2014; Naidoo et al., 2019; Jacobs et al., 2020). Continued focus on the *practice* domain may negatively impact the transformational

role that physiotherapists can fulfil in caring for vulnerable individuals and communities.

Health systems and professions should continually evolve and keep pace in response to changes within policy, the population's needs and advances in the greater medical field (Jacobs et al., 2020). The results of this thesis suggest a possible need for updating physiotherapy competencies in certain settings, since the oldest document included in the review dated back to 2008 (Ireland). It remains challenging to capture the current complexities of healthcare adequately, when developing competency frameworks (Batt et al., 2021a). The themes presented in the conceptual thematic framework are intended to be considered and contextualised. Reflection on the role physiotherapists serve in their healthcare system, the uniqueness thereof, and who they interact with to serve their function, may aid in "describing the context". Considerations regarding what a physiotherapist does and what society expects a physiotherapist to be able to do, may assist in "describing ways of practicing" (Batt et al., 2021b; Tackett et al., 2022). Achieving a competency framework that assists in guiding the profession to meet health service demands is a shared responsibility that requires the involvement of a range of stakeholders in the contextualisation process. These stakeholders would include, among various others, other health disciplines and end-users such as clients and educators (Lepre et al., 2021).

Appropriately addressing both context and ways of practicing has been cited as a balanced approach that allows for the guidance and development of a profession (Lester, 2014). The conceptual thematic framework presented in the results has contributed to the literature by providing themes and sub-themes related to the physiotherapy profession. These need to be further unpacked and described to align them with the needs of the local context to affect change in healthcare, health systems and the physiotherapy's professional practice in a particular setting (Gruppen et al., 2012; Kelland et al., 2014; Unger & Hanekom, 2014; Van Aswegen et al., 2017; Barradell, 2017).

6.3 Limitations of this thesis

This study has some limitations, which must be acknowledged when interpreting the results.

The search strategy was based on data available from World Physiotherapy, and as such included 125 countries. Non-member countries were thus excluded from this study. Furthermore, income classification distribution within World Physiotherapy member countries must be considered when interpreting the results, as World Physiotherapy currently has more high-income members compared to low-income members.

A notable language barrier was met in the execution of the study. Because of time and budget constraints of the study, the use of a professional translator could not be employed. First, this may have affected the efficiency of non-English website searches. These websites could only be searched with the translation functionality of the web browser, Google Chrome. Second, the translation of documents was done with Google Translate, and as such, it remains possible that the translated content may not be entirely accurate. In an attempt to mitigate against this, the translated versions were returned via email to the member country contact, for an opinion on its accuracy. It was, however, deemed essential to include these translations, as excluding all documents that were not originally published in English would have resulted in a biased sample.

We chose to analyse the competency statements through the structure of the WHO RCF, thus the results were influenced by the structure and definitions of this framework. However, the original CanMEDS dataset remains available and may also be analysed.

6.4 Recommendations for future research

The use of professional translation services, to overcome the restrictions associated with language barriers, is recommended should this study be repeated and or updated.

To address the underrepresentation of certain regions, alternative search strategies such as snowballing, should be considered beginning with regulatory authorities such as health professional councils.

As health systems continue to evolve, many authors anticipate that physiotherapists will need to take on more roles to meet the needs of the relevant population (Gruppen et al., 2012; Kelland et al., 2014; Unger & Hanekom, 2014; Van Aswegen et al., 2017; Barradell, 2017). For this to happen effectively, further research to achieve a more in-depth understanding related to the scope and local context of roles beyond the clinical setting, will be needed.

Stakeholders, for whom physiotherapy competencies may hold relevance, should be included in the next steps taken when aiming to develop physiotherapy competency frameworks (World Health Organization, 2020b; Lepre et al., 2021). These may include any or all of the following: Practising physiotherapists, representatives from specific professional associations, health institutions, end-users, regulatory bodies, specialist groups, patient advocacy organisations and tertiary education institutions.

6.6 Conclusion

The concept of this thesis was conceived as a first step to address the lack of data describing the competencies needed by physiotherapists serving the Namibian population. To the researcher's knowledge, there is currently no global consensus on what constitutes a competent physiotherapist. Thus, before endeavouring to develop a Namibian physiotherapy competency framework, understanding the global perspectives on competencies was warranted. This thesis provides an updated perspective on global physiotherapy competencies and serves as a springboard, from which to define those competencies contextually.

Through a document review of physiotherapy competency statements and a thematic analysis of the five domains of the WHO RCF, a conceptual thematic framework has been developed. Each theme and sub-theme in this framework should be considered, and then contextualised in an appropriate statement or statements. Such statements

should then be relatable, relevant and even prescriptive for change in the physiotherapy workforce in a particular setting. Using a common framework could further clarify our understanding of the unique physiotherapy competencies needed within the different contexts.

In changing healthcare systems, the role of the physiotherapist will continue to evolve and expand. Ensuring this professional discipline has the necessary competencies – the required knowledge, skills, attitudes and behaviours – to optimally excel in their work, will be foundational to the credibility of the profession and to address the changing healthcare needs of our populations.

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Appendices

APPENDIX 1: SEARCH STRATEGY INFORMATION

Country	Association name	Email addresses used	Website URL
Afghanistan	Afghan Association for Physical Therapy	president@aapt.org.af	http://www.aapt.org.af
Albania	Albanian Association of Physiotherapists	fizioterapiashqiptare@gmail.com; erionlh@yahoo.es	http://www.shshf.al/
Argentina	Argentine Association of Kinesiology	oronzio@gmail.com; info@aak.org.ar	http://www.aak.org.ar
Australia	Australian Physiotherapy Association	info@australian.physio; anja.nikolic@australian.physio; scott.willis@australian.physio; jenny.aiken@australian.physio	http://www.australian.physio
Austria	Austrian Physiotherapy Association	office@physioaustria.at; stefan.moritz@physioaustria.at; president@physioaustria.at	http://www.physioaustria.at
Bahamas	Bahamas Association of Physiotherapists	bapt242@gmail.com	https://www.bapt242.com/
Bahrain	Bahrain Physical Therapy Association	bpta.bh@gmail.com; mohamed.alanzoor@alanzoor.com	http://www.bpta.com.bh
Bangladesh	Bangladesh Physiotherapy Association	eobpa2017@gmail.com; physiozahid@gmail.com; shahadatphysio@yahoo.com; sphddhaka@gmail.com	http://www.bpa-bd.org
Barbados	Barbados Physical Therapy Association	gerrywarner@yahoo.com; bdospta@gmail.com	no website
Belgium	Axxon, Physical Therapy in Belgium	axxon@axxon.be; rolandcraps@hotmail.com; lucas.dieleman@telenet.be; marina.gasten@axxon.be; peter.bruynooghe@axxon.be	http://www.axxon.be/nl
Benin	Beninoise Association of Physiotherapists - Reeducators	germain.houngbedji@gmail.com; wdahoueto@yahoo.fr	https://abekir.net/
Bermuda	Bermuda Physiotherapy Association	hollis.physio@gmail.com	no website
Bhutan	Bhutan Society of Physiotherapy	kphuentsho@jdwnrh.gov.bt	no website
Bolivia	College of Physiotherapy and Kinesiology of Bolivia	cofykbol.bolivia@gmail.com; fisiolidia_copacabana@hotmail.com	no website
Bosnia and Herzegovina	Association of Physiotherapists in Bosnia and Herzegovina	ufubih2018@outlook.com	http://www.ufubih.ba

