Learning of person-centred practice amongst clinical associate students at the University of Pretoria

by

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DECLARATION

I, Jakobus Murray Louw, student number 04396987 hereby declare that this thesis, Learning of person-centred practice amongst clinical associate students at the University of Pretoria, is submitted in accordance with the requirements for the degree PhD in Family Medicine at the University of Pretoria, is my own original work and has not previously been submitted to any other institution of higher learning. All sources cited or quoted in this research paper are indicated and acknowledged with a comprehensive list of references.

Jakobus Murray Louw

18 July 2019

DEDICATION

I dedicate this work to Jesus Christ who gave Himself so that we may be forgiven and set free to give ourselves to those in need.

ACKNOWLEDGEMENTS

About wisdom, insight and understanding Solomon said some 3000 years ago:

> "… if you seek it like silver and search for it as for hidden treasures, then you will understand the fear of the LORD and find the knowledge of God. For the LORD gives wisdom; from his mouth come knowledge and understanding" (Proverbs 2:4–6 – The Bible, English Standard Version).

Firstly I acknowledge that all wisdom comes from the Lord. Searching for it was not always easy. Finding some knowledge and understanding and expressing it in this thesis, is a gift I am grateful for.

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SUMMARY

Aim

The purpose of this study was to understand the extent to which clinical associate students learn person-centred practice (PcP) as well as the curricular elements that may facilitate such learning.

This study analysed the essential elements, ethical principles, learning, practical application and measurement of PcP in the training of clinical associates (ClinAs).

Understanding of PcP

PcP combines a holistic perspective of patients and their illness experiences, a therapeutic patient-clinician alliance focused on respectful, enabling collaboration in order to arrive at a mutually agreed assessment and management plan for the patient's health problem.

Methods

ClinA learning of PcP was investigated through an assessment of a quality improvement (QI) intervention by 62 students on their own medical consultations. Their experiences were explored in 10 focus group discussions (FGs). The dimensions of the person/learner involved in learning PcP were identified and analysed using the capability approach framework. Additionally, the SEGUE framework was used to measure PcP in consultations during Objective Structured Clinical Examinations (OSCEs) before and after the intervention in both intervention and control groups.

Results

The triggers for learning were understood as disruptions to students' abilities, knowledge, identity and relationships. The QI process functioned as a learning cycle

scaffolded by peer feedback and assessment tools during which students reviewed disruptions and developed improvement plans.

While students spoke passionately in FGs about building rapport with patients and involving them in decision making, few actually demonstrated these skills during OSCE consultations with simulated patients. Total SEGUE scores indicated a marginal but statistically significant increase in PcP but the difference between intervention and control groups was not significant. The significantly better improvement in third year students, compared to those in second year, suggest that learning PcP is grounded in increased confidence in biomedical knowledge and skills, motivation and sense of self-efficacy.

Students' identity formation as clinicians is determined by their desire to be regarded as competent and knowledgeable by patients. Their sense of self was disturbed when they sensed that they were unable to help patients and inspire trust. In response, self-directed students devised learning strategies involving relationships with peers, mentors and facilitators. Relationships are thus both triggers for learning and a means to learning.

Conclusion and recommendations

The findings of this study show that students learn and practice PcP best in authentic encounters with real patients. It thus follows that such consultations are the best place to measure and evaluate student learning and practice of PcP.

Therefore, to achieve PcP, the student-patient relationship needs to be given primacy in professional identity formation as patients and their needs transform student apprentices into caring, solution-seeking clinicians who *engage with* rather than *other* patients in the therapeutic alliance.

KEYWORDS

Communication skills; facilitation; feedback; peer learning; work-based learning; capability approach; person-centred practice; consultation skills; quality improvement; clinical associate education.

LIST OF ABBREVIATIONS AND ACRONYMS

BCMP	Bachelor of Clinical Medical Practice
CCM	Consultation Care Measure
CI	Confidence Interval
CLC	Clinical Learning Centre
ClinA	Clinical Associate
COSMIN	COnsensus based Standards for the selection of health status Measurement INstruments
DISQ	Doctor Interpersonal Skills Questionnaire
DPC	Doctor Patient Communication
EBM	Evidence Based Medicine
FG	Focus Group
FPI	Facilitation of Patient Involvement in care
HPCSA	Health Professions Council of South Africa
IRT	Item Response Theory
KEECC(A)	Kalamazoo Essential Elements Communication Checklist (adapted)
MPI	Matched Pair Instrument
MPOC	Measure of Processes of Care
NHI	National Health Insurance
NIH	National Institutes of Health
OSCE	Objective Structured Clinical Examination
PBCI	Patient-centred Behaviour Coding Instrument
PCC	Patient-Centred Care
PcP	Person-centred Practice
PEI	Patient Enablement Instrument
PFC	Patient Feedback Questionnaire on Communication Skills
PIL	Participant Information Leaflet
PPCB	Physician-Patient Communication Behaviours Scale
PPOS	Patient-Practitioner Orientation Scale
PPPC	Patient Perception of Patient-Centeredness
QI	Quality Improvement
QQPPI	Questionnaire on Quality of Physician-Patient Interaction
RUCIS	Revised Patient-Centred Communication and Interpersonal Skills Scale
SD	Standard Deviation
SDM	Shared decision making
SEGUE	Set the stage, Elicit information, Give information, Understand the patient's perspective, and End the encounter
STARD	Standards for Reporting of Diagnostic Accuracy
UP	University of Pretoria
WITS	University of the Witwatersrand
WSU	Walter Sisulu University

LIST OF TABLES

LIST OF FIGURES

LIST OF TEXTBOXES

TABLE OF CONTENTS

Chapter 1

Introduction and Background

1.1 Introduction

The setting was a rural hospital in northern Mozambique. The year ca1997, early one Monday morning. Loud wailing was emanating from the medical ward. Someone has died…

It was a young man – maybe in his late teens or early twenties. Strong and healthy – the pride of his mother who was now sobbing and wailing uncontrollably. She lost her beloved son. She lost the future of having a son who will care for her in her old age.

The young man was admitted with malaria two days earlier. The standard treatment was prescribed (Chloroquine). Being a weekend the hospital pharmacy was closed. In response to the widespread disappearance of medication from state facilities, a new system was introduced a week earlier: "Unidose". This meant that the hospital pharmacy will only dispense a single dose of treatment at a time according to each prescription for each specific named patient. No more "ward stock" was allowed.

On the Sunday his mother complained bitterly (and with reason) about her son not getting any treatment. Eventually the first dose of four Chloroquine tablets were arranged from somewhere. However, his mother maintained that it was never given… The ward nurse eventually admitted that he used the Chloroquine for someone else, a relative of his…

Why? Why does nobody care?

Sadly, such incidents of healthcare workers disrespecting and/or mistreating patients are not uncommon.

How can it be different? How can we ensure that every healthcare worker will respect and treat each patient as they would their own loved ones? If not all, at least most healthcare workers? If not most, at least some healthcare workers? How can we prevent once caring clinicians from becoming callous and uncaring?

1.2 Background

Human resources for healthcare in South Africa are under severe strain. Medical schools have not been able to significantly increase the output of medical practitioners.[1] Most doctors practice in urban areas leaving rural areas with a severe shortage of clinicians.[2] Many qualified professionals have emigrated[3] while the increase in workload due to the rising burden of disease has all but overwhelmed those who remain.[1]

In the face of a relentlessly burdensome workload, compassion and empathy have fallen victim to the tide of need. Healthcare in South Africa is in crisis both for a lack of carers and for want of caring.

To increase the supply of clinicians to serve the underserved and mostly rural poor who depend on the public healthcare service, the training of a new cadre of mid-level medical workers, similar to clinical officers or physician assistants in other countries, started in 2008.[4,5]

For this profession students complete a Bachelor of Clinical Medical Practice (BCMP) degree over a minimum of three years[4] before they register as clinical associates (ClinAs) with the Health Professions Council of South Africa (HPCSA) under its Medical and Dental Board.[6] Currently three South African universities train ClinAs: 1) University of Pretoria (UP), 2) University of the Witwatersrand (Wits) and 3) Walter Sisulu University (WSU).[4] They follow an integrated, case-based curriculum with early clinical involvement.[4]

As from 2010 the BCMP programme at UP engaged with experts in education in pursuit of a transformative educational model. In this, the programme aims to integrate the concepts of authentic learning, whole brain learning, co-operative learning as well as self-directed and self-regulated learning.[7] To ensure the authenticity of the learning environment second and third year students spend the majority of their training time in service learning (Figure 1.1).

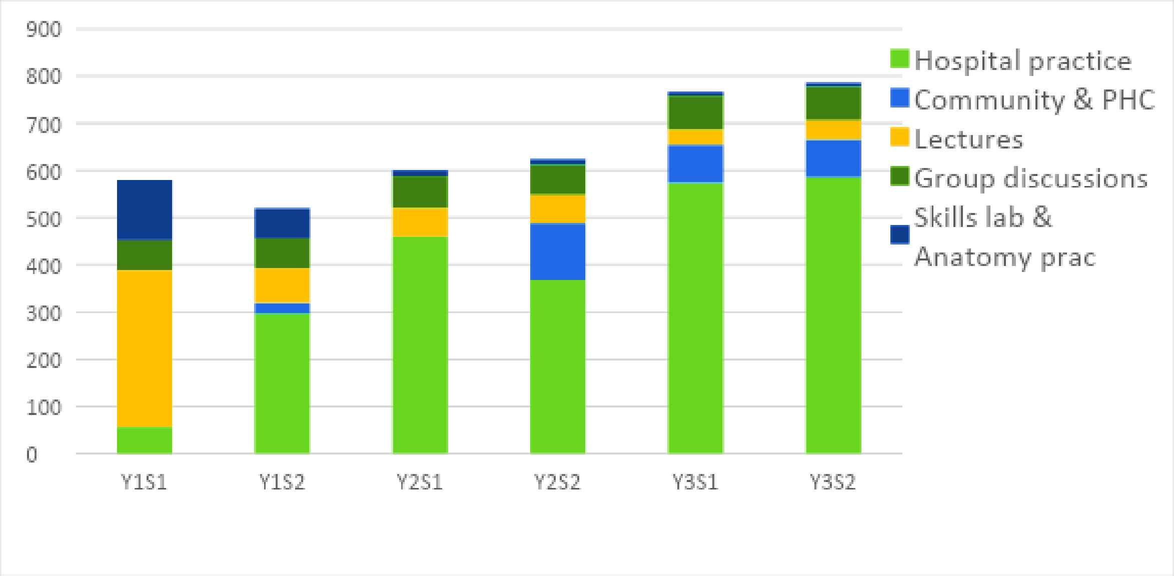

Figure 1.1: Hours of training time per semester over the three BCMP years (2015).

Because the greatest need for clinicians is in rural areas and because rural origin[8,9] and rural training[10, 11] has been shown to predict a preference to work in rural areas, most students are recruited from rural disadvantaged communities[4] and trained in rural areas (Figure 1.2).

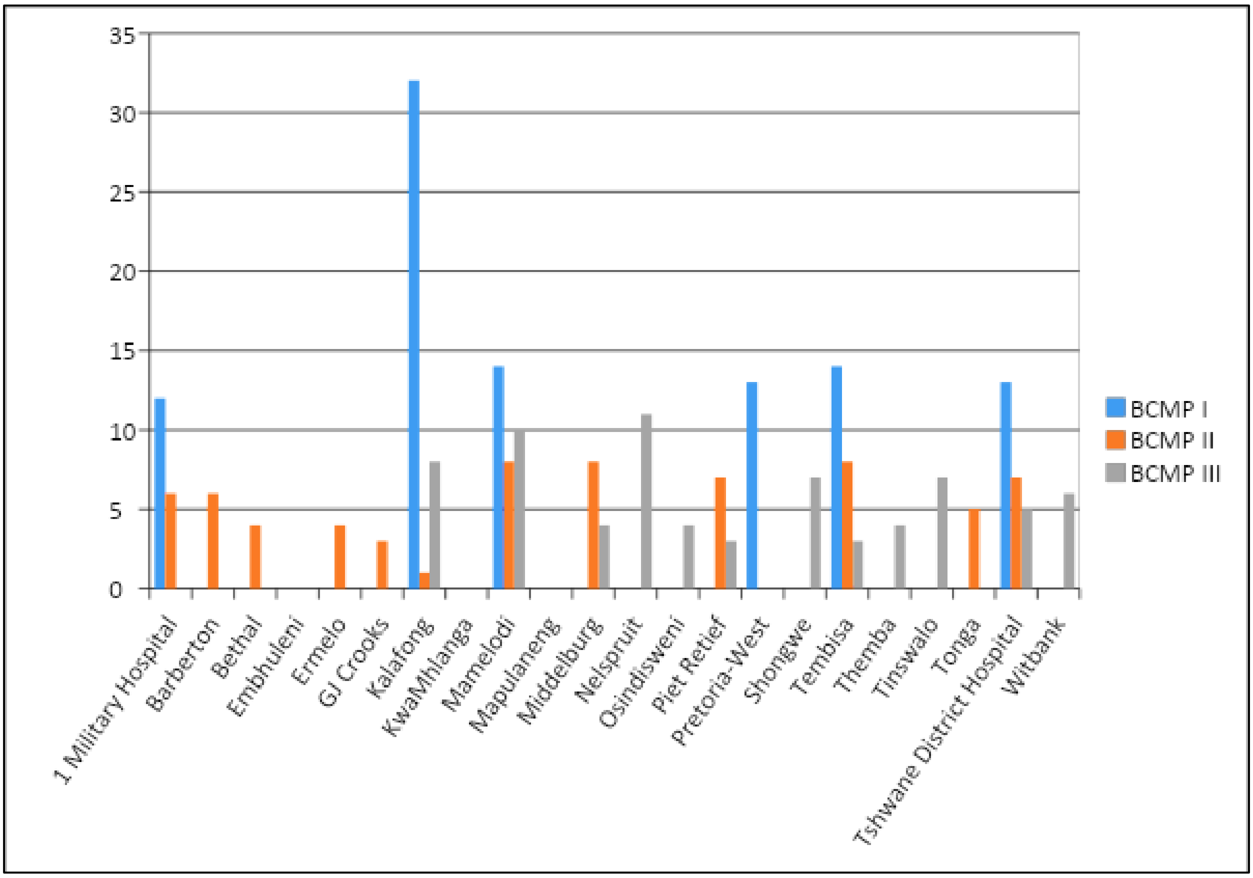

Figure 1.2: Number of BCMP students allocated to each of 19 CLCs in 2015.

The first ClinAs entered practice from WSU in 2011. By June 2019 1074 students have graduated of which 502 are from UP (personal communications Scott Smalley, Mukund Khatry-Chhetry and Murray Louw). Their work is closely linked to that of medical doctors who supervise them. They provide quality cost-effective healthcare in South Africa and relieve some of the burden on medical practitioners and nursing professionals.[12,13] The "Regulations defining the scope of practice of clinical associates" (Appendix A) were officially approved and published in the Government Gazette of 11 November 2016.[14] The scope of practice includes, inter alia, comprehensive assessment and management of patients as well as performing certain investigations and procedures under supervision of medical practitioners and according to their level of training and experience.

The ClinA programme presents opportunities to increase capacity and to develop competencies that better reflect the dual purpose of allopathic medicine, namely to care and to heal. Arguably, to do this, it has to be built on a curriculum of person-centeredness.

ClinA students train almost exclusively in the public healthcare service where they are exposed to the immense burden of morbidity and mortality and learn from often overworked clinicians who may or may not practice medicine in a caring, humane, person-centred way. Consequently, clinical associate students may become callous and uncaring clinicians if they model their practice on some of the healthcare professionals they are exposed to.

Over the last century scientific advances in medicine have been achieved at the price of increasingly depersonalised, fragmented and decontextualized healthcare.[15] Technological advance is gradually dehumanising modern medicine.[16,17] While clinicians engage with electronic devices evaluating myriads of test results and images as well as (in some places) entering information into electronic medical records, billing or referral systems, patients are left feeling isolated, unsupported and uninformed.

1.3 Rationale for this research

The starting assumption is that when ClinA students learn to practice person-centred medicine, the risk of becoming professionals who practice biomedical medicine without humanity may be reduced and patients may experience caring, humane medical care from them.

Studying person-centred medicine is of little value if ways are not found to apply it in healthcare, especially for those who need it most – the poor, marginalised and excluded communities where the burden of disease is highest. For person-centred practice (PcP) to be implemented it has to be learnt by the professionals who provide the services, namely the doctors, clinical associates, nurses, allied health professionals and others.

In the BCMP programme students learn mostly through practical clinical care based on the concepts of authentic learning, self-regulated learning and whole brain learning.[7]

To become person-centred clinicians, students have to learn not only biomedical knowledge and skills but also facilitation and collaboration skills. They have to be able to communicate well with patients. They have to value the patient as a person. They have to be aware of themselves as persons as much as, as clinicians. And they have to internalise person-centred values and attitudes in their relationships with patients.

1.4 Purpose, aim and outline

This is a study of the extent to which clinical associate students learn PcP as well as of the curricular elements that may facilitate such learning.

Literatures are reviewed to understand the concept of PcP (Chapter 2) and ways of measuring it (Chapter 3). An intervention to facilitate ClinA student learning of PcP is described and analysed (Chapter 4, Chapter 5 and Chapter 6).

Considering the data obtained in focus group discussions, the effects of self-reflection, feedback from patients and peers and the use of different schemas for self-evaluation on PcP are analysed using a capability approach to learning (Chapter 5).

Improvement in PcP was measured during two examination opportunities and compared between students who were exposed to the intervention vs those not exposed (Chapter 6).

In Chapter 7 the quantitative and qualitative findings are compared and related to the literature on learning PcP. Recommendations for further research are drawn and changes in the BCMP curriculum proposed.

Figure 1.3 provides a visual outline of this thesis.

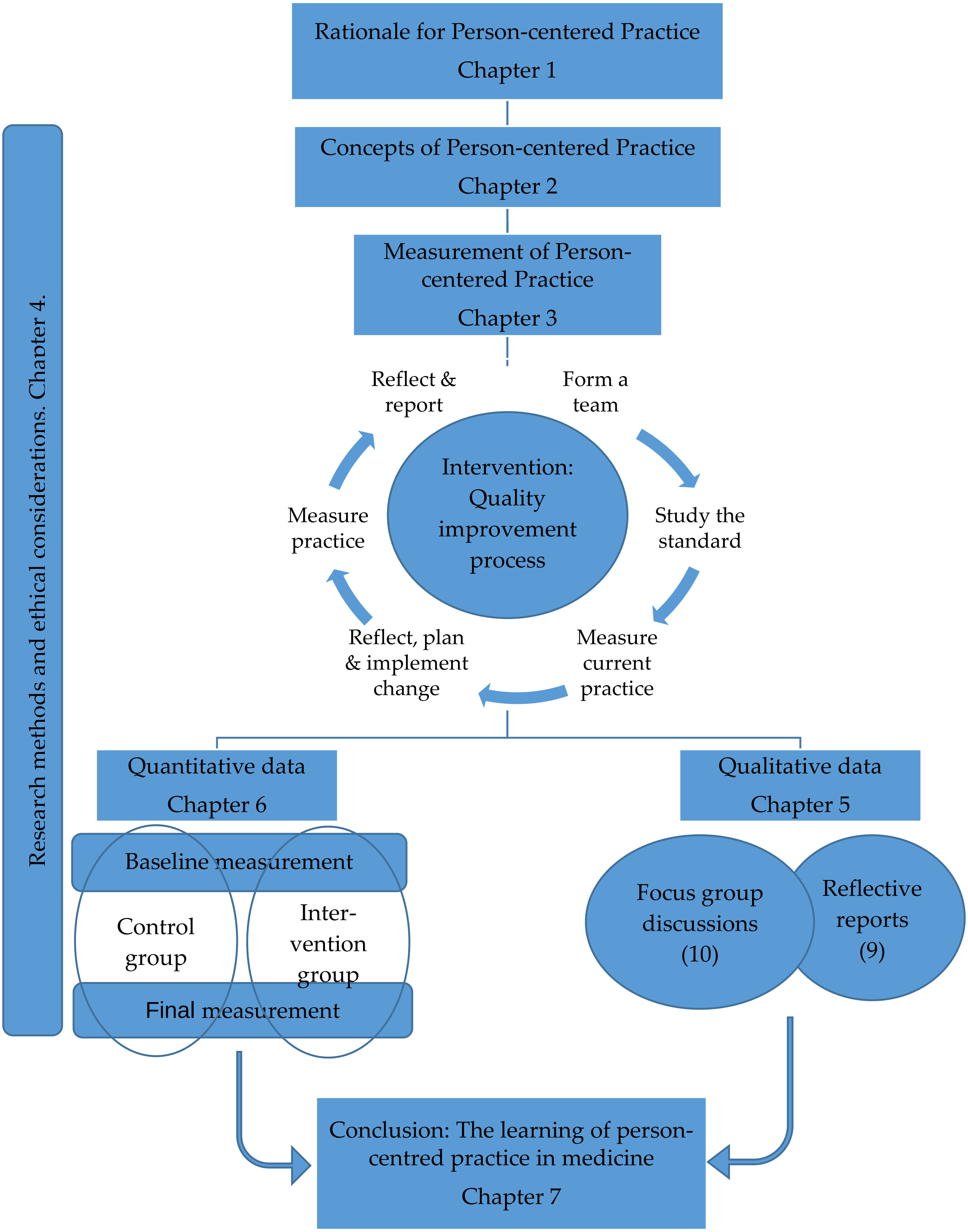

Figure 1.3: Visual outline of this thesis

1.5 The capability approach to learning

Amartya Sen promoted the capability approach to understand and facilitate human development. He described quality of life in terms of opportunities to convert resources into ways of living or valued functionings according to the choice of the person.[18] Sandars and Hart [19] described the process and core concepts of the capability approach in terms of how available resources support the development of aspirations from which a capability set or potential functionings develop, some of which will become actual functionings. They describe how "conversion factors" can facilitate or inhibit this process. Individual choice interacts with the conversion factors to produce a life of valued actual functionings.

In their application of capability to medical education they highlight how future practitioners should be patient-centred, team-based, inter-professional [20] fully functioning persons [21] who are self-aware and understand their own values and beliefs so that they make decisions congruent with their values.[22] The autonomy of the individual is prominent in choosing which capabilities to pursue.

The approach by Marcus and colleagues at the University of Pretoria differ somewhat from the above. They focus on how the individual learner develops new capabilities in response to disruptions. In this approach the person develop new capabilities in four dimensions: physical and mental abilities, knowledge and beliefs, sense of self and identity, and social relationships. The process is scaffolded by facilitators and mentors. Each learner reviews disruptions in terms of the four dimensions and develop meta-cognitive learning responses to react to the disruption. In the process students become more self-directed in their learning.

The latter approach is to some extent, the application of how to learn the capabilities proposed in the former approach. These two understandings of the capability approach to learning concur on the importance of transformative learning (dimension of the sense of self and identity), developing team-based, patient-centred inter-professional practitioners (developing the dimension of social relationships), the usefulness of the "disorientating dilemma" (disturbances), the critical importance of reflection to develop new understandings to be used in future encounters, a facilitative approach which respects the autonomy of the individual learner and capability as the basis for lifelong learning. In terms of terminology the "conversion factors" and potential functionings described by Sandars and Hart may be similar to the "capacity to learn" that Marcus refer to. Both approaches refer to capability as doing and being or as a state of doing and a way of being. "Doings" can be likened to acting within the dimensions of physical and mental abilities as well as knowledge and beliefs. "Beings" can be compared to sense of self and identity, and social relationships.

The two approaches differ in their emphasis on learner autonomy. Sandars and Hart describe how students can, through facilitated reflection, determine their own list of aspirations (functionings they would like to achieve). Marcus refers to options to be reviewed in response to disruptions, suggesting that learner autonomy follows in response to the disruptions or triggers. However, the strength of the approach by Marcus is the centrality of the person of the learner in all his/her dimensions. This whole person approach makes it very suitable for the understanding and facilitation of learning to grow whole person skills (such as PcP) in healthcare practitioners. For this reason this study mostly used the capability approach to learning as described by Marcus to understand the data analysed and to guide the development of future learning strategies.

1.6 Summary

This chapter described how the researcher was motivated to embark on this study. This was followed with a short description of the clinical associate profession and the training of clinical associate students. It explained the purpose of the research and provided a visual outline indicating how the different chapters relate to each other.

Lastly the capability approach to learning as used in this thesis was described and compared to other authors' understanding and descriptions of it.

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Chapter 2

Patient- or person-centred practice in medicine? – A review of concepts

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Abstract

Background: Person-centred practice in medicine may provide solutions to several pressing problems in health care, including the cost of services, poor outcomes in chronic care and the rise in litigation. It is also an ethical imperative in itself. However, patient- or person-centred care is not well researched partly because of a lack of conceptual and definitional clarity.

Aim: The aim of this review was to analyse essential elements, ethical principles, logic and the practical application of person-centred practice described in clinician- and researcher-defined conceptual frameworks, terms and practices.

Methods: A search of review articles on patient- and person-centred care or medicine was conducted using Medline and Google Scholar. Secondary searches were conducted using references and citations from selected articles.

Results: Five conceptual frameworks were identified in terms of their practical application of the ethical principles of beneficence, autonomy and justice. They converge around a few central ideas such as having a holistic perspective of patients and their illness experience, a therapeutic alliance between the patient and clinician as well as respectful, enabling collaboration with the patient.

Conclusions: Terminological differences appear to owe more to disciplinary origins than to substantive meaning. Beneficence needs to be balanced by and practiced through respect for patient autonomy. Core ideas in existing conceptual frameworks

of patient or person centeredness can guide teaching and research. Considering the value and ethical imperative of person-centred practice, training institutions should train health care students and practitioners in its precepts.

2.1 Introduction

The concept of patient or person centeredness has gained prominence internationally and received official support in the health care systems of several countries including the USA, UK, Germany and Australia.[1]

The concept of patient-centred care (PCC) developed mostly in the discipline of family medicine, whereas the concept of person-centred medicine was defined and mostly developed in psychiatry. The difference in emphasis suggested by these terms can be attributed to their origins. In the practice of the former, the idea of PCC is used to shift the focus of the consultation away from the clinician and associated medical practices to the patient and their expectations, fears, feelings, etc.[2] In the person-centred medicine movement, advocates focus on both the person of the patient and the person of the clinician[3,4] as well as their contexts – the society they live in and the health system they function in.

Person-centred practice (PcP) has a number of actual or potential benefits. Even though evidence is still regarded as insufficient by some, it can improve patient health outcomes.[5,6,7,8,9] It may also reduce the workload (and cost) of health care services[10,11] by avoiding services and procedures that patients do not want and/or need.[11,12] Person-centred care increases patient satisfaction,[13] reduces complaints against health care professionals and leads to fewer malpractice lawsuits.[14,15] PcP is also important for the development of patient capability.[16] Entwistle and Watt [16] contend that person-centred care should be pursued for its own intrinsic value as it is an ethical requirement that clinicians treat patients as persons with significance. They argue that

"…the ways others treat us enable us (or not) to exhibit the characteristics – as well as to experience the social status – of persons as ethically significant beings."[16]

While there is no universally agreed-upon definition of person-centred practice,[1] an abundance of terms is used in the medical and health care literature to describe its intent, including person-centred medicine, person-centred care, patient centeredness, individualised medicine, personalised medicine, family-centred medicine, patient-centric medicine, patient-centric care, etc.[1,13,17] The multiplicity of terms and the absence of a singular definition reflect the complexity as well as the state of flux of person centeredness as a practice. The profusion of descriptions can also be attributed to the roots and specific applications of person-centred practice in a variety of disciplines including family medicine, psychiatry, nursing, dentistry, physiotherapy and others.

This chapter is an analytic review of clinician-defined conceptual frameworks as well as researcher-defined terms and practices of person-centred practitioners. Frameworks, terms and practices were identified and then assessed in terms of their underlying ethical principles, logical construction and practical application in order to ascertain similarities and differences.

In terms of ethical values, the review focuses primarily on beneficence and autonomy, with some references to respect, non-maleficence and justice. These values are described by the Health Professions Council of South Africa (HPCSA) as follows.[18]

2.1.1 Respect for persons

Health care practitioners should respect patients as persons, and acknowledge their intrinsic worth, dignity, and sense of value.

2.1.2 Best interests or well-being

Non-maleficence: Health care practitioners should not harm or act against the best interests of patients, even when the interests of the latter conflict with their own self-interest.

Beneficence: Health care practitioners should act in the best interests of patients even when the interests of the latter conflict with their own personal self-interest.

2.1.3 Autonomy

Health care practitioners should honour the right of patients to self-determination or to make their own informed choices, and to live their lives by their own beliefs, values and preferences.

2.1.4 Justice

Health care practitioners should treat all individuals and groups in an impartial, fair and just manner.

2.2 Methods

The literature search strategies described below are also discussed in more detail under Literature review in Chapter 4.

Searches were conducted on the databases of Ovid Medline®, Pubmed and Google Scholar for English language articles published between 2000 and 2015. The search terms were “patient centeredness”, “patient centred”, “person centeredness”, “person centred”, “model”, “concept”, “definition” and “framework”.

Searches in the three databases rendered approximately 4500 articles of possible relevance to the understanding of person- or patient-centred practice with sufficient variety in terms of sources and content. To build a clear understanding of the concept and for the sake of feasibility, the search was further refined to include review articles that described a framework, model or conceptual definition of person or patient centeredness. It yielded approximately 900 articles.

Through a review of titles, articles with a disease or age-specific focus (e.g. stroke or the elderly) were excluded. Similarly, articles describing person or patient centeredness in terms of a specific service such rehabilitation or nursing homes were excluded. Secondary searches were then conducted in the references and citations of the most relevant articles. The criteria for inclusion were the potential for application in medical practice, ethical implications and logical clarity. Through these processes the eight articles discussed below were selected.

2.3 Review findings

Six of the articles describe five frameworks for person- or patient-centred medicine in generalist primary care. In addition, two articles reviewing the dimensions, themes and behaviours of PcP are discussed. These eight articles come from a range of disciplines in health care (family medicine,[19,20,21] psychiatry,[3] medical psychology[1] and nursing[13]) and from a health policy perspective.[12,17,24] The frameworks have been described over a period of two decades (1995[22] to 2014[12,19]).

The following are the five frameworks:

1. Six (later four) interactive components of the patient-centred clinical method described by Stewart (2005)[20] and Stewart et al. (2014).[19]
2. Five key dimensions of patient centeredness described by Mead and Bower (2000).[21]
3. Definitions and descriptions by Miles and Mezzich (2011)[3] in their model of person-centred medicine.
4. Four defining attributes of PcP described by Morgan and Yoder (2012).[13]

5. Four principles of person-centred care described by Collins (2014).[12]

The first four frameworks are applicable to the medical consultation where a clinician meets with a patient to find solutions for health-related problems. The fifth framework relates more to the health care system, how it is accessed and how it interfaces with patients. In the analysis that follows, they are discussed and compared in terms of their practical application, logical construction and ethical implications.

2.3.1 The six interactive components of the patient-centred clinical method

The first framework for consideration is the patient-centred clinical method described by Stewart et al. (2014).[19] Stewart (2005)[20] describes patient centeredness as “the middle way” where there is a balance (equally valued) between the individual and the community, science and art, analysis and synthesis, and technology and wisdom. In pursuing this balance, she contends that clinicians will regain their capacity for love and spirituality.[20] This patient-centred or integrated clinical method comprises six interactive components (Figure 2.1).