Brazil	Physiotherapists' Association of Brazil	comunicacao@afb.org.br; denise.flavio40@globo.com; fatima-bussinger@hotmail.com	http://www.afb.org.br
Bulgaria	Bulgarian Association of Physiotherapists	info@bgapt.org; info.bgapt@gmail.com	https://bgapt.org/
Cambodia	Cambodian Physical Therapy Association	president@cambodiapt.org	http://www.cambodiapt.org
Cameroon	Cameroon Society of Physiotherapy	casp.national@gmail.com; ykagwe@gmail.com	no website
Canada	Canadian Physiotherapy Association	information@physiotherapy.ca; president@physiotherapy.ca; jpcodycox@physiotherapy.ca	http://www.physiotherapy.ca
Chile	College of Physiotherapists of Chile	contacto@ckch.cl; presidencia@ckch.cl	http://www.ckch.cl
Colombia	Colombian Association of Physiotherapy	info@ascofi.org.co; njmolinaa@unal.edu.co	http://www.ascofi.org.co
Congo (Democratic Republic)	Congo Physical Therapists Union	ukcrdcongo@gmail.com; abedipamphyle@yahoo.fr; mariefeliciteb@yahoo.fr	no website
Costa Rica	Physical Therapy Commission of the Therapist Guild of Costa Rica	presidencia@ctcr.cr; info@ctcr.cr	http://www.colegiodeterapeutas.cr
Croatia	Croatian Council of Physiotherapists	hkf@hkf.hr	http://www.hkf.hr
Curaçao	Curaçao Association of Physiotherapists	secretariaat.cvf@gmail.com; fysiocarecuracao@gmail.com	no website
Cyprus	Cyprus Association of Physiotherapists	cyprusphysio@cytanet.com.cy	http://www.cyprusphysio.com
Czech Republic	Union of Physiotherapists of the Czech Republic	unify-cr@unify-cr.cz; toufar@nembv.cz	http://www.unify-cr.cz
Denmark	Association of Danish Physiotherapists	fysio@fysio.dk; sf@fysio.dk; kl@fysio.dk; tl@fysio.dk	http://www.fysio.dk
Dominican Republic	Dominican Association of Physical Therapists	adofd.rd@gmail.com; crist19b@hotmail.com; giovannagenao@outlook.com	no website
Ecuador	Ecuadorian Society of Physiotherapy	sefecuador2016@gmail.com; djmaldonadob@uce.edu.ec;	no website
Estonia	Estonian Association of Physiotherapists	info@efl.ee; siiri.heinaru@efl.ee	http://www.efl.ee/
Eswatini	Eswatini Physiotherapy Association	lnvphysio@swazi.com; lnvphysio@swazi.net; zolishaba@gmail.com	no website
Ethiopia	Ethiopian Physiotherapists' Association	sberhanu@icrc.org; smartbiz787@gmail.com	http://www.ethiopta.org/
Fiji	Fiji Physiotherapy Association	fijiphysiotherapyassociation@gmail.com; sbulitimai@yahoo.com; william.koong@fijirugby.net	no website
Finland	Finnish Association of Physiotherapists	toimisto@suomenfysioterapeutit.fi; tiina.makinen@suomenfysioterapeutit.fi; katri.partanen@suomenfysioterapeutit.fi	http://www.suomenfysioterapeutit.fi

France	French National Council of Physiotherapists	cno@ordremk.fr; laure.ehret@ordremk.fr; presidente.cno@ordremk.fr; secretaire.general.cno@ordremk.fr	http://www.ordremk.fr/
Georgia	Georgian Association of Physical Therapy and Rehabilitation	geophysicaltherapy@gmail.com	no website
Germany	German Association for Physiotherapy	info@physio-deutschland.de; s.hegenscheidt@physio-akademie.de; raedlein@physio-deutschland.de	http://www.physio-deutschland.de
Ghana	Ghana Physiotherapy Association	ghanaphysiotherapy@gmail.com; nalbertagh.ar@gmail.com; ghanaphysiotherapy@gmail.com	http://www.physioghana.org
Greece	Panhellenic Physiotherapists' Association	bournousouzislefteris@gmail.com; pptaks@gmail.com	https://www.psf.org.gr/
Guyana	Guyana Physiotherapy Association	guyphysio@yahoo.com; jana.gabz@hotmail.com; ishaurlin@gmail.com	no website
Haiti	Haitian Physiotherapy Society	shpasso@yahoo.fr; presisohaph@gmail.com	http://www.sohaph.ht
Hong Kong	Hong Kong Physiotherapy Association	marco.pang@polyu.edu.hk	http://www.hongkongpa.com.hk
Hungary	Association of Hungarian Physiotherapists	info@gyogytornaszok.hu; ildiko@rochlitz.hu; elnok@gyogytornaszok.hu	http://www.gyogytornaszok.hu
Iceland	Icelandic Physiotherapy Association	physio@physio.is; unnur@physio.is	http://www.physio.is
India	Indian Association of Physiotherapists	enquiries.iap@gmail.com; dralirani@gmail.com; iappresident2020@gmail.com	http://www.physiotherapyindia.org/
Indonesia	Indonesian Physiotherapy Association	pp_ifi@yahoo.co.id; ali.arafah5@gmail.com	http://www.ifi.or.id
Iran	Iranian Physiotherapy Association	info@iran-pta.ir; zare4028@yahoo.com; farid_pt@yahoo.com	http://www.iran-pta.ir
Ireland	Irish Society of Chartered Physiotherapists	info@iscp.ie; president@iscp.ie; ruaidhrioconnor@rcsi.ie	http://www.iscp.ie
Israel	Israeli Association of Physiotherapists	elgab@bezegint.net	no website
Italy	Italian Association of Physiotherapists	info@aifi.net; michelecannone@gmail.com; presidente@aifi.net	http://www.aifi.net
Ivory Coast	Ivorian Association of Masseurs-Kinesitherapists	associationkineci@gmail.com; soualiokine@gmail.com	http://www.aimk-ci.com
Jamaica	Jamaica Physiotherapy Association	jpa.executive@gmail.com	no website
Japan	Japanese Physical Therapy Association	international@japanpt.or.jp; president@japanpt.or.jp	http://www.japanpt.or.jp/

Jordan	Jordanian Physiotherapy Society	alia.alghwiri@gmail.com; jpts.media@gmail.com, info@jpts.org.jo	http://jpts.org.jo/
Kenya	Kenya Society of Physiotherapists	kspkenya@yahoo.co.uk; catherinewjw@yahoo.com; bandahenry66@gmail.com	http://www.ksphy.org
Korea	Korean Physical Therapy Association	kpta@kpta.co.kr; kpta12@kpta.co.kr; kpta3201@kpta.co.kr	http://www.kpta.co.kr
Kosovo	Chamber of Physiotherapists of Kosovo	oda.oftk@gmail.com; feim_ga@yahoo.com	no website
Kuwait	Kuwaiti Physical Therapy Association	g.secretary@kpta-kuwait.org; president@kpta-kuwait.org	http://kpta-kuwait.org/
Latvia	Latvian Physiotherapists' Association	fizioterapeitiem@gmail.com; l.tiesnese@gmail.com	http://fizioterapeitiem.lv
Lebanon	Order of Physiotherapists in Lebanon	info@optl.org; international.affairs@optl.org; president.koueik@optl.org	http://www.optl.org
Liechtenstein	Physiotherapists' Association of the Principality of Liechtenstein	pvfl@physio.li; therapy@physio.li	http://www.physio.li
Lithuania	Lithuanian Physiotherapy Association	rolandas_kesminas@yahoo.com; inesa.rimdeikiene@kaunoklinikos.lt; lietuvosktd@gmail.com	http://www.lktd.lt/
Luxembourg	Luxembourg Association of Physiotherapists	secretariat@alk.lu; glod.carmen@alk.lu; obertin.patrick@alk.lu	http://www.alk.lu
Macau	Macau Physical Therapists Association	mpta@mpta.org.mo; wendy@physio1macao.com; ptsteven@yahoo.com.hk; pt.kitao@gmail.com	http://www.mpta.org.mo
Madagascar	Association of Physiotherapists of Madagascar	akima.mada@hotmail.com; lantoharisoarakotoarivelo@yahoo.fr	no website
Malawi	Physiotherapy Association of Malawi	physioassocmw@gmail.com	no website
Malaysia	Malaysian Physiotherapy Association	mpaexco.secretary@gmail.com, mpa.secretariat2020@gmail.com	http://www.mpa.net.my
Mali	Association of Physiotherapists of Mali	bouba59badialan3@gmail.com	https://akimali.net/
Malta	Malta Association of Physiotherapists	info@physiomalta.com; secretariat@physiomalta.com; president@physiomalta.com	http://www.physiomalta.com
Mauritius	Association of Physiotherapists	sec.ap.mru@gmail.com; rizuthephysio@yahoo.com	no website
Mexico	Mexican Association of Physiotherapy	rociod03@gmail.com	http://www.amefi.com.mx/
Mongolia	Mongolian Physical Therapy Association	ariunaa.kh@mnums.edu.mn	no website
Montenegro	Chamber of Physiotherapists of Montenegro	kftcg2021@gmail.com; predsjednik@komorafizioterapeuta.me	no website

Morocco	National Federation of Physiotherapists in Morocco	fnkpm2016@gmail.com	no website
Myanmar	Myanmar Physiotherapy Association	mmpa.pta@gmail.com	no website
Namibia	Namibian Society of Physiotherapy	wcpt@namibiaphysio.com; chairperson@namibiaphysio.com	http://www.namibiaphysio.com
Nepal	Nepal Physiotherapy Association	nepalphysiotherapy@gmail.com	http://www.nepalphysio.org.np
Netherlands	Royal Dutch Society for Physiotherapy	hoofdkantoor@kngf.nl; g.meerhoff@kngf.nl; g.vanwoerkom.bestuur@kngf.nl	http://www.kngf.nl
New Zealand	Physiotherapy New Zealand	pnz@physiotherapy.org.nz; sandra.kirby@physiotherapy.org.nz; president@physiotherapy.org.nz	https://pnz.org.nz/
Niger	Nigerien Physiotherapy Association	aknniger@yahoo.fr; baroseini@yahoo.fr	https://akniger.net/
Nigeria	Nigeria Society of Physiotherapy	nspgensec1959@gmail.com; president@nsphysio.org	http://www.nigeriaphysio.org
Norway	Norwegian Physiotherapist Association	nff@fysio.no; kbs@fysio.no; gl@fysio.no; sre@fysio.no	http://www.fysio.no
Pakistan	Pakistan Physical Therapy Association	info@ppta.org.pk; secretarybods@ppta.org.pk; chairmanbods@ppta.org.pk	http://www.ppta.org.pk
Palestine	Palestinian General Syndicate for Physical Therapy	info@pspt.ps; eidahmed@ppta.ps; pptass@hotmail.com	http://www.pspt.ps
Panama	Panamanian Association of Physiotherapy and/or Kinesiology	apafik@gmail.com; avizor@cwpanama.net	no website
Papua New Guinea	Papua New Guinea Physiotherapy Association	physiopng@gmail.com; prkarthi@dwu.ac.pg;	http://pngpa.weebly.com
Peru	Peruvian Association of Physiotherapy	aspetefi@gmail.com; gabrielamallma@gmail.com;	http://www.aspetefi.org
Philippines	Philippine Physical Therapy Association	pptaboard@gmail.com; mikegabiloptrp@gmail.com;	http://www.philpta.org
Poland	Polish Chamber of Physiotherapists	biuro@kif.info.pl; dalia.woznica@kif.info.pl; maciej.krawczyk@kif.info.pl; physiopoland@kif.info.pl	https://kif.info.pl/
Portugal	Portuguese Association of Physiotherapists	apfisio@apfisio.pt; aderito.seixas@apfisio.pt	http://www.apfisio.pt
Puerto Rico	Puerto Rican Association of Physiotherapy	apf.pr1976@gmail.com; maria.dejesus11@upr.edu; rafalopezandino@gmail.com	http://www.apfpr.com
Romania	Order of Physiotherapists in Romania	secretariat@cfizio.ro; elena_caciulan@yahoo.com	https://colegiulfizioterapeutilor.ro/
Rwanda	Rwanda Physical Therapy Organisation	jdamascene@gmail.com; cgatsinzi@gmail.com	no website
Saudi Arabia	Saudi Physical Therapy Association	spta@ksu.edu.sa; albarrati@ksu.edu.sa	https://spta.ksu.edu.sa/en

Senegal	Senegalese Association of Physiotherapists - Rehabilitators	askirdusenegal@gmail.com	https://askir.org/
Singapore	Singapore Physiotherapy Association	secretary@physiotherapy.org.sg; president@physiotherapy.org.sg	http://www.physiotherapy.org.sg
Slovakia	Slovak Chamber of Physiotherapists	elenaziakov@gmail.com	https://komorafyzioterapeutov.sk/
Slovenia	Slovenian Association of Physiotherapists	info@physio.si; tine.kovacic2@triera.net	http://www.physio.si
South Africa	South African Society of Physiotherapy	president@saphysio.co.za	http://www.saphysio.co.za
Spain	Spanish Association of Physiotherapists	info@aefi.net; administracion@aefi.net; 1stvicechairman@erwcpt.eu; presidente@aefi.net	http://www.aefi.net
Sri Lanka	Sri Lanka Society of Physiotherapy	sphysiotherapysl@gmail.com; rasikajayakody@yahoo.com; dsnm1551@gmail.com	http://www.slsp.lk
Saint Lucia	Physiotherapy Association of Saint Lucia	paslinc.pt@gmail.com	no website
Sudan	Sudanese Physiotherapy Association	sudanesepta@gmail.com	no website
Suriname	Surinamese Association for Physiotherapy	svf2008@gmail.com; bastiaan.deboer@boeroeswing.com	no website
Sweden	Swedish Association of Physiotherapists	kansli@fysioterapeuterna.se; charlotte.chruzander@fysioterapeuterna.se; cecilia.winberg@fysioterapeuterna.se; helena.pepa@fysioterapeuterna.se	http://www.fysioterapeuterna.se
Switzerland	physioswiss	info@physioswiss.ch; mirjam.stauffer@physioswiss.ch; osman.besic@physioswiss.ch	http://www.physioswiss.ch
Syria	Syrian Physical Therapy Association	syphysicaltherapyassociation@gmail.com	no website
Taiwan	Taiwan Physical Therapy Association	tpta@tpta.org.tw; lichiou@gmail.com; tjwang@ym.edu.tw	http://www.tpta.org.tw/
Tanzania	Association of Physiotherapists in Tanzania	physiotanzania@gmail.com; aptapresident2021@gmail.com	http://www.apta.or.tz
Thailand	Physical Therapy Association of Thailand	mantana.von@mahidol.edu	http://www.thaipt.org
Togo	Togolese Physiotherapists' Association	akitogo1@gmail.com; dh.parfait@gmail.com	no website
Trinidad and Tobago	Physiotherapy Association of Trinidad and Tobago	patt999@hotmail.com; kmdebique@gmail.com	http://www.physiotherapytt.org/
Turkey	Turkish Physiotherapy Association	tfd1969@gmail.com; filiz.can@gmail.com; tduger@yahoo.com	http://www.fizyoterapistler.org/
Uganda	Uganda Association of Physiotherapy	physiotherapyuganda@gmail.com; kmusago@gmail.com	no website

Ukraine	Ukrainian Association of Physical Therapy	rehabl@ukr.net; stepanko@ukr.net	http://www.physrehab.org.ua
United Arab Emirates	Emirates Physiotherapy Society	president@uaephysio.org;	http://www.uaephysio.org
United Kingdom	Chartered Society of Physiotherapy	physiotherapyuk@csp.org.uk; middletonk@csp.org.uk; mackenziea@csp.org.uk	http://www.csp.org.uk
United States	American Physical Therapy Association	emiliorouco@apta.org; justinmoore@apta.org; sharondunn@apta.org	http://www.apta.org
Uruguay	Physiotherapists' Association of Uruguay	fisioterafu@adinet.com.uy; presidenciaafu@gmail.com	http://www.afu.org.uy
Venezuela	Venezuelan Federation of Physiotherapists	feveft@gmail.com; julioarvelo11@gmail.com;	http://www.fvcf.org.ve
Vietnam	Vietnam Physical Therapy Association	hoivatlytrilieuvietnam@gmail.com; lethanhvan@ump.edu.vn; danptbm@gmail.com	http://vnpta.org.vn
Zambia	Zambia Society of Physiotherapy	zsocietyofphysiotherapy@gmail.com; mafumartha94@gmail.com	no website
Zimbabwe	Zimbabwe Physiotherapy Association	zimphysioassoc@gmail.com; ammadiki@gmail.com	http://www.zimphysio.org.zw

APPENDIX 2: EMAIL TEMPLATE SENT TO WORLD PHYSIOTHERAPY MEMBERS

Dear World Physiotherapy Member

I am currently enrolled as a master's student at Stellenbosch University, Physiotherapy division. My research project aims to determine core competencies for the Namibian physiotherapy profession.

Phase 1 of my research project will be a document review of existing Physiotherapy Competency Frameworks of member countries of World Physiotherapy.

I would like to find out whether your country has any such document relating to physiotherapy competencies. If it does, could you kindly send me this document for inclusion in my document review Phase 1.

Your assistance would be greatly appreciated.