Stewart, Brown, Weston, McWhinney, McWilliam and Freeman (2014)[22] **“Interactive components”**		**Mead and Bower (2000)[21]** **“Key dimensions”**
1. Exploring health, disease and the illness experience	⟷	1. Patient-as-person
2. Understanding the whole person	⟷	2. Biopsychosocial perspective
3. Finding common ground	⟷	3. Sharing power and responsibility
4. Incorporating prevention and health promotion[a]		4. Therapeutic alliance
5. Enhancing the patient–clinician relationship		5. Doctor-as-person
6. Being realistic[a]		

[a] Two components were later integrated into other aspects of the model.[16]

Figure 2.1: Patient-centred care: A comparison of the Stewart et al.[19] and Mead and Bower’s [21] frameworks based on Hudon et al.[23]

The first three interactive components follow the common sequence of medical consultations from understanding the patient fully through the medical history and examination to finding common ground on the assessment (diagnosis) and management plan. In the third edition of their book, the authors integrated prevention and health promotion into the other interactive components.[19] Being realistic is no longer described as a component but rather as a comment on the implementation of this clinical method.

This clinical method is focussed on fully and deeply understanding the patient for the benefit of the patient. Thus, it is the practical manifestation of the ethical principle of beneficence. In the first component, the focus is on understanding the patient's experience of the illness. The second component builds on this by exploring the person and the context of the patient. This flows well into "finding common ground" (component three): the patient and the clinician coming to one mutually acceptable understanding of both the problem and the plan to address it. On this common ground the patient–clinician relationship can be built (fifth component) through sharing of power and responsibility.

In two of the interactive components, the ethical value of autonomy (of the patient) is inferred. Finding common ground requires the patient to contribute towards a mutual understanding of the problem and of the way forward. In enhancing the patient–clinician relationship, Stewart et al. (2014)[19] refer to the sharing of power. However, it is not clear how much autonomy is offered to the patient to pursue unique, customised options of assessment and management. Incorporation of "prevention and health promotion"[22] (previously component four), for instance, is the clinician's agenda and, thus, is more a manifestation of beneficence and less of autonomy. In some scenarios, attempts to prevent disease without proper patient involvement in decision-making can cause greater harm than good (e.g. screening for prostate cancer). This breaks the principle of non-maleficence. Thus, the lack of emphasis on patient autonomy is a weakness in this framework.

The "being realistic" comment (previously the sixth component)[19,22] is unique to this framework. It will aid the practical implementation of any framework of care. It reminds clinicians that the implementation of the first five, very important, interactive components will often be limited by lack of time and other resources. It can also inspire innovative planning to overcome these limitations. Being realistic requires cooperation and collaboration. Through well-organised teamwork, more time is available for building good patient–clinician relationships. A deep relationship with a patient cannot be established in one consultation; being realistic means ensuring continuity of care to allow for the relationship to grow over time. Being realistic can also refer to the ethical principle of justice. The use of resources to the benefit of one patient should not be to the detriment of other patients.

Incorporating prevention and health promotion implies that the patient is capable of learning and changing behaviour. However, if the clinician lectures the patient and does not give the patient autonomy to choose actions, ask questions and contribute to the plan, learning will be limited and the application of new knowledge unlikely.

2.3.2 The five key dimensions of patient centeredness

The framework of Mead and Bower (2000)[21] analysed next, describes five key dimensions of patient centeredness, four of which correlate with the interactive components described by Stewart et al. (2014)[19] as Figure 2.1 shows.

The first two of the five key dimensions are very similar to the first two components of the framework described by Stewart et al. (2014)[19] They indicate the importance of knowing the patient comprehensively to help the patient comprehensively (beneficence).

The next dimension described by Mead and Bower (2000)[21] is that of sharing power and responsibility. The authors describe how the power of the medical expert conflicts with the patient's autonomy as a lay person. Reduction of this power imbalance, they argue, requires that the doctor respects patient autonomy and confers decision-making power on the patient as a shared responsibility.

When it comes to the power and responsibility dimension, it is important to note the use of the term "sharing" by Mead and Bower (2000)[21] The clinician, as medical expert, still carries responsibility and decision-making power as to abdicate these would be unfair and in conflict with the ethical value of justice.

The dimension of the therapeutic alliance in this framework has a strong focus on beneficence. The clinician and the patient form an alliance against suffering and ill health for the benefit of the patient.

The fifth dimension in the framework by Mead and Bower (2000)[21] reminds the clinician to be self-aware. The clinician's emotional responses and biases influence patient healing and this is not always with positive effect. The clinician's self-awareness should guide the application of their own person to the benefit of the patient.

2.3.3 Descriptions of person-centred medicine

In their framework, Miles and Mezzich (2011)[3] describe person-centred medicine as "the rational integration" of the thinking behind two social movements in medical care, namely, PCC and evidence-based medicine (EBM). In so doing, they seem to reinvent or redefine person-centred medicine as new or "emergent" when actually the concept and terminology of person-centred medicine pre-dates EBM by several decades and, as discussed in this review, there is no clear differentiation between the concepts of person-centred care and PCC.

According to Miles and Mezzich (2011),[3] person-centred medicine is:

> "a move away from impersonal, fragmented and decontextualised systems of healthcare towards personalised, integrated and contextualised models of clinical practice, so that affordable biomedical and technological advance can

> be delivered to patients within a humanistic framework of care which recognises the importance of applying science in a manner which respects the patient as a person and takes full account of his [or her] values, preferences, stories, cultural context, fears, worries and hopes and which thus recognises and responds to his [or her] emotional, spiritual and social necessities in addition to his [or her] physical needs.”[3]

This definition is more like a description with definitional elements that include the system of health care delivery – “models of clinical practice” – and the provision of health care to the individual – “…within a humanistic framework of care.” In it, the ethical principle of beneficence is prominent as the authors seek to incorporate everything that is good and valued in medicine, including the best interest of the patient, into person-centred medicine. It can also be understood as a response to the question of how the health care provider and the health care system can provide the best possible service to each patient.

Also, although Miles and Mezzich (2011)[3] refer to respect for the patient as a person and for the patient’s preferences, they fail to emphasise patient autonomy or describe how the patient should be involved in collaboration and shared decision-making with the health care provider. Their definition is therefore insufficient to guide enquiry or practice in the field.

Like Miles and Mezzich (2011),[3] The Health Foundation[17] in the United Kingdom also refers to a person-centred health *system*. The Health Foundation describes this as a health system that “supports people to make informed decisions about, and to successfully manage, their own health and care, [to be] able to make informed decisions and choose when to invite others to act on their behalf.”[17] Thus, the health care service should “work in partnership to deliver care responsive to people’s individual abilities, preferences, lifestyles and goals.”[17] They then define person-centred care as “a philosophy that sees patients as equal partners in planning, developing and assessing care to make sure it is most appropriate for their needs."[17] This description gives prominence to individual autonomy, but little is said about providing the best quality of care. It lacks a focus on beneficence. The Health Foundation provides evidence of the benefits of self-management support, but without the appropriate checks it may result in patients harming themselves. This is against the ethical principle of non-maleficence. Collaboration with a caring, competent health care professional should reduce this risk.

2.3.4 Four principles and four defining attributes of person-centred practice

In the fourth framework, Collins' (2014)[12] PcP is guided by four principles, namely, personalised, coordinated, enabling and compassionate (Figure 2.2) practice, which supports self-management, shared decision-making and collaborative care and planning.[12,24]

Figure 2.2: Collins' four principles of person-centred practice.[12,24]

Similarly, Morgan and Yoder (2012)[13] describe what they call defining attributes of person-centred care – namely, holistic, individualised, respectful and empowering.

As Figure 2.3 demonstrates, three of their "defining attributes" are interchangeable with three of Collins' (2014)[12] four principles.

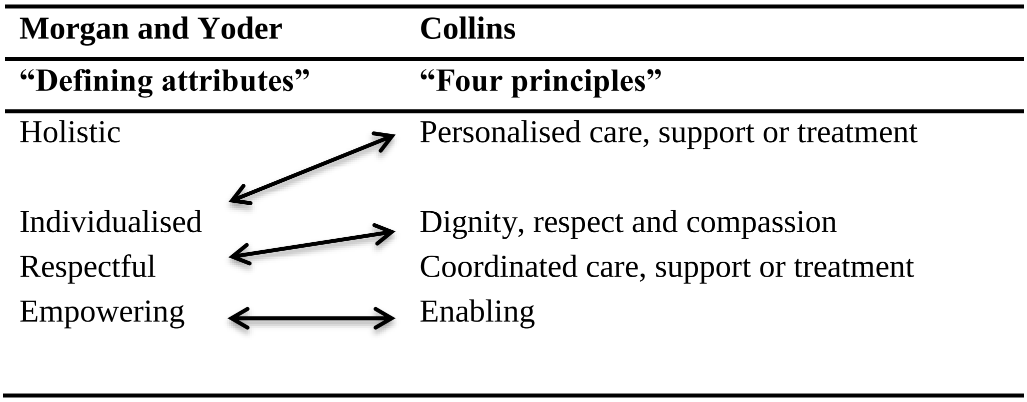

Figure 2.3: Person-centred care: A comparison of Morgan and Yoder's [13] "defining attributes" and Collins' [12,24] "four principles".

Both frameworks can be applied to PcP at an organisational level and to some extent at an interpersonal level in medical consultations. Both contain elements of beneficence. In the framework of Morgan and Yoder,[13] beneficence is articulated as holistic, individualised, respectful care, while in Collins' [12] framework it is expressed as personalised care with dignity, respect and compassion. And, unlike the definition by Miles and Mezzich,[3] both emphasise patient autonomy, describing person-centred care as empowering and enabling.

2.4 Discussion

The terms "person centeredness" and "patient centeredness" are often used interchangeably in the medical literature.[26] Although the frameworks were developed in different disciplines, many of their concepts overlap or are similar. In terms of researcher understanding and interpretation of person-centred care, a review of the empirical literature by De Silva (2014)[17] generated a list of 19 subcomponent themes and 19 behaviours associated with person-centred care (Table 2.1).

Table 2.1: Subcomponent themes and behaviours of person-centred care–related research. Adapted from De Silva (2014).[17]

Subcomponent themes	Behaviours
1. Activation	1. Advocating
2. Choice	2. Assessing needs[a]
3. Compassion	3. Assessing family needs[a]
4. Continuity	4. Communicating
5. Control	5. Coordinated care
6. Dignity	6. Enablement[b]
7. Empathy[a]	7. Engagement[b]
8. Empowerment	8. Goal planning[b]
9. Health literacy	9. Individual budgets
10. Holism	10. Individual care plans
11. Independence	11. Information provision
12. Individuality	12. Listening[a]
13. Integration	13. Participation
14. Involvement[b]	14. Physical environment
15. Partnership[b]	15. Recognising values
16. Privacy[a]	16. Self-care support[b]
17. Respect	17. Shared decision-making[b]
18. Rights	18. Support[b]
19. Trust	19. Transitions

[a] Specific to facilitation.
[b] Specific to collaboration.

In a systematic review of PCC, Scholl et al. (2014)[1] integrated more than 400 definitions into one model. They defined 15 dimensions of PCC and categorised them into four principles, five enablers and six activities (Table 2.2).

Table 2.2: Dimensions of patient-centred care by Scholl et al. (2014). [1]

Principles	Enablers	Activities
1. Essential characteristics of the clinician	1. Clinician–patient communication	1. Patient information
2. Clinician–patient relationship	2. Integration of medical and non-medical care	2. Patient involvement in care
3. Patient as a unique person	3. Teamwork and teambuilding	3. Involvement of family and friends
4. Biopsychosocial perspective	4. Access to care	4. Patient empowerment
	5. Coordination and continuity of care	5. Physical support
		6. Emotional support

These lists demonstrate the diversity in descriptions of the concept with some authors (like clinicians) placing more emphasis on certain dimensions, subcomponent themes or behaviours than on others, with many authors only making reference to a few. The result is a multiplicity of definitions and the absence of a single definition that researchers investigating person-centred practice agree on.

There appears to be a tension between beneficence and autonomy. While some frameworks have a strong emphasis on beneficence to the detriment of autonomy, others emphasise autonomy without ensuring beneficence.

In terms of ethical principles, Miles and Mezzich (2011)[3] and Stewart et al. (2003)[27] place more emphasis on beneficence and less on patient autonomy. Morgan and Yoder (2012),[13] Collins (2014)[12] and The Health Foundation[17] seem to promote patient autonomy more. The model described by Mead and Bower (2000)[21] seems more balanced.

When beneficence is applied without involvement of the patient, it can restrict patient autonomy. However, respect for patient autonomy can also be a catalyst for the activation of the beneficence intended by the clinician, because a patient who is involved in customising a decision is more likely to adhere to the beneficial treatments jointly decided upon in a therapeutic alliance.

In patient-centred medicine, a more symmetrical power relationship between the patient and the clinician may prevent patients being submitted to unnecessary or even harmful treatment by clinicians who may stand to gain financially or otherwise from such treatment. Thus, when the clinician lacks beneficence, patient centeredness to support autonomy can prevent maleficence. Paradoxically, this apparent benefit is absent in the literature on person centeredness. Perhaps the notion of a clinician who pursues own self-interest above the patient's best interest is the elephant in the room that nobody dares to name.

Close collaboration in the therapeutic alliance or the patient–clinician relationship enables strong effective therapeutic interventions and it has therapeutic value in itself. Positive expectations in this alliance lead to positive outcomes.[25] As Rogers (1967)[28] described, the unconditional positive regard, congruence and empathy within the alliance effect improvement in a patient's condition. Balint (1964)[29] described the doctor as the medication: "the drug, doctor".

This alliance can be skewed if one of the parties invests more into it and the other lacks commitment and investment or if one party yields significantly more power than the other. Sharing of power is essential to prevent abuse of any of the parties in the alliance. An example is where the patient may manipulate a clinician to prescribe medication such as habit forming medication or antibiotics to the detriment of the patient. The patient uses the emotional investment in the alliance to convince the clinician to act against clinical knowledge. Alternatively, there is the example of a surgeon convincing a patient within their alliance to have a back operation that is without significant health benefit but has financial gain for the medical industry. These examples are in conflict with the ethical value of non-maleficence.

Entwistle and Watt [16] reasoned that models of person-centred care should be based on capability rather than on patient autonomy. In the conceptual frameworks analysed, capability is referred to by Collins,[12] Morgan and Yoder [13] and The Health Foundation[17] in the terms empowerment and enabling. Capability seems to be absent in the other frameworks.

Where a clinician focuses only on respecting the patient's autonomy, the clinician may provide all the information regarding the patient's disease and treatment options and leave the patient to decide without helping the patient or building a relationship with the patient. For some patients this may be scary and unhelpful.[16] However, in a capability approach to PCC, the clinician will work with the patient to increase their ability to confidently make health care decisions. In response, Frank [30] also contends that respect for patient autonomy includes respecting a patient's right to choose not to make a decision and/or to allow or not allow a clinician or someone else to decide for them. This shows the value of both the autonomy and capability approaches in implementing PCC.

The term "patient centred" is often used to refer to the clinical consultation and the direct relationship between the patient and the health care provider. As we have seen, it has also been used to refer to a health care system or even health care policy. In terms of the patient–health care provider interaction, the notion of "patient" indicates that the parties are meeting with a specific purpose, namely, the health of the patient, and in this interaction they are neither equals nor do they come with equal expectations.

By replacing the notion of "patient" with that of "person", it reminds medicine of its epicentre: the person of the patient as well as the people who are significant to that person, such as family, caregivers and friends.[3] The term "person" is also suggestive of a sense of equality with the health care provider.[16]

Miles and Mezzich (2011)[3] contend that the conceptual difference lies in where the obligation to care is placed. Person-centred care is not simply about providing care to patients on their own terms. Rather, care is the result of shared decision-making between two people, the person of the patient and the person of the clinician "focussed on the patient's best interests, in a caring atmosphere, within a relationship of engagement, responsibility and trust."[3]

In practice, however, all these meanings are also found in patient-centred frameworks, conceptually and in method.[21,31] As Figure 2.1 shows, Stewart et al. (2014)[19] include prevention and health promotion (typically the doctor's initiative) and Mead and Bower (2000)[21] include the dimension of "doctor-as-person"[21] in PCC. Thus, seeing "the patient as person" and "the doctor as person" are fundamental tenets of both person-centred medicine and PCC.

Defining PcP remains complex … so many authors, so many definitions. Multiple terms are used in the literature to describe this concept. However, an analysis of descriptions of the elements, dimensions, attributes, components, etc., of person centeredness reveals that they converge around a few core concepts. It can be concluded, therefore, that there is little in conceptual intent that differentiates the person centred and patient centred debate.[32]

Person-centred medicine attempts to achieve the same ideals promoted by PCC and the biopsychosocial approach that Paul Tournier[23,33] (Medicine of the Person) and others advocate. As to whether it is possible to provide whole medicine by whole practitioners for whole people or even to put the person of the patient at the centre of the clinical encounter[34] remains an empirical question as does the ideal of integrating all that is good into general primary health care.

2.5 Conclusions

Medicine is practiced on the basis of ethical values within a contract between society and health care providers. PcP can be viewed as the practical manifestation of these values, focusing particularly on the importance of patient autonomy and the practice of beneficence. One of the core values in the practice of medicine is beneficence – to do good, to do the best for each patient. Beneficence needs to be balanced by and practiced through respect for the patient’s autonomy. To do this requires collaborative practice. The call to collaborative PcP is actually a call to respect the autonomy of each person while also building their capacity for autonomy as a capability.

Notwithstanding the multiplicity of definitions and terms used to describe person- or patient-centred practice, conceptually there is notional convergence around a few core principles and dimensions of practice. These include a holistic perspective of patients and their illness experience, a therapeutic alliance between the patient and clinician as well as respectful, enabling collaboration with the patient. Executed as well-intended, skilful collaboration, such practice can uphold and balance the ethical principles of autonomy and beneficence in the medical consultation. Collaboration is the catalyst that ensures that the interaction between patient autonomy and clinician beneficence promotes patient’ health and is not reduced to ineffective or, worse still, toxic maleficence.

Considering growing evidence of the value of person-centred practice as well as its ethical imperative, training institutions have to ensure that health care students and practitioners are schooled in its precepts. There is therefore a need to identify and evaluate training interventions of person-centred practice, or at least some of the key dimensions described in this review, to both substantiate and improve student and health care practitioner learning of PcP.

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Chapter 3

How to measure person-centred practice – an analysis of reviews of the literature

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Abstract

Background: Facilitation and collaboration differentiates person-centred practice (PcP) from biomedical practice. In PcP a person-centred consultation requires clinicians to juggle three processes - facilitation, clinical reasoning and collaboration. How best to measure PcP in these processes remains a challenge.

Aim: To assess the measurement of facilitation and collaboration in selected reviews of PcP instruments.

Methods: Ovid Medline® and Google Scholar was searched for review articles evaluating measurement instruments of patient- or person-centeredness in the medical consultation.

Results: Six of the nine review articles were selected for analysis. They considered the psychometric properties and rigour of evaluation of reviewed instruments. Mostly they did not find instruments with good evidence of reliability and validity. Evaluations in South Africa rendered poor psychometric properties. Tools were often not transferable to other socio-cultural-linguistic contexts both with and without adaptation.

Conclusion: The multiplicity of measurement tools is a product of the many dimensions of person-centeredness which can be approached from many perspectives and in many service scenarios in- and outside the medical consultation. Extensive

research into the myriad instruments found no single valid and reliable measurement tool that can be recommended for general use. The best hope for developing one is to focus on a specific scenario, conduct a systematic literature review, combine the best items from existing tools, involve multiple disciplines and test the tool in real life situations.

3.1 Introduction

The applicability, implementation and measurement of person-centred practice (PcP) needs to be carefully considered as part of the drive towards universal health coverage as it brings a number of benefits, particularly improved patient health outcomes[1-4] as well as a reduction in healthcare provider workload and healthcare services, as the summary of benefits (Table 3.1) shows. In 1997 the South African government adopted the eight Batho Pele (People First) principles (Appendix C) to guide the transformation of public service delivery costs.[5,6] To ensure that these benefits are realised through training, there is a need to accurately measure person-centred practice and that such measurement is based on a well-understood conceptual framework.

Table 3.1: Benefits of person-centred practice.

For the patient	For the healthcare system	For the clinician[7]
Higher patient satisfaction[7-9]	Better adherence to treatment, recommendations and follow up visits[1,7,10,11]	More satisfaction
Improved patient health [4,5,7,8,10]	Increased efficiency of care[5]	Better use of time
Improved quality of care[8]	Less hospitalisations[10]	Fewer complaints from patients
More use of preventative care[10]	Shorter hospital stays[4]	
Better functional performance[4]		
Increased patient engagement[9]		

Person-centeredness and patient-centeredness are used interchangeably here[12,13] due both to the absence of a universally agreed definition as well as to conceptual similarities described previously.[14]

‘The clinician as juggler’ used to teach consultation skills at the University of Pretoria[15] relate well to other frameworks of PcP (Figure 3.1). The metaphor describes three processes which the clinician has to manage concurrently – facilitation (listening), clinical reasoning (thinking) and collaboration (shared decision making). The clinician juggling three balls helps us understand the simultaneity and interplay between the three processes.[15,16]

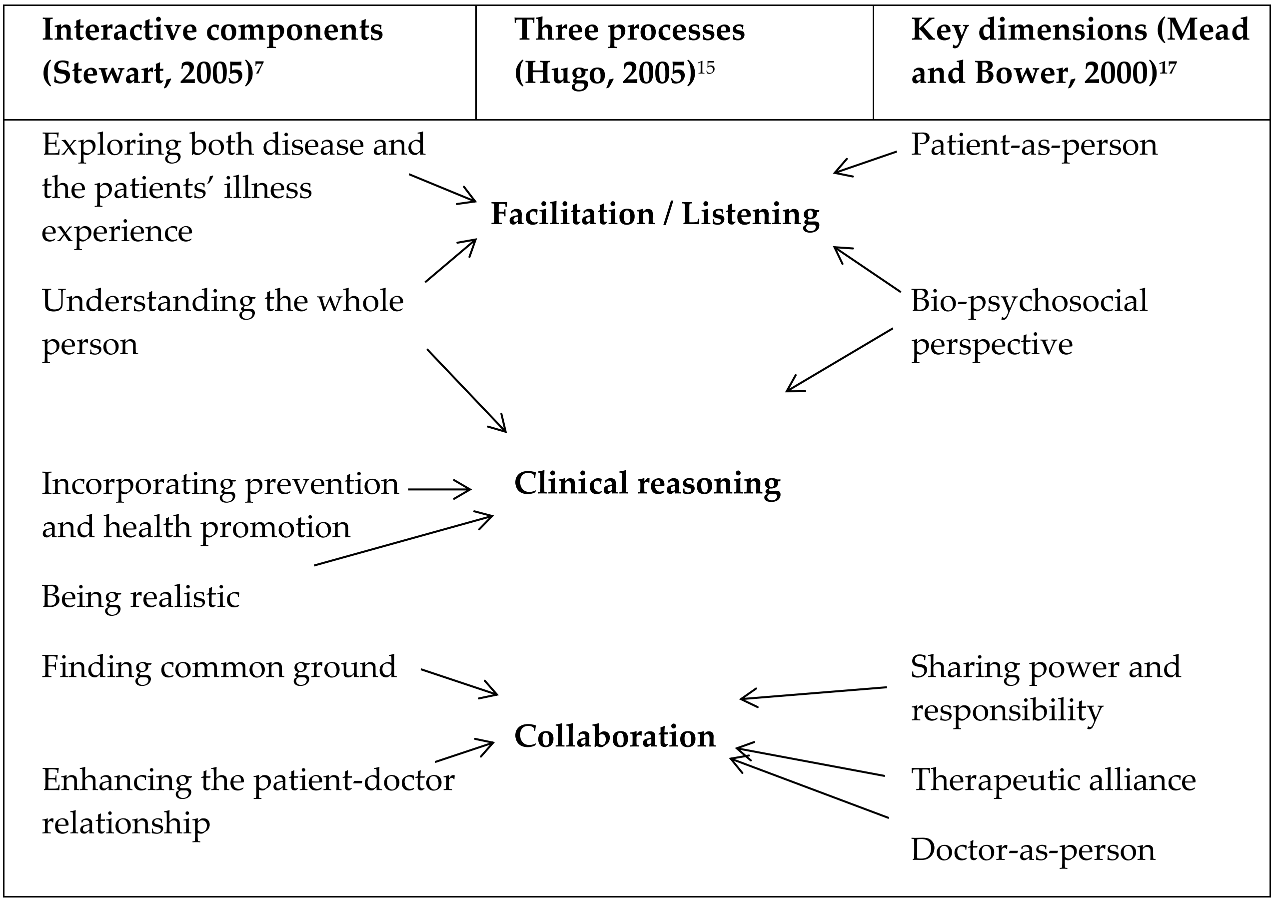

Figure 3.1: Patient-centred care: Interactive components and key dimensions as related to the three processes of the consultation.

The clinician must be constantly aware of where each process is, its trajectory and how next to interact with it. The position and trajectory of each process also informs the clinician as to what to do with the others.[15,16] In this way he or she brings together clinical expertise and experience with patients' ideas (Figure 3.2).[18]

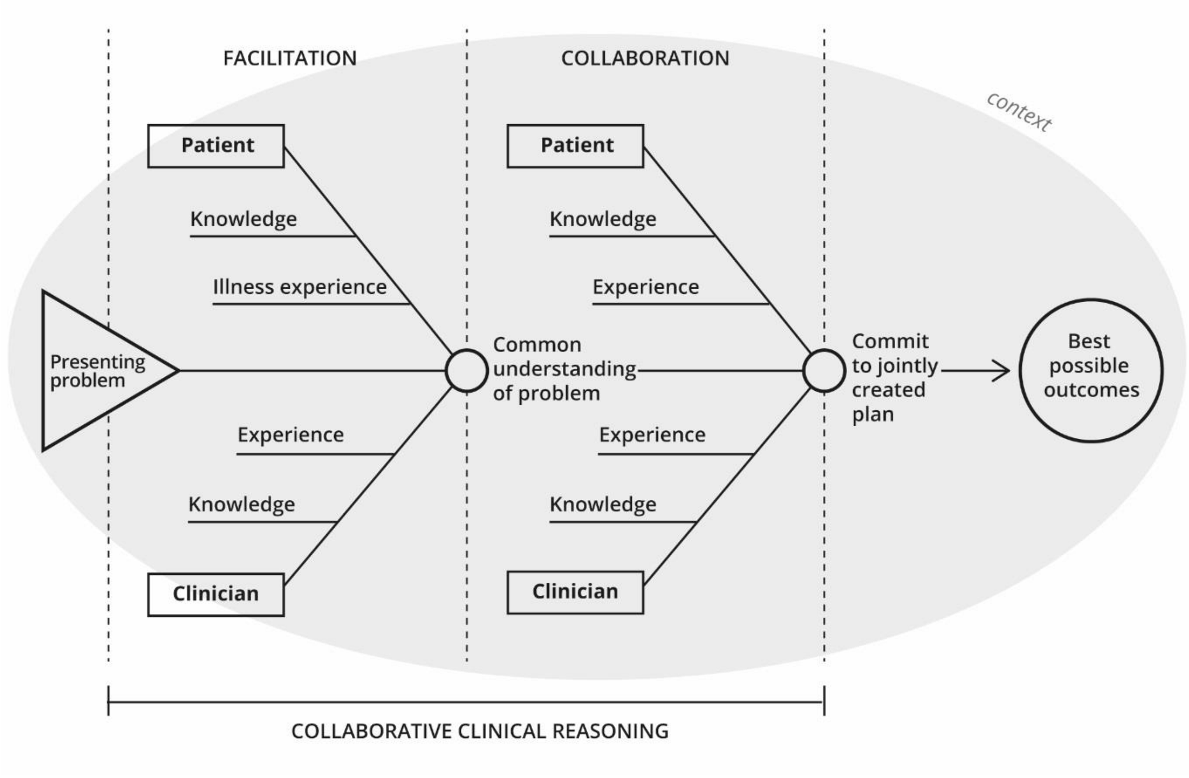

Figure 3.2: Facilitation, clinical reasoning and collaboration in the consultation.

As illustrated in Figure 3.1 concepts such as 'Patient-as-person',[17] 'understanding the patient's illness experience' and 'understanding the whole person',[7] manifest themselves in the process of facilitation. Facilitation (caring) is a prerequisite for collaboration. Measuring collaboration may, therefore, indirectly also measure facilitation.

The process of collaboration in the consultation is related to the concepts of 'sharing power and responsibility', 'therapeutic alliance', [17] 'finding common ground' and to some extent to 'building the doctor-patient relationship'[7] (Figure 3.1). Collaboration can be measured by the degree to which the clinician explains the risks and side-effects of management options, explores the patient's questions and expectations and plans with the patient so that he or she understands and is willing and able to follow it. Because competency in clinical reasoning is the foundation of collaboration with a patient, collaboration can serve as an indirect measure of clinical reasoning. Collaboration is thus an outcome of person-centred practice.[19]

The discovery of the patient's perspective and shared control of the consultation are in fact the two features that distinguish a person-centred from a traditional biomedical consultation.[20] Research suggests that it is patients' perceptions of PcP that correlate best with improved health outcomes associated with PcP.[3,5,10,21] This is because an adequate bio-psychosocial understanding enables the clinician and the patient to consider relevant and possible management options within the patient's specific context and preference, thereby saving valuable time in the consultation, ensuring patient relevant solutions and better contributing to health and treatment outcomes.

Measuring person-centeredness is difficult,[22,23] evidenced by the sheer volume of measurement tools developed, published and evaluated in various contexts. Many of these measure subcomponents of person-centred care, while several attempt to measure the concept as a whole. Some are specifically designed to evaluate a single visit to a healthcare practitioner while others try measure person-centeredness over a period of time.[23]

Whilst numerous reviews of instruments have been done, the aim of this article is to assess the measurement of facilitation and collaboration in selected reviews of PcP instruments, as these are elemental components in all frameworks of person-centred consultations.[14]

3.2 Methods

The literature search strategies described below are also discussed in more detail under Literature review in Chapter 4.

Literature searches were conducted for the period 1 January 2000 to 2 May 2019 in Ovid Medline® and Google Scholar. Search terms used included patient-centeredness, patient-centred, person-centeredness, person-centred combined with measurement tools or instruments, evaluate or evaluation and assessment. The search yielded 13 548 articles in Ovid Medline®, 83 of which were English language review articles with structured abstracts applicable to adults. References in, and citations of relevant articles were screened to identify additional review articles. The first author screened review articles by their titles. Inclusion criteria were comparison of instruments that measure person- or patient-centeredness in the medical consultation. Exclusion criteria were being in a language other than English, not being review articles, not comparing measurement instruments, no structured abstract, not referring to adult patients, and an exclusive focus on a specific disease (e.g. epilepsy) or discipline such as gerontology, oncology, palliative care etc.

Eligible review articles were then thematically analysed by the first author to specifically consider the measurement of facilitation and collaboration in the medial consultation as well as the psychometric properties of the instruments reviewed. Measurement items in preferred tools identified in the review articles were classified by the first author as related to collaboration, facilitation or clinical reasoning. For the items from the first tool so analysed two experienced family physicians (the third author and another) reviewed the classification. Differences were discussed until consensus was reached.

3.3 Results

Nine review articles published in the period 2010–2018 were identified (Figure 3.9). One of these was a rapid review, listing and classifying 160 tools to measure person-centred care without evaluating their quality.[24] In the remaining eight articles, 129 measurement tools were reviewed. Two of the tools appeared in three reviews and 11 in two reviews while the remaining 116 were only included once in a review. The analyses by Edvardsson et al.[25] and Wilberforce et al.[26] were subsequently also excluded as they reviewed tools that measure the person-centeredness of the care environment of people with dementia and older people but not of medical consultations.