Yours faithfully

Marieke Kirchner-Mocke
SU student number 25391631.
Study leaders: Prof. Marianne Unger and Prof. Susan Hanekom

APPENDIX 3: DOCUMENTS FOR CONSIDERATION

Country	Documents received /obtained	Link to document
Australia	Physiotherapy Career Pathway Competence Framework Version 6.0	https://australian.physio/pd/career-pathway
Austria	The Physiotherapist Profile of Competencies	https://www.physioaustria.at/system/files/general/kompetenzprofil_englisch.pdf
Bangladesh	BPA Practice Guide for Physiotherapy Practitioners	https://bpa-bd.org/BPA_Practice_Guideline.pdf
Belgium	Het Beroepscompetentieprofiel van de Kinesitherapeut in België anno 2020	https://overlegorganen.gezondheid.belgie.be/sites/default/files/documents/pcp_kine_2020_0.pdf
	Beroeps- en Competentieprofiel van de kinesitherapeut in België 2010	https://docplayer.nl/18296591-Beroeps-en-competentieprofiel-van-de-kinesitherapeut-in-belgie.html
Bermuda	Standards of Practice Bermuda Board of Physiotherapists	no website, received via email
Bosnia and Herzegovina	PANEUROPSKI UNIVERZITET APEIRON BANJA LUKA	non-official, word doc only, received via email
Canada	NPAG Essential Competency Profile for Physiotherapists in Canada (2017)	https://physiotherapy.ca/essential-competency-profile
Colombia	Perfil profesional y competencias	https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/TH/Perfil-profesional-competencias-Fisioterapeuta-Colombia.pdf
Costa Rica	Perfil Profesional de Terapia Fisica 2019	https://www.colegiodeterapeutas.cr/wp-content/uploads/2019/04/Perfil-Profesional-de-Terapia-Fi%cc%81sica.-Marzo-2019.-.pdf
Denmark	NATIONAL KOMPETENCEPROFIL FOR FYSIOTERAPEUTER I AKUTMODTAGELSEN	https://www.fysio.dk/fafo/faglige-anbefalinger/kompetenceprofiler
Finland	The core competences of a physiotherapist	http://www.suomenfysioterapeutit.com/ydinosaaminen/CoreCompetencies.pdf
France	Order of September 2, 2015 relating to the state diploma of masseur-physiotherapist (JORF no . 0204 of September 4, 2015)	https://www.legifrance.gouv.fr/loda/id/JORFTEXT000031127778/
Germany	_PT_Kompetenzkatalog_Hochschule_PT_Stand_05_07_2019.pdf	https://www.physio-deutschland.de/fileadmin/data/bund/news/pdfs/Anlage_1_PT_Kompetenzkatalog_Hochschule_PT_Stand_05_07_2019.pdf
Ireland	Physiotherapy Competencies Therapy Project Offices 2008	https://www.tcd.ie/medicine/physiotherapy/assets/pdf/Physiotherapy-Competencies.pdf
	Palliative Care Competence Framework	https://aiihpc.org/wp-content/uploads/2016/02/Physiotherapy-Complete.pdf
Latvia	FIZIOTERAPEITA PROFESIJAS STANDARTS	https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-187.pdf
Malta	COUNCIL FOR THE PROFESSIONS COMPLEMENTARY TO MEDICINE Benchmarking document Physiotherapy	https://deputyprimeminister.gov.mt/en/regcounc/cpcm/Documents/Physiotherapy%20Benchmark.pdf;

		https://deputyprimeminister.gov.mt/en/regcounc/cpcm/Documents/Physiotherapy%20Code%20of%20Practice.pdf
Netherlands	Beroepsprofiel 2014 eng	https://www.kngf.nl/binaries/content/assets/kngf/onbeveiligd/vak-en-kwaliteit/beroepsprofiel/beroepsprofiel-engels.pdf
	KNGF Beroepsprofiel Fysiotherapeut 2021	https://www.kngf.nl/binaries/content/assets/kngf/onbeveiligd/vak-en-kwaliteit/beroepsprofiel/kngf_beroepsprofiel-fysiotherapeut_2021.pdf
New Zealand	Physiotherapy Board Physiotherapy Thresholds	https://www.physioboard.org.nz/standards/physiotherapy-thresholds
Philippines	STANDARDS OF PRACTICE OF THE PHILIPPINE PHYSICAL THERAPY ASSOCIATION	https://1e491d09-45b7-4f01-9173-90f66be57aa7.filesusr.com/ugd/2c6e79_d36c06da7395480a95a2102f4befb811.pdf
Portugal	APFisio_Perfil_Compet_Fisio_rev2020.pdf - PORTUGUESE DOC	http://www.apfisio.pt/wp-content/uploads/2020/09/APFisio_Perfil_Compet_Fisio_rev2020.pdf
Romania	Code of ethics and professional deontology of the physiotherapist	https://colegiulfizioterapeutilor.ro/deontologie/
Saudi Arabia	Saudi MSK PT Curriculum	https://www.scfhs.org.sa/en/MESPS/Documents/2019.pdf
Singapore	Skillsfuture-skills frameworks	https://www.moh.gov.sg/docs/librariesprovider4/default-document-library/skills-framework-for-healthcare.pdf
Switzerland	Abschlusskompetenzen BSc Physiotherapie	https://www.zhaw.ch/storage/gesundheit/studium/bachelor/physiotherapie/abschlusskompetenzen-bsc-physiotherapie-zhaw.pdf
United Kingdom	Physiotherapy framework (2013)	https://www.csp.org.uk/professional-clinical/cpd-education/professional-development/professional-frameworks/physiotherapy
United States	Core Competencies of a Physical Therapy Resident 2020	https://www.apta.org/contentassets/89db00a8ab01418c844ced87e401563e/core-competencies-pt-resident.pdf
European Region	Expected Minimum Competencies for an Entry-Level Physiotherapist in the European Region of the WCPT Guidance Document	https://www.erwcpt.eu/file/251
European Region	European Network of Physiotherapy Higher Education	http://www.enphe.org/wp-content/uploads/2019/10/ESCO_report_ENPHE_recommendations_April_2017.pdf

APPENDIX 4: INCLUSION AND EXCLUSION PROCESS

Country	Documents received /obtained	Incl	Excl	Reason for Exclusion
Australia	Physiotherapy Career Pathway Competence Framework Version 6.0	✓		
Austria	The Physiotherapist Profile of Competencies	✓		
Bangladesh	BPA Practice Guide for Physiotherapy Practitioners		✓	Does not describe competencies
Belgium	Het Beroepscompetentieprofiel van de Kinesitherapeut in België anno 2020	✓		
	Beroeps- en Competentieprofiel van de kinesitherapeut in België 2010		✓	Previous version of document
Bermuda	Standards of Practice Bermuda Board of Physiotherapists		✓	Does not describe competencies
Bosnia and Herzegovina	PANEUROPSKI UNIVERZITET APEIRON BANJA LUKA		✓	Unpublished/ Draft document
Canada	NPAG Essential Competency Profile for Physiotherapists in Canada (2017)	✓		
Colombia	Perfil profesional y competencias	✓		
Costa Rica	Perfil Profesional de Terapia Fisica 2019	✓		
Denmark	NATIONAL KOMPETENCEPROFIL FOR FYSIOTERAPEUTER I AKUTMODTAGELSEN		✓	Document was developed for a sub-speciality
Finland	The core competences of a physiotherapist	✓		
France	Order of September 2, 2015 relating to the state diploma of masseur-physiotherapist (JORF no . 0204 of September 4, 2015)	✓		
Germany	_PT_Kompetenzkatalog_Hochschule_PT_Stand_05_07_2019.pdf	✓		
Ireland	Physiotherapy Competencies Therapy Project Offices 2008	✓		
	Palliative Care Competence Framework		✓	Document was developed for a sub-speciality
Latvia	FIZIOTERAPEITA PROFESIJAS STANDARTS	✓		
Malta	COUNCIL FOR THE PROFESSIONS COMPLEMENTARY TO MEDICINE Benchmarking document Physiotherapy		✓	Does not describe competencies
Netherlands	Beroepsprofiel 2014 eng		✓	Previous version of document
	KNGF Beroepsprofiel Fysiotherapeut 2021	✓		
New Zealand	Physiotherapy Board Physiotherapy Thresholds	✓		
Philippines	STANDARDS OF PRACTICE OF THE PHILIPPINE PHYSICAL THERAPY ASSOCIATION		✓	Does not describe competencies

Portugal	APFisio_Perfil_Compet_Fisio_rev2020.pdf - PORTUGUESE DOC	✓		
Romania	Code of ethics and professional deontology of the physiotherapist		✓	Does not describe competencies
Saudi Arabia	Saudi MSK PT Curriculum		✓	
Singapore	Skillsfuture-skills frameworks	✓		
Switzerland	abschlusskompetenzen-bsc-physiotherapie	✓		
United Kingdom	Physiotherapy framework (2013)	✓		
United States	Core Competencies of a Physical Therapy Resident 2020	✓		
European Region	Expected Minimum Competencies for an Entry Level Physiotherapist in the European Region of the WCPT Guidance Document	✓		
European Region	European Network of Physiotherapy Higher Education	✓		
26 countries + 2 regions	*31 documents*	*20 incl*	*11 excl*	