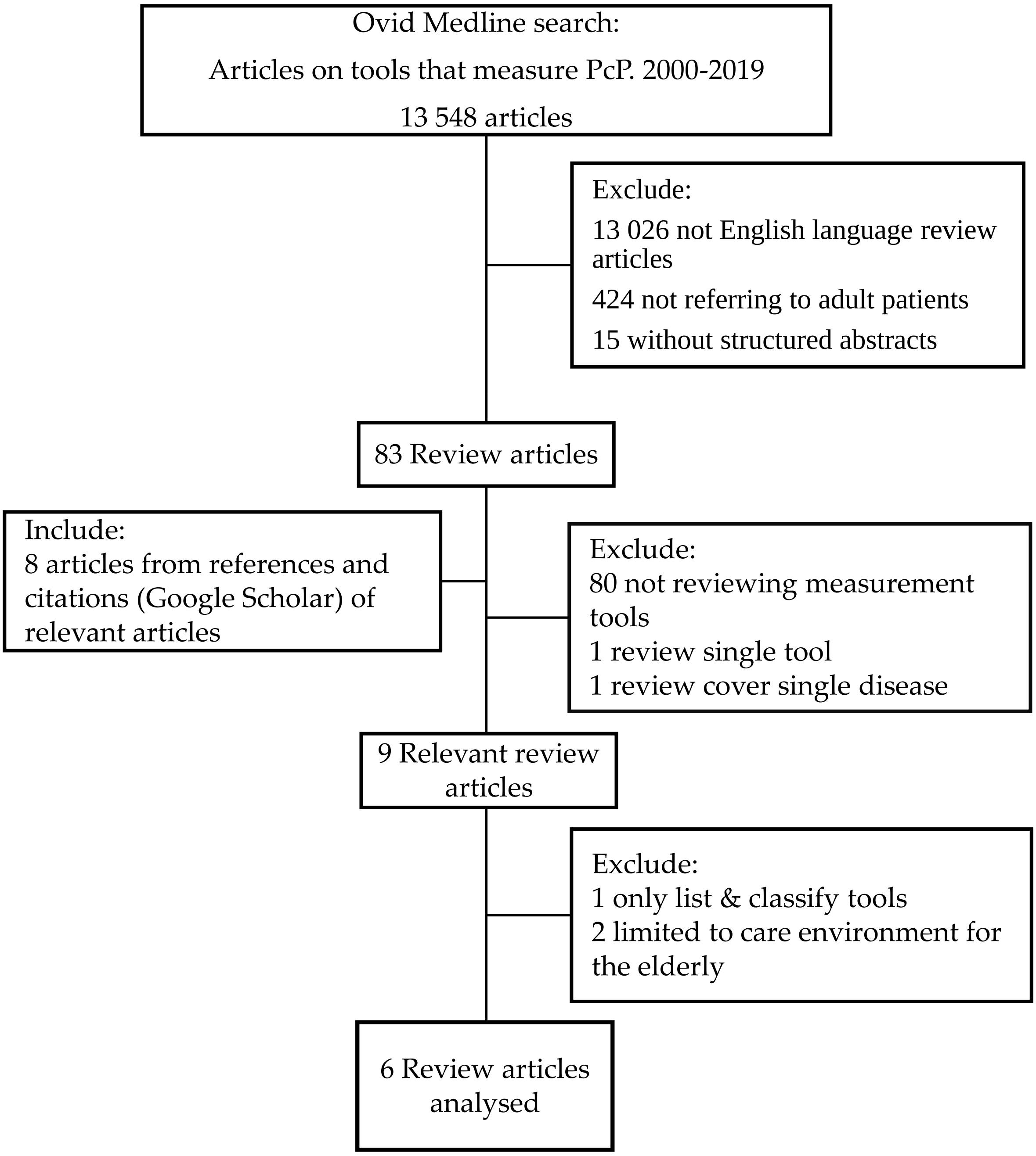

Figure 3.9: Search and selection of articles.

This analysis is based on the remaining six review articles[21,23,27-30] where measurement instruments of person-centred practice in the medical consultation were included. The number of tools reviewed per article varied from 12 to 40. The six reviews are summarised in Table 3.2 and discussed below.

Table 3.2: Summary of six review articles

Author(s)	Focus	No. of tools reviewed	Assessment of methodological quality & psychometric properties	Preferred measurement tools & reasons preferred				Findings	Recommendations
				Tools	Facil#	Coll##	α*		
Hudon et al. (2011)[21]	Self-administered instruments measuring patients' perceptions of patient-centered care	13	STARD	Measure patient centeredness as concept & scored 11/15 on STARD.				The patient needs to perceive that his or her individual needs and circumstances are at the heart of the clinical care he or she receives.	Study the convergent validity of patient-centred care instruments (CCM & PPPC) and sub- scales or items of other instruments.
				CCM	11	8	- †	Higher levels of patient-centred care on CCM & PPPC were associated with better health outcomes in the short term.	
				PPPC-14	6	8	0.71[21]		
Zill et al. (2014)[27]	Physician-Patient Communication	20	COSMIN checklist & Quality criteria of Terwee et al.	≥ 2 good/excellent COSMIN ratings & ≥ 2 positive on Terwee.				Most scores on COSMIN fair to poor.	Further psychometric evaluation of tools with the COSMIN checklist.
				SEGUE	13	13	0.57[31]		
				PBCI	15	2	- †		
				QQPPI	7	6	0.95[36]		
Brouwers et al. (2017)[23]	Instruments for measurement of, and feedback on patient centeredness in	14	COSMIN checklist	PCOF cover all dimensions. PFC excellent validity but reliability not studied. CARE only one to consider flexibility - according to preference of the patient.				The complexity of patient centeredness, may hamper measurement and assessment. Situational flexibility and context sensitivity not considered. Most instruments not thoroughly investigated	Further research and enhancement of validity, reliability, generalisability, responsiveness, interpretability in different contexts, comprehensibility and feasibility.
				PCOF	22	30	0.67[32]		
				PFC	6	7	0.89[37]		
				CARE	7	2	0.93[23]		

Author(s)	Focus	No. of tools reviewed	Assessment of methodological quality & psychometric properties	Preferred measurement tools & reasons preferred				Findings	Recommendations
				Tools	Facil#	Coll##	α*		
Al-Jabr et al. (2018)[29]	Patient feedback questionnaires that assess the development of consultation skills.	12	NIH quality assessment tool	DISQ: Only one valid & reliable on > 2 criteria				Most studies had poor to fair methodological quality. Feasible to use patient feedback, but the impact on consultation skills development not clear.	To use patient feedback to improve consultation skills: Use a valid and reliable questionnaire (e.g. DISQ with at least 25 patients per practitioner) An independent person recruit patients face-to- face Collect patient feedback immediately after the encounter and over more than one day Report feedback results to practitioners comparing with peers Follow with reassessment of practitioners
				DISQ	5	1	0.96[33]		
Gärtner et al. (2018)[28]	SDM measurement instruments	40	COSMIN checklist, Quality criteria of Terwee et al. & Best-evidence synthesis	Had positive evidence of at least one type of reliability and one type of validity				Lack of evidence on measurement qualities. Positive results where content and structural validity were evaluated but negative results where inter-rater reliability and hypothesis testing were evaluated	Define SDM clearly. Determine content validity prior to further validation. Large enough sample sizes. Improve test-re-test and inter-rater reliability. Determine minimal important change values. Evaluate and refine existing instruments. Adhere to the COSMIN guidelines.
				FPI	2	7	0.91[34]		
				SDM-Q-9	0	9	0.94[35]		
Sustersic et al. (2018)[30]	Creating a measurement tool from the literature for	22	None	High internal consistency & good external validity				Developed a measurement tool: specific scenario, good literature review, good theoretical model, combine	Test DPC-13 in other clinical situations and populations.

Author(s)	Focus	No. of tools reviewed	Assessment of methodological quality & psychometric properties	Preferred measurement tools & reasons preferred				Findings	Recommendations
				Tools	Facil[#]	Coll[##]	α*		
	doctor-patient communication in the emergency department.			DPC-13	7	5	0.89[30]	items from existing tools, involve multiple disciplines	

CARE - Consultation and Relational Empathy Measure; **CCM -** Consultation Care Measure; **COSMIN -** COnsensus based Standards for the selection of health status Measurement INstruments; **DISQ -** Doctor Interpersonal Skills Questionnaire; **DPC -** Doctor Patient Communication; **FPI -** Facilitation of Patient Involvement in care; **NIH -** National Institutes of Health; **PBCI -** Patient - centred Behaviour Coding Instrument; **PCOF** - Patient-Centred Observation Form; **PFC -** Patient Feedback Questionnaire on Communication Skills; **PPPC -** Patient Perception of Patient - Centeredness; **QQPPI -** Questionnaire on Quality of Physician - Patient Interaction; **SDM -** Shared decision making; **SEGUE -** Set the stage, Elicit information, Give information, Understand the patient's perspective, and End the encounter; **STARD -** Standards for Reporting of Diagnostic Accuracy.

[#] Number of items in the tool measuring facilitation.

[##] Number of items in the tool measuring collaboration.

* Cronbach's alpha.

† For two tools Cronbach's alpha was reported for subscales only.

Three[23,27,28] of the six reviews used the COnsensus based Standards for the selection of health status Measurement INstruments (COSMIN) checklist[31] to evaluate the methodological quality of each study reviewed, while one[21] used a modified version of the Standards for Reporting of Diagnostic Accuracy (STARD) scale and another[29] used the NIH Quality Assessment Tool.

The standard of assessment in evaluating studies of measurement instruments is clearly higher in the later reviews than in the earlier ones. Not only do authors compare the psychometric properties of the various instruments, but they also consider the methodological rigour of the studies that measured those properties. Gärtner et al.[28] used an adapted scale from the Cochrane back group to synthesize both aspects into one rating (**Error! Reference source not found.**[38,39] This made it possible to rate each measurement property (e.g. internal consistency, reliability, measurement error, content validity, structural validity, etc.) of each measurement instrument.

Table 3.3 Quality Synthesis.

Level	Rating	Description
Strong	+++ (−−−)	Consistent positive (negative) ratings derived from multiple studies of good quality, or in one study of excellent quality
Moderate	++ (−−)	Consistent positive (negative) ratings in multiple studies of fair quality, or in one study of good quality
Limited	+ (−)	Positive (negative) rating in one study of fair quality
Conflicting	+/−	Conflicting results
Unknown	?	Only studies of poor quality

Gärtner et al.[28] ascribe the lack of good evidence on the measurement qualities of instruments both to a failure to study their measurement properties and to the poor methodological quality of validation studies. They argue that this does not mean that existing instruments are necessarily of poor quality, only that their quality is often unknown.[28] Many measurement instruments fail to define the concept that is being measured clearly and this affects the comparability of results.[28,40]

Most tools have been developed in first world countries. Of the few tested in Africa, the Physician-Patient Communication Behaviours Scale (PPCB) was developed by adapting 19 statements from the Matched Pair Instrument (MPI) for local use in Kenya. Patients at anti-retroviral treatment clinics responded to 19 statements on a Likert scale. Thirteen statements were found to be reliable and useful in that setting. Another, the Measure of Processes of Care (MPOC) developed in Canada, was tested in seven countries including South Africa. It measures family centred care provided to children with chronic conditions over the past year by asking parents or caregivers to respond to questions on a Likert scale. After adaptation for resource poor settings in South Africa (MPOC–22 (SA))[41] it was found to be neither reliable nor valid. Of 22 items tested, the eight that reached an acceptable degree of reliability and validity formed the basis for MPOC–8 (SA), which needs to be studied further. The validity and reliability of the Patient-Practitioner Orientation Scale (PPOS) was found to be poor when evaluated with South African medical students.[40]

Both Zill et al.[27] and Brouwers et al.[23] reviewed the Questionnaire on Quality of Physician-Patient Interaction (QQPPI).[36] They concurred that the internal consistency and construct validity methodology was good, while that for reliability was poor. However, there was some divergence in their assessment of the methodology for measuring content validity. Zill et al.[27] rated it as poor and Brouwers et al.[23] as fair.

The Patient Feedback Questionnaire on Communication Skills (PFC)[37] received three positive ratings with excellent methodological scores for validity.[19] Reliability has not been tested. However, a study evaluating the PFC[29] was itself rated on the NIH Quality Assessment tool for Observational Cohort and Cross Sectional Studies, as 'poor' (3/14) with a high risk of bias.

Gärtner et al.[28] found only seven of 40 measurement instruments had moderate to strong evidence of positive performance on at least one aspect of each of validity and reliability. Of these only the Facilitation of Patient Involvement in care (FPI) is in English and only three (non-English) instruments had no negative scores on other measurement properties.

Sustersic et al.'s[30] Doctor Patient Communication (DPC) scale for acute conditions has 13 items with good internal consistency. It is an adaptation of items from 22 measurement tools identified by them in a systematic review and elaborated through a multi-disciplinary informed theoretical model.

Many of the tools use similar items to measure PcP. Broadly they can be grouped into those that relate to facilitation, clinical reasoning and collaboration.

As Table 3.2 shows, the internal consistency of the better performing tools are greater when they focus mostly on either facilitation or collaboration. Thus, the four with more than 75% of their items measuring either facilitation or collaboration reported Cronbach's alpha values above 0.9. Of the six tools with a greater balance of facilitation and collaboration measures, three had Cronbach's alpha values below 0.75. This finding may be an indication that facilitation and collaboration are not directly correlated. In other words, an increase in one may not be accompanied by an increase in the other. Or, equally, that some clinicians may practice one construct more while others practice the other more. Measurement tools that try to measure both may therefore suffer from poor internal consistency.

3.4 Implications and recommendations

In the six reviews of instruments to measure PcP as a whole or its components, only one commits to a single measurement tool (Doctor Interpersonal Skills Questionnaire (DISQ)) as having better evidence of being valid and reliable than others.[29]

On the basis of her rapid review of instruments available to measure PcP de Silva [24] concludes that there is no agreement on a single best measure that covers all aspects of person-centred care. Instead she recommends combining and testing various measurement methods and tools locally to determine their local usefulness.

Reviews call for more studies with adequate methodological rigour to evaluate the psychometric properties of measurement instruments. Three[23,27,28] which used the COSMIN checklist recommend its use whilst one[23] found it to be in need of further development and testing.

Rather than developing new instruments, the reviews recommend that researchers focus on refining existing measurement instruments to improve their validity, reliability, generalisability, responsiveness, comprehensibility and feasibility. In this, attention needs to be paid to aspects of interpretability in different contexts[23,26] by different practitioners.[29] Given the association between better health outcomes and patients' perceptions of patient-centeredness[3,5,10,21] instrument development also requires inputs from patients and their families.[25,26] Also, even with excellent translation methods, measurement instruments need to be adapted for and tested in new socio-cultural environments before they are used.[40,41]

In general, instruments should measure the quality of both facilitation and collaboration in the medical consultation, even where combining the two may reduce internal consistency. Furthermore, there is a need to study the reliability and validity of subscales in the instruments, not only of the overall instrument.

In choosing among the 12 tools (Table 3.2) PcP researchers need to take account of what they seek to measure (facilitation, collaboration or both), who will rate the PcP and the context, language and population, etc. More than 75% of items in the DISQ, Patient-centred Behaviour Coding Instrument (PBCI) and Consultation and Relational Empathy (CARE) measure relates to facilitation while more than 75% of items in the nine item Shared Decision Making tool (SDM–Q–9) and FPI relates to collaboration. Only the Patient-Centred Observation Form (PCOF), SEGUE (Set the stage, Elicit information, Give information, Understand the patient's perspective, and End the encounter) and PBCI are designed to be completed by observers, the rest by the patient. Most tools are only available and validated in English. Some have been translated to other languages but often lost reliability in the process.

Further research into the measurement properties of existing instruments to measure person-centred practice should be guided by the COSMIN checklist. Reviewers of such research should preferably report both the measurement properties and the strength of the evidence for them in a single, well defined scale.

Should new instruments be needed for specific scenarios or socio-cultural-linguistic contexts, the concept to be measured should first be clearly defined before well performing items from existing instruments can be selected with input from patients, families and experts from various disciplines. For developing a valid and reliable measurement tool the methodology of Sustersic et al.[30] can be considered. They focused on a specific scenario, conducted a thorough systematic literature review of existing applicable tools, combined the best items from such tools, involved multiple disciplines to select and adapt items and tested their new tool in real life situations.

3.5 Limitations

Because our initial search strategy were limited to two databases, it is possible that some applicable reviews were not identified for this article. However, screening references in and citations of review articles did identify several appropriate reviews.

The first author classified the various items of the measurement tools as pertaining to clinical reasoning, facilitation or collaboration. Only for one tool (SEGUE) was this classification verified by two other experts.

A limitation identified in the tools reviewed was that the voice of patients themselves are usually not included in the development of PcP measurement tools. It seems logical that the best person to measure person-centeredness of any healthcare service would be the patient – the one for whom the service exists – because the patient is the one experiencing the person-centeredness (or not) of the service and because greater perceptions of person-centeredness have a stronger association with improved patient outcomes.[3,5,10,21] However, account also has to be taken of the fact that patients often rate the service (or actually the providers) highly, in part because they are dependent on the service and may feel vulnerable (fear retribution) and in part because of social desirability - they just want to be nice and avoid making uncomfortable but true assessments. This limitation notwithstanding, the fact that patients are rarely involved in the development of measurement instruments is a serious ommission.[26]

3.6 Conclusions

The multiplicity of measurement tools is a product of the many dimensions of person-centeredness which can be measured from many perspectives (patients, family, clinicians, and observers) and in many service scenarios in- and outside the medical consultation. In addition, tools are often not transferable to other socio-cultural-linguistic contexts both with and without adaptation.

In spite of extensive research there is no single valid and reliable measurement tool that can be recommended for general use. Instruments focussed on patients' perceptions of PcP may be more useful in outcomes research[3,5,10,21] whereas instruments completed by peers or facilitators of learning may be more useful in teaching.[42]

Many tools are developed – often by the same authors – but few are studied extensively in terms of their psychometric properties and usefulness for research on, and teaching of person-centeredness. Often a tool is developed, evaluated and then abandoned. This leaves us without common measurement tools for which we have good evidence - repeated in several studies - of all their properties. Some are valid, others are reliable, while others are neither. Many are untested.

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Chapter 4

Research methods and ethical considerations

In this chapter the methods and ethical considerations of a quality improvement case study on the medical consultation are described. The results of this study (with summaries of the relevant methods) are reported in chapters five (for qualitative data) and six (for quantitative data).

4.1 Study setting

This research was carried out with students in the three year Clinical Associate (ClinA) training programme at the University of Pretoria (UP) where they learn mostly in the workplace. In semester 1 of the first year, students attend lectures for four days per week and spend one day per week in a hospital. In semester 2 they spend three to four days in clinical training and only one day a week in lectures. In the subsequent years, they spend four to five days per week learning through patient care – mostly in hospitals but also in clinics and in community based services. At the time of this study, first years were based at six hospitals in the Gauteng province of South Africa while second and third years were allocated to 19 different Clinical Learning Centres (CLCs) based at hospitals spread over three provinces. Since 2016 students also go to the Limpopo Province.

4.2 Methods

This study was undertaken using a mixed methods approach. A systematic review of the literature was undertaken to clarify concepts and to determine appropriate instruments to use in the enquiry. This work was developed into two review articles (Chapter 2 (Appendix B) & Chapter 3). To test an educational intervention to learn person-centred practice (PcP), a quality improvement (QI) process was designed and implemented as a randomised, single blind, controlled trial. Both quantitative and qualitative methods were used to collect data in this component.

The literature search strategies as well as the design, implementation, data collection, data processing and methods of data analysis for the QI intervention are presented here and are also summarised in the respective articles (Chapters 2, 3, 5 & 6).

4.3 Literature review

Several literature searches were conducted to understand the concept of PcP (Textbox 4.1), its measurement (Textbox 4.2) and learning (Textbox 4.3). In addition two auto-alerts (Table 4.1 and Table 4.2) were set up in Ovid and monitored for relevant articles. The Mendeley (Ltd) Reference Management Software & Researcher Network computer programme was used to manage the research library of relevant literature and citations of references. Mendeley (Ltd) generates suggested articles based on the content of this library and these were often included in the study.

Table 4.1: Ovid auto-alert regarding caring practices by mid-level medical workers.

#	Search History	Results
1	exp Patient Care/	21197
2	exp health knowledge, attitudes, practice/ or exp communication/ or exp self stimulation/ or exp cooperative behavior/ or exp helping behavior/ or exp social facilitation/ or exp drive/ or exp empathy/ or exp emotional intelligence/	12983
3	(mindful* or reflection or reflective or virtue* or responsib*).tw.	10279
4	exp *caring/	318
5	exp Physician Assistants/	102
6	(clinical associat* or mid-level medical or clinical officer*).tw.	83
7	(5 or 6) and (2 or 3)	23
8	limit 7 to (english language and humans)	22
9	(exp *health knowledge, attitudes, practice/ or exp *communication/ or exp *self stimulation/ or exp *cooperative behavior/ or exp *helping behavior/ or exp *social facilitation/ or exp *drive/ or exp *empathy/ or exp *emotional intelligence/ or 3) and (5 or 6)	15
10	limit 9 to (english language and humans)	15
11	exp caring/ or exp patient care/ or exp treatment outcome/	47922
12	10 and 11	3
13	10 and 5	11
14	12 or 13	11
15	limit 14 to updaterange="medl(20190529021735-20190606101804]"	5

Table 4.2: Ovid auto-alert regarding mid-level workers and patient-centred care

#	Search History	Results
1	exp physician assistants/	95
2	(clinical associat* or mid-level medical or clinical officer*).tw.	82
3	1 or 2	177
4	exp Patient-Centered Care/	776
5	3 and 4	1
6	limit 5 to (english language and humans)	1
7	limit 6 to updaterange="medl(20180502034249-20180509! 064220]"	1

4.3.1 Literature that describes and defines person-centred practice

The literature searches on this topic are also summarised in Chapter 2 under Methods.

Searches were conducted on the databases of Ovid Medline®, PubMed and Google Scholar for English language articles published between 2000 and 2015. The search terms were "patient centeredness", "patient centred", "person centeredness", "person centred", "model", "concept", "definition" and "framework" (Textbox 4.1).

Searches in the three databases rendered approximately 4500 articles of possible relevance to the understanding of person- or patient-centred practice with sufficient variety in terms of sources and content. To build a clear understanding of the concept and for the sake of feasibility, the search was further refined to include only review articles that described a framework, model or conceptual definition of person or patient centeredness. This yielded approximately 900 articles.

```
Database: Ovid MEDLINE(R) <1946 to May Week 1 2017>
Search Strategy:
------------------------------------------------------------------------------
5     ((patient-centeredness or patient-centred or person-centred or person-centeredness) and (model* or concept* or definition* or framework*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (1905)
6     limit 5 to (english language and "review articles" and humans) (332)
7     limit 6 to yr="2011 - 2015" (159)
8     ((patient-centeredness or patient-centred or person-centred or person-centeredness) and (model* or concept* or definition* or framework*)).ti. or ((patient-centeredness or patient-centred or person-centred or person-centeredness) and (model* or concept* or definition* or framework*)).ab. or ((patient-centeredness or patient-centred or person-centred or person-centeredness) and (model* or concept* or definition* or framework*)).kw. (1584)
9     limit 8 to (english language and "review articles" and humans and yr="2000 - 2015") (245)
```

Textbox 4.1: Ovid MEDLINE search 11 May 2017 for models, concepts, definitions and frameworks of person centred practice.

Through a review of titles, articles with a disease or age-specific focus (e.g. stroke or the elderly) were excluded. Similarly, articles describing person or patient centeredness in terms of a specific service such rehabilitation or nursing homes were excluded. Secondary searches were then conducted in the references and citations of the most relevant articles. The criteria for inclusion were the potential for application in medical practice, ethical implications and logical clarity. Through these processes eight articles were selected and discussed in a published review (Chapter 2: Appendix B).[1]

4.3.2 Literature that describes the measurement of person-centred practice

The search strategies for this topic are also summarised in Chapter 3 under Methods. Figure 3.9 represents the results of the literature search described below.

Literature searches were conducted for the period 1 January 2000 to 2 May 2019 in Ovid Medline® and Google Scholar. Search terms used included patient-centeredness, patient-centred, person-centeredness, person-centred combined with measurement tools or instruments, evaluate or evaluation and assessment. In Ovid Medline® this yielded 13 548 articles of which 83 were English language review articles with structured abstracts applicable to adults (Textbox 4.2).

Database: Ovid MEDLINE(R) <1946 to April Week 4 2019>
Search Strategy:
----
1 ((Evaluat* or Assess* or Measure*) and (patient cent* or person cent* or communication or empathy) and (tools or instruments or measure)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (15281)
2 limit 1 to yr="2000 -Current" (13548)
3 limit 2 to (english language and "review articles" and humans and "reviews (maximizes specificity)") (552)
4 limit 3 to "all adult (19 plus years)" (98)
5 limit 4 to structured abstracts (83)

Textbox 4.2 Ovid MEDLINE search 2 May 2019 for measurement, evaluations and assessment of person centred practice.

References in, and citations of relevant articles were screened to identify additional review articles. Through reading of the titles, articles that compare various instruments that measure person- or patient-centeredness were selected for this review.

Reasons for the exclusion of articles included: focus only on a specific disease or discipline such as oncology, palliative care, diabetes, ophthalmology, dermatology etc. Inclusion criteria were review articles which evaluate or compare tools that measure person-centred care or components thereof as manifested in the medical consultation. Nine review articles published in the period 2010–2018 were identified. One of these was a rapid review, listing and classifying 160 tools to measure person-centred care without evaluating their quality.[2] Two articles [3,4] only reviewed tools that measure the person-centeredness of the care environment of people with dementia and older people but not of medical consultations. The remaining six review articles listed in Table 4.3 included measurement instruments of PcP in the medical consultation. These were analysed and discussed in a review article accepted for publication (Chapter 3).

Table 4.3: Measurement review articles.

Author(s)	Title	Number of measurement tools reviewed
Hudon et al. (2011)[5]	Measuring patients' perceptions of patient-centered care: a systematic review of tools for family medicine.	13
Zill et al. (2014)[6]	Measurement of Physician-Patient Communication—A Systematic Review.	20
Brouwers et al. (2017)[7]	Assessing patient-centred communication in teaching: a systematic review of instruments.	14
Al-Jabr et al. (2018)[8]	Patient feedback questionnaires to enhance consultation skills of healthcare professionals: A systematic review.	12
Gärtner et al. (2018)[9]	The quality of instruments to assess the process of shared decision making: A systematic review.	40
Sustersic et al. (2018)[10]	A scale assessing doctor-patient communication in a context of acute conditions based on a systematic review.	22

4.3.3 Literature that describes the learning of person-centred practice

Literature searches were also conducted to find appropriate literature on the learning of person centred practice (Textbox 4.3). The articles from these searches were used to understand, compare and interpret the qualitative and quantitative data from the current study and to prepare articles for submission (Chapter 5 & 6). These also helped to form the arguments contained in the concluding chapter (Chapter 7).

```
Database: Ovid MEDLINE(R) <1946 to February Week 1 2014>
Search Strategy:
-------------------------------------------------------------------------------
1     (("Clinical Associate*" or "Physician Assistant*" or "Medical Officer*" or "Clinical Officer*" or "Medical Assistant") and (Educat* or teach* or learn* or improv* or increas* or train*) and (patient-cent* or person-cent*)).ab. (16)
2     limit 1 to (english language and humans and yr="2004 -Current") (14)
3     ((Educat* or teach* or learn* or improv* or increas* or train*) and ("Clinical Associate*" or "Physician Assistant*" or "Medical Officer*" or "Clinical Officer*" or "Medical Assistant") and (patient-cent* or person-cent* or empathy or car* or compassion* or humanistic)).ab. (1175)
4     limit 3 to (english language and humans) (1002)
5     limit 4 to yr="2004 -Current" (608)
6     ((patient-cent* or person-cent* or caring or empathy or compassion* or humanistic) and (Educat* or teach* or learn* or improv* or increas* or train*) and ("Clinical Associate*" or "Physician Assistant*" or "Medical Officer*" or "Clinical Officer*" or "Medical Assistant*" or "medical education")).ab. (664)
7     limit 6 to (english language and humans and yr="2004 -Current") (388)
8     ((patient-cent* or person-cent* or empathy or car* or compassion* or humanistic) and (Educat* or teach* or learn* or improv* or increas* or train*)).kw. (291)
9     limit 8 to (english language and humans and yr="2004 -Current") (19)
10     limit 8 to (english language and humans) (86)
```

Textbox 4.3 Literature searches 18 Feb 2014 on the learning of person-centred practice.

4.4 A quality improvement process on the medical consultation

The research methods of this QI process are also summarised under methods in Chapter 5 and Chapter 6.

Although originally conceptualised as a study of PcP by ClinA students in various patient interactions such as medical consultations and clinical procedures, after initial observation of workplace based learning in the training sites it was decided to narrow the study focus to the medical consultation. This decision was informed, in the first instance, by the centrality of the medical consultation in healthcare practice. According to Spence "The essential unit of medical practice is the occasion when, in the intimacy of the consulting room or sick room, a person who is ill, or believes himself to be ill, seeks the advice of a doctor whom he trusts. This is a consultation and all else in the practice of medicine derives from it."[11] The consultation is the key moment in medical practice where person centred practice should be learned and produced. Secondly, person-centred consultation skills are the basis for more generalised person-centred practice in healthcare beyond the consultation. Lastly, studying medical procedures was logistically difficult and conceptually non-specific in respect of the imperative of PcP.

Two key components of the capability approach to learning were central to data collection: the metacognitive process of reflection and feedback.

Hattie and Timperley [12] describe feedback as: "information provided by an agent regarding aspects of one's performance or understanding." Examples of such agents are a peer, self, a teacher or a patient. For feedback to be effective it has to be directed towards the attainment of specific goals and relate to a specific learning context.[12]

Sandars [13] describes reflection as "… a metacognitive process that occurs before, during and after situations with the purpose of developing greater understanding of both the self and the situation so that future encounters with the situation are informed from previous encounters." Feedback can be a source for, or guide to reflection.

Guided reflection is regarded as particularly useful to develop students' ability to build a therapeutic relationship with patients.[13] Paul et al. [14] reported that self-critique (reflection), peer- and instructor feedback on video recorded student-patient interactions facilitated self-awareness which is essential for self-directed learning.

Drawing on best educational practice, reflection and feedback were combined as tools to explore learning PcP. Feedback was collected from peers and patients and reflection was collected using video or audio recordings as well as evaluation instruments.

4.5 Study population

In 2015 the Bachelor of Clinical Medical Practice (BCMP) programme at UP had 137 eligible students, 67 in their second year and 70 in their third year. They were learning in 19 different clinical learning centres (CLCs) based at public hospitals in the Gauteng, Mpumalanga and KwaZulu-Natal provinces. Five of these CLCs had both second and third year students while seven had only second year and seven only third year students.

All second and third year students participated in their respective foundation phase training periods on the medical campus in Pretoria, attending a lecture on consultation skills and small group practical skills laboratory training in patient-centred interviewing in January 2015. Second years also had had a similar foundation phase in preparation for their second semester from 27 July to 7 August.

4.6 Sampling

For the QI process clustered sampling was used to randomly select an intervention group of second and third year students, with the remainder of the students serving as controls.

The 19 CLCs were grouped into three clusters. The CLCs were numbered and random numbers were generated with the Microsoft Excel programme using the RANDBETWEEN command in three separate instances for each cluster of CLCs. If the same CLC was selected more than once the process was repeated until it rendered three unique random numbers for each cluster. Three students at one of the nine CLCs (KwaMhlanga) were moved individually to three other CLCs (two intervention and one control) prior to implementation, as their site was closed soon after the randomisation.

Students at the now eight selected CLCs received the learning intervention while the remainder at the other 10 CLCs served as controls. (Table 4.4)

Table 4.4: Composition of randomly selected intervention and control groups.