APPENDIX 5: CODING PROCESS

Practice 1st Pass

adhere to regulatory and legal requirements	5
adopt a client centred approach	37
agree with client on treatment goals	34
assessment and interviewing skills	45
barriers to care	3
clarifying and integrating client perceptions, preferences and expectations	27
client confidentiality	8
client context	32
client health literacy	4
client privacy	5
client safety	10
clinical reasoning skills	39
communication skills with client / others	81
complex situations	8
contraindications / risk / indication	17
determine and implement appropriate treatment / management / interventions	39
diagnosis	28
discharge planning / continuing care	21
disclose information on adverse events	3
educating the client / others	10
education and self management strategies	31
evidence based care	36
explain information (benefit/risk) to patient	37
factors affecting decision making	15
factors affecting performance	8
first contact	4
identify determinants of health	7
integrating skills	25
involve others in management	2
knowledge of other professions	4
language and terminology	14
listening and responding to client's verbal communication	18
manage conflict	2
managing a structured client encounter / consultation	23
modifying and adapting treatment / interventions	4
multidisciplinary care	12
non-clinical roles	4
observe and respond to client's non-verbal communication	19
obtain and document informed consent	3
obtain information from various sources	38
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prevention and promotion	10
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prognosis	4
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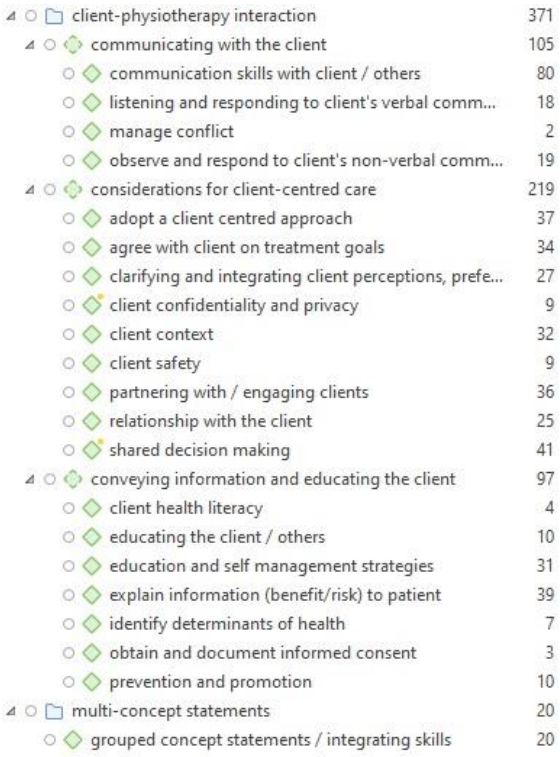
physical examination	19
physiotherapy knowledge	128
physiotherapy professional values	15
physiotherapy settings	12
physiotherapy skills / interventions	93
practice within scope and expertise	25
prognosis	4
record keeping and documentation	45
share written / electroning information	38
transfer of management	19
use of technology to support and manage health	47

○ **determine and implement appropriate treatment / management / interventions**
Comment: by Marieke Mocke
01/09/2022 11:52:18, merged with management

○ **shared decision making**
Comment: by Marieke Mocke
07/09/2022 10:57:47, merged with factors affecting decision making

Practice 3rd Pass



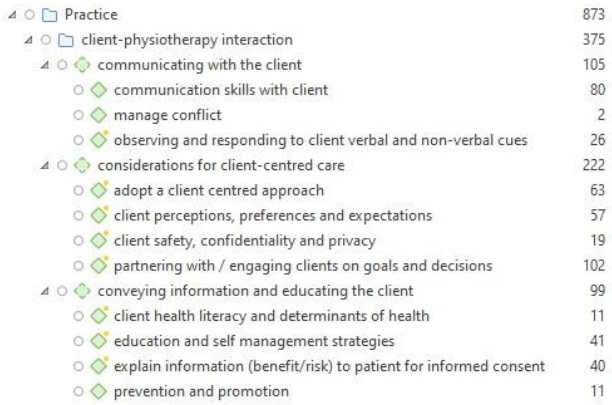
○ **considerations for client-centred care: client confidentiality and privacy**
Comment: by Marieke Mocke
08/09/2022 13:14:54, merged with client privacy

○ **considerations for client-centred care: shared decision making**
Comment: by Marieke Mocke
07/09/2022 10:57:47, merged with factors affecting decision making

○ **delivering interventions and specific clinical skills: determine and implement appropriate treatment / management / interventions**
Comment: by Marieke Mocke
01/09/2022 11:52:18, merged with management

○ **non-clinical skills and considerations: physiotherapy settings**
Comment: by Marieke Mocke
08/09/2022 12:52:26, merged with non-clinical roles 08/09/2022 12:53:27, merged with first contact

Practice 4th Pass



○ **arriving at a diagnosis and planning management: assessment, interviewing and evaluation skills**

Comment: by Marieke Mocke

23/10/2022 14:18:11, merged with arriving at a diagnosis and planning management: physical examination

○ **arriving at a diagnosis and planning management: clinical reasoning skills**

Comment: by Marieke Mocke

23/10/2022 14:20:36, merged with arriving at a diagnosis and planning management: complex situations

○ **arriving at a diagnosis and planning management: diagnosis and prognosis**

Comment: by Marieke Mocke

08/09/2022 12:52:53, merged with prognosis

○ **communicating with the client: observing and responding to client verbal and non-verbal cues**

Comment: by Marieke Mocke

23/10/2022 16:39:12, merged with communicating with the client: listening and responding to client's verbal communication

○ **considerations for client-centred care: adopt a client centred approach**

Comment: by Marieke Mocke

23/10/2022 17:33:44, merged with considerations for client-centred care: relationship with the client

○ **considerations for client-centred care: client perceptions, preferences and expectations**

Comment: by Marieke Mocke

23/10/2022 17:31:08, merged with considerations for client-centred care: client context

- **considerations for client-centred care: client safety, confidentiality and privacy**
  Comment: by Marieke Mocke
  08/09/2022 13:14:54, merged with client privacy 23/10/2022 17:24:53, merged with considerations for client-centred care: client safety

- **considerations for client-centred care: partnering with / engaging clients on goals and decisions**
  Comment: by Marieke Mocke
  23/10/2022 17:25:46, merged with considerations for client-centred care: agree with client on treatment goals 23/10/2022 17:25:46, merged with considerations for client-centred care: shared decision making 07/09/2022 10:57:47, merged with factors affecting decision making

- **conveying information and educating the client: client health literacy and determinants of health**
  Comment: by Marieke Mocke
  23/10/2022 17:05:35, merged with conveying information and educating the client: identify determinants of health

- **conveying information and educating the client: education and self-management strategies**
  Comment: by Marieke Mocke
  23/10/2022 17:07:58, merged with conveying information and educating the client: educating the client / others

- **conveying information and educating the client: explain information (benefit/risk) to patient for informed consent**
  Comment: by Marieke Mocke
  23/10/2022 17:16:21, merged with conveying information and educating the client: obtain and document informed consent

- **delivering interventions and specific clinical skills: determine and implement appropriate interventions**
  Comment: by Marieke Mocke
  01/09/2022 11:52:18, merged with management
- **delivering interventions and specific clinical skills: monitor interventions and adapt as needed**
  Comment: by Marieke Mocke
  23/10/2022 14:41:39, merged with delivering interventions and specific clinical skills: outcome measures / monitor interventions

- **ending or transitioning care: discharge planning / transfer of management to ensure continuing care**
  Comment: by Marieke Mocke
  23/10/2022 14:59:40, merged with ending or transitioning care: transfer of management

- **ending or transitioning care: multidisciplinary care**
  Comment: by Marieke Mocke
  23/10/2022 15:03:50, merged with ending or transitioning care: knowledge of other professions

- **non-clinical skills and considerations: physiotherapy evidence and practice settings**
  Comment: by Marieke Mocke

08/09/2022 12:52:26, merged with non-clinical roles 08/09/2022 12:53:27, merged with first contact 23/10/2022 16:22:31, merged with non-clinical skills and considerations: evidence based care

- **non-clinical skills and considerations: record keeping and documentation**
  Comment: by Marieke Mocke
  23/10/2022 15:54:23, merged with non-clinical skills and considerations: adhere to regulatory and legal requirements

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Practice Final

- **client centredness: ethical considerations**
  Comment: by Marieke Mocke
  08/09/2022 13:14:54, merged with client privacy 23/10/2022 17:24:53, merged with considerations for client-centred care: client safety

- **client centredness: respect / cultural humility**
  Comment: by Marieke Mocke
  20/11/2022 12:12:32, merged with client centredness: client perceptions, preferences and expectations 23/10/2022 17:31:08, merged with considerations for client-centred care: client context

- **client centredness: ways of communication**
  Comment: by Marieke Mocke
  20/11/2022 12:13:47, merged with communicating with the client: observing and responding to client verbal and non-verbal cues 23/10/2022 16:39:12, merged with communicating with the client: listening and responding to client's verbal communication