Name of CLC	Status	Province	BCMP II	BCMP III	Total
Middelburg	Intervention	MP	8	4	12
Tintswalo	Intervention	MP		7	7
Themba	Intervention	MP		4	4
Ermelo	Intervention	MP	4		4
Bethal	Intervention	MP	4		4
Tshwane District Hospital	Intervention	GP	7	5	12
Tembisa	Intervention	GP	8	3	11
Kalafong	Intervention	GP	1	7	8
KwaMhlanga*	Intervention	MP	0		0
Total intervention group			**32**	**30**	**62**
Osindisweni	Control	KZN		4	4
Nelspruit	Control	MP		10	10
Witbank	Control	MP		6	6
Shongwe	Control	MP		7	7
GJ Crooks	Control	KZN	3		3
Mamelodi	Control	GP	8	10	18
Tonga	Control	MP	5		3
1 Military Hospital	Control	GP	6		6
Barberton	Control	MP	6		7
Piet Retief	Control	MP	7	3	10
Total control group			**35**	**40**	**75**
Percentage in intervention group					**45%**

*Students from one CLC were removed before the start of second semester
MP = Mpumalanga; GP = Gauteng; KZN = KwaZulu-Natal.

4.7 Intervention

The QI process was implemented using the following process. The researcher explained the study to all BCMP II and III students. They were invited to read the participant information leaflet and provide informed consent (Appendix D.1) electronically on the computer based testing system at UP.

Thereafter, students in the intervention CLCs were sent e-mails with reading material and detailed QI process instructions. This was followed up with a training workshop at each of the eight intervention CLCs in the period 11–20 August 2015. Over the 2–3 hour session, the intervention was discussed, explained and demonstrated. The medical consultation was explored and role play was used to demonstrate how to observe a consultation and give appropriate feedback. Questions were clarified and students were encouraged to engage with the QI process. After the site visit workshops, the instructions were adapted (Appendix E) to ensure clarity and re-emailed to all students in the intervention group. These are summarised below (and described in two articles (Chapters 5 & 6):[15,16]

1. Form a team of two to four fellow students in the same year group to work together to improve their consultation skills.
2. Read and reflect on two articles describing the medical consultation
    a. Fehrson and Henbest.[17] In search of excellence. Expanding the patient-centred clinical method: a three-stage assessment.
    b. Hugo and Couper.[18] The consultation: a juggler's art.
3. Study four consultation assessment tools: Kalamazoo Essential Elements Communication Checklist (adapted) - KEECC(A) (Appendix F.1),[19,20,21] Consultation Peer Assessment Tool (as adapted for students at the University of Pretoria) (Appendix F.2), CARE Patient Feedback Measure (Appendix F.3),[22] Patient Enablement Instrument (Appendix F.4).[23,24]

4. Measure their current consultation practice by assessing each other's consultations with the tools provided. Consultations could be video recorded, audio recorded and/or observed in person after appropriate consent by the patient (Appendix D.2). Subsequently they were required to give feedback to each other based on the tools and to reflect on patients' perceptions of their consultations as recorded in the tools. The final measurement was a self-assessment using the same tools.
5. Plan and implement measures to improve their own consultations using the strategies for improvement described in the Leicester Assessment Package (Appendix G). [25]
6. Repeat the measurements of their consultation practice.
7. Reflect on changes in their performance and submit a report on this QI process.

4.8 Data collection

Qualitative data (Figure 4.1) were drawn from the nine written reflection reports from 17 students in four of six CLCs where QI processes were implemented and 10 focus group discussions (FGs) of student experiences of the QI process on the medical consultation conducted between 19 October and 23 November 2015. Each FG involved four to 12 participants, lasted seven to 25 minutes and was conducted in English, audio recorded and transcribed. The shortest FGs were with intervention group students who did not implement the QI and therefore did not have much to discuss. Transcriptions were checked and corrected by the researcher while listening to the recordings. FG participants included students from seven of the eight intervention CLCs. No student participated in more than one. In all FGs, participants were asked "How are you progressing with the quality improvement on the medical consultation?" and four supplementary questions: "How useful did you find the feedback that you were giving to one another?", "how useful did you find the feedback from patients?", "how useful did you find reflecting and thinking about your own consultation?" and "how useful were the evaluation tools or rubrics?"

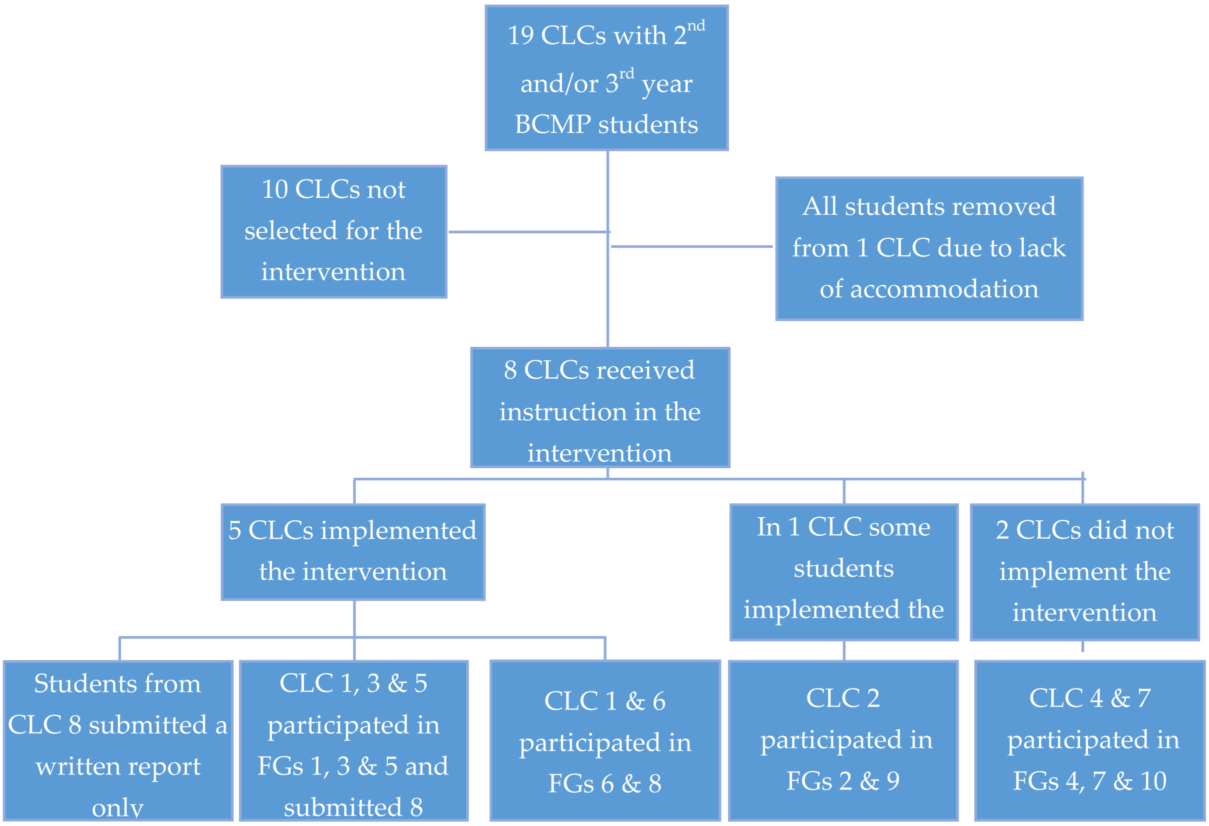

Figure 4.1. Study Sites, Participants and Data sources for the QI Process intervention. FGs = Focus Group Discussions; CLCs = Clinical Learning Centres.

Inclusion criteria for the single blind randomised controlled trial were being in second or third year of the BCMP programme, completion of both a baseline and final consultation assessment and consent to audio/video recording of assessment consultations. Therefore, quantitative data were only drawn from students for whom there were recordings of both their baseline and final OSCE consultations.

Exclusion criteria for the study were being in the first year of the BCMP programme, completion of only one assessment and not consenting to audio/video recording of either of the assessment consultations.

Due to equipment malfunction on the first day of assessment recording, several third year students were excluded. In a few cases OSCE consultations were only partially recorded when the battery of the recording device (video camera or audio recorder) went flat. In a number of cases students withdrew consent as they entered the OSCE station and requested that their consultation should not be recorded.

As shown in Figure 4.2 a total of 64 sets of recordings of baseline and final consultations were available for analysis.

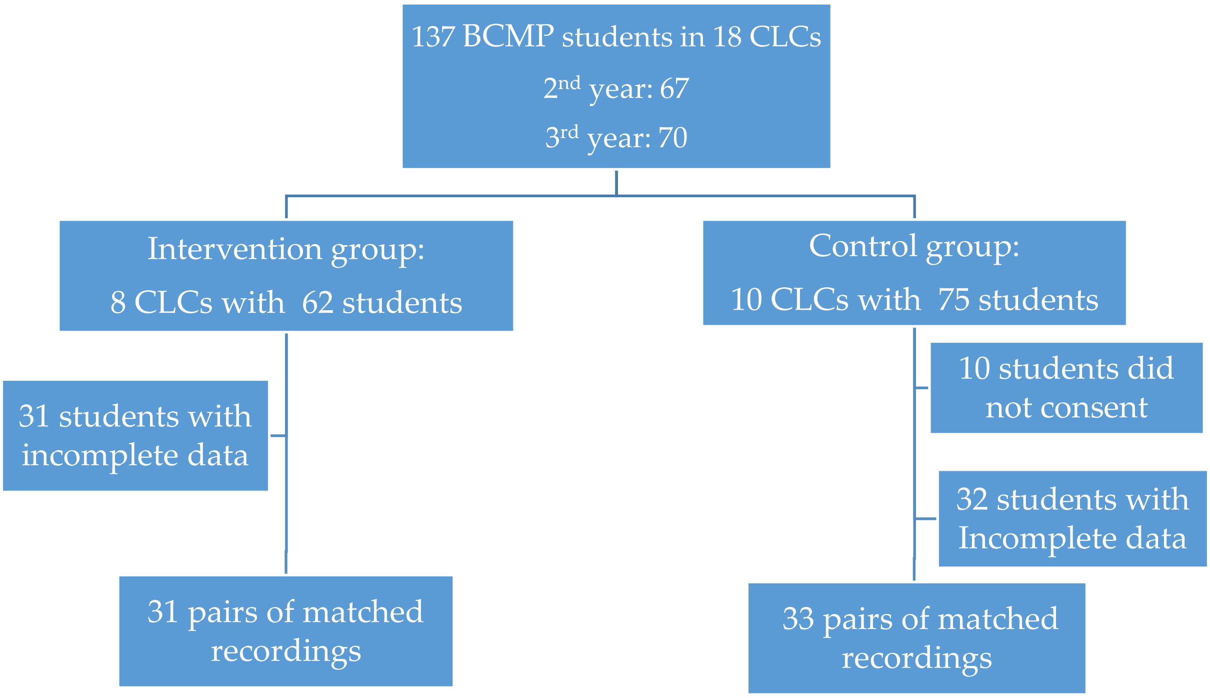

Figure 4.2: Sampling framework for recordings analysed.

Fidelity of implementation of the intervention was reviewed using the conceptual framework proposed by Carroll et al.[26]

4.9 Measurements

Consultation skills were evaluated during the Objective Structured Clinical Examinations (OSCEs) at the end of each semester (June and November 2015). All students (intervention and control groups) were required to conduct a 13 minute consultation with a simulated patient based on one of five standard scenarios. The scenarios were allocated according to the particular clinical rotations the specific student group did in the preceding semester. Students had no access to the scenarios before the examination and no student had the same scenario in the baseline and final measurements. Only one of the five scenarios was used in both the baseline and final evaluations (Table 4.5).

Table 4.5: Dates of scenarios used in OSCE consultation stations.

Scenario (Baseline)		**3rd years**	**2nd years**
	Vaginal discharge (Sexually Transmitted Infection)	2-Jun-15	
	Stomach pain (Peptic ulcer)		10-Jun-15
	Foot pain (Gout)	3-Jun-15	
Scenario (Final)			
	Foot pain (Gout)		19-Nov-15
	Chest pain (Stable angina)	12-Nov-15	
	Headache (Migraine)	11-Nov-15	

The consultations were video and/or audio recorded in line with the consent provided by the student. For the purpose of this study only audio recordings were coded for person-centeredness. Where only a video recording was available, it was converted to audio before scoring. The SEGUE framework (Set the stage, Elicit information, Give information, Understand the patient's perspective, and End the encounter) [27] was selected as the preferred measurement tool based on the systematic review by Zill et al.[6,28] It consists of 32 tasks, each of which can receive a code of "Yes", "No" or "Not applicable"(Appendix F.5).

Each recorded final consultation was matched to the baseline consultation for the same student. All the audio recordings of the consultations were given random numbers before assignment to one of two coders.

Initially a trained social worker and a retired nursing professional were trained to code the recorded consultations. Unmatched recordings were used for the training and to measure intra- and interrater reliability before coding the matched recordings. After three rounds of rating their intra- and interrater reliability measurements (kappa) remained poor. A second retired nursing professional was recruited and trained to help but even then intra- and interrater reliability remained unacceptably low. The kappa measure of agreement per SEGUE task was on average 0.27 (range 0.06 to 1.00, SD = 0.24) when comparing the three coders pairwise for the 30 tasks they coded.

Eventually two qualified clinical associates were recruited. They received four hours of training in the use of the SEGUE measurement tool and achieved better intra- and interrater reliability. These were measured again during coding the actual data by assigning 24 recordings to both coders and by re-allocating at least 22 previously coded recordings under a new random number to the same coder later in the process. The mean of kappa (measure of agreement) calculated for intra-rater reliability across the 30 tasks for coder A was 0.90 (range 0.65 to 1.00, SD = 0.10) and for coder B it was 0.82 (range 0.46 to 1.00, SD = 0.16). The mean Kappa for interrater reliability over 22 tasks was lower at 0.54 (range 0.0 to 1.0, SD = 0.26). (For eight tasks interrater agreement could not be calculated because of a lack of variability in at least one measurement).

Considering the nature of medical consultations, the SEGUE framework contains a mix of tasks measuring various communication abilities. Internal consistency is therefore not regarded as an appropriate criterion for the SEGUE framework.[27] Indeed in this study’s data the Cronbach's Alpha Based on Standardized Items was 0.52 in the baseline assessment and 0.57 in the final assessment. The subscale with the highest Cronbach's Alpha was the “Give Information” subscale (0.53) and the lowest “Elicit Information” (0.25). Generally acceptable values are between 0.70 and 0.95.[29]

Coders were blinded as to the pre- or post-intervention status of each recording and to the group allocation (intervention or control). Each coder was assigned equal numbers of intervention and control group recordings. The baseline and final recordings of each student were coded by the same person.

Task 5 (Maintain patient's privacy) and task 21 (Acknowledge waiting time) were not applicable in the context of the OSCE and therefore not coded.

Statistical analyses were conducted on the scores using the IBM SPSS statistics version 25 software. Effect size was measured with Cohen's d and p-values < 0.05 were regarded as statistically significant. Bonferroni adjustment was applied for multiple comparisons.

4.10 Data processing

Audio recordings of the consultations were retrieved from electronic recorders and cell phones. Video recordings were retrieved from various cameras. Considerable time was spent matching the recordings to student names so that baseline and final consultations could be matched. Video recordings were converted to audio. FG discussions were transcribed and reviewed to ensure accuracy.

4.11 Data analysis

The capability approach to learning developed at the University of Pretoria[30,31] was used as a conceptual framework to analyse and interpret the qualitative data. Through repeated reading of the reports and transcribed texts as well as repeated listening to the audio recordings, insights into learning the consultation skills required for person-centred practice were identified and related to the dimensions of the person and the processes of learning. Quotations were coded and catalogued in themes using the Atlas.ti© (Version 7.5) computer programme. Three focus groups were coded in the verified transcribed texts and seven were coded directly on the audio recording.

Quantitative data were analysed in terms of the 30 tasks coded, the total SEGUE scores and the five SEGUE subscale scores. In order to understand changes in individual student and intervention/control group performance over time for each task the percentages of student scores for each task individually were calculated in four categories:

1. Those who had a "Yes" code in both assessments.
2. Those who improved from a "No" code to a "Yes" code.
3. Those who had a "No" code in both assessments.
4. Those who worsened from a "Yes" code to a "No" code.

This calculation was done for the group as a whole to determine changes in the five month period between the baseline and final consultation assessment. Three comparisons were examined - intervention vs control group, third year vs second year students and male vs female students. Significance of differences were tested using the two sided Fischer's Exact and McNemar tests for paired values.

To summarize, total SEGUE scores were calculated by assigning a value of one to each "yes" and zero to each "no" and summing the scores for each consultation as done in previous research[27] to determine the degree to which person-centred communication tasks were accomplished.

Results were first compared using paired samples t-tests. Multivariate regression was employed to model the final total SEGUE scores against group (intervention group vs control group), year of study (second vs third) and gender (male vs female), taking into account the interactions between gender and year of study and between gender and group, adjusted for the baseline total SEGUE scores.

In an attempt to evaluate the possible effect of variable implementation of the intervention by students in the intervention group, their results were grouped into three – full, partial and non-implementation. QI intervention and submission of written reports were used as an albeit imperfect proxy for full implementation. QI without a report was categorised as partial implementation and those who did not implement the QI were categorised as no intervention.

Totals for each of the five components of the SEGUE framework were calculated and analysed as subscales. The seven tasks under "New or modified treatment/prevention plan" were analysed as part of the "End the encounter" subscale.

4.12 Limitations

In the focus group discussions some students did not participate as much as the others. This could have affected the discussions. However, all participants were encouraged to voice their opinions and in most of the groups opposing views did emerge occasionally. The content of written reports confirmed the data gathered through the focus group discussions.

The number of matched consultations recordings available for coding was significantly less than planned due to students withdrawing consent for recording and in some cases due to equipment failure. The resultant smaller sample had a negative impact on the statistical power of the quantitative data.

To measure the degree of implementation of the intervention, students were requested to complete an electronic survey to measure feedback received and reflection on their medical consultations. This would have served to quantify the implementation of the intervention by the intervention group and as well as to detect if the control group also implemented any aspects of the intervention. The information from the survey would have allowed a more accurate detection of any dose-response effect for the intervention. 67 (49%) students completed the baseline survey on 5 June 2015. However, only 29 (21%) students completed the post intervention survey on 30 Oct and 9 Nov 2015. The low response rate meant that this survey data would not be an accurate reflection of students' actual reflection and feedback practices. The responses to these surveys were therefore not analysed. As a result it was less possible to come to an accurate conclusion regarding the effectiveness or not of the QI intervention.

4.13 Ethical considerations

This research and its QI intervention, as an amendment, were approved (protocol number 128/2013) by the Faculty of Health Sciences Research Ethics Committee (Appendix H.1&2) as well as by the Mpumalanga provincial Department of Health research ethics committee (Appendix H.3).

No identifying data from patients were collected and students' personal information were kept confidential. No specific student could be identified in any of the publications or research reports. Students were treated respectfully and role-plays demonstrated how they should treat patients with care and respect. For video recordings students were instructed not to video record any identifying features of patients but to rather focus the video on the student conducting the consultation.

4.14 Summary of research methodology

This chapter described the research methods that underlies the two review articles (Chapter 2 & 3) as well as the single blind randomised controlled trial from which two original research articles were prepared based on the qualitative and quantitative data gathered (Chapter 5 & 6).

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Chapter 5

A Capability Approach Analysis of Student Perspectives on a Medical Consultation QI Process

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This chapter consists of a draft journal article reporting the qualitative data drawn from focus group discussions with, and reflective reports submitted by the intervention group of BCMP second and third year students in the study described in Chapter 4.

Abstract

Background: Research shows that person-centeredness declines during medical education. This study examines the underlying assumptions and effects of clinical associate training interventions on person-centred practice.

Objectives: To understand student experiences of a medical consultation quality improvement (QI) process in terms of a capability approach to learning. Secondly to understand the effects of this process on their person-centeredness.

Methods: In a randomised controlled trial students from eight Clinical Learning Centres (CLCs) participated in a qualitative, medical consultation QI process. For this article qualitative data (focus group discussions and reflective reports) were analysed using a capability approach to learning framework.

Results: Learning was triggered by disruptions to students' abilities, knowledge, identity and relationships. Through facilitated review-read-reflect-re/action scaffolded by feedback and practical assessment tools they learned new person-centred consultation skills. The QI process functioned as a learning cycle in which students reviewed disruptions, identified areas for improvement and developed improvement plans. Through it they developed a deeper awareness of themselves, their relationships with peers and patients grew and they improved their knowledge and consultation skills.

Conclusions: Students demonstrated learning through their understanding of the skills and competencies required for person-centred practice. The study found students to be at different points along the directed/self-directed learning continuum, with most developing abilities to learn independently, work in groups, give and take feedback and apply learning across different contexts. Facilitation of learning is particularly important given the uneven development of the "dimensions of a person" at an individual level. Lastly, the capability approach is both useful as an analytic framework and as a way of doing learning.

5.1 Introduction

Person-centred practice (PcP) is an ethical imperative.[1,2] and an essential competency that has value for patients, clinicians and the health service.[3] At its core is a holistic view of the patient as a person with a unique illness experience as well as the creation of a therapeutic relationship between patient and clinician.[1] Despite various interventions, research shows that person-centeredness and its constituent elements decline during the training of medical students.[4,5,6] To understand this phenomenon, it is necessary to examine the underlying assumptions and effects of training interventions on person-centred practice. This, in turn, requires an understanding of learning and the learner.

Marcus [7] refers to four dimensions of the learner as sources of human capacity and competency - physical and mental abilities, knowledge and beliefs, sense of self and identity, and social relationships. When there is a disturbance to any, some or all of these dimensions, the person experiences uncertainty. This uncertainty becomes the trigger to several, preferably conscious, cognitive and metacognitive activities that lead to learning. These include reviewing the activities or events that triggered the disruption, finding new information, and critically evaluating the new information against the disruption while taking into account self and identity, relationships and competencies. All this is done in order to develop an appropriate plan of action. Through practice, learners improve or develop new competencies, and develop or deepen their understanding of themselves and others, thereby growing the ability to learn in a continuously iterative learning cycle.[8] The capability approach, (Figure 5.1)[7,9,10] enables learners to develop mastery and move towards self-directed learning over time. It needs to be made consciously visible, scaffolded and guided by mentors and teachers, for all individuals to learn how to use it.[9]

Figure 5.1: The Capability Approach to Learning [7,9,10]

In this article we use the capability approach to assess Bachelor of Clinical Medical Practice (BCMP) students' person-centred consultation skills learning during a quality improvement (QI) process on the medical consultation. BCMP degreed students are qualified to practice as clinical associates (ClinA) in South Africa.[11] They spend most of their three years of training doing service learning on a decentralised learning platform at Clinical Learning Centres (CLCs). Typically these comprise a district level public hospital and its surrounding clinics.[12] A local family physician provides oversight and leadership for student learning in each CLC. There, students have daily contact with patients and conduct consultations under the supervision of qualified health professionals.

5.2 Methods

The research methods of this study are discussed in more detail in Chapter 4. Here the focus is on the qualitative aspects.

As part of a mixed methods study, a randomised controlled trial of a quality improvement (QI) intervention to learn person-centred practice was conducted with second and third year BCMP students.[13] This article reports on the qualitative data from student reflective reports and focus group interviews with intervention group students. Students learning at eight of 19 CLCs selected for the intervention by clustered randomisation were trained to implement the QI process as follows:

1. Form a team of two to four fellow students in the same year group to work together to improve their consultation skills.
2. Read and reflect on two articles describing the medical consultation.[14,15]
3. Study four consultation assessment tools: Kalamazoo Essential Elements Communication Checklist (adapted) – KEECC(A) (Appendix F.1), Consultation Peer Assessment Tool (as adapted for students at the University of Pretoria) (Appendix F.2), CARE Patient Feedback Measure (Appendix F.3), Patient Enablement Instrument (Appendix F.4).
4. Measure current consultation practice by assessing each other's consultations with the tools provided. Consultations could be video recorded, audio recorded and/or observed in person. Give feedback to each other based on the

tools and reflect on patients' perceptions of their consultations as recorded in the tools. Do a self-assessment using one or two of the tools.

5. Plan and implement measures to improve their own consultations.
6. Repeat the measurements of their consultation practice.
7. Reflect on changes in their performance and submit a report on this QI process.

One CLC closed after randomisation but before commencement of training for the intervention. The three affected students were moved individually to three other CLCs. Students at the remaining 10 CLCs served as controls.

Even though intervention group students were repeatedly encouraged to submit reports only nine were received. Data for this analysis (Figure 4.1) were drawn from these nine written reflection reports from 17 students in four CLCs and 10 focus group discussions that explored student experiences of the QI process on the medical consultation conducted between 19 October and 23 November 2015. All 62 students in the intervention group were invited (volunteer sampling) to participate in focus groups when they were on campus for tests or examinations. Each focus group discussion (FG) involved two to 12 participants, lasted seven to 25 minutes and was conducted by the first author in English, audio recorded and transcribed. The 48 FG participants included students from seven of the eight CLCs trained for the QI process. No student from CLC 8 volunteered to participate in a FG. No student participated in more than one. In all FGs, participants were asked 'How are you progressing with the quality improvement on the medical consultation?' and four supplementary questions: 'How useful did you find the feedback that you were giving to one another?', 'how useful did you find the feedback from patients?', 'how useful did you find reflecting and thinking about your own consultation?' and 'how useful were the evaluation tools or rubrics?'

Data were interpreted using a capability approach to learning as framework. For the purposes of this analysis the physical and mental dimension of the learner were interpreted specifically in terms of consultation skills rather than as general abilities. Scaffolding for learning consultation skills included academic readings explaining the processes of the medical consultation as well as assessment tools detailing the behaviours evaluated in a consultation. Guidance of learning included a QI process and advocating for a learning environment that enabled learners to engage meaningfully in the process. It was also facilitated by peer feedback among students in order to stimulate reflection on their performance as related to assessment tools. Feedback was deemed effective when it related to a specific learning context and was directed towards the attainment of specific goals.[16]

Data were analysed through repeated reading of the reports and transcribed texts as well as repeated listening to the audio recordings in order to identify specific insights into learning the consultation skills required for person-centred practice and to relate them to the phases and elements of the capability approach to learning (Fig. 1). Quotations were coded and catalogued deductively in themes using the Atlas.ti© (Version 7.5) computer programme. Codes and themes were verified through discussions between the first and second author with involvement of the third author where they did not agree.

Ethical approval

The study was granted ethical clearance from the Research Ethics Committees of the Mpumalanga Provincial government and the Faculty of Health Sciences, University of Pretoria (128/2013).

5.3 Results

The average age of the 62 students in the intervention group were 23.3 years and 44% were female.

Describing their competencies prior to undertaking the QI process, students said that by their second year they had a better understanding of person-centred practice which prepared them for this QI process (Table 5.1: Quote 1:25). They ascribed their skill in involving patients as equals in decision making to previous training in preparation for an Objective Structured Clinical Examination (OSCE) (Table 5.1: Quote 1:28). Students reported gaps in their knowledge of pharmacology (Table 5.2: Quote 18:16), special investigations and in communication skills (Table 5.1: Quote 21:4).

In one instance a student continued to externalise responsibility for learning (Table 5.3: Quote 5:15).

Table 5.1: Quotes related to the Physical and Mental abilities of Learners (Consultation skills).

Quote no.	Student reference	Quote	Related to: Theme (s)
1:25	FG1, CLC1, F, Yr2	"I think we are better than during our first year … on how to interview a patient and then make that patient the centre of attention."	Learner before
1:28*	FG1, CLC1, M, Yr2	"…maybe if it was last semester it was going to be a problem, but for now because we even had like an OSCE… We know that you must... not act like a boss whereby you must tell the patient that this is what you must do. … It is between (you and) the patient, you discuss and you reach like a certain agreement. So it was not that bad because we were well trained in that aspect."	Learner before
2:17	FG2, CLC2, F, Yr3	"If we start(ed) this project in the beginning of the year by now… you would have seen stars."	Response
2:23	FG2, CLC2, M, Yr3	"But it is a good thing because after that you do reflect and you start thinking of okay I should have done this better, I should have done that and you learn actually, you learn a lot."	Response
3:5	FG3, CLC3, F, Yr3	"… we also got to pick up which questions we leave out in consultations and where we sometimes tend to ask the same questions over and over again. … Recording helped us to pick up on that."	Disruption & Response

Quote no.	Student reference	Quote	Related to: Theme (s)
3:7†	FG3, CLC3, M, Yr3.	"What I've learned is all about firstly, listening … you create a rapport with the patient… because sometimes if you don't make them feel at ease they won't give you everything. Some of the things they'll just keep them inside that they don't want to tell you. But if you make them feel at ease they will tell you. At least they might manage to tell you some things. They might even tell you things that: 'this one, even my family don't know."	Learner after
3:14	FG3, CLC3, M, Yr3.	"I took a long consultation whereby I'm repeatedly asking the same question… I go back… and then she (peer) told me … don't spend more than fifteen minutes or ten minutes, but make sure that you get everything that you need. But it doesn't mean that … you just hurry up and then you leave some important things out, but make sure that you gathered everything that you needed so that you can go on with your working diagnosis."	Response & Facilitation
5:34	FG5, CLC3, M, Yr3	"I think the other thing is the feedback. You get a better feedback from your peers than (from) facilitators. Some of them, they are in a rush. Sometimes you don't get feedback at all. They (facilitators) say work on your skills of examination. Which one? Skills of examination? How? In our peers we just get a clear feedback."	Facilitation
6:6*†	FG6, CLC6, F, Yr3.	"Then on the management, you work together, you negotiate so that the patient can do compliance. Using that facilitation and collaboration helped me a lot."	Learner after
6:9*	FG6, CLC6, F, Yr3	"You find that the patient may come to you, having a complaint that he is drunk but the main problem is depression… So as we dig further, as we approach the patient as a whole, we find different diagnoses."	Learner after
6:22	FG6, CLC6, F, Yr3	"As you're interviewing the patient, if maybe you forgot something to ask then he can help you then. So that's how we give feedback."	Facilitation
6:36*	FG6, CLC6, F, Yr3	"So it's better to understand that if you are not treating a human emotionally, even the adherence is affected. The patient can't take the pills because the cause, the inner cause which is … maybe depression, is not sorted, your work would be in vain."	Learner after
8:2	FG8, CLC1, F, Yr3	"When we did these questionnaires, like when we evaluated ourselves, it alerted us on where do we lack on and then we have improved on that."	Response & Facilitation

Quote no.	Student reference	Quote	Related to: Theme (s)
8:12	FG8, CLC1, M, Yr3	"… the thing that was most useful, it was reading the article, it tells about the important steps that you need to outline in case of the consultation."	Facilitation
20:4	QI report 6, CLC3, 2xYr2	"The examination still needs to be practiced, the exams of meningitis were not done well and musculoskeletal examination was superficial not according to sequence and active range of motion was not done, it was only passive."	Facilitation
20:8	QI report 6, CLC3, M, 2xYr2	"…take history on as many patients as possible to improve his consultation skills… try to examine lots of patients to be good."	Response
21:4	QI report 7, CLC3, 2xYr2	Weak points: b. Sharing information with a patient c. Displaying sensitivity to the patient d. Recognizing patients' verbal clues e. Supporting patient in coping with the current situation	Learner before
21:9	QI report 7, CLC3, 2xYr2	a. Do more consultations together and with a doctor where possible b. Have a doctor to observe most of our consultations c. Try and exchange partners just to get different opinions	Response & Facilitation

FG = Focus Group discussion; CLC = Clinical Learning Centre
M = Male; F = Female; Yr = Year of study
OSCE = Objective Structured Clinical Examination
*Also relate to the "Knowledge and beliefs" dimension of the learner.
†Also relate to the "Relationships" dimension of the learner.

Students experienced several disruptions in the QI process that triggered learning, including: being observed by peers (Table 5.3: Quote 2:57 and Table 5.4: Quote 2:59) and/or recorded (Table 5.3: Quote 2:16) while conducting a consultation, watching (Table 5.3: Quote 2:25 & 27) and listening (Table 5.1: Quote 3:5) to recordings of themselves, not knowing enough (Table 5.2: Quotes 18:16 & Table 5.4: Quote 19:5) and feeling patients regarded them as incompetent (Table 5.3: Quote 6:11 & Table 5.4: Quote 19:5). Some were also disrupted by technical and logistical barriers during implementation of the QI process and in two CLCs by administrative prohibition of doing video recordings of consultations altogether.