- **continuum of care: empowerment (self-management)**
  Comment: by Marieke Mocke
  23/10/2022 17:07:58, merged with conveying information and educating the client: educating the client / others 20/11/2022 14:52:43, merged with conveying information and educating the client: prevention and promotion

- **continuum of care: multi-/inter-/transdisciplinary**
  Comment: by Marieke Mocke
  23/10/2022 15:03:50, merged with ending or transitioning care: knowledge of other professions

- **continuum of care: referral**
  Comment: by Marieke Mocke
  22/11/2022 08:36:06, merged with continuum of care: practice within scope and expertise

- **diagnosis / formulating a hypothesis: diagnosis and prognosis**
  Comment: by Marieke Mocke
  08/09/2022 12:52:53, merged with prognosis

- **diagnosis / formulating a hypothesis: interview and observation**
  Comment: by Marieke Mocke
  23/10/2022 14:18:11, merged with arriving at a diagnosis and planning management: physical examination

- **implementing interventions: education**
  Comment: by Marieke Mocke
  23/10/2022 17:16:21, merged with conveying information and educating the client: obtain and document informed consent

- **implementing interventions: evidence informed interventions**
  Comment: by Marieke Mocke
  20/11/2022 11:47:50, merged with delivering interventions and specific clinical skills: determine and implement appropriate interventions 01/09/2022 11:52:18, merged with management

- **implementing interventions: monitoring and adapting**
  Comment: by Marieke Mocke
  23/10/2022 14:41:39, merged with delivering interventions and specific clinical skills: outcome measures / monitor interventions

- **information and data management: client records / documentation**
  Comment: by Marieke Mocke
  22/11/2022 08:49:27, merged with client centredness: record keeping and documentation
  23/10/2022 15:54:23, merged with non-clinical skills and considerations: adhere to regulatory and legal requirements

- **information and data management: sharing information and feedback**
  Comment: by Marieke Mocke
  20/11/2022 15:01:13, merged with information and data management: obtain information from various sources 20/11/2022 15:01:25, merged with information and data management: disclose information on adverse events

- **planning interventions and/or management: clinical reasoning**
  Comment: by Marieke Mocke
  23/10/2022 14:20:36, merged with arriving at a diagnosis and planning management: complex situations

- **planning interventions and/or management: collaboration and shared decision making**
  Comment: by Marieke Mocke
  23/10/2022 17:25:46, merged with considerations for client-centred care: agree with client on treatment goals 23/10/2022 17:25:46, merged with considerations for client-centred care: shared decision making 07/09/2022 10:57:47, merged with factors affecting decision making

- **planning interventions and/or management: personal and environmental considerations**
  Comment: by Marieke Mocke
  20/11/2022 14:42:38, merged with personal and environmental considerations: physiotherapy professional values 20/11/2022 14:48:47, merged with conveying information and educating the client: client health literacy and determinants of health 23/10/2022 17:05:35, merged with conveying information and educating the client: identify determinants of health 22/11/2022 08:33:54, merged with continuum of care: physiotherapy practice settings 08/09/2022 12:52:26, merged with non-clinical roles 08/09/2022 12:53:27, merged with first contact 23/10/2022 16:22:31, merged with non-clinical skills and considerations: evidence based care

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Professionalism 1st Pass

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- **colleagues: collaborative culture**

  Comment: by Marieke Mocke
  01/09/2022 09:18:04, merged with working with others: positive relationships with colleagues (health/other) 01/09/2022 09:15:32, merged with working with others: collegial work environment 01/09/2022 09:18:31, merged with working with others: respecting collaborators

- **colleagues: common goals and outcomes**
  Comment: by Marieke Mocke
  01/09/2022 09:16:19, merged with working with others: cooperation

- **colleagues: scope of practice and shared responsibilities**
  Comment: by Marieke Mocke
  01/09/2022 09:15:58, merged with working with others: knowledge of other professions

- **colleagues: transfer of management**
  Comment: by Marieke Mocke
  01/09/2022 09:15:05, merged with working with others: delegate management

- **colleagues: working efficiently with collaborators in a team**
  Comment: by Marieke Mocke
  01/09/2022 09:17:07, merged with working with others: team member

- **external factors: risk & safety**
  Comment: by Marieke Mocke
  01/09/2022 09:25:27, merged with response to extrinsic factors: safety

- **internal factors: commitment to the profession**
  Comment: by Marieke Mocke
  01/09/2022 09:44:31, merged with response to extrinsic factors: trends

- **internal factors: excellence & high-quality care**
  Comment: by Marieke Mocke
  01/09/2022 09:24:18, merged with self: culturally responsive care 01/09/2022 09:26:02, merged with response to extrinsic factors: best practice

- **internal factors: high ethical & moral standards, response to ethical issues**
  Comment: by Marieke Mocke
  01/09/2022 10:09:33, merged with internal factors: respond to ethical issues

- **internal factors: personal health, self-care and wellbeing**
  Comment: by Marieke Mocke
  01/09/2022 09:24:05, merged with self: boundaries

- **internal factors: personal professional performance and improvement**
  Comment: by Marieke Mocke
  01/09/2022 09:22:28, merged with self: critical reflection and feedback

- **internal factors: professional behaviour descriptors**
  Comment: by Marieke Mocke
  01/09/2022 09:21:41, merged with self: adaptability

- **internal factors: responsibilities**
  Comment: by Marieke Mocke
  01/09/2022 10:06:38, merged with internal factors: language skills 01/09/2022 10:10:31, merged with internal factors: reporting incidents

- **the client: documentation, informed consent and confidentiality**
  Comment: by Marieke Mocke
  01/09/2022 10:04:56, merged with internal factors: documentation 01/09/2022 08:30:55, merged with record keeping 01/09/2022 10:05:24, merged with the client: confidentiality

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Professionalism 3rd Pass

- **external factors: impact of diversity**

  Comment: by Marieke Mocke
  23/10/2022 09:46:56, merged with external factors: impact of values, culture, biases, perspectives

- **external factors: risk & safety**
  Comment: by Marieke Mocke
  01/09/2022 09:25:27, merged with response to extrinsic factors: safety 23/10/2022 09:50:27, merged with external factors: physical environment

- **internal factors: commitment to the profession**
  Comment: by Marieke Mocke
  01/09/2022 09:44:31, merged with response to extrinsic factors: trends

- **internal factors: excellence & high-quality care**
  Comment: by Marieke Mocke
  01/09/2022 09:24:18, merged with self: culturally responsive care 01/09/2022 09:26:02, merged with response to extrinsic factors: best practice 23/10/2022 10:32:19, merged with internal factors: personal professional performance and improvement 01/09/2022 09:22:28, merged with self: critical reflection and feedback

- **internal factors: high ethical & moral standards, response to ethical issues**
  Comment: by Marieke Mocke
  01/09/2022 10:09:33, merged with internal factors: respond to ethical issues

- **internal factors: personal health, self-care and wellbeing**
  Comment: by Marieke Mocke
  01/09/2022 09:24:05, merged with self: boundaries

- **internal factors: professional behaviour descriptors**
  Comment: by Marieke Mocke
  01/09/2022 09:21:41, merged with self: adaptability

- **internal factors: responsibilities**
  Comment: by Marieke Mocke
  01/09/2022 10:06:38, merged with internal factors: language skills 01/09/2022 10:10:31, merged with internal factors: reporting incidents

- **professional conduct to colleagues: collaborative culture**
  Comment: by Marieke Mocke
  01/09/2022 09:18:04, merged with working with others: positive relationships with colleagues (health/other) 01/09/2022 09:15:32, merged with working with others: collegial work environment 01/09/2022 09:18:31, merged with working with others: respecting collaborators

- **professional conduct to colleagues: scope of practice and shared responsibilities**
  Comment: by Marieke Mocke
  01/09/2022 09:15:58, merged with working with others: knowledge of other professions

- **professional conduct to colleagues: shared decision making and goal setting with colleagues**
  Comment: by Marieke Mocke
  23/10/2022 08:34:06, merged with professional conduct to colleagues: common goals and outcomes 01/09/2022 09:16:19, merged with working with others: cooperation

- **professional conduct to colleagues: transfer of management**
  Comment: by Marieke Mocke
  01/09/2022 09:15:05, merged with working with others: delegate management

- **professional conduct to colleagues: working efficiently with collaborators in a team**
  Comment: by Marieke Mocke
  01/09/2022 09:17:07, merged with working with others: team member

- **professional conduct to the client: documentation, informed consent and confidentiality**
  Comment: by Marieke Mocke
  01/09/2022 10:04:56, merged with internal factors: documentation 01/09/2022 08:30:55, merged with record keeping 01/09/2022 10:05:24, merged with the client: confidentiality