Table 5.2: Quotes related to Learners' Knowledge and Beliefs.

Quote no.	Student reference	Quote	Related to: Theme (s)
2:49	FG2, CLC2, M, Yr3	"Most time when you see a patient you just want to go straight to diagnosing what's wrong. You don't hear what he feels, what he thinks, his ideas. You just wanna (go): "Oh, he is coughing: TB, pneumonia." You know, and go straight to treatment without focusing on the patient's ideas: What he thinks, what he feels. Which is also just as important as the clinical part."	Response
2:54	FG2, CLC2, M, Yr3	"I was asking focused questions. If you have headache, I'd be saying like: "Where is it? Can you please point? Okay. No, I think it's this and this." Without allowing the patient to say… to tell me more about the headache"	Disruption
18:8	QI report 4, CLC1, 2xM, Yr2	"It also helped us because we got to know more of pharmacology as we were explaining to patient(s)."	Response
18:16	QI report 4, CLC1, 2xM, Yr2	"Weak points: 2. Knowing the alternatives of medication, in case other medications are out of stock and the correct doses as well. 3. Educating the patient on how to take medication and also the common adverse effect s associated with the medication prescribed. 4. Explaining to the patient why the medication given and how does it work. 5. Emphasizing on patient adherence and compliance"	Learner before & Disruption
19:7	QI report 5, CLC3, 2xYr2	"…planned meeting up every Friday as a group and come up with common conditions that most patients present with to the hospital and discuss the right procedures, examinations and tests to do in each and every condition."	Response

FG = Focus Group discussion; CLC = Clinical Learning Centre
M = Male; F = Female; Yr = Year of study

Students said they responded to the disruptions by reviewing their consultations through self-evaluation using the consultation scoring tools (Table 5.1: Quote 8:2), discussing with the peers who observed them (Table 5.1: Quote 3:14), listening to audio recordings (Table 5.1: Quote 3:5) or watching video recordings (Table 5.3: Quote 2:27).

Patient information needs triggered students to read up on pharmacology and investigative studies so that they could manage patients and explain these to patients (Table 5.2: Quotes 18:8, 18:16 & Table 5.4: Quote 19:5).

Students became self-aware as they observed themselves in video and audio recordings (Table 5.1: Quote 2:23, Table 5.3: Quotes 2:26 & 27) with some saying that exposure earlier on in the course would have made them more comfortable (Table 5.1: Quote 2:17). They reflected on their mannerisms and how they appear to patients (Table 5.3: Quote 2:25). They also reflected on the way they interact in the consultation, becoming aware of not allowing patients to elaborate and being unable to formulate open-ended questions (Table 5.3: Quote 2:62). Through watching their recordings some gained an understanding of what it means to reflect (Table 5.3: Quote 2:26) while others recognised that they were biased in their self-evaluations (Table 5.3: Quote 1:33).

Through joint reflection on their consultation skills, students developed action plans to find solutions to the disruptions they experienced like reading about the subject, discussing issues with one another and others and practicing (Table 5.3: Quote 15:2, Table 5.2: Quote 19:7 and Table 5.1: Quotes 20:8 & 21:9). For some, their insight into the value of learning with peers extended to planning cooperative learning to grow their all-round competencies beyond the QI process (Table 5.2: Quote 19:7).

There were two different approaches to the disruption caused by administrative prohibition of videoing consultations. One group observed each other’s consultations, used the reading material and gave one another feedback during consultations to improve their skills (Table 5.1: Quote 6:22). The other group stopped the QI process in order to avoid confrontation with hospital management (Table 5.3: Quote 7:6).

Table 5.3: Quotes related to the Sense of Self and Identity of the Learner.

Quote no.	Student reference	Quote	Related to: Theme (s)
1:33	FG1, CLC1, F, Yr2	"Usually you are biased to yourself so you can't say this was bad."	Response
2:16	FG2, CLC2, F, Yr3	"But as soon as I, like, put the recorder there. I'm like, oh my gosh, I don't know anything. So that was my problem."	Disruption
2:25	FG2, CLC2, M, Yr3	"When you see yourself on a video, then you actually get a real idea of how you…present yourself to the patient… If you have any funny mannerisms like 'uh-huh … uh-huh' "	Disruption
2:26	FG2, CLC2, F, Yr3	"… and that's when we all understood the part of reflection, and I must say I never understood what reflection was until... I watched myself and then I'm like, okay, now I need to reflect."	Disruption Response
2:27*	FG2, CLC2, F, Yr3	"... if you're watching the video you can see how you behave when talking to the patient and the kind of questions that you are supposed to ask ….so it's a good reflection."	Response
2:56	FG2, CLC2, F, Yr3	Interviewer: "What make you learn the things you are now saying you are going to do different?" Student: "Watching ourselves... "	Disruption
2:57†	FG2, CLC2, F, Yr3	"...and plus our colleague is in the room. Besides us watching ourselves… someone else is watching,"	Disruption
2:62*	FG2, CLC2, F, Yr3	"One thing I learned about myself as an individual was that I tend to ask a lot of closed questions. I don't give the patient an opportunity to elaborate on their presenting complaints. …. it's kind of hard for me to find open ended questions."	Learner before, Disruption, Response
5:15	FG5, CLC3, F, Yr2	"I was generally taught to go through full history… So focused history, I don't know what you are referring to... How am I supposed to know that?"	Learner before
6:11†	FG6, CLC6, F, Yr3	"When you ask the patient to involve himself or herself, he feels like you don't know what you are	Disruption

Quote no.	Student reference	Quote	Related to: Theme (s)
		doing. 'Why are you asking me this? You don't know what you are supposed to do.'"	
6:8†*	FG6, CLC6, F, Yr3	"In this thing, I've learnt that you should ask about the patient expectations. If you don't meet the patient's expectations, then you become a bad clinician."	Learner after
7:6	FG7, CLC7, F, Yr3	"Someone suggested that I speak to him but I didn't."	Response
15:2*	QI report 1, CLC8, Yr2 group	"This study research was very helpful. …It gave us the opportunity to prove or rate ourselves on how far we have developed when it comes to clinical practice, and where we need to put more effort and practice more correctly in order to improve, so that we can become quality and professional Clinical Associates."	Disruption Response Learner after

FG = Focus Group discussion; CLC = Clinical Learning Centre
M = Male; F = Female; Yr = Year of study
*Also relates to "Physical and mental abilities" dimension of the learner.
†Also relates to the "Relationships" dimension of the learner.

In terms of peer feedback, participants said that the specific feedback given by peers helped them learn physical examination and other consultation skills such as not repeating questions and time management (Table 5.1: Quote 3:14, 5:34 & 20:4). They saw the value of diversity of experience and knowledge that came through peer learning, even suggesting that partners be rotated to get other opinions (Table 5.1: Quote 21:9). They said the presence of peers also was less intimidating and that they could implement what they learned. Some felt facilitator feedback was too general or, at times, not given at all. Also they felt that fear of making mistakes hampered their performance in formal assessments observed by an examiner (Table 5.4: Quote 5:4).

Students said they did not find formal patient feedback helpful. They felt it did not contribute to their learning because it was consistently positive and non-specific.

Students reported that the readings and assessment tools to support their learning were helpful. Especially, they found Hugo and Couper's [15] juggling analogy helped them grasp key components of the consultation (Table 5.1: Quote 8:12) and that the consultation assessment tools helped them identify areas for improvement during self-evaluation (Table 5.1: Quote 8:2). Some said that they found the English used in the Kalamazoo measuring tool difficult to follow and preferred the adapted consultation peer assessment tool.

In terms of new and strengthened person-centred practice, students expressed strong person-centred beliefs on the medical consultation. For example, they felt it was important to facilitate patients to tell their stories (Table 5.2: Quote 2:54), to focus more on the patient's ideas and feelings (Table 5.2: Quote 2:49) and they believed making a personal connection with the patient to be therapeutic (Table 5.4: Quote 6:26).

They also reported learning valuable person-centred consultation skills such as listening and building trust to discuss sensitive information (Table 5.1: Quote 3:7); being fully focused on the patient to better explore their illness experience (Table 5.4: Quote 6:5) and improve treatment adherence (Table 5.4: Quote 6:7); eliciting patient expectations (Table 5.3: Quote 6:8); adopting a holistic approach to find underlying causes of patients' worries and complaints (Table 5.1: Quote 6:9 & 36) and recognising the importance of negotiation to achieve compliance (Table 5.1: Quote 6:6). Students considered consultation skills to be a foundation for clinical practice, suggesting that they be learnt prior to clinical skills in the earlier years of the programme.

Table 5.4: Quotes related to Learners' Sense of Relationships.

Quote no.	Student reference	Quote	Related to: Theme (s)
2:59	FG2, CLC2, F, Yr3	"It's like even though we were comfortable with each other as soon as they are in a formal setting, friendship goes away and it's like teacher student relationship all of the sudden."	Disruption
5:4	FG5, CLC3, F, Yr2	"And you become nervous when you are doing it with your facilitator 'cause you're scared: What if I do something wrong? But if it's your peer you are chilled, you just do everything the way you learned…"	Disruption
6:5*†	FG6, CLC6, F, Yr3	"Ok, on my side, I learnt a lot. On the consultation: It's not about you as a clinician. It's about the patient. Facilitating the patient, so that the patient can explore all the symptoms."	Learner after
6:7†	FG6, CLC6, F, Yr3	"Then for a patient, it is easy to comply, as the patient sees that you are interested in him or her and you understand better."	Learner after
6:26	FG6, CLC6, F, Yr3	"And what we've learnt from this thing is that some of the patients they don't need medicine, they need your touch, your smile, your time."	Learner after
19:5	QI report 5, CLC3, 2xYr2	"When it comes to selecting the right tests to perform… and start going back to our books to check what must we do next and we feel like that makes the patient to start doubting us."	Disruption

FG = Focus Group discussion; CLC = Clinical Learning Centre
M = Male; F = Female; Yr = Year of study
*Also relates to "Physical and mental abilities" dimension of the learner
†Also relates to "Knowledge and beliefs" dimension of the learner

5.4 Discussion

Students found the QI process a valuable opportunity to self-evaluate and identify practice areas needing improvement to gain the competencies expected of them as clinicians.

Our findings show that a self-directed QI process with evaluation tools, peer feedback and reflection on audio and video recordings led students to learning person-centred care. Disruptions triggered cognitive and metacognitive processes, that through scaffolding, enabled students to engage in a self-directed cycle of reading, reviewing, reflecting and acting or planning action, impacting on all their dimensions as learners.[9] Watching video recordings of themselves conducting a consultation disrupted students' identity and sense of self. It triggered them to reflect on who they are, how they appear to others, and what they do and do not know. Self-awareness created through auto-critique is a recognised essential component for self-directed learning.[17,18]

As reported elsewhere, students found being recorded stressful[17,19] and this may explain why many did not video-record themselves. As proposed by the students and in other studies,[19] this could be partly alleviated by introducing video recording of consultations early in the course.

This study confirms the importance of motivation and self-efficacy for all learning, especially learning that centres on self-directed activities.[8] The student groups who abandoned the QI process when they were unable or not permitted to video record their consultations failed to learn. Through their own agency, the groups who continued the QI process, either without doing video recordings or by overcoming technical and logistical obstacles, were able to develop their critical thinking skills as well as gain valuable person-centred competencies.

As reported by Aper et al.[20] conducting consultations with real patients both inspired and challenged students. Being regarded by them as incompetent not only disrupted students' relationships with patients but also their sense of self. This has been described elsewhere as part of the process of identity formation, where individuals form their identity by imagining how they appear to and are judged by others.[21] The QI process made students aware of how their own and patients' lack of confidence in their knowledge and abilities prevented them from inspiring trust in patients. For some, the awareness triggered by this disruption motivated self-development, driving them to re-establish and build themselves as competent healthcare student apprentices. For others, it triggered a defensive reaction that obstructed learning because it cut to the core of their sense of self, leading them to express reluctance to share decision making power with patients. This response points to the critical need for facilitation of learning to be an on-going process so that students develop the necessary competencies and skills that help them retain their sense of self-worth and give them the confidence to collaborate with patients without appearing incompetent.

Through the QI process students built and developed relationships with one another as peers. In this study the principles of good feedback to promote changed practice were followed, namely, that it be given face to face, be part of a coaching process (the QI), contain specifics with examples, be based on observation, comparison (between peers) and a clear standard as well as that it supports positive change.[22] The use of evaluation tools with clearly explained criteria to guide peer feedback ensured that what was said guided practice, even though it came from peers on the same level. Students demonstrated the ability to discern useful and unhelpful feedback. As with medical students,[17,23] this study found that clinical associate students preferred peer feedback for its clarity and details and did not report any drawbacks.[24] As in other research, the cognitive and social congruence between peers put students at ease while being observed conducting medical consultations.[25] They felt peers helped them focus, perform better and learn more than when they did consultations in the presence of a lecturer or examiner.

Although trained how to give feedback, the study found student feedback was constrained both by limitations in their knowledge of content and their relationships with one another. Generally they gave feedback that related to their understanding of the knowledge and abilities required for the tasks and processes of the consultation but did not address the issues of identity and relationships that these brought to light. This points to the important role of mentor and lecturer facilitation of learning to ensure that students are guided towards the best available knowledge and provided with deeper levels of feedback.

5.5 Limitations

This study was conducted in a decentralised workplace based training platform for clinical associate students and the findings may therefore not be generalizable to other teaching models.

Not all students submitted QI reports. Students from one of the intervention CLCs did not participate in the focus groups. They however submitted a joint report congruent with the rest of the data, suggesting that the results are an accurate reflection of students' experiences with the QI process.

Despite repeated engagement with local supervisory structures, their support for the study was insufficient and contributed to variable implementation across CLCs.

FGs 9 and 10 were of very short duration largely because they involved only two or three students who did not implement the intervention. Even though FG 7 and 8 had four participants each, they were also of short duration. Participants in FG 7 did not implement the intervention while data generated in FG 8 was congruent with the rest of the data. These limitations were mitigated by the number and extent of data generated by the FGs.

The researcher's position as BCMP programme coordinator may have prevented students discussing negative attitudes toward the course or patients. Though students did not report personal negative attitudes toward patients they did critique the consultation skills of other clinicians as well as the timing of the QI intervention. On the other hand the researcher's experience as a clinician allowed students to freely share their clinical experiences which he could understand and empathise with.[26]

5.6 Conclusion

Students' demonstrated the learning achieved in the QI process through their understanding of the skills and competencies required for person-centred practice.

Using a capability approach to understand the triggers and processes of learning person-centred care, the study revealed that students are at different points along the directed/self-directed learning continuum. While some had yet to internalise their responsibility for learning, most were developing their abilities to learn independently, to work in groups, to give and receive feedback and to apply what they have learned across different contexts. Given the uneven development of the "dimensions of a person" at an individual level, facilitation of learning is particularly important to help students translate disruptions into learning. Similarly, the cycle of reviewing, reading, reflecting and acting benefits all students when it is scaffolded through readings and evaluation instruments as well as by creating deliberate opportunities for feedback. In addition to being a way of "doing" learning, the paper also demonstrates the usefulness of the capability approach as framework to analyse if and how learning happens.

Based on the quality of learning reported it is recommended that a QI process on the medical consultation with video recording be included in the undergraduate curriculum of clinicians. Areas for future research include the effects of different tools to guide self-evaluation and peer feedback, the role and place of video-recording in the learning cycle, the best methods and processes to support the learning of person-centred practice, and an exploration of the development of students' “review” competencies over time.

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Chapter 6

Learning person-centred consultation skills in clinical medicine: a randomised controlled case study

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This chapter consists of a journal article which reports the quantitative data of the same study of which the qualitative data was reported in Chapter 5. Whereas the qualitative data for Chapter 5 was based on focus group discussions and reports by the intervention group only, this chapter reports, analyses and compares quantitative data drawn from assessments of both the intervention and control groups.

Abstract

Background: Training institutions need to ensure that healthcare students learn the skills to conduct person-centred consultations. We studied changes in person-centred practice over time following a quality improvement (QI) intervention amongst Bachelor of Clinical Medical Practice (BCMP) undergraduate students.

Methods: Students were randomised to intervention and control groups. The intervention group received training and did a quality improvement cycle on their own consultation skills. Consultations with simulated patients were recorded during Objective Structured Clinical Examinations (OSCEs) in June (baseline) and November (post-intervention) 2015.

Results: Matched consultations for 64 students were analysed. Total SEGUE scores were significantly higher in the final assessment compared to baseline for both the whole group and the intervention group ($p = 0.005$ and 0.015 respectively). The improvement did not differ significantly between intervention and control groups (multivariate p-value = 0.778). Third year students improved significantly more than second years (p-value = 0.007).

Conclusion: The person-centred practice (including collaboration) of clinical associate students did improve over the period studied. The results show that students' learning of person-centred practice also happened in ways other than through the QI intervention. There is a need to develop students' collaborative skills during the medical consultation.

6.1 Introduction

Person-centred practice (PcP) can be described as practice where clinicians and patients collaborate on the basis of a holistic understanding of the patient and his or her health needs in the milieu of a therapeutic alliance between patient and clinician.[1] Ethically, it is driven by the obligations to apply the principles of beneficence and autonomy in healthcare.[2] Practically it has benefits for patients, clinicians and the healthcare system.[3,4,5,6,7] Benefits include increased patient[6,8,9] and clinician[8,10,11] satisfaction, improved adherence to management plans[8,12,13] and more efficient care being delivered.[14]

Collaboration, including shared decision making (SDM), is regarded as quintessential PcP.[15] As articulated in the Salzburg Global Seminar statement on SDM,[16] this means recognising the ethical imperative to share important decisions with patients, stimulating a two-way flow of information, and encouraging patients to ask questions, explain their circumstances, and express their personal preferences.

Given the importance of and the need for clinicians to have PcP skills, every institution training healthcare professionals needs to ensure that students learn PcP, including the skills needed to involve the patient in understanding the problem, share decision making and negotiate as part of collaboration in the medical consultation.[17,18] They need to be guided in their attitudes to show empathy, compassion and caring and they need to become proficient in communication, reflection, negotiation, collaboration, mindfulness and other critical 'soft skills'. Amongst the ways that these skills and attitudes can be learned are through role plays of simulated consultations,[17,19] review of recorded consultations,[20] feedback on directly observed consultations,[10,21,22] patient feedback,[23] observing and working with positive role models,[24,25] reflective practices,[26] small group discussions with role-models, student centred community based learning,[27,28] patient centred learning (learning from real patients)[29] and mindfulness training.[26,30]

Despite the numerous methods suggested for improving skills, a recent Cochrane review[31] could not find any good evidence for the effectiveness of any interventions to increase the use of shared decision making by healthcare professionals. There is therefore a need to develop training methods so that patients can experience 'nothing about me without me'.[15]

The study reported here aimed to measure changes in person-centred practice over time following a quality improvement (QI) intervention for learning person-centred consultation skills among Bachelor of Clinical Medical Practice (BCMP) undergraduate students. As graduates, clinical associates qualify to practise as midlevel medical professionals who perform many of the tasks medical doctors usually perform, similar to the physician assistant or clinical officer professions in other countries such as Malawi, Tanzania and the USA.[32,33]

6.2 Methods

The research methods of this study are discussed in more detail in Chapter 4. Here the focus is on the quantitative aspects.

In this case study an intervention group of second and third year students was randomly selected through clustered sampling with the remaining students serving as controls.

6.2.1 Study population

All second and third year BCMP students at the University of Pretoria in 2015 were eligible. They were learning in 19 different clinical learning centres (CLCs) based at public hospitals in the Gauteng, Mpumalanga and KwaZulu-Natal provinces.

6.2.2 Sampling

Five of the CLCs had both second and third year students while seven had only second year and seven only third year students. From each of these three clusters of CLCs, three CLCs were randomly selected. After randomisation the three students at one of the selected second year CLCs were moved individually to three other CLCs (two intervention and one control CLC). The remaining eight selected CLCs received the learning intervention while the students at the other 10 CLCs served as controls.

Information on the study was provided to all BCMP II and III students and they indicated their consent electronically on the computer based testing system at the University of Pretoria.

To be included second or third year BCMP students had to complete both a baseline and final consultation assessment and consent to audio or video recording of the consultations.

Due to equipment malfunction on the first day of assessment recording, several third year students were also excluded.

A total of 64 sets of recordings of baseline and final consultations were available for analysis (See Chapter 4, Figure 4.2).

6.2.3 Intervention

The researcher sent e-mails with reading material and detailed instructions for the intervention to the students in the intervention CLCs. During subsequent site visits to intervention CLCs the intervention was explained. Role play was used to demonstrate how to observe a consultation and give appropriate feedback. Any questions were clarified and students were encouraged to engage with the QI process.

The students in the intervention CLCs were expected to:

1. Form a team of two to four fellow students in the same year group to work together to improve their consultation skills.
2. Read and reflect on two articles describing the medical consultation.[34,35]
3. Study four consultation assessment tools: Kalamazoo Essential Elements Communication Checklist (adapted) - KEECC(A), (Appendix F.1)[36] Consultation Peer Assessment Tool (as adapted for students at the University of Pretoria) (Appendix F.2), CARE Patient Feedback Measure, (Appendix F.3)[37] Patient Enablement Instrument (Appendix F.4).[38]
4. Measure their current consultation practice by assessing each other's consultations with the tools provided. Consultations could be video recorded, audio recorded and/or observed in person. Then they were required to give feedback to each other based on the tools and to reflect on patients' perceptions of their consultations as recorded in the tools. The final measurement was a self-assessment using one or two of the tools.
5. Plan and implement measures to improve their own consultations.
6. Repeat the measurements of their consultation practice.
7. Reflect on changes in their performance and submit a report on this QI process.

Fidelity of implementation was reviewed using the conceptual framework proposed by researchers at the University of Sheffield.[39]

6.2.4 Measurements

During the Objective Structured Clinical Examinations (OSCEs) at the end of each semester (June and November 2015) consultation skills were evaluated. All students (intervention and control groups) conducted a 13 minute consultation with a simulated patient based on one of five standard scenarios. The scenarios were allocated according to the particular clinical rotations the specific student group did in the preceding semester. Students had no access to the scenarios before the examination and no student had the same scenario in the baseline and final measurements. Only one of the five scenarios was used in both the baseline and final evaluations. The consultations were video and/or audio recorded in line with the consent provided by the student. For the purpose of this study only audio recordings were coded for person centeredness. Where only a video recording was available, it was converted to audio before scoring. The SEGUE framework (Set the stage, Elicit information, Give information, Understand the patient's perspective, and End the encounter) was selected as the preferred measurement tool based on a systematic review.[40,41] It consists of 32 tasks, each of which can receive a code of "Yes", "No" or "Not applicable" (Appendix F.5).

Two qualified clinical associates received four hours of training in the use of the SEGUE measurement tool. Every audio recording was randomly assigned to one of them. They received four hours of training in the use of the SEGUE measurement tool. They were blinded as to the pre- or post-intervention status of each recording and to the group (intervention or control). Each coder was assigned equal numbers of intervention and control group recordings. The baseline and final recordings of each student were coded by the same person.

Task 5 (Maintain patient's privacy) and task 21 (Acknowledge waiting time) were not applicable in the context of the OSCE and therefore not coded.

Statistical analyses were conducted on the scores using the IBM SPSS statistics version 25 software. Statisticians from both the Faculty of Health Sciences and the internal consultation service of the University of Pretoria's Department of Statistics were involved in data analysis. Effect size was measured with Cohen's d and p-values < 0.05 were regarded as statistically significant. Bonferroni adjustment was applied for multiple comparisons.

Intra- and interrater reliability were measured by assigning 24 recordings to both coders and by re-allocating at least 22 previously coded recordings under a new random number to the same coder later in the process. The mean of Kappa (measure of agreement) calculated for intra-rater reliability across the 30 tasks was 0.9 for coder A and 0.82 for coder B. The mean Kappa for interrater reliability over 22 tasks was lower at 0.54. (For eight tasks interrater agreement could not be calculated because of a lack of variability in at least one measurement).

Considering the nature of medical consultations, the SEGUE framework contains a mix of tasks measuring various communication abilities. Internal consistency is therefore not regarded as an appropriate criterion for the SEGUE framework.[42]

To summarize the degree to which person-centred communication tasks were accomplished, total SEGUE scores were calculated by assigning a value of one to each "yes" and zero to each "no" and summing the scores for each consultation as done in previous research.[42]

Results were first compared using paired samples t-tests. Multivariate regression was employed to model the final total SEGUE scores against group (intervention group vs control group), year of study (second vs third) and gender (male vs female), taking into account the interactions between gender and year of study and between gender and group, adjusted for the baseline total SEGUE scores.

To evaluate the possible effect of variable implementation of the intervention by students in the intervention group, the intervention group results were divided into those who fully implemented the intervention (submitted written reports), those who implemented partially (did not submit written reports) and those who did not implement the intervention.

Totals for each of the five components of the SEGUE framework were calculated and analysed as subscales. The seven tasks under "New or modified treatment/prevention plan" were analysed as part of the "End the encounter" subscale.

6.3 Results

The demographic characteristics of the study population and participants are displayed in Table 6.1.

Table 6.1: Demographic Data.

	Study population N (%)	Sample	
		Intervention N (%)	Control N (%)
Female	69 (50)	10 (32)	21 (64)
Male	68 (50)	21 (68)	12 (36)
Year of study			
Second year	67 (49)	22 (71)	21 (64)
Third year	70 (51)	9 (29)	12 (36)
Average age	22.9 years	23.0 years	21.9 years
Age distribution			
< 20	8 (6)	1 (3)	4 (12)
20-22	79 (58)	15 (48)	22 (67)
23-25	34 (25)	12 (39)	6 (18)
26-28	10 (7)	2 (6)	0
>28	6 (4)	1 (3)	1 (3)
Total	**137**	**31**	**33**

The 25 missing data points were due to poor quality of audio recordings. SEGUE total scores and subscale scores were adjusted for missing values before analysis.

6.3.1 Fidelity of implementation

Only five of 62 intervention group students did not attend the training. Matched recordings of three of these five were included in the intervention group for analysis.

Of the 31 students analysed in the intervention group, eight did not implement the QI cycle. However, their results were analysed with the intervention group (intention-to-treat analysis). Only 12 students in the intervention group submitted reflective reports.

6.3.2 Results of total SEGUE scores

The total SEGUE scores of the 64 pairs of matched student consultations showed a significant improvement over the five months studied (Table 6.2). Although the intervention group improved significantly from the baseline to the final assessment this improvement was not significantly better than for the control group. The control group's scores did not improve significantly.

Table 6.2: Comparison of means of Total SEGUE scores.

	Unadjusted means of total SEGUE scores (Max = 30)				Adjusted mean§	p-value†
	Baseline (SD)	Final (SD)	p-value*	Effect size: Cohen's d		
All (n=64)	14.9 (3.20)	16.3 (3.01)	0.005ǂ	0.46		
Intervention group (n=31)	14.9 (2.50)	16.6 (3.40)	0.015ǂ	0.56	16.28	0.778
Control group (n=33)	14.8 (3.77)	16.0 (2.61)	0.118	0.37	16.07	
Male students (n=33)	15.0 (2.62)	16.9 (3.34)	0.010ǂ	0.59	16.89	0.07
Female students (n=31)	14.7 (3.51)	15.6 (2.50)	0.191	0.31	15.53	
Second years (n=43)	14.9 (3.00)	15.7 (3.04)	0.216	0.24	15.66	0.007ǂ
Third years (n=21)	14.7 (3.64)	17.5 (2.60)	0.003ǂ	0.89	17.76	

* Two tailed paired samples t-test
† Multivariate
ǂ Significant at the p < 0.05 level.
§Mean in final assessment adjusted for baseline

The multivariate regression model demonstrated that third year students improved significantly more than second year students but the difference in improvement in scores between males and females was not significant. (Table 6.2).

Figure 6.1 compares the means of the total SEGUE scores in the final assessment of the control group with the subgroups in the intervention group, after adjustment for the baseline scores. The subgroup of the intervention group students who implemented the intervention partially had the highest adjusted means (signifying that they had the best improvement) whereas those who did implement the intervention completely had the least improvement. The difference between these groups was significant (p = 0.035).

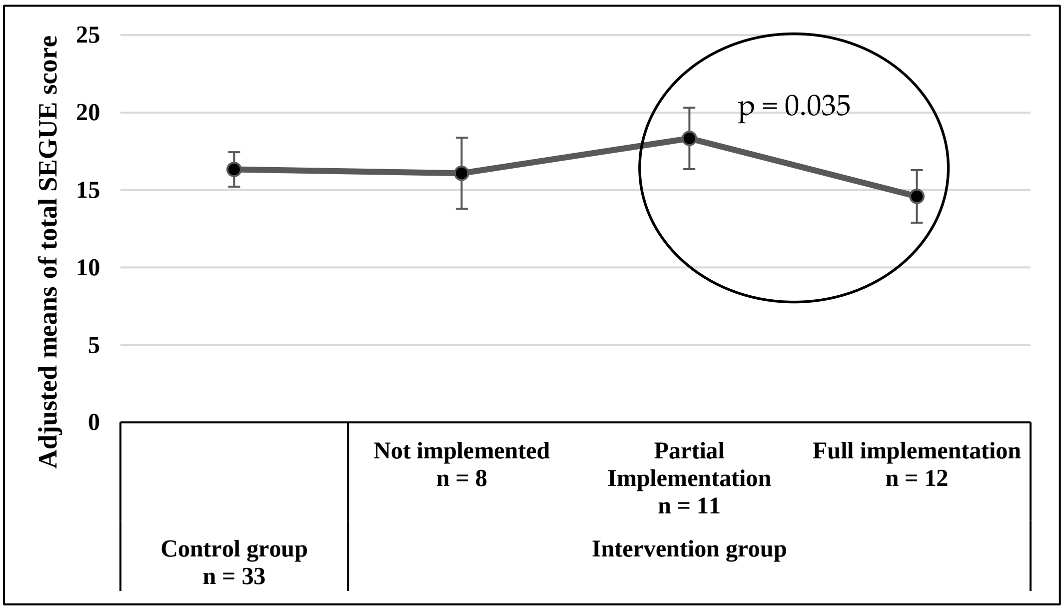

Figure 6.1: Comparison of adjusted means according to degree of implementation of the intervention with 95% CI.

Excluding the non-implementing subgroup from the analysis (per-protocol analysis) did not affect the significance of the difference between the intervention and control groups.

Neither the relationship between student age and total SEGUE scores, nor between age and changes in the total SEGUE scores were statistically significant.

Where students interviewed simulated patients of a different gender (discordant) than their own in the final assessment OSCE, they achieved a significantly higher total SEGUE score. The mean difference was 2.34 (95% CI 0.9 – 3.7) and p = 0.002 (Cohen's d = 0.82). However, gender discordance did not have any effect in the baseline scores. The simulated patients' gender did not have any significant effects independently.

6.3.3 Results of analysis in subscales

The "Give Information" and "End Encounter" SEGUE subscales relate closely to collaboration in the consultation. These had lower scores than the other three subscales but improved significantly over the five months studied. Changes in the other three subscales were not significant (Figure 6.2).

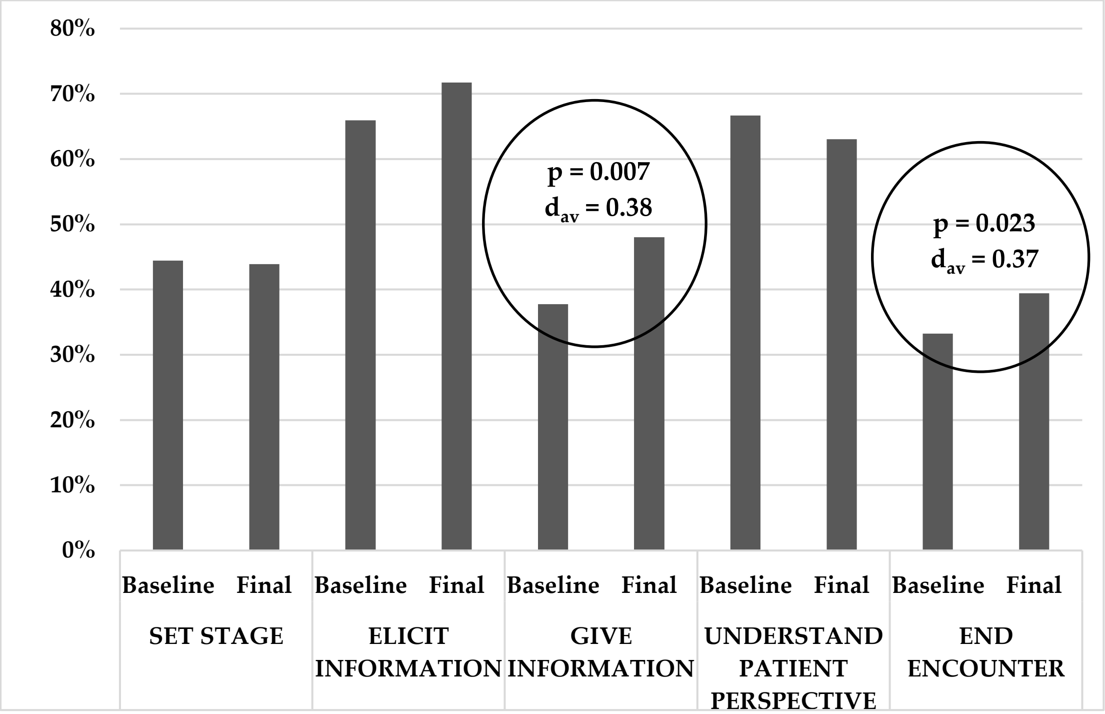

Figure 6.2: Changes in SEGUE subscale scores between baseline and final assessments.

Third year students improved significantly more than second year students in the "Elicit information" subscale (p = 0.020; Cohen's d = 0.59, 95% CI -5.85 – 6.70).

There was a significant, moderate degree of positive correlation between the improvement in the "Elicit information" and the "End encounter" subscales (Pearson's Correlation Coefficient = 0.321, p = 0.01).

There were no statistically significant relationships between student age and any of the subscale scores nor with any changes in the subscale scores.

6.3.4 Results of analysis of specific tasks

In comparing the improvement in specific tasks between intervention versus control groups (Appendix I.1), third versus second year students (Appendix I.2) and male versus female students (Appendix I.3), differences were not significant (two sided Fischer's exact test with Bonferroni adjustment).

6.4 Discussion

This study evaluated the actual behaviour of students in the medical consultation and not only self-reported attitudes regarding person centeredness. We tested whether a quality improvement intervention implemented by students themselves would improve their person-centred practice. The study did not demonstrate a statistically significant effect of the intervention when comparing the intervention group to the control group. This may be due to the exposure of both the control and intervention groups to other avenues of learning person-centred practice such as the role models (healthcare practitioners)[24,25] they worked with, small group discussions and role plays.[17,19] It is also possible that motivated, self-directed students in the control group used the information provided during the informed consent process to learn person-centred practice.[43] Students were not closely supervised during the intervention and since it would not directly affect their marks, some students probably lacked motivation to put effort into the QI. Even so, analysis of the results according to the assumed degree of implementation of the intervention did not reveal a dose-response effect.

Why the 12 students who implemented the intervention completely had the lowest total adjusted SEGUE scores (Figure 6.1) is not clear. This result could suggest that reporting on learning does not correlate with actual learning of person-centred practice. Equally, it may be the consequence of other, unaccounted for variations in implementation. The effect size of the improvement measured in the group as a whole, can be regarded as educationally significant though not necessarily practically or clinically relevant.[44,45,46]

Previous research in the United States could not find a difference between the total SEGUE scores for first year Family Medicine residents compared to third year residents.[47] In our study the baseline measurements of second and third year student did not differ significantly. However, third year students improved significantly more than second years over the period studied resulting in significantly higher scores in the final assessment. The effect size of this difference in improvement was moderate to large (Cohen's d = 0.76) and therefore both practically and educationally meaningful.[44,45,46] The difference can be attributed to third years improving significantly more in the "elicit information" subscale and to some extend in the "end encounter" subscale, perhaps suggesting a more mature approach to the consultation.

When trying to learn both clinical reasoning and person-centred consultation skills simultaneously students can feel overwhelmed.[48] Consultations with real patients trigger empathy and a sense of responsibility in students. Even so, feeling primarily responsible for their patient's medical decisions, students tend to prioritise clinical reasoning.[48] The greater improvement by third year BCMP students, as compared to those in second year, can thus be understood in terms of cognitive load theory. Second year students could not learn complex consultation skills as well because they have less information organised in cognitive frameworks or concepts (automated schemas) to help them organize and interpret new information, compared to third years who have already internalised more skills in schemas and thus can learn new skills more efficiently without overloading their working memory.[49,50] This demonstrates the important role of time that goes beyond spacing effects in acquiring person-centred consultation skills. Students need time to develop from clinical knowledge to critical thinking and decision-making skills.[51] In addition third (final) year students could be more focused and motivated to learn since they would soon have to pass final examinations and then enter practice as clinical associates.

Intra- and interrater reliability were lower than what has been reported in the literature[42] but the means of total and subscale scores did not differ significantly between the coders. Poor interrater reliability is a common problem. A recent systematic review reported it to be poor in six of seven coding schemes for which they could find valid measurements.[52]

It is difficult to understand the effect of gender discordance in the final assessment in light of the absence of such effect in the baseline assessment.

Since shared decision making - or collaboration with the patient - is crucial for person-centred practice,[15] we have to evaluate if and how clinical associate students learn to collaborate with patients.

For medical students lower scores for "Ending the session by summarising and clarifying the plan" than for other subscales has been reported.[21] Similarly BCMP students had their lowest scores in the "End the encounter" subscale. However, it is encouraging to find an increase in this subscale over the period studied – especially among third year students. Its positive correlation with the "Elicit information" subscale has logic: a clinician cannot collaborate with a patient without a good holistic understanding of the patient. The observation that third year students improved significantly more than second years in the "elicit information" subscale shows that learning of biomedical consultation skills accelerates towards the end of the course.

The data analysed in this study concur with the literature that students are more likely to implement "caring" aspects of person-centred practice while struggling to consistently share power or collaborate with patients. As Barry and Edgman-Levitan[15] said: "Although talk about patient-centred care is ubiquitous in modern health care, one of the greatest challenges of turning the rhetoric into reality continues to be routinely engaging patients in decision making."

The finding that male students had higher total SEGUE scores than female students was surprising and contrasts with most other reports of measures of person centeredness where female healthcare providers are usually more person-centred than their male counterparts.[21,53,54] In the intention-to-treat analysis the effect of student gender did not reach statistical significance but it warrants further quantitative and qualitative research to confirm or refute it and to understand the possible reasons for it.

6.5 Limitations

There are a number of limitations to the study, including the fact that measurements in this study relied on simulated consultations, and thus results may not be generalizable to clinical practice with real patients.

All aspects of the students' implementation of the QI were not documented. We can therefore not be sure about the effect of variable implementation of the intervention on the results.

The analysis did not control for other possible methods of learning person-centred practice neither for the possibility of partial implementation of the intervention by the control group.

The smaller than intended sample size limited the statistical power to detect differences. With a larger sample the difference between male and female students may have reached statistical significance in the intention-to-treat analysis.

6.6 Conclusion

Person-centred practice of second and third year clinical associate students did improve marginally over the five month period studied, although the study intervention did not contribute significantly to this improvement. The fact that person-centred practice improved significantly more among third year students' suggests that these skills are most effectively learned in the last part of the course.

This said, the measurement of person centeredness in the medical consultation remains difficult.[55,56] Further research should explore comparisons with locally developed measurement tools and/or the appropriate adaptation of existing international tools. Also, the quality and extent of the implementation of any intervention needs to be monitored and effectively documented in order to derive definitive conclusions on its effectiveness.

6.7 Recommendations

Clinical associate students learn person-centred practice through a range of activities. Further research is indicated to identify and measure sources of such learning.

Further studies are needed to understand the effect of gender concordance vs discordance between student and simulated patient in consultation OSCE stations.

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Chapter 7

Conclusion

The learning of person-centred practice (PcP) in medicine

In this chapter the findings of the two literature reviews (concepts and measurement of PcP) are summarised. Next the qualitative and quantitative data from this study are reviewed and compared, explanations for the contradictions and similarities in the data are explored before curricular and research recommendations are made.

7.1 Discussion of findings

To increase person-centred practice (PcP) in healthcare service it is necessary to fully understand this complex, multifaceted concept. As discussed in Chapter 2, descriptions, definitions, dimensions, frameworks and principles of person-centeredness abound. Terminology used to describe it and other centred care concepts are very similar and often overlap. The most recent comparative synthesis of 21 reviews identified nine themes with 25 sub-themes common to both person-centred and patient-centred literature in all reviews.[1] Four other themes with nine sub-themes had variable representation in both person-centred and patient-centred reviews.

There are essential elements of patient or person-centeredness that are common to most of the literature. Two of these differentiate person-centred practice from biomedical, disease- and doctor-centred practice. One element is the focus on the whole person of the patient. It requires active listening and honest care and concern communicated to the patient. The other element is the formation of a therapeutic alliance between the healthcare provider and the patient in which they collaborate to achieve jointly defined objectives for an improved state of health for the patient. These two elements - of "caring" (concern for and interest in the patient) and "sharing"

(sharing power and control)[2] are active processes that are operationalised in the medical consultation through facilitation and collaboration.[3]

From the literature it is clear that accurate methods to measure PcP are difficult to find (Chapter 3). Many instruments have been developed but few have proven to be valid and reliable in specific contexts, and none are generally valid and reliable. In terms of who should do the measurement, while observers might produce more reliable results, evaluations by patients are more valid since their perceptions of person-centeredness are more closely associated with improved outcomes.[4] In any case, there is a need to adapt or create and test a suitable instrument to validly and reliably measure person centred practice in South African contexts.

In 2015 an intervention group of Bachelor of Clinical Medical Practice (BCMP) second and third year students implemented a quality improvement process on their own medical consultation skills to learn PcP. It included peer feedback and reflection which were expected to be effective.

An analysis of the data obtained from focus group discussions and written reports (Chapter 5) showed that most students engaged actively with the process, grew in PcP and expressed sentiments congruent with PcP.

Students explained how their sense of self related to their learning of PcP, how their relationships with peers and patients changed and how they also learned biomedical skills and knowledge while engaging with the Quality Improvement (QI) process to learn PcP. Those who have grown further in their self-directedness benefitted most from the QI process.

Whilst students spoke passionately about building rapport with patients and involving them in decision making during focus group discussions, very few actually demonstrated these skills during consultations with simulated patients in Objective Structured Clinical Examinations (OSCEs). Objective measurements with the SEGUE framework during summative clinical examinations (OSCEs) with simulated patients

only indicated a marginal (though statistically significant) increase in PcP in the intervention group (Chapter 6).
Although students in the intervention group demonstrated more person-centeredness in their OSCE consultations post intervention (higher total SEGUE scores) than the control group, the difference (in improvement) was not statistically significant.

There are several reasons that may account for these two anomalies – expressing patient-centeredness in focus groups but not practicing it in OSCEs and the lack of a statistically significant difference in improvement between the intervention and control groups.

One reason would be incongruence between the students' espoused theory (what they say they believe) versus their theory-in-use (the theory actually influencing their behaviour).[5] The latter is often subconscious and not verbally expressed. However, the examples of their own actual PcP that students described in the focus group discussions indicate that there may be other explanations.

What students learn and do when they interact with real patients in the healthcare service differs from their person-centred performance in OSCEs. When a healthcare student engages with a patient in a consultation the student feels a sense of responsibility for that patient. There is a certain gravity in the encounter with a real patient with real health issues that need solutions. For the sake of their own self-esteem students want the patient to regard and experience them as competent.[6] Also, the patient's suffering evokes empathy in students, which they can express by showing a caring attitude.

By contrast, a student will not and cannot experience any real empathy in an examination situation with a simulated patient who clearly is not experiencing any real suffering from the symptoms he or she is reporting. This happens even when simulated patients are excellent actors who are able to evoke emotional responses from students, because students still know that the situation is not real. The student's focus shifts to the exam and the examiner and the need to demonstrate clinical competence.

Simulations in health professions education are just that - simulations. They are not the real thing. It is easier to simulate biomedical facts of a medical scenario than to accurately display the real affective psychosocial aspects of an encounter. An OSCE with simulated patients, therefore, more easily and accurately measures biomedical consultation skills than the requisite psychosocial skills.

Following this rationale, the study suggests that it is better to assess student learning of person-centeredness through an engagement with real patients in medical consultations rather than through imagined role plays in OSCEs.

The purpose of preparing for a helping or caring profession, such as medicine, is to help and care for people. Paradoxically, students motivated by this purpose are more likely to learn and to practice person-centeredness in a consultation with a real patient, while those motivated mostly by academic performance are more likely to try harder to be person-centred with a simulated patient in an OSCE. Yet other students lack motivation and have a poor sense of self-efficacy. In this study, there were students who did not engage with opportunities to learn PcP and can be predicted to perform poorly in terms of PcP in both real patient consultations and simulated patient OSCEs.

The effect of the intervention could thus have been diluted if, on average, students in the intervention group were less motivated and less self-efficacious than those in the control group. As these differences in motivation and agency were not measured in this research we do not know if they partly account for the results.

Sampling effects are also likely to have contributed to the difference between focus group and the SEGUE framework results. Only students who were part of the intervention group participated in the focus groups. Considering the opening and follow-up questions, it is possible that the more motivated and person-centred students were more vocal during the focus group discussions while those who were less motivated and less person-centred remained relatively quiet.

The difference can also be understood in terms of the two forms of discourse described by Bernstein.[7] In simulated consultations in the OSCE, students communicated using biomedical pedagogic or vertical discourse that is academic outcomes oriented.[8] By contrast, in real consultations with real patients they mobilised local, tacit, context specific "common sense" horizontal discourse to achieve person-centred practice.[8]

Thus the majority of students inappropriately used disciplinary vocabulary in OSCE consultations with simulated patients (see Task 19 in Appendix I) whereas they would be less likely to use medical terms in consultations with real patients not least of all because they often conduct these in languages other than English. It would seem that developing the skill of combining horizontal and vertical discourse is critical to learning patient centred practice.

The effect of the intervention was diluted by a poor correlation between person-centeredness practiced with real patients and simulated patient PcP measured with the SEGUE framework. This shortcoming could have possibly been addressed by conducting focus group discussions and administering questionnaires to determine self-reported person-centred attitudes in both groups. The most valid measurement, however, would have been to rate observed or video-recorded real consultations with real patients using a valid and reliable measurement tool.

Although both year levels of students started learning PcP at the same time, third year students showed the greatest improvement in PcP, particularly in respect of the two positively correlated SEGUE subscales "eliciting information" and "ending the encounter". This finding points to the need for students to be well practiced in facilitation in order for them to be able to collaborate with patients. It also suggests that learning PcP is accelerated by a combination of cumulative biomedical knowledge and skills, motivation to interact with patients and personal maturity.

A critical study finding is that students need to have a measure of confidence in their biomedical knowledge and skills before they can effectively practice person-centeredness, contrary to their expressed desire to start learning PcP earlier in their training.

In short, the study found that BCMP students learned PcP albeit not necessarily in the way that was anticipated or tested for.

This study also analysed how students learned PcP. This was done using the capability framework in which individuals are understood as four dimensional learners with physical and mental abilities, knowledge and beliefs, sense-of-self and identity and social relationships. In addition learning is understood as a process that is triggered by a challenge or disruption that mobilises a thinking review process using existing cognitive and metacognitive competencies to arrive at a possible solution that leads to action.[9] Using capability as an analytic framework, it was possible to uncover the dimensions of the learner and the processes of learning involved in PcP.

Relationships are particularly important in student learning. From the qualitative data, PcP encounters with patients and feedback from peers stimulated them to actively address biomedical knowledge and skills gaps. The lack of meaningful feedback from patients and patient resistance to collaborative involvement in clinical decision making was also disruptive for students, although it did not trigger a learning response. Rather, they attributed this relationship failure to patients, suggesting that they did not expect involvement in decision making, were not used to it and did not know how to respond when invited to participate.

Students also reported that being observed by a facilitator was stressful and hindered learning while easier relationships with peers promoted learning from observed consultations.

Relationships with patients are closely tied to students' sense of self and identity. Their desire to be regarded as competent and knowledgeable by patients is integral to their identity formation as clinicians. They want to be able to both help and inspire trust. When their abilities are questioned, they experience disturbance in several or all of their dimensions. How they respond to the uncertainties these create depends on their degree of self-efficacy in learning and within that, the locus of their motivation. In this study, the results show that PcP was influenced by where students were positioned on the directed-self-directed learning continuum. Those that were more self-directed were able to reflect on the disruptions and identify their learning needs. Internally motivated, these students devised learning strategies that often involved building relationships with peers, mentors and facilitators. In so doing, relationships became as much a means to learning as they were triggers for learning. Students who were less self-directed tended to withdraw, in order to avoid further disruption. In the process the disturbance did not trigger learning and, as a consequence, their practices remained less person-centred. They chose not to invite patients to collaborate in decision making and would only be likely to do so under instruction (external motivation).

PcP throws into question the commonly held assumption that professional identity is best acquired from and should mirror that of professional clinicians. Given the importance of sense-of-self and identity in learning, the question arises as to whether patients whom students need to learn to serve, are also not integral to shaping their identity as professionals?[6,10] Put another way, to achieve PcP, the student-patient relationship needs to be given primacy in professional identity formation as patients and their needs transform student apprentices into caring, solution-seeking clinicians (professionals) who *engage with* rather than *other* patients in the therapeutic alliance. In what has elsewhere been described as the strong patient-centred model of medical education,[10] the role of qualified professionals changes from exemplars to facilitators of learning. They mobilise their skills, knowledge and experience, using the best available basic ‘rules’ of instruction to support the development of capability.[11] Here collaborative knowledge production (student with patient) replaces information reproduction (student learning from qualified professionals).

BCMP students train in small groups in the healthcare service. Their identity is formed in communities of practice with the professionals facilitating their training.[12] This and other research on a strong patient-centred model of medical education, however, suggests that students’ professional identity would be more person-centred where patients are construed as and included in their community of practice. In conclusion, motivated and self-efficacious students learned person-centred practice as they formed their professional identities in relationships with real patients in a service learning environment.

Novel findings

Students learn and practice PcP best in authentic encounters with real patients and much less in simulated consultations.

When students’ sense of self is threatened by their inability to help patients, self-directed students respond with learning strategies involving relationships with peers, mentors and facilitators. Relationships are thus both triggers for learning and a means to learning.

The significantly better improvement in third year students’ PcP, compared to second years, suggest that learning PcP is grounded in increased confidence in biomedical knowledge and skills, motivation and a sense of self-efficacy.

Textbox 7.1 New knowledge described in this thesis

Another novelty is that the study took the capability approach beyond its usual use as a way of doing learning and applied it as an analytic framework to interpret how PcP is learned. Conceptually, the framework made it possible to link issues generated through cognitive and metacognitive processes to the dimensions of the person. In turn, it then became possible to identify the key dimensions involved in learning PcP as well as the gaps that need to be addressed to support clinical associate students.

7.2 Curricular recommendations

Being a multidimensional concept we need a multidimensional approach to grow PcP in healthcare students. It cannot be a separate “vertical” programme, didactic lectures, standalone interventions or self-study. It has to be integrated into the rest of the curriculum and form part of the soul of the curriculum. It has to be something that changes students from the inside, impacting their identity.

The capability approach to learning engages students in four dimensions of their being: physical and mental abilities (skills), knowledge and beliefs, sense-of-self and identity and relationships with others. Person-centred practice has to be instilled in each of these dimensions.

In terms of physical and mental abilities students need to learn consultation skills such as physical examination techniques, communication skills, history taking skills etc. to be able to engage with patients to gather the information needed to assess the patient’s health problem(s) and plan solutions. Learning these through interaction with real patients from the start of the course will provide the opportunity for students to form relationships with patients without “othering” the patients and before “othering” can be learnt from professional role-models.

Medical knowledge and believing or trusting that knowledge is necessary to assess the patient’s health problem and plan the solutions. From a biomedical perspective this is the essence of evidence based medicine. However, a purely biomedical approach does not result in the best possible outcome for the patient because it ignores the important psychosocial, cultural and spiritual dimensions of the patient. Thus while students need to know, understand and be able to apply medical knowledge they should not do so isolated from a holistic approach. Long term memory of medical facts will be enhanced when the facts are linked to a specific patient and the affective experience the student had with that patient.[13]

Students' sense of self can trigger learning of medical knowledge. They do not want to be regarded as incompetent by patients and therefore they pursue strategies to learn. The extent to which students are motivated and self-directed affect their learning. Students with a poor sense of self and lacking agency will not pursue learning when faced with obstacles.

Students' sense of self is linked to their relationships: relationships with patients, peers and teachers. Building a trusting relationship with patients motivate students to learn – they need to learn to best help the patients with whom they now are in a caring relationship. Collaborative learning activities should foster mutually beneficial, collaborative relationships with peers. Facilitators of learning have the experience to give students feedback on their PcP at the deeper levels of self-regulation and maybe on their sense of self. However such feedback will be more effective if given in the context of a positive relationship between the student and the facilitator.

Furthermore the context of learning should be considered. Certain factors promote the practice and learning of PcP while others discourage it (Table 7.1).

Table 7.1: Factors in the context of learning which may promote or oppose the learning of PcP.

Factors opposing PcP	Factors promoting PcP
Technological advance,[14,15]	Meeting patients in context[16]
Complex referral systems	Continuity of care[16]
Cultural and language barriers[17]	Cultural understanding
Secondary and tertiary level of healthcare	Integration of services
	Student-centred approach[18]

In our context the effects of these factors have not been researched but should be considered in planning for the learning of PcP.

7.2.1 Implementation of the capability approach to enhance learning PcP in the BCMP curriculum

How can the capability approach to learning be applied in the BCMP course generally and specifically to enhance the learning of PcP?

Person-centred medical education with the capability approach to learning applied in longitudinal clerkships throughout the three years of the BCMP curriculum is proposed. This means that student learning should consistently be focused on meaningful long term relationships with patients. This will have to be diligently applied by all facilitators of learning, clinical mentors and lecturers in the BCMP programme.

Three activities are proposed:

1) **Create constant awareness of the capability approach to learning:** Students to submit regular structured reflections on their own learning in terms of all four dimensions of the learner. Use the video graphic[19] explanation of the capability approach to learning as the initial trigger for reflection. Discuss and apply the concepts in lectures and group discussions. Repeat reflection at the start of each semester and also include it in patient studies submitted as assignments.
2) **Create opportunities for students to build relationships with patients, peers and facilitators and learn in these relationships:** Relationships with patients should be fostered through regular and repeated contact with the same individual patients from the start of the course – even from day one. For continuity of learning students should maintain contact and keep learning from patients after their initial contact episode. Continuity of care have to be pursued in longitudinal patient studies where the same patient is followed for at least 10 months. Relationships with peers and facilitators of learning should be fostered through continuity of collaborative learning in small groups being together at one CLC with a specific facilitator and group of clinical mentors for at least one year. Over and above working together in the health service these relationships will be enhanced through person-centred patient discussions in small groups. Peer relationships can be strengthened through group assignments designed to demonstrate students' ability to work and learn as a team.
3) **Create opportunities for feedback from facilitators, peers and patients:** Feedback from facilitators are already included in workplace based formative and summative assessments. Feedback from peers should be included in peer assessments of consultation skills. Video recordings of consultations can be uploaded securely online and reviewed by peers as well as by mentors or facilitators. Peer feedback (usually on the task or process level) can be reviewed

by experienced facilitators to add feedback on the self-regulation level. Logistical barriers will have to be overcome and permission for video recording obtained from all relevant stakeholders. Regular feedback from patients can be collected by dedicated administrative assistants or other health professionals. Students to review the patient feedback weekly and administrative staff to summarise it in student specific reports and group specific reports.

These three activities can be complimented by mindfulness training for clinicians so that self-aware clinician role models will discuss their own PcP with students. [20] Role models need to demonstrate and explain strategies to students to avoid losing their self-esteem when students try to collaborate with those patients who are uncomfortable with participation in decision making.

Feedback on observed, recorded and/or role played consultations can be used when students are preparing for clinical placement. This will serve to highlight the principles of PcP to be internalised over time as students conduct consultations with patients in the primary care context.

7.2.2 Monitoring

We have to develop valid and reliable measures of students' person-centred practice in real consultations with real patients in the healthcare service. Ultimately patients' experience of person-centred care is what matters. Therefore measuring it there - in real consultations - will indicate whether our efforts are successful. The most valid measurement will be that of patients' perceptions of PcP. Though our students did not experience patient feedback as educationally useful this should still be pursued. The patient feedback referred to above will be more likely educationally useful by following these guidelines adapted from Al-Jabr et al.[21]

(1) Select a locally valid and reliable questionnaire for patient feedback

(2) An independent person should approach patients face-to- face

(3) Collect questionnaires from patients immediately following the encounter

(4) Collect patient feedback multiple times

(5) Protect patient anonymity and keep practitioners (students) blinded

(6) Report feedback results to practitioners (students) by using a combined method of data presentation that allows comparison with peers

(7) Conduct follow-up that includes reassessment of practitioners (students)

Applying these guidelines will not be easy. It will require resources. The role of technology have to be considered. Patients can give students feedback on a tablet device managed by an administrative assistant. But will this be possible considering the relatively low levels of exposure to such technology among patients seeking help at the South African public healthcare service?

In addition to patient perceptions, objective third party measurement of PcP in student-patient consultations can be used to monitor the effectiveness of students' learning of PcP. The same consultations used for facilitator feedback referred to above can be scored with an instrument which is valid and reliable in this context.

7.3 Research recommendations

In future research to test any interventions to help students learn PcP, diligent implementation of the intervention have to be ensured and monitored for it to produce clear results.

Measurement instruments of PcP have to be adapted and tested for their psychometric properties in the context of clinical associates working in the South African public health service. With such instruments the PcP of clinical associate students can then be monitored regularly while curricular changes are being implemented to determine the effectiveness of patient-centred medical education. With careful planning and monitoring of implementation the effectiveness of the various curricular changes can be compared.

Areas for future research of the best methods and processes to support the learning of person-centred practice include the effectiveness of different tools to guide self-evaluation and peer feedback, the role and place of video-recording in the learning cycle, the development of students' 'review' competencies over time and students' responses to patients' resistance to involvement in decision making and the determinants of those responses.

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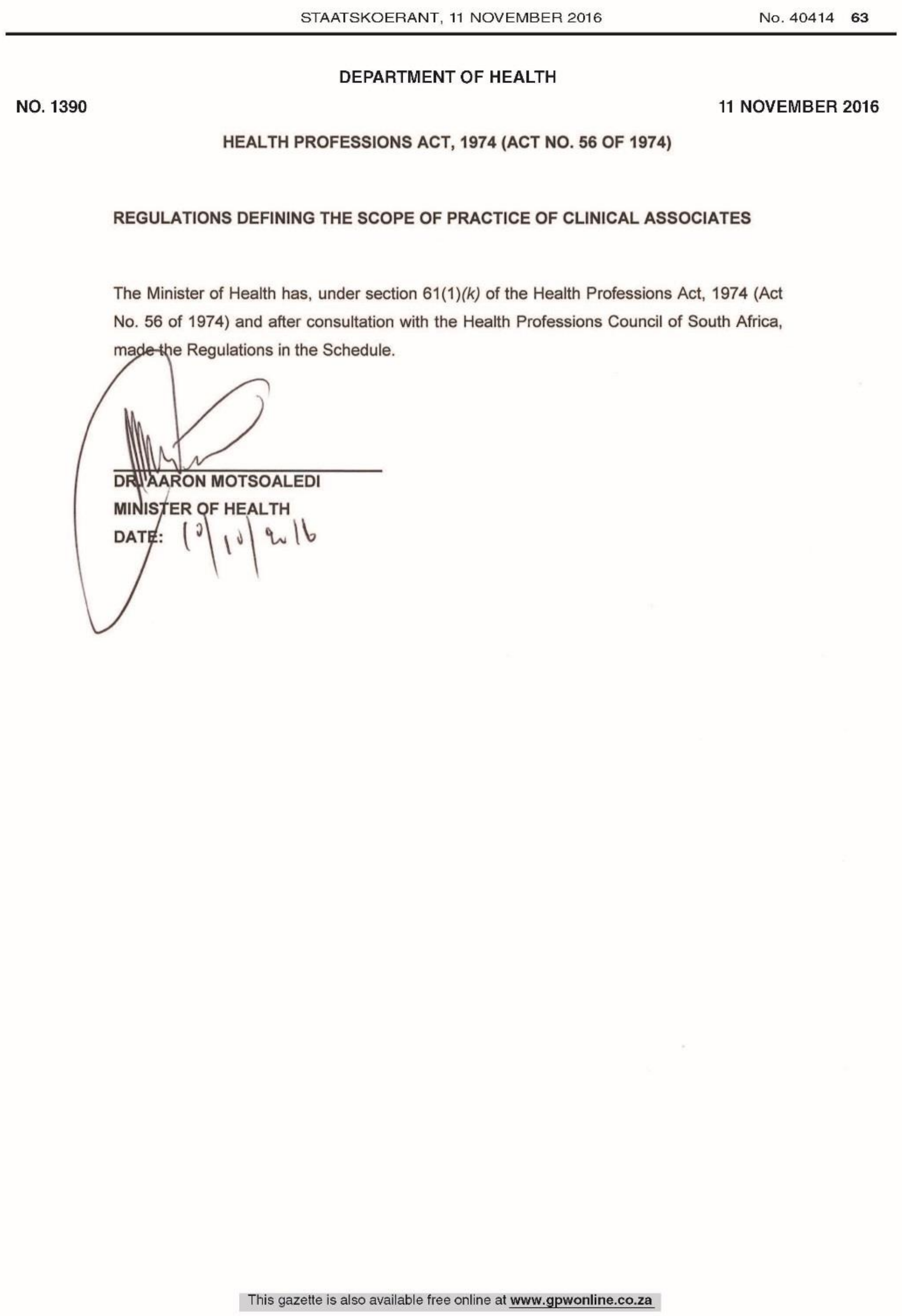
Appendices

Appendix A: Regulations defining the scope of practice of clinical associates



STAATSKOERANT, 11 NOVEMBER 2016 No. 40414 63

DEPARTMENT OF HEALTH

NO. 1390 **11 NOVEMBER 2016**

HEALTH PROFESSIONS ACT, 1974 (ACT NO. 56 OF 1974)

REGULATIONS DEFINING THE SCOPE OF PRACTICE OF CLINICAL ASSOCIATES

The Minister of Health has, under section 61(1)*(k)* of the Health Professions Act, 1974 (Act No. 56 of 1974) and after consultation with the Health Professions Council of South Africa, made the Regulations in the Schedule.

DR. AARON MOTSOALEDI
MINISTER OF HEALTH
DATE: 12/10/2016

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SCHEDULE

Definitions

1. In these Regulations, unless the context otherwise indicates, "**Act**" means the Health Professions Act, 1974 (Act No. 56 of 1974), and any word or expression to which a meaning has been assigned in the Act bears that meaning -

"clinical associate" means a person registered as such under the Act;

"professional board" means the Medical and Dental Professions Board established in terms of section 15 of the Act.