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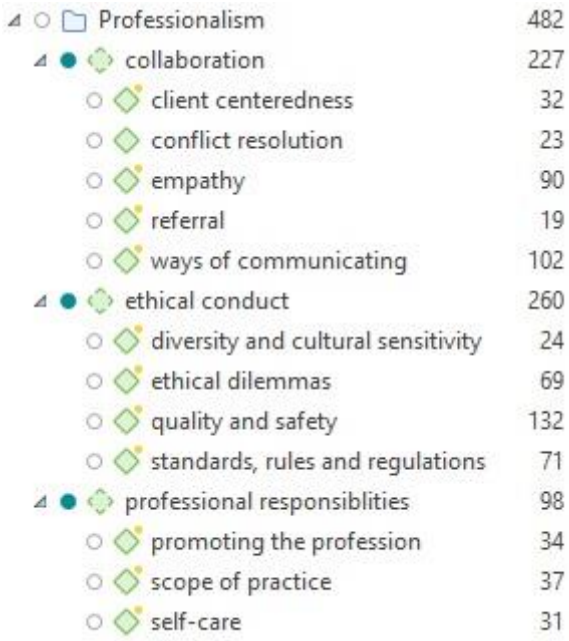
Professionalism Final



- **collaboration: client centeredness**

  Comment: by Marieke Mocke
  20/11/2022 15:11:53, merged with collaboration: client healthcare rights 20/11/2022 15:11:53, merged with collaboration: informing and engaging the client

- **collaboration: empathy**
  Comment: by Marieke Mocke
  01/09/2022 09:21:41, merged with self: adaptability 20/11/2022 15:22:44, merged with professional conduct to colleagues: working efficiently with collaborators in a team 01/09/2022 09:17:07, merged with working with others: team member

- **collaboration: referral**
  Comment: by Marieke Mocke
  01/09/2022 09:15:05, merged with working with others: delegate management

- **collaboration: ways of communicating**
  Comment: by Marieke Mocke
  20/11/2022 15:19:30, merged with ethical conduct: technology use 20/11/2022 15:20:15, merged with professional conduct to colleagues: shared decision making and

goal setting with colleagues 23/10/2022 08:34:06, merged with professional conduct to colleagues: common goals and outcomes 01/09/2022 09:16:19, merged with working with others: cooperation 20/11/2022 15:23:14, merged with collaboration: collaborative culture 01/09/2022 09:18:04, merged with working with others: positive relationships with colleagues (health/other) 01/09/2022 09:15:32, merged with working with others: collegial work environment 01/09/2022 09:18:31, merged with working with others: respecting collaborators

- **ethical conduct: diversity and cultural sensitivity**
  Comment: by Marieke Mocke
  23/10/2022 09:46:56, merged with external factors: impact of values, culture, biases, perspectives

- **ethical conduct: ethical dilemmas**
  Comment: by Marieke Mocke
  20/11/2022 15:14:50, merged with ethical conduct: multiple and competing demands 20/11/2022 15:17:48, merged with professional responsibilities: high ethical & moral standards, response to ethical issues 01/09/2022 10:09:33, merged with internal factors: respond to ethical issues 20/11/2022 15:18:12, merged with ethical conduct: barriers

- **ethical conduct: quality and safety**
  Comment: by Marieke Mocke
  01/09/2022 09:24:18, merged with self: culturally responsive care 01/09/2022 09:26:02, merged with response to extrinsic factors: best practice 23/10/2022 10:32:19, merged with internal factors: personal professional performance and improvement 01/09/2022 09:22:28, merged with self: critical reflection and feedback 20/11/2022 15:16:45, merged with ethical conduct: risk & safety 01/09/2022 09:25:27, merged with response to extrinsic factors: safety 23/10/2022 09:50:27, merged with external factors: physical environment

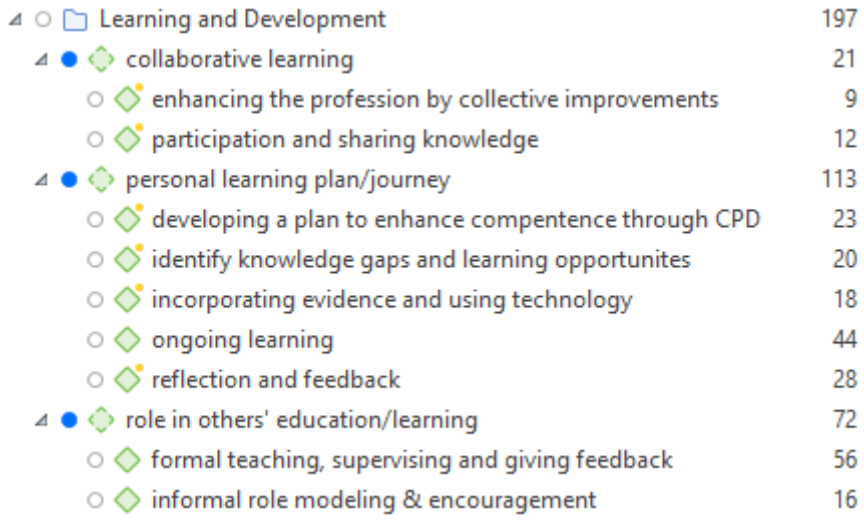
- **ethical conduct: standards, rules and regulations**
  Comment: by Marieke Mocke
  20/11/2022 15:23:43, merged with ethical conduct: documentation, informed consent and confidentiality 01/09/2022 10:04:56, merged with internal factors: documentation 01/09/2022 08:30:55, merged with record keeping 01/09/2022 10:05:24, merged with the client: confidentiality

- **professional responsibilities: promoting the profession**
  Comment: by Marieke Mocke
  01/09/2022 09:44:31, merged with response to extrinsic factors: trends

- **professional responsibilities: scope of practice**
  Comment: by Marieke Mocke
  01/09/2022 09:15:58, merged with working with others: knowledge of other professions

- **professional responsibilities: self-care**
  Comment: by Marieke Mocke
  01/09/2022 09:24:05, merged with self: boundaries

Learning and Development 1st Pass



- **collaborative learning: enhancing the profession by collective improvements**
  Comment: by Marieke Mocke
  02/08/2022 08:15:46, merged with contributing to profession

- **collaborative learning: participation and sharing knowledge**
  Comment: by Marieke Mocke
  02/08/2022 08:15:17, merged with collaborative learning (2): sharing knowledge (2)
  02/08/2022 08:16:30, merged with collaborative learning (2): participation
- **personal learning plan/journey: developing a plan to enhance competence through CPD**
  Comment: by Marieke Mocke
  02/08/2022 08:09:02, merged with personal learning plan/journey (2): CPD 02/08/2022 08:09:02, merged with personal learning plan/journey (2): enhancing own competence

- **personal learning plan/journey: identify knowledge gaps and learning opportunities**
  Comment: by Marieke Mocke
  02/08/2022 08:07:55, merged with personal learning plan/journey (2): identify learning opportunities 02/08/2022 08:13:06, merged with identification of knowledge gaps/education needs

- **personal learning plan/journey: incorporating evidence and using technology**
  Comment: by Marieke Mocke
  02/08/2022 08:58:17, merged with personal learning plan/journey: use of technology

- **personal learning plan/journey: reflection and feedback**
  Comment: by Marieke Mocke
  02/08/2022 08:03:09, merged with personal learning plan/journey (2): internal and external feedback 26/07/2022 11:10:07, merged with personal learning plan/journey (2): involving a mentor/coach

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Learning and Development Final

- **continuous professional development: identification of gaps**
  Comment: by Marieke Mocke
  02/08/2022 08:07:55, merged with personal learning plan/journey (2): identify learning opportunities 02/08/2022 08:13:06, merged with identification of knowledge gaps/education needs 05/11/2022 10:57:21, merged with personal learning plan/journey: reflection and feedback 02/08/2022 08:03:09, merged with personal learning plan/journey (2): internal and external feedback 26/07/2022 11:10:07, merged with personal learning plan/journey (2): involving a mentor/coach

- **continuous professional development: implementation and reflection**
  Comment: by Marieke Mocke
  02/08/2022 08:58:17, merged with personal learning plan/journey: use of technology

- **continuous professional development: seeking and sourcing credible information**
  Comment: by Marieke Mocke
  02/08/2022 08:09:02, merged with personal learning plan/journey (2): CPD 02/08/2022 08:09:02, merged with personal learning plan/journey (2): enhancing own competence 05/11/2022 10:56:01, merged with personal learning plan/journey: ongoing learning

- **developing the profession: collaboration**
  Comment: by Marieke Mocke
  02/08/2022 08:15:46, merged with contributing to profession

- **developing the profession: sharing information**
  Comment: by Marieke Mocke
  02/08/2022 08:15:17, merged with collaborative learning (2): sharing knowledge (2) 02/08/2022 08:16:30, merged with collaborative learning (2): participation