Acts deemed to be acts pertaining to the scope of practice of Clinical Associates

2. The following acts are deemed to be acts pertaining to the scope of practice of clinical associates and must be performed within ethical rules of the Health Professions Council of South Africa and all applicable clinical protocols and strategies for all age groups:

(a) Obtaining a patient's history and performing a physical examination of the patient in accordance with the clinical associate's level of education, training and experience;

(b) ordering or performing diagnostic and therapeutic procedures for common and important conditions in South Africa and in accordance with the clinical associate's level of education, training and experience;

(c) performing or ordering and interpreting the following investigations:

INVESTIGATIONS	
Performing finger prick blood tests (on accreditation compliant instrumentation under the guidance of an accredited laboratory according to Point of Care Testing guidelines).	HIV (including counselling), Haemoglobin, blood glucose, blood type, etc.
Ordering and interpreting X Rays	
Performing/ordering and interpreting ECG	
Performing/ordering urine tests and interpreting results	Dipstix, pregnancy test, Microscopy, Culture and Sensitivity (MC&S), etc.

Ordering stool tests and interpreting results	MC&S, etc.
Performing throat swab, ordering tests and interpreting results	MC&S, etc.
Collecting sputum samples, ordering tests and interpreting results	Acid Fast Bacillus (AFB) , MC&S, etc.
Ordering blood tests and interpreting results	Full Blood Count (FBC)
	Liver Function Tests (LFT)
	Urea and Electrolytes (U&E)
	C-reactive protein (CRP), etc.

(d) interpreting findings and formulating a diagnosis for common and emergency conditions referred to in paragraph (b) in accordance with clinical associate's level of education, training and experience;

(e) performing the following procedures under supervision of a medical practitioner and in accordance with the clinical associate's level of education, training and experience:

AGE GROUP	**PROCEDURE**
All age groups	Administration of Oxygen
	Acute debriefing/Sharing bad news
	Administration of nebulisation
	Apply POP - all types
	Arterial blood gas - radial, femoral
	Check for union of fractures
	Cranial Nerve II-XII Examination
	Completion of J88 Assault Form
	Counselling - bad news
	Counselling – death
	Counselling - family/mental health
	Counselling – HIV
	Counselling – Pregnancy
	Defibrillation Automatic Emergency Defibrillator (AED)/ manual
	Death notification
	Dress abrasions and burns

	Foreign body removal – ear and nose
	Gastric Lavage
	Intravenous line insertion
	Inter costal drain insertion
	Injections – Intradermal
	Injections – Intramuscular
	Injections – Subcutaneous
	Lumbar Puncture (except in neonates)
	Mantoux
	Medical condition notification
	Metered Dose Inhaler technique and demonstration
	Nasogastric Tube Insertion
	Paraphimosis reduction
	Patient referral
	Peak Flow Meter use and Interpretation
	Pulse Oximetry
	Removal of foreign body –ear and nose
	Removal of POP
	Sick leave certification
	Snellen Visual Chart Exam
	Suprapubic aspiration/catheter insertion
	Syringe of ear/Ear irrigation
	Venipuncture
Adults and children 13 – 17 years	Aspiration and incision and drainage of abscess
	Assist in Caesarean Section
	Assist in closed fracture reduction
	Assist in diathermy/cautery
	Assist in emergency laparotomies
	Assist in epidural and spinal anaesthesia
	Assist in knee and other joint aspiration
	Assist in medico legal examination
	Assist in open reduction of fractures
	Assist in/perform reduction of joint dislocations
	Assist in tubal ligation
	Bag and mask ventilation

	Basic life support
	Bladder catheterisation - female
	Bladder catheterisation - male
	Blood transfusion
	Bone marrow aspiration
	Cardiopulmonary resuscitation (CPR)
	Cardiotocographic fetal heart monitoring
	Cautery/excision of condylomata
	Central line insertion- external jugular vein, femoral vein.
	Circumcision - uncomplicated
	Close surgical incisions (all layers)
	Cricothyroidotomy
	Cryotherapy
	Debridement of minor limb injuries
	Dilatation &Curettage
	Dilatation of pupil
	Drainage of simple hydrocele
	Dry mopping of ear
	Episiotomy – perform and suture (including repair of vaginal tears)
	Eye staining
	Excision of skin glands/cysts/ masses/lesions
	Fine Needle Aspiration – breasts and nodes
	Full spine immobilization & log roll
	Genital swabs
	Glasgow Coma Scale (GCS)assessment
	Glue lacerations
	Incision and drainage of Quinsy
	Incision and drainage of paronychia
	Instruction in use of crutches
	IV Infusion
	Incision and drainage of superficial abscess
	Incision of thrombosed haemorrhoid
	Intra- and post-operative observation
	Intrauterine contraceptive device insertion
	Insertion and removal of long-acting subdermal contraceptive implants

	Knee examination
	Leg ulcer chronic dressing
	Lymph node biopsy
	Maebomian abscess removal
	Mental health examination
	Mental Health History
	Mini Mental State (MMS) examination
	Normal vaginal delivery
	Oral airway/Laryngeal mask airway/other airway devices
	Oral endotracheal intubation
	Packing of nose
	Paracentesis
	PAP smear
	Portable ventilation
	Pre-op assessment
	Pleural tap; Pleural biopsy
	Preparation of malaria smear
	Reduction of shoulder dislocation
	Removal of K-wire
	Regional Blocks – penile
	Regional blocks - ring blocks
	Removal of foreign body – ear, eye, eyelid and vagina
	Restraining a patient
	Conscious sedation
	Skin applications (Podophyllin)
	Skin biopsy
	Skin grafts – small
	Sputum collection
	Stool specimen collection
	Suture lacerations
	Suturing ear
	Suturing eyelid
	Tamponade of epistaxis
	Trauma survey (primary &secondary)
	Triage

	Venous cut down
	Wound care and debridement
Children up to 12 years of age	Apply Gallows traction
	Assist at lumbar puncture - Neonate
	Lumbar puncture - Children
	Hearing Screen
	Immunisations
	Intraosseous infusion
	Initiate Neonatal Resuscitation (bag and mask)
	Initiate Paediatric Resuscitation (bag and mask)
	Complete the Road to Health booklet
	Nutritional assessment
	Assess for and initiate CPAP in newborns with respiratory distress syndrome (RDS)
	Prescribe and initiate phototherapy in newborns

(f) developing, implementing and monitoring a comprehensive management plan for common and important conditions;

(g) issuing sick certificates for a period not exceeding 3 days, which must contain the name and contact details of the supervising medical practitioner;

(h) prescribing medicines for common and important conditions according to the primary health care level Essential Drug List (EDL) and up to schedule IV, except in emergencies when appropriate drugs of higher schedules may be prescribed. The prescription must contain the name of the supervising medical practitioner. In the case of drugs not on the EDL the prescription must be countersigned by a medical practitioner;

(i) being the required assistant at surgery;

(j) making appropriate admissions, discharges and referrals;

(k) performing any act delegated to him or her by the supervising medical practitioner in accordance with the education, training and experience of the clinical associate; and

(l) assisting medical practitioners within district level health care services and with the focus on primary health care.

Conditions of practice

3. (1) A clinical associate may not conduct an independent private practice.

(2) A clinical associate may not act as a *locum tenens* for a medical practitioner.

(3) The acts referred to in regulation 2 must be performed under the supervision of a medical practitioner identified by the service in which the clinical associate is working and must be available to the clinical associate at all times.

(4) A clinical associate who has practised as a clinical associate for a continuous period of less than two years must perform the acts referred to in regulation 2 under the continuous and hands on supervision of a medical practitioner, and in the clinical setting alongside the supervising medical practitioner.

(5) A clinical associate who has practised as a clinical associate for a continuous period of two to four years must perform the acts referred to in regulation 2 and report, in person, to the clinical associate's supervisor after each task: Provided that a clinical associate referred to in this subregulation must practise in the same component of a health facility as the supervising medical practitioner who must approve and countersign all the clinical associate's management plans or decisions.

(6) A clinical associate who has practised as a clinical associate for a continuous period of five or more years may perform acts referred to in regulation 2 independently on a day to day basis and does not have to report to the supervising medical practitioner but must have personal or verbal access to the supervising medical practitioner's support when necessary.

(7) A clinical associate must be identified by the title of Clinical Associate (abbreviation: Clin A) and must always be identifiable as such by patients and co-workers.

Short Title

4. These Regulations are called the Regulations Defining the Scope of Practice of Clinical Associates, 2016.

Appendix B: Published article

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Patient- or person-centred practice in medicine? – A review of concepts

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Background: Person-centred practice in medicine may provide solutions to several pressing problems in health care, including the cost of services, poor outcomes in chronic care and the rise in litigation. It is also an ethical imperative in itself. However, patient- or person-centred care is not well researched partly because of a lack of conceptual and definitional clarity.

Aim: The aim of this review was to analyse essential elements, ethical principles, logic and the practical application of person-centred practice described in clinician- and researcher-defined conceptual frameworks, terms and practices.

Methods: A search of review articles on patient- and person-centred care or medicine was conducted using Medline and Google Scholar. Secondary searches were conducted using references and citations from selected articles.

Results: Five conceptual frameworks were identified in terms of their practical application of the ethical principles of beneficence, autonomy and justice. They converge around a few central ideas such as having a holistic perspective of patients and their illness experience, a therapeutic alliance between the patient and clinician as well as respectful, enabling collaboration with the patient.

Conclusions: Terminological differences appear to owe more to disciplinary origins than to substantive meaning. Beneficence needs to be balanced by and practised through respect for patient autonomy. Core ideas in existing conceptual frameworks of patient or person centredness can guide teaching and research. Considering the value and ethical imperative of person-centred practice, training institutions should train health care students and practitioners in its precepts.

Introduction

The concept of patient or person centredness has gained prominence internationally and received official support in the health care systems of several countries including the USA, UK, Germany and Australia.[1]

The concept of patient-centred care (PCC) developed mostly in the discipline of family medicine, whereas the concept of person-centred medicine was defined and mostly developed in psychiatry. The difference in emphasis suggested by these terms can be attributed to their origins. In the practice of the former, the idea of PCC is used to shift the focus of the consultation away from the clinician and associated medical practices to the patient and their expectations, fears, feelings, etc.[2] In the person-centred medicine movement, advocates focus on both the person of the patient and the person of the clinician as well as their contexts – the society they live in and the health system they function in.[3,4]

Person-centred practice has a number of actual or potential benefits. Even though evidence is still regarded as insufficient by some, it can improve patient health outcomes.[5,6,7,8,9] It may also reduce the workload (and cost) of health care services[10,11] by avoiding services and procedures that patients do not want or need.[11,12] Person-centred care increases patient satisfaction,[13] reduces complaints against health care professionals and leads to fewer malpractice lawsuits.[14,15] Person-centred practice is also important for the development of patient capability.[16] Entwistle and Watt[16] contend that person-centred care should be pursued for its own intrinsic value as it is an ethical requirement that clinicians treat patients as persons with significance. They argue that 'the ways others treat us enable us (or not) to exhibit the characteristics – as well as to experience the social status – of persons as ethically significant beings.'[16]

While there is no universally agreed-upon definition of person-centred practice,[1] an abundance of terms are used in the medical and health care literature to describe its intent, including person-centred medicine, person-centred care, patient centredness, individualised medicine, personalised medicine, family-centred medicine, patient-centric medicine, patient-centric care, etc.[1,13,17] The multiplicity of terms and the absence of a singular definition reflect the complexity as well as the state of flux of person centredness as a practice. The profusion of descriptions can also be attributed to the roots and specific applications of person-centred practice in a variety of disciplines including family medicine, psychiatry, nursing, dentistry, physiotherapy and others.

This article is an analytic review of clinician-defined conceptual frameworks as well as researcher-defined terms and practices of person-centred practitioners. Frameworks, terms and practices were identified and then assessed in terms of their underlying ethical principles, logical construction and practical application in order to ascertain similarities and differences.

In terms of ethical values, the review focuses primarily on beneficence and autonomy, with some references to respect, non-maleficence and justice. These values are described by the Health Professions Council of South Africa (HPCSA) as follows:[18]

- **Respect for persons:** Health care practitioners should respect patients as persons, and acknowledge their intrinsic worth, dignity, and sense of value.
- **Best interests or well-being:**
    - **Non-maleficence:** Health care practitioners should not harm or act against the best interests of patients, even when the interests of the latter conflict with their own self-interest.
    - **Beneficence:** Health care practitioners should act in the best interests of patients even when the interests of the latter conflict with their own personal self-interest.
- **Autonomy:** Health care practitioners should honour the right of patients to self-determination or to make their own informed choices, and to live their lives by their own beliefs, values and preferences.
- **Justice:** Health care practitioners should treat all individuals and groups in an impartial, fair and just manner.

Methods

Searches were conducted on the databases of Ovid Medline®, Pubmed and Google Scholar for English language articles published between 2000 and 2015. The search terms were 'patient centredness', 'patient centred', 'person centredness', 'person centred', 'model', 'concept', 'definition' and 'framework'.

Searches in the three databases rendered approximately 4500 articles of possible relevance to the understanding of person- or patient-centred practice with sufficient variety in terms of sources and content. To build a clear understanding of the concept and for the sake of feasibility, the search was further refined to include review articles that described a framework, model or conceptual definition of person or patient centredness. It yielded approximately 900 articles.

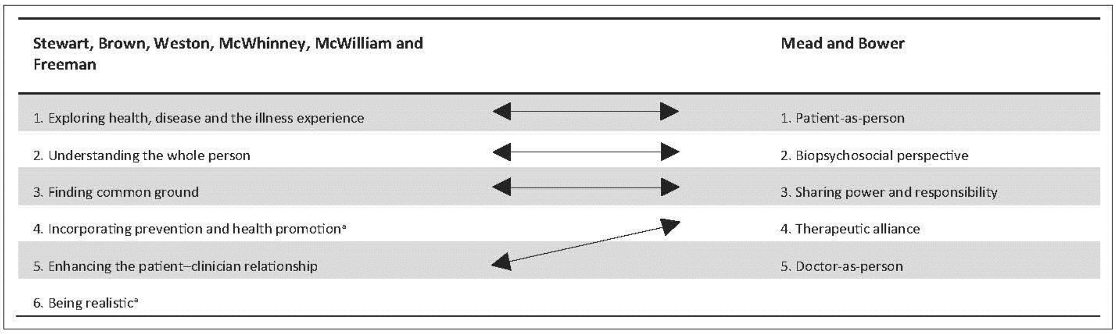
Through a review of titles, articles with a disease or age-specific focus (e.g. stroke or the elderly) were excluded. Similarly, articles describing person or patient centredness in terms of a specific service such as rehabilitation or nursing homes were excluded. Secondary searches were then conducted in the references and citations of the most relevant articles. The criteria for inclusion were the potential for application in medical practice, ethical implications and logical clarity. Through these processes the eight sources discussed below were selected.

Ethical considerations

Ethical clearance was obtained from the University of Pretoria Faculty of Health Sciences Research Ethics Committee (Ethics reference no.:128/2013).

Review findings

Six of the sources describe five frameworks for person- or patient-centred medicine in generalist primary care. In addition, two sources reviewing the dimensions, themes and behaviours of person-centred practice are discussed. These eight sources come from a range of disciplines in health care (family medicine,[19,20,21] psychiatry,[3] medical psychology[1] and nursing[13]) and from a health policy perspective.[12,24] The frameworks have been described over a period of two decades (1995[22] to 2014[12,19]).



Stewart, Brown, Weston, McWhinney, McWilliam and Freeman		Mead and Bower
1. Exploring health, disease and the illness experience	↔	1. Patient-as-person
2. Understanding the whole person	↔	2. Biopsychosocial perspective
3. Finding common ground	↔	3. Sharing power and responsibility
4. Incorporating prevention and health promotion[a]		4. Therapeutic alliance
5. Enhancing the patient–clinician relationship		5. Doctor-as-person
6. Being realistic[a]		

Source: Adapted from Hudon et al.[23]

[a], Two components were later integrated into other aspects of the model.[16]

FIGURE 1: Patient-centred care: A comparison of the Stewart et al.[19] and Mead and Bower[21] frameworks based on Hudon et al.[23]

The following are the five frameworks:

- the six (later four) interactive components of the patient-centred clinical method described by Stewart[20] and Stewart et al.[19]
- the five key dimensions of patient centredness described by Mead and Bower[21]
- definitions and descriptions by Miles and Mezzich[3] in their model of person-centred medicine
- four defining attributes of person-centred practice described by Morgan and Yoder[13]
- four principles of person-centred care described by Collins.[12]

The first four frameworks are applicable to the medical consultation where a clinician meets with a patient to find solutions for health-related problems. The fifth framework relates more to the health care system, how it is accessed and how it interfaces with patients. In the analysis that follows, they are discussed and compared in terms of their practical application, logical construction and ethical implications.

The six interactive components of the patient-centred clinical method

The first framework for consideration is the patient-centred clinical method described by Stewart et al.[19] Stewart[20] describes patient centredness as 'the middle way' where there is a balance (equally valued) between the individual and the community, science and art, analysis and synthesis, and technology and wisdom. In pursuing this balance, she contends that clinicians will regain their capacity for love and spirituality.[20] This patient-centred or integrated clinical method comprises six interactive components (Figure 1).

The first three interactive components follow the common sequence of medical consultations from understanding the patient fully through the medical history and examination to finding common ground on the assessment (diagnosis) and management plan. In the third edition of their book, the authors integrated prevention and health promotion into the other interactive components.[19] Being realistic is no longer described as a component but rather as a comment on the implementation of this clinical method.

This clinical method is focused on fully and deeply understanding the patient for the benefit of the patient. Thus, it is the practical manifestation of the ethical principle of beneficence. In the first component, the focus is on understanding the patient's experience of the illness. The second component builds on this by exploring the person and the context of the patient. This flows well into 'finding common ground' (component three): the patient and the clinician coming to one mutually acceptable understanding of both the problem and the plan to address it. On this common ground the patient–clinician relationship can be built (fifth component) through sharing of power and responsibility.

In two of the interactive components, the ethical value of autonomy (of the patient) is inferred. Finding common ground requires the patient to contribute towards a mutual understanding of the problem and of the way forward. In enhancing the patient–clinician relationship, Stewart et al.[19] refer to the sharing of power. However, it is not clear how much autonomy is offered to the patient to pursue unique, customised options of assessment and management. Incorporation of 'prevention and health promotion'[22] (previously component four), for instance, is the clinician's agenda and, thus, is more a manifestation of beneficence and less of autonomy. In some scenarios, attempts to prevent disease without proper patient involvement in decision-making can cause greater harm than good (e.g. screening for prostate cancer). This breaks the principle of non-maleficence. Thus, the lack of emphasis on patient autonomy is a weakness in this framework.

The 'being realistic' comment (previously the sixth component)[19,22] is unique to this framework. It will aid the practical implementation of any framework of care. It reminds clinicians that the implementation of the first five, very important, interactive components will often be limited by lack of time and other resources. It can also inspire innovative planning to overcome these limitations. Being realistic requires cooperation and collaboration. Through well-organised teamwork, more time is available for building good patient–clinician relationships. A deep relationship with a patient cannot be established in one consultation; being realistic means ensuring continuity of care to allow for the relationship to grow over time. Being realistic can also refer to the ethical principle of justice. The use of resources to the benefit of one patient should not be to the detriment of other patients.

Incorporating prevention and health promotion implies that the patient is capable of learning and changing behaviour. However, if the clinician lectures the patient and does not give the patient autonomy to choose actions, ask questions and contribute to the plan, learning will be limited and the application of new knowledge unlikely.

The five key dimensions of patient centredness

The framework of Mead and Bower,[21] analysed next, describes five key dimensions of patient centredness, four of which correlate with the interactive components described by Stewart et al.[19] as Figure 1 shows.

The first two of the five key dimensions are very similar to the first two components of the framework described by Stewart et al.[19] They indicate the importance of knowing the patient comprehensively to help the patient comprehensively (beneficence).

The next dimension described by Mead and Bower[21] is that of sharing power and responsibility. The authors describe how the power of the medical expert conflicts with the patient's autonomy as a lay person. Reduction of this power imbalance, they argue, requires that the doctor respects patient autonomy and confers decision-making power on the patient as a shared responsibility.

When it comes to the power and responsibility dimension, it is important to note the use of the term 'sharing' by Mead and Bower.[21] The clinician, as medical expert, still carries responsibility and decision-making power as to abdicate these would be unfair and in conflict with the ethical value of justice.

The dimension of the therapeutic alliance in this framework has a strong focus on beneficence. The clinician and the patient form an alliance against suffering and ill health for the benefit of the patient.

The fifth dimension in the framework by Mead and Bower[21] reminds the clinician to be self-aware. The clinician's emotional responses and biases influence patient healing and this is not always with positive effect. The clinician's self-awareness should guide the application of their own person to the benefit of the patient.

Descriptions of person-centred medicine

In their framework, Miles and Mezzich[3] describe person-centred medicine as 'the rational integration' of the thinking behind two social movements in medical care, namely PCC and evidence-based medicine (EBM). In so doing, they seem to reinvent or redefine person-centred medicine as new or 'emergent' when actually the concept and terminology of person-centred medicine predates EBM by several decades and, as discussed in this review, there is no clear differentiation between the concepts of person-centred care and PCC.

According to Miles and Mezzich,[3] person-centred medicine is:

> a move away from impersonal, fragmented and decontextualised systems of healthcare towards personalised, integrated and contextualised models of clinical practice, so that affordable biomedical and technological advance can be delivered to patients within a humanistic framework of care which recognises the importance of applying science in a manner which respects the patient as a person and takes full account of his [*or her*] values, preferences, stories, cultural context, fears, worries and hopes and which thus recognises and responds to his [*or her*] emotional, spiritual and social necessities in addition to his [*or her*] physical needs.[3]

This definition is more like a description with definitional elements that include the system of health care delivery – 'models of clinical practice' – and the provision of health care to the individual 'within a humanistic framework of care'. In it, the ethical principle of beneficence is prominent as the authors seek to incorporate everything that is good and valued in medicine, including the best interest of the patient, into person-centred medicine. It can also be understood as a response to the question of how the health care provider and the health care system can provide the best possible service to each patient.

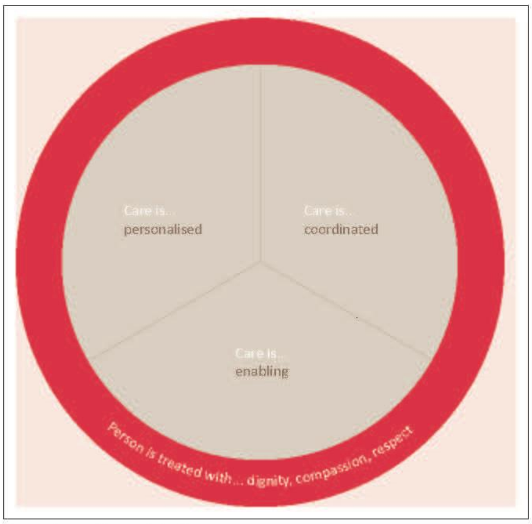
Also, although Miles and Mezzich[3] refer to respect for the patient as a person and for the patient's preferences, they fail to emphasise patient autonomy or describe how the patient should be involved in collaboration and shared decision-making with the health care provider. Their definition is therefore insufficient to guide enquiry or practice in the field.

Like Miles and Mezzich,[3] The Health Foundation[17] in the United Kingdom also refers to a person-centred health *system*. The Health Foundation describes this as a health system that 'supports people to make informed decisions about, and to successfully manage, their own health and care, [to be] able to make informed decisions and choose when to invite others to act on their behalf.'[17] Thus, the health care service should 'work in partnership to deliver care responsive to people's individual abilities, preferences, lifestyles and goals'.[17] They then define person-centred care as 'a philosophy that sees patients as equal partners in planning, developing and assessing care to make sure it is most appropriate for their needs'.[17] This description gives prominence to individual autonomy, but little is said about providing the best quality of care. It lacks a focus on beneficence. The Health Foundation provides evidence of the benefits of self-management support, but without the appropriate checks it may result in patients harming themselves. This is against the ethical principle of non-maleficence. Collaboration with a caring, competent health care professional should reduce this risk.

Four principles and four defining attributes of person-centred practice

In the fourth framework, Collins's[12] person-centred practice is guided by four principles, namely personalised, coordinated, enabling and compassionate (Figure 2) practice, which supports self-management, shared decision-making and collaborative care and planning.[12,24]

Similarly, Morgan and Yoder[13] describe what they call defining attributes of person-centred care – namely holistic, individualised, respectful and empowering.



Source: The Health Foundation[24]

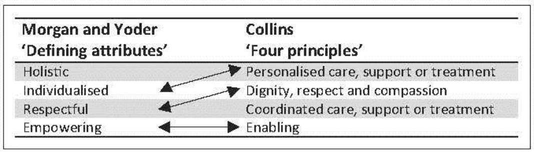
FIGURE 2: Collins's four principles of person-centred practice.[12,24]

As Figure 3 demonstrates, three of their 'defining attributes' are interchangeable with three of Collins's four principles.

Both frameworks can be applied to person-centred practice at an organisational level and to some extent at an interpersonal level in medical consultations. Both contain elements of beneficence. In the framework of Morgan and Yoder,[13] beneficence is articulated as holistic, individualised, respectful care, while in Collins's[12] framework it is expressed as personalised care with dignity, respect and compassion. And, unlike the definition by Miles and Mezzich,[3] both emphasise patient autonomy, describing person-centred care as empowering and enabling.

Discussion

The terms 'person centredness' and 'patient centredness' are often used interchangeably in the medical literature.[25] Although the frameworks were developed in different disciplines, many of their concepts overlap or are similar. In terms of researcher understanding and interpretation of person-centred care, a review of the empirical literature by De Silva[17] generated a list of 19 subcomponent themes and 19 behaviours associated with person-centred care (Table 1). In a systematic review of PCC, Scholl et al.[1] integrated more than 400 definitions into one model. They defined 15 dimensions of PCC and categorised them into four principles, five enablers and six activities (Table 2). These lists demonstrate the diversity in descriptions of the concept with some authors (like clinicians) placing more emphasis on certain dimensions, subcomponent themes or behaviours than on others, with many authors only making reference to a few. The result is a multiplicity of definitions and the absence of a single definition that researchers investigating person-centred practice agree on.



Source: Authors' comparison of the work by Morgan and Yoder[13] and Collins[12]

FIGURE 3: Person-centred care: A comparison of Morgan and Yoder's[13] 'defining attributes' and Collins's[12,24] 'four principles'.

TABLE 1: Subcomponent themes and behaviours of person-centred care–related research.

Subcomponent themes	Behaviours
1. Activation	1. Advocating
2. Choice	2. Assessing needs[a]
3. Compassion	3. Assessing family needs[a]
4. Continuity	4. Communicating
5. Control	5. Coordinated care
6. Dignity	6. Enablement[b]
7. Empathy[a]	7. Engagement[b]
8. Empowerment	8. Goal planning[b]
9. Health literacy	9. Individual budgets
10. Holism	10. Individual care plans
11. Independence	11. Information provision
12. Individuality	12. Listening[a]
13. Integration	13. Participation
14. Involvement[b]	14. Physical environment
15. Partnership[b]	15. Recognising values
16. Privacy[a]	16. Self-care support[b]
17. Respect	17. Shared decision-making[b]
18. Rights	18. Support[b]
19. Trust	19. Transitions

Source: Adapted from De Silva[17]

[a], specific to facilitation; [b], specific to collaboration.

There appears to be a tension between beneficence and autonomy. While some frameworks have a strong emphasis on beneficence to the detriment of autonomy, others emphasise autonomy without ensuring beneficence.

In terms of ethical principles, Miles and Mezzich[3] and Stewart et al.[26] place more emphasis on beneficence and less on patient autonomy. Morgan and Yoder,[13] Collins[12] and The Health Foundation[17] seem to promote patient autonomy more. The model described by Mead and Bower[21] seems more balanced.

When beneficence is applied without involvement of the patient, it can restrict patient autonomy. However, respect for patient autonomy can also be a catalyst for the activation of the beneficence intended by the clinician, because a patient who is involved in customising a decision is more likely to adhere to the beneficial treatments jointly decided upon in a therapeutic alliance.

In patient-centred medicine, a more symmetrical power relationship between the patient and the clinician may prevent patients being submitted to unnecessary or even harmful treatment by clinicians who may stand to gain financially or otherwise from such treatment. Thus, when the clinician lacks beneficence, patient centeredness to support autonomy can prevent maleficence. Paradoxically, this apparent benefit is absent in the literature on person centredness. Perhaps the notion of a clinician who pursues own self-interest above the patient's best interest is the elephant in the room that nobody dares to name.

Close collaboration in the therapeutic alliance or the patient–clinician relationship enables strong effective therapeutic interventions and it has therapeutic value in itself. Positive expectations in this alliance lead to positive outcomes.[27] As Rogers[28] described, the unconditional positive regard,

TABLE 2: Dimensions of patient-centred care by Scholl et al.[1]

Principles	Enablers	Activities
1. Essential characteristics of the clinician	1. Clinician–patient communication	1. Patient information
2. Clinician–patient relationship	2. Integration of medical and non-medical care	2. Patient involvement in care
3. Patient as a unique person	3. Teamwork and teambuilding	3. Involvement of family and friends
4. Biopsychosocial perspective	4. Access to care	4. Patient empowerment
-	5. Coordination and continuity of care	5. Physical support
-	-	6. Emotional support

Source: Scholl et al[1]

congruence and empathy within the alliance effect improvement in a patient's condition. Balint[29] described the doctor as the medication: 'the drug, doctor'.

This alliance can be skewed if one of the parties invests more into it and the other lacks commitment and investment or if one party yields significantly more power than the other. Sharing of power is essential to prevent abuse of any of the parties in the alliance. An example is where the patient may manipulate a clinician to prescribe medications such as antibiotics or habit forming medication to the detriment of the patient. The patient uses the emotional investment in the alliance to convince the clinician to act against clinical knowledge. Alternatively, there is the example of a surgeon convincing a patient within their alliance to have a back operation that is without significant health benefit but has financial gain for the medical industry. These examples are in conflict with the ethical value of non-maleficence.

Entwistle and Watt[16] reasoned that models of person-centred care should be based on capability rather than on patient autonomy. In the conceptual frameworks analysed, capability is referred to by Collins,[12] Morgan and Yoder[13] and The Health Foundation[17] in the terms empowerment and enabling. Capability seems to be absent in the other frameworks.

Where a clinician focuses only on respecting the patient's autonomy, the clinician may provide all the information regarding the patient's disease and treatment options and leave the patient to decide without helping the patient or building a relationship with the patient. For some patients this may be scary and unhelpful.[16] However, in a capability approach to person-centred care, the clinician will work with the patient to increase their ability to confidently make health care decisions. In response, Frank[30] also contends that respect for patient autonomy includes respecting a patient's right to choose not to make a decision or to allow or not allow a clinician or someone else to decide for them. This shows the value of both the autonomy and capability approaches in implementing person-centred practice.

The term 'patient centred' is often used to refer to the clinical consultation and the direct relationship between the patient and the health care provider. As we have seen, it has also been used to refer to a health care system or even health care policy. In terms of the patient–health care provider interaction, the notion of 'patient' indicates that the parties are meeting with a specific purpose, namely the health of the patient, and in this interaction they are neither equals nor do they come with equal expectations.

By replacing the notion of 'patient' with that of 'person', it reminds medicine of its epicentre: the person of the patient as well as the people who are significant to that person, such as family, caregivers and friends.[3] The term 'person' is also suggestive of a sense of equality with the health care provider.[16]

Miles and Mezzich[3] contend that the conceptual difference lies in where the obligation to care is placed. Person-centred care is not simply about providing care to patients on their own terms. Rather, care is the result of shared decision-making between two people, the person of the patient and the person of the clinician 'focussed on the patient's best interests, in a caring atmosphere, within a relationship of engagement, responsibility and trust'.[3]

In practice, however, all these meanings are also found in patient-centred frameworks, conceptually and in method.[21,31] As Figure 1 shows, Stewart et al.[19] include prevention and health promotion (typically the doctor's initiative) and Mead and Bower[21] include the dimension of 'doctor-as-person'[21] in PCC. Thus, seeing 'the patient as person' and 'the doctor as person' are fundamental tenets of both person-centred medicine and PCC. It can be concluded, therefore, that there is little in conceptual intent that differentiates the person centred and patient centred debate.[32]

Defining person-centred practice remains complex … so many authors, so many definitions. Multiple terms are used in the literature to describe this concept. However, an analysis of descriptions of the elements, dimensions, attributes, components, etc., of person centredness reveals that they converge around a few core concepts.