- **role in others' learning: supervision and mentorship**
  Comment: by Marieke Mocke
  20/11/2022 15:55:32, merged with role in others' learning: informal role modelling & encouragement

---

Management and Leadership 1st Pass

○ **community/population health upliftment: advocating for client need and access in different settings and beyond physiotherapy scope**
Comment: by Marieke Mocke
10/08/2022 16:48:31, merged with client needs and access beyond physio scope
10/08/2022 19:38:35, merged with primary healthcare setting

○ **leadership qualities: development of personal leadership skills**
Comment: by Marieke Mocke
13/08/2022 15:48:29, merged with leadership qualities: leadership styles 09/08/2022 11:52:09, merged with leadership/management skills and tasks (2): ensuring quality in the organisation

○ **leadership qualities: empoyer/employee interactions**
Comment: by Marieke Mocke
09/08/2022 11:51:53, merged with leadership/management skills and tasks (2): nurturing a team

○ **managing service delivery: health resource management and sustainability**
Comment: by Marieke Mocke
10/08/2022 19:58:47, merged with managing service delivery: optimal use of resources

- **managing service delivery: supply and demand of services in the system**
  Comment: by Marieke Mocke
  10/08/2022 20:20:35, merged with managing service delivery: service development

- **social responsibility: social contract with society**
  Comment: by Marieke Mocke
  09/08/2022 11:07:43, merged with accountability 20/10/2022 11:43:26, merged with social responsibility: societal inequities and opportunities to address

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Management and Leadership 2nd Pass

- **community/population upliftment: health advocacy across scope and setting**
  Comment: by Marieke Mocke
  10/08/2022 16:48:31, merged with client needs and access beyond physio scope
  10/08/2022 19:38:35, merged with primary healthcare setting

- **community/population upliftment: prevention, promotion and health surveillance**
  Comment: by Marieke Mocke
  03/11/2022 14:48:35, merged with community/population health upliftment: determinants of health 03/11/2022 14:48:35, merged with community/population health upliftment: motivating behaviour change in clients/communities/populations

- **community/population upliftment: social responsibility to health improvement**
  Comment: by Marieke Mocke
  09/08/2022 11:07:43, merged with accountability 20/10/2022 11:43:26, merged with social responsibility: societal inequities and opportunities to address 03/11/2022 14:37:32, merged with community/population health upliftment: client/community/population health and quality improvement

- **leadership qualities: development of personal leadership skills**
  Comment: by Marieke Mocke
  13/08/2022 15:48:29, merged with leadership qualities: leadership styles 09/08/2022 11:52:09, merged with leadership/management skills and tasks (2): ensuring quality in the organisation

- **leadership qualities: employer/employee interactions**
  Comment: by Marieke Mocke
  09/08/2022 11:51:53, merged with leadership/management skills and tasks (2): nurturing a team

- **leadership qualities: promoting the profession**
  Comment: by Marieke Mocke
  03/11/2022 14:54:08, merged with promoting the profession: profession at higher levels
  03/11/2022 14:54:08, merged with promoting the profession: profession at societal level

- **managing service delivery: health resource management and sustainability**
  Comment: by Marieke Mocke
  10/08/2022 19:58:47, merged with managing service delivery: optimal use of resources

- **managing service delivery: performance of daily managerial tasks and duties**
  Comment: by Marieke Mocke
  03/11/2022 14:52:18, merged with managing service delivery: supply and demand of services in the system 10/08/2022 20:20:35, merged with managing service delivery: service development

- **role in health systems: awareness of local and global health systems**
  Comment: by Marieke Mocke
  03/11/2022 14:43:56, merged with awareness of impacts on local and global health system: awareness of impacts on the greater health system

- **role in health systems: policies, procedures and system management**
  Comment: by Marieke Mocke
  03/11/2022 14:42:34, merged with social responsibility: safety issues in the system

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Management and Leadership Final

- **advocacy: community upliftment**
  Comment: by Marieke Mocke
  10/08/2022 16:48:31, merged with client needs and access beyond physio scope 10/08/2022 19:38:35, merged with primary healthcare setting 20/11/2022 16:00:51, merged with community/population upliftment: prevention, promotion and health surveillance 03/11/2022 14:48:35, merged with community/population health upliftment: determinants of health 03/11/2022 14:48:35, merged with community/population health upliftment: motivating behaviour change in clients/communities/populations

- **advocacy: promoting the profession**
  Comment: by Marieke Mocke
  03/11/2022 14:54:08, merged with promoting the profession: profession at higher levels 03/11/2022 14:54:08, merged with promoting the profession: profession at societal level

- **advocacy: social justice/accountability**
  Comment: by Marieke Mocke
  09/08/2022 11:07:43, merged with accountability 20/10/2022 11:43:26, merged with social responsibility: societal inequities and opportunities to address 03/11/2022 14:37:32, merged with community/population health upliftment: client/community/population health and quality improvement

- **physiotherapy service delivery: multi-stakeholder engagement**
  Comment: by Marieke Mocke
  03/11/2022 14:42:34, merged with social responsibility: safety issues in the system 20/11/2022 16:04:50, merged with role in health systems: collaborative leadership and management

- **physiotherapy service delivery: strengthening systems**
  Comment: by Marieke Mocke
  13/08/2022 15:48:29, merged with leadership qualities: leadership styles 09/08/2022 11:52:09, merged with leadership/management skills and tasks (2): ensuring quality in the organisation 20/11/2022 16:05:36, merged with leadership qualities: employer/employee interactions 09/08/2022 11:51:53, merged with leadership/management skills and tasks (2): nurturing a team 20/11/2022 16:05:50, merged with physiotherapy service delivery: performance of daily managerial tasks and duties 03/11/2022 14:52:18, merged with managing service delivery: supply and demand of services in the system 10/08/2022 20:20:35, merged with managing service delivery: service development 20/11/2022 16:06:23, merged with role in health systems: awareness of local and global health systems 03/11/2022 14:43:56, merged with awareness of impacts on local and global health system: awareness of impacts on the greater health system

- **physiotherapy service delivery: sustainability and growth**
  Comment: by Marieke Mocke
  10/08/2022 19:58:47, merged with managing service delivery: optimal use of resources 20/11/2022 16:04:06, merged with leadership qualities: implementing change and growth initiatives

Research 1st Pass

abilitiy to critically evaluate research and literature	13
ability to engange in scholarly debate	1
ability to systematicaaly collect data which can be used for research	5
carry out research with appropriate methods	12
contribute to dissemination and/or creation of knowledge	5
ethical principles in research	5
importance of evidence in practice	1
integrating research into practice	27
keeping up to date with new research	8
knowing where to access quality research / sources	8
participates in and contributes to research	14
pose research questions and identify knowledge gaps	7
publishing research	2
relay research findings to professional and lay audiences	4
reporting on research findings	6
training to do research	2
understanding the research process and principles	7

Research 2nd Pass

Research	99
doing your own research	38
ability to systematicaaly collect data which can be used for research	5
carry out research with appropriate methods	12
ethical principles in research	5
pose research questions and identify knowledge gaps	7
publishing research	2
reporting on research findings	6
training to do research	2
understanding the research process and principles	7
enaging or supporting other's research	18
contribute to dissemination and/or creation of knowledge	5
participates in and contributes to research	14
judging quality in research	21
abilitiy to critically evaluate research and literature	13
ability to engange in scholarly debate	1
knowing where to access quality research / sources	8
using research	35
integrating research into practice	27
keeping up to date with new research	8
relay research findings to professional and lay audiences	4

Research Final

- **conducting research: dissemination of new knowledge**
  Comment: by Marieke Mocke
  05/11/2022 10:51:06, merged with judging quality in research: ability to engage in scholarly debate 20/11/2022 16:24:06, merged with conducting research: publishing research

- **conducting research: research methods**
  Comment: by Marieke Mocke
  20/11/2022 16:20:38, merged with conducting research: specific research skills 20/10/2022 21:04:43, merged with doing your own research: carry out research with appropriate methods 20/10/2022 21:04:43, merged with doing your own research: ethical principles in research 20/10/2022 21:04:43, merged with doing your own research: pose research questions and identify knowledge gaps 20/10/2022 21:04:43, merged with doing your own research: reporting on research findings 20/11/2022 16:24:17, merged with conducting research: training to do research

- **consumer of research: finding credible information**
  Comment: by Marieke Mocke
  20/11/2022 16:13:25, merged with consumer of research: keeping up to date with new research

- **participating in research: contributing to research**
  Comment: by Marieke Mocke
  23/10/2022 07:52:38, merged with engaging or supporting other's research: contribute to dissemination and/or creation of knowledge

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