Person-centred medicine attempts to achieve the same ideals promoted by PCC and the biopsychosocial approach that Paul Tournier[23,33] (Medicine of the Person) and others advocate. As to whether it is possible to provide whole medicine by whole practitioners for whole people or even to put the person of the patient at the centre of the clinical encounter[34] remains an empirical question as does the ideal of integrating all that is good into general primary health care.

Conclusions

Medicine is practised on the basis of ethical values within a contract between society and health care providers. Person-centred practice can be viewed as the practical manifestation of these values, focusing particularly on the importance of patient autonomy and the practice of beneficence. One of the core values in the practice of medicine is beneficence – to do good, to do the best for each patient. Beneficence needs to be balanced by and practised through respect for the patient's autonomy. To do this requires collaborative practice. The call to collaborative person-centred practice is actually a call to respect the autonomy of each person while also building their capacity for autonomy as a capability.

Notwithstanding the multiplicity of definitions and terms used to describe person- or patient-centred practice, conceptually there is notional convergence around a few core principles and dimensions of practice. These include a holistic perspective of patients and their illness experience, a therapeutic alliance between the patient and clinician as well as respectful, enabling collaboration with the patient. Executed as well-intended, skilful collaboration, such practice can uphold and balance the ethical principles of autonomy and beneficence in the medical consultation. Collaboration is the catalyst that ensures that the interaction between patient autonomy and clinician beneficence promotes patient' health and is not reduced to ineffective or, worse still, toxic maleficence.

Considering growing evidence of the value of person-centred practice as well as its ethical imperative, training institutions have to ensure that health care students and practitioners are schooled in its precepts. There is therefore a need to identify and evaluate training interventions of person-centred practice, or at least some of the key dimensions described in this review, to both substantiate and improve student and health care practitioner learning of person-centred practice.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

J.M.L. searched the databases, reviewed the literature and wrote the article. T.S.M. and J.F.M.H. contributed to concept development and reviewed and edited the article.

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Appendix C: Batho Pele principles

EIGHT BATHO PELE PRINCIPLES TO KICKSTART THE TRANSFORMATION OF SERVICE DELIVERY

**The Public Service will put the following "People First" principles into practice without delay.
And we will step up implementation to arrive at acceptable service levels and quality as soon as possible.**

CONSULTATION 1

You can tell us what you want from us.

You will be asked for your views on existing public services and may also tell us what new basic services you would like. All levels of society will be consulted and your feelings will be conveyed to Ministers, MECs and legislators.

THE PRINCIPLE: *You should be consulted about the level and quality of the public services you receive and, wherever possible, should be given a choice about the services that are offered.*

SERVICE STANDARDS 2

Insist that our promises are kept.

All national and provincial government departments will be required to publish service standards for existing and new services. Standards may not be lowered! They will be monitored at least once a year and be raised progressively.

THE PRINCIPLE: *You should be told what level and quality of public services you will receive so that you are aware of what to expect.*

ACCESS 3

One and all should get their fair share.

Departments will have to set targets for extending access to public servants and public services. They should implement special programmes for improved service delivery to physically, socially and culturally disadvantaged persons.

THE PRINCIPLE: *You and all citizens should have equal access to the services to which you are entitled.*

COURTESY 4

Don't accept insensitive treatment.

All departments must set standards for the treatment of the public and incorporate these into their Codes of Conduct, values and training programmes. Staff performance will be regularly monitored, and discourtesy will not be tolerated.

THE PRINCIPLE: *You should be treated with courtesy and consideration.*

INFORMATION 5

You're entitled to full particulars.

You will get full, accurate and up-to-date facts about services you are entitled to. Information should be provided at service points and in local media and languages. Contact numbers and names should appear in all departmental communications.

THE PRINCIPLE: *You should be given full, accurate information about the public services you are entitled to receive.*

OPENNESS AND TRANSPARENCY 6

Administration must be an open book.

You'll have the right to know. Departmental staff numbers, particulars of senior officials, expenditure and performance against standards will not be secret. Reports to citizens will be widely published and submitted to legislatures.

THE PRINCIPLE: *You should be told how national and provincial departments are run, how much they cost, and who is in charge.*

REDRESS 7

Your complaints must spark positive action.

Mechanisms for recording any public dissatisfaction will be established and all staff will be trained to handle your complaints fast and efficiently. You will receive regular feedback on the outcomes.

THE PRINCIPLE: *If the promised standard of service is not delivered, you should be offered an apology, a full explanation and a speedy and effective remedy. When complaints are made, you should receive a sympathetic, positive response.*

VALUE FOR MONEY 8

Your money should be employed wisely.

You pay income, VAT and other taxes to finance the administration of the country. You have the right to insist that your money should be used properly. Departments owe you proof that efficiency savings and improved service delivery are on the agenda.

THE PRINCIPLE: *Public services should be provided economically and efficiently in order to give you the best possible value for money.*

Designed and issued by the Department of Public Service and Administration.

Appendix D: Information leaflets and informed consents to participate in this study

Appendix D.1: Information leaflet and informed consent to participate in this study (STUDENT)

TITLE OF THE STUDY: Learning of person-centred practice amongst clinical associate students at the University of Pretoria

Dear Student,

INTRODUCTION

We invite you to participate in a research study. This information leaflet will help you to decide if you want to participate. Before you agree to take part you should fully understand what is involved. If you have any questions that this leaflet does not fully explain, please do not hesitate to ask the investigator, Dr Murray Louw.

THE NATURE AND PURPOSE OF THIS STUDY

We are undertaking an action research, multidisciplinary investigation of authentic learning in the BCMP Curriculum.

Authentic learning is the knowledge, skills and values that are acquired through and applied in practice. It is learning that is holistic, continuous, reflexive, contextual, critical and creative (collectively termed 'deep' learning). Authentic learning means that people can practice what they know and they can do this at the level required of them in their profession.

In order to know if authentic learning is happening it has to be researched. As the curriculum is enacted it will be possible to explore several research themes. This study focuses on understanding the processes and techniques of authentic learning of person-centred practice in the BCMP programme.

EXPLANATION OF PROCEDURES TO BE FOLLOWED

In action research people use social scientific methods in practical situations to resolve actual problems. In this study the problems are those of learning person-centred practice as they present themselves in the BCMP curriculum.

Consultation(s) or procedure(s) being performed by you will be observed and recorded on video or audio depending on your choice and available facilities. The person-centredness of the event will be analysed afterwards. The video or audio recording may also be used by the University of Pretoria, Faculty of Health Sciences for teaching and assessment purposes for healthcare students if you agree to such usage.

Feedback will be obtained from your patients using the following instruments:

CARE Patient Feedback Measure, Patient Enablement Instrument

You and your peers will reflect on your consultations using the Kalamazoo Essential Elements Communication Checklist (adapted) (KEEC-A)

RISK AND DISCOMFORT INVOLVED

Your participation in the research process will neither advantage nor disadvantage you as a student. The time you spend participating in the study will count as part of your clinical training hours. You may experience some discomfort in reviewing and reflecting on your practice.

POSSIBLE BENEFITS OF THIS STUDY

You are likely to benefit from the study because you will reflect on the person-centredness of your practice and plan and implement measures to improve it. The results of the study will help us to better train healthcare providers in future.

WHAT ARE YOUR RIGHTS AS A PARTICIPANT?

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during the consultation, procedure or interview without giving any reason. Your withdrawal will not affect you or your studies in any way.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

Before beginning any research all studies conducted by researchers in the Faculty of Health Sciences of the University of Pretoria have to be approved by the Research Ethics Committee. This study has received written approval from the Research Ethics Committee of the Faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one.

INFORMATION AND CONTACT PERSON

If you have any questions about this study at any point in time, please contact MURRAY LOUW at 012 354 2334. You may also contact the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria at:

HW Snyman South Building, Level 2, Room 2-33

31 Bophelo Road, Gezina, Pretoria

Private Bag X323, Arcadia, 0007

Telephone: 012 3541677 Fax: 086 6516047

E-mail: deepeka.behari@up.ac.za

COMPENSATION

Your participation in this research is voluntary. No compensation will be given for your participation.

CONFIDENTIALITY

The information that you share with the researcher, healthcare workers and students will be treated as confidential. Nothing that you say or do will be linked in the research to your name or image, unless you expressly agree to being identified. Once we have analysed the information no one will be able to identify you. Research reports and articles in scientific journals will not include any information that may identify you.

Consent to participate in this study

I confirm that

a. The person asking me to take part in this study has told me about the nature, process, risks, discomforts and benefits of the study;

b. I have received, read, have had read to me and understood the information leaflet and informed consent form about this study;

c. I am aware that the results of the study, including personal details, will be anonymously processed into research reports.

d. I am participating willingly.

e. I have had time to ask questions and have no objection to participate in the study.

f. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect my studies.

g. I hereby give / do not give (DELETE AS APPROPRIATE) my permission that a video and/or audio (DELETE AS APPROPRIATE) recording may be made of the medical consultation and/or procedure performed by me.

h. I understand that the video and/or audio recording will be used for teaching, assessment and research purposes only. It will be regarded as confidential and will be stored securely. It may not be used for purposes other than the stated ones without my written consent.

i. I agree / do not agree (DELETE AS APPROPRIATE) to be identified with the information or images in future publications.

j. I have received a signed copy of this informed consent agreement.

I agree/ do not agree (DELETE AS APPROPRIATE) to participate in the action research study entitled "Learning of person-centred practice amongst clinical associate students at the University of Pretoria".

Participant's name: .... (Please print)

Participant's signature: ….........................………………… Date............................

Investigator's name........Dr JM Louw....……………………… (Please print)

Investigator's signature ....………………… Date: 11 Aug 2015.......

Witness's Name ....……………..... (Please print)

Witness's signature ....………………….. Date.…........................

Appendix D.2: Information leaflet and informed consent to participate in this study (PATIENT)

TITLE OF THE STUDY: Learning of person-centred practice amongst clinical associate students at the University of Pretoria

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We are undertaking research of authentic learning in the BCMP Curriculum.

Authentic learning is the knowledge, skills and values that are learned through and applied in practice. Authentic learning means that people can practice what they know and they can do this at the level required of them in their profession.

In order to know if authentic learning is happening it has to be researched. This study focuses on understanding the processes and techniques of authentic learning of person-centred practice in the BCMP programme.

EXPLANATION OF PROCEDURES TO BE FOLLOWED

In action research people use social scientific methods in practical situations to resolve actual problems. In this study the problems are those of learning person-centred practice as they present themselves in the BCMP curriculum.

Your consultation(s) or procedure(s) being performed on you by a clinical associate student will be observed and recorded on video or audio depending on your choice and available facilities. The person-centredness of the event(s) will be analysed afterwards. The video or audio recording may also be used by the University of Pretoria, Faculty of Health Sciences for teaching and assessment purposes for healthcare students if you agree to such usage.

After the consultation(s) or procedure(s) you will also be asked to answer questions to indicate your experience of the consultation(s) or procedure(s) as listed below in the Patient Enablement Instrument and CARE Patient Feedback Measure. You can choose to not answer a question if you are unsure about or uncomfortable with it.

Your views about the Consultation today (Patient Enablement Instrument)

Please complete the questions below when you have finished your visit today.

Your responses and comments will be absolutely anonymous and confidential.
We would therefore encourage you to be as open and honest as possible.

1. As a result of your visit today, do you feel you are:

(please tick one box in each row)

		Much better	**Better**	**Same or less**	**Not applicable**
a	**Able to cope with life……………………**	☐	☐	☐	☐
b	**Able to understand your condition……**	☐	☐	☐	☐
c	**Able to cope with your condition………**	☐	☐	☐	☐
d	**Able to keep yourself healthy…………**	☐	☐	☐	☐
		Much more	**More**	**Same or less**	**Not applicable**
e	**Confident about your health…………..**	☐	☐	☐	☐
f	**Able to help yourself…………………...**	☐	☐	☐	☐

2. How well do you know the person you saw today?

(*please place a circle round one of the numbers below*)

(don't know them at all) 1 2 3 4 5 (know them very well)

3. Please rate the following statements about today's consultation (CARE Patient Feedback Measure)

Please tick one box for each statement and answer every statement

	How was the person you saw at …	**Poor**	**Fair**	**Good**	**Very Good**	**Excellent**	**Does Not Apply**
1	**Making you feel at ease……** *(being friendly and warm towards you, treating you with respect; not cold or abrupt)*	☐	☐	☐	☐	☐	☐
2	**Letting you tell your "story"……** *(giving you time to fully describe your illness in your own words; not interrupting or diverting you)*	☐	☐	☐	☐	☐	☐
3	**Really listening……** *(paying close attention to what you were saying; not looking at the notes or computer as you were talking)*	☐	☐	☐	☐	☐	☐
4	**Being interested in you as a whole person…** *(asking/knowing relevant details about your life, your situation; not treating you as "just a number")*	☐	☐	☐	☐	☐	☐
5	**Fully understanding your concerns……** *(communicating that he/she had accurately understood your concerns; not overlooking or dismissing anything)*	☐	☐	☐	☐	☐	☐
6	**Showing care and compassion….** *(seeming genuinely concerned, connecting with you on a human level; not being indifferent or "detached")*	☐	☐	☐	☐	☐	☐
7	**Being Positive……** *(having a positive approach and a positive attitude; being honest but not negative about your problems)*	☐	☐	☐	☐	☐	☐

8	**Explaining things clearly……..** *(fully answering your questions, explaining clearly, giving you adequate information; not being vague)*	☐	☐	☐	☐	☐	☐
9	**Helping you to take control……** *(exploring with you what you can do to improve your health yourself; encouraging rather than "lecturing" you)*	☐	☐	☐	☐	☐	☐
10	**Making a plan of action with you …** *(discussing the options, involving you in decisions as much as you want to be involved; not ignoring your views)*	☐	☐	☐	☐	☐	☐

Do you have any further comments about your consultation today?

RISK AND DISCOMFORT INVOLVED

Your participation in the research process will neither advantage nor disadvantage you as a patient. It will not change your medical management. You can withdraw from the study or any part of the study at any time without giving any reason.

The research interview will take about 10 minutes of your time. Because we will invite patients from the back of the queue to participate in the research, the research will not make your visit to the health facility longer than usual.

POSSIBLE BENEFITS OF THIS STUDY

Although you will not benefit directly from the study, the results of the study will help us to better train healthcare providers in future.

WHAT ARE YOUR RIGHTS AS A PARTICIPANT?

Your participation in this study is entirely voluntary. You can refuse to participate or stop at any time during the consultation, procedure or interview without giving any reason. Your withdrawal will not affect you or your treatment in any way.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

Before beginning any research all studies conducted by researchers in the Faculty of Health Sciences of the University of Pretoria have to be approved by the Research Ethics Committee. This study has received written approval from the Research Ethics Committee of the Faculty of Health Sciences at the University of Pretoria. A copy of the approval letter is available if you wish to have one.

INFORMATION AND CONTACT PERSON

If you have any questions about this study at any point in time, please contact MURRAY LOUW at 012 354 2334. You may also contact the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria at:

HW Snyman South Building, Level 2, Room 2-33

31 Bophelo Road, Gezina, Pretoria

Private Bag X323, Arcadia, 0007

Telephone: 0123541677 Fax: 086 6516047

E-mail: deepeka.behari@up.ac.za

COMPENSATION

Your participation in this research is voluntary. No compensation will be given for your participation.

CONFIDENTIALITY

The information that you share with the researcher, healthcare workers and students will be treated as confidential. Nothing that you say or do will be linked in the research to your name or image, unless you expressly agree to being identified. Once we have analysed the information no one will be able to identify you. Research reports and articles in scientific journals will not include any information that may identify you.

Consent to participate in this study

I confirm that

a. The person asking me to take part in this study has told me about the nature, process, risks, discomforts and benefits of the study;

b. I have received, read, have had read to me and understood the information leaflet and informed consent form about this study;

c. I am aware that the results of the study, including personal details, will be anonymously processed into research reports.

d. I am participating willingly.

e. I have had time to ask questions and have no objection to participate in the study.

f. I understand that there is no penalty should I wish to discontinue with the study and my withdrawal will not affect my treatment.

g. I have received a signed copy of this informed consent agreement.

I agree/ do not agree (DELETE AS APPROPRIATE) to participate in the action research study entitled "Learning of person-centred practice amongst clinical associate students at the University of Pretoria".

Participant's name: ....(Please print)

Participant's signature: …........................………………… Date............................

Investigator's name ....Dr JM Louw............…………… (Please print)

Investigator's signature ....…………………. Date: 11 Aug 2015

Witness's Name ....…………… (Please print)

Witness's signature ....…………………... Date.…........................

Appendix E: Quality improvement (QI) of the medical consultation in peer groups

Instructions to students in the intervention group

The quality of the consultation is central to quality in health care. In this project you will improve the quality of your own consultations with the help of your student colleagues. In the Quality Improvement cycle you choose your own consultation as the topic and your fellow students and patients as the team.

Form the team:

Choose 1, 2 or 3 fellow students to work with you on this QI

Set standards

Set the standard by reading through the literature about the consultation (See the article: The Consultation: a juggler's art by Hugo and Couper and In search of excellence. Expanding the patient-centred clinical method: a three-stage assessment by Fehrson and Henbest and look for more). Use the Kalamazoo Essential Elements Communication Checklist (adapted) - KEECC(A), Consultation Peer Assessment Tool, CARE Patient Feedback Measure and Patient Enablement Tool as assessment tools.

Go through these tools and mark the elements that you decide to focus on as the standard for your own consultations.

Measure present practice

The best way to assess the quality of your consultation is to make a video recording of the consultation. For this QI a consultation with a non-urgent outpatient is used. A standard consent form is used for permission from the patient. Use a cell phone, tablet or camera. Or you can do an audio only recording with your phone or tablet.

Alternatively, ask your colleague to view your consultation without interruption. You may stop the consultation to consult with your supervising clinician if necessary. Then continue the consultation and recording again.

Give copies of the KEECC(A) and/or the consultation peer-assessment tool to your colleague student. Ask him/her to view your consultation and to give you feedback specifically on those elements that you choose. Ask your fellow student to ask the patient to fill in a Patient Enablement Tool and CARE Patient Feedback Measure. Ensure that the patient's care is completed in the usual way for your CLC.

Make an assessment on yourself using the same tools adapted for the clinician. Go through the feedback and write down a summary.

Reflect on Present Practice

Go through all the assessments, discuss with your peers in your small group. Reflect and identify the strong and weak points and reflect on what you did and what impact it had.

Plan change

From the reflection, decide how you can improve and write a plan of improvement. Use the "Strategies for improvement" that you received to help develop your personal and/or group action plan.

Implement action plan / change:

Implement the changes that you decided on for at least two weeks.

Assess change

Repeat the assessment of at least one consultation in the same way you did the first time. Reflect on the changes, what worked and what did not work and write a final summary on the process.

Final assessment

Hand all the documents and your own plans to Dr Louw or your facilitator. Ask for feedback specifically on those things you identified in the QI process. It will be marked to count for two of your Observed consultation (or MiniCEX) of this semester. You and the peer assessor(s) (fellow students) will receive the same mark based on the quality of reflection and effort put into this quality improvement project. ***The marks awarded by peers to one another will not be the mark you receive.***

After your formal final assessment write a final paragraph and add together with the rest of the evidence of your QI process to your professional development portfolio.

Your report will be assessed using the following criteria:

Quality of the peer feedback on the forms
Insight into the consultation process
Use / Understanding of the Quality Improvement cycle
Authenticity / realness

Based on the above you will receive a global score out of 10.

Please structure your report as follows

1. Members of your QI group (your fellow students)
2. The dates of your consultations and the dates you met to discuss the feedback
3. Strong points identified in the feedback – things you did well in your consultations
4. Weak points identified in the feedback – things you realised you need to improve on.
5. Your improvement plan: How you planned to address the weak points
6. Final paragraph: Summary of what you found to be different or not different in your final consultation. What you learnt and how you plan to continue improving your consultation skills

Appendix F: Measuring Instruments

Appendix F.1: Kalamazoo Essential Elements Communication Checklist (adapted) – KEECC(A)

Kalamazoo Essential Elements Communication Checklist (adapted)*

How well does the learner do the following:

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
A. Builds a Relationship (includes the following):	○	○	○	○	○

- Greets and shows interest in patient as a person
- Uses words that show care and concern throughout the interview
- Uses tone, pace, eye contact, and posture that show care and concern

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
B. Opens the Discussion (includes the following):	○	○	○	○	○

- Allows patient to complete opening statement without interruption
- Asks "Is there anything else?" to elicit full set of concerns
- Explains and/or negotiates an agenda for the visit

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
C. Gathers Information (includes the following):	○	○	○	○	○

- Begins with patient's story using open-ended questions (e.g."tell me about…")
- Clarifies details as necessary with more specific or "yes/no" questions
- Summarizes and gives patient opportunity to correct or add information
- Transitions effectively to additional questions

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
D. Understands the Patient's Perspective (includes the following):	○	○	○	○	○

- Asks about life events, circumstances, other people that might affect health
- Elicits patient's beliefs, concerns, and expectations about illness and treatment
- Responds explicitly to patient's statements about ideas and feelings

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
E. Shares Information (includes the following):	○	○	○	○	○

- Assesses patient's understanding of problem and desire for more information
- Explains using words that patient can understand
- Checks for mutual understanding of treatment plan
- Asks if patient has any questions

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
F. Reaches Agreement (if new/changed plan) (includes the following):	○	○	○	○	○

- Includes patient in choices and decisions to the extent s/he desires
- Asks about patients ability to follow diagnostic and/or treatment plans
- Identifies additional resources as appropriate

	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent
G. Provides Closure (includes the following):	○	○	○	○	○

- Asks if patient has questions, concerns or other issues
- Summarizes / asks patient to summarize plans until next visit
- Clarifies follow-up or contact arrangements
- Acknowledges patient and closes interview

*Adapted from Essential Elements: The Communication Checklist, ©Bayer-Fetzer Group on Physician-Patient Communication in Medical Education, May 2001, and from: The Bayer-Fetzer Conference on Physician-Patient Communication in Medical Education. Essential Elements of Communication in Medical Encounters: The Kalamazoo Consensus Statement. *Academic Medicine* 2001; 76:390-393.

Contact: Elizabeth Rider, MSW, MD – elizabeth_rider@hms.harvard.edu (member, Kalamazoo Consensus Group)
3/2007

Appendix F.2: Consultation Peer Assessment Tool (as adapted for students at the University of Pretoria)

CONSULTATION PEER-ASSESSMENT TOOL

SYSTEM: ________________________________

Name of Peer Evaluator: __________________ Student number: ___________

Student doing the consultation: ____________ Student number: ____________

CLC: _____________________ Date of consultation______________

Patient details:

S:____

____

____

____

O:____

____

____

____

A:

Clinical____

Individual____

Contextual____

P:

Clinical____

Individual____

Contextual____

Rate your peer in his/her performance in executing the following:	Below expectations		Borderline	Meets expectations	Above expectations		N/A
	1	2	3	4	5	6	
FACILITATION:							
Building of rapport:							
Introduce self to the patient							
Put the patient at ease							
Enable the patient to elaborate presenting problem fully							
Communication skills:							
Listen attentively							
Use silence appropriately							
Recognise the patient's verbal cues and non-verbal cues							
Use empathy to encourage the patient to express feelings and thoughts.							
PROBLEM SOLVING:							
Process:							
Access information from the patient's record							
Apply knowledge of basic, behavioral and clinical sciences							
Be capable of recognizing limits							

Rate your peer in his/her performance in executing the following:	**Below expectations**		**Borderline**	**Meets expectations**	**Above expectations**		**N/A**
	1	**2**	**3**	**4**	**5**	**6**	
of personal competence							
Exhibit a well-organized approach to gathering and giving of information							
History							
Seek information from the patient to help distinguish between working diagnoses							
Seek clarification of words							
Phrases questions simply and clearly							
Identify the patient's ideas, concerns and expectations							
Consider physical, social and psychological factors as appropriate							
Examination:							
Seek physical signs to help confirm or refute working diagnoses							
Perform examination and							

Rate your peer in his/her performance in executing the following:	**Below expectations**		**Borderline**	**Meets expectations**	**Above expectations**		**N/A**
	1	**2**	**3**	**4**	**5**	**6**	
elicit physical signs correctly							
Use diagnostic instruments competently							
Display sensitivity to the patient's needs during examination							
Use of universal precautions							
Special investigations:							
Order appropriate investigations							
Assessment:							
Correctly interpret information obtained							
Generate appropriate working diagnoses							
Assessment has three components							
Plan:							
Plan includes clinical, individual and contextual							
Identify and apply information to the management							
Provide advice on patient self-care							
Utilize drug therapy safely and rationally							

Rate your peer in his/her performance in executing the following:	**Below expectations**		**Borderline**	**Meets expectations**	**Above expectations**		**N/A**
	1	**2**	**3**	**4**	**5**	**6**	
Make discriminating use of referral(s)							
Act on opportunities for health promotion							
COLLABORATION:							
Patient involvement:							
Reach a shared understanding with the patient							
Support the patient in coping with the situation							
Maintain friendly but professional relationship with the patient							
Demonstrate an awareness that the patient's attitude to the doctor (and vice versa) affects achievement of co-operation							
Collaborate with patient in negotiating a plan							
Negotiation:							
Collaborate with patient in negotiating a mutually acceptable plan							

Rate your peer in his/her performance in executing the following:	Below expectations		Borderline	Meets expectations	Above expectations		N/A
	1	2	3	4	5	6	
Recognise the difference between you and the patient in terms of the assessment or plan							
Value the difference							
Verbalise and clarify the difference							
Understand the difference							
Find areas of agreement							
Find a solution							
Maintain the relationship with the patient							
Arrange follow-up							

What went especially well?

____

____

____

____

____

____

What does s/he still need to improve on?

____

____

____

____

____

____

How can I help him/her to achieve these improvements?

Signature of peer evaluator: ______________________________ **Date:** ____________________

Appendix F.3: CARE Patient Feedback Measure

CARE Patient Feedback Measure for

*** Type name of Practitioner here ***

Please write today's date here:

☐☐ / ☐☐ / ☐☐
D D M M Y Y

Please rate the following statements about today's consultation.

Please mark the box like this ✓ with a ball point pen. If you change your mind just cross out your old response and make your new choice. Please answer every statement.

How good was the practitioner at...	Poor	Fair	Good	Very Good	Excellent	Does not apply
1) Making you feel at ease (introducing him/herself, explaining his/her position, being friendly and warm towards you, treating you with respect; not cold or abrupt)	☐	☐	☐	☐	☐	☐
2) Letting you tell your "story" (giving you time to fully describe your condition in your own words; not interrupting, rushing or diverting you)	☐	☐	☐	☐	☐	☐
3) Really listening (paying close attention to what you were saying; not looking at the notes or computer as you were talking)	☐	☐	☐	☐	☐	☐
4) Being interested in you as a whole person (asking/knowing relevant details about your life, your situation; not treating you as "just a number")	☐	☐	☐	☐	☐	☐
5) Fully understanding your concerns (communicating that he/she had accurately understood your concerns and anxieties; not overlooking or dismissing anything)	☐	☐	☐	☐	☐	☐
6) Showing care and compassion (seeming genuinely concerned, connecting with you on a human level; not being indifferent or "detached")	☐	☐	☐	☐	☐	☐
7) Being positive (having a positive approach and a positive attitude; being honest but not negative about your problems)	☐	☐	☐	☐	☐	☐
8) Explaining things clearly (fully answering your questions; explaining clearly, giving you adequate information; not being vague)	☐	☐	☐	☐	☐	☐
9) Helping you to take control (exploring with you what you can do to improve you health yourself; encouraging rather than "lecturing" you)	☐	☐	☐	☐	☐	☐
10) Making a plan of action with you (discussing the options, involving you in decisions as much as you want to be involved; not ignoring your views)	☐	☐	☐	☐	☐	☐

Comments: If you would like to add further comments on this consultation, please do so here.

4571132878

Appendix F.4: Patient Enablement Instrument

Your views about the Consultation today (Patient Enablement Instrument)
Please complete the questions below when you have finished your visit today.
Your responses and comments will be absolutely anonymous and confidential.
We would therefore encourage you to be as open and honest as possible.

1. As a result of your visit today, do you feel you are…

(please tick one box in each row)

		Much better	Better	Same or less	Not applicable
a	**Able to cope with life……………………**	☐	☐	☐	☐
b	**Able to understand your condition……**	☐	☐	☐	☐
c	**Able to cope with your condition………**	☐	☐	☐	☐
d	**Able to keep yourself healthy…………**	☐	☐	☐	☐

		Much more	More	Same or less	Not applicable
e	**Confident about your health…………..**	☐	☐	☐	☐
f	**Able to help yourself…………………..**	☐	☐	☐	☐

2. How well do you know the person you saw today?

(please place a circle round one of the numbers below)

(don't know them at all) 1 2 3 4 5 (know them very well)

Appendix F.5: SEGUE framework

	Yes/ No/ n/a
SET THE STAGE	
1. Greet the patient appropriately	
2. Establish the reason for the visit	
3. Outline agenda for visit (e.g., issues, sequence)	
4. Make a personal connection during visit (e.g., go beyond medical issues at hand)	
5. Maintain patient's privacy (e.g., knock, close door)	
ELICIT INFORMATION	
6. Elicit the patient's view of health problem and/or progress	
7. Explore physical/physiological factors (signs/symptoms)	
8. Explore psychosocial/emotional factors (e.g., living situation, family relations, stress, work)	
9. Discuss antecedent treatments (e.g., self-care, last visit, other medical care)	
10. Discuss how the health problem affects the patient's life (e.g., quality of life)	
11. Discuss lifestyle issues/prevention strategies (e.g., health risks)	
12. Avoid directive/leading questions	
13. Give the patient the opportunity/time to talk (e.g., don't interrupt)	
14. Listen. Give the patient your undivided attention (e.g., face patient, give feedback)	
15. Check/clarify information (e.g., recap, ask "how much is not much")	
GIVE INFORMATION	
16. Explain rationale for diagnostic procedures (e.g., exam, tests)	
17. Teach patient about his or her own body and situation (e.g., provide feedback and explanations)	

18. Encourage patient to ask questions / Check his or her understanding	
19. Adapt to patient's level of understanding (e.g., avoid or explain jargon)	
UNDERSTAND THE PATIENT'S PERSPECTIVE	
20. Acknowledge the patient's accomplishments/progress/challenges	
21. Acknowledge waiting time	
22. Express caring, concern, empathy	
23. Maintain a respectful tone	
END THE ENCOUNTER	
24. Ask if there is anything else patient would like to discuss	
25. Review next steps with patient	
IF YOU SUGGESTED A NEW OR MODIFIED TREATMENT/PREVENTION PLAN	
26. Discuss patient's interest/expectation/goal for the plan	
27. Involve the patient in deciding upon a plan (e.g., options, rationale, values, preferences, concerns)	
28. Explain likely benefits of the option(s) discussed	
29. Explain likely side-effects and risks of the option(s) discussed	
30. Provide complete instructions for the plan	
31. Discuss the patient's ability to follow the plan (e.g., attitude, time, resources)	
32. Discuss the importance of the patient's role in treatment/prevention	

Appendix G: Strategies for improvement

FACILITATION	
BUILD RAPPORT	
COMPETENCE	**RECOMMENDED STRATEGY**
Introduce self to the patient	Introduce yourself by your given and family name. Ensure the patient knows why you are talking to them.
Put the patient at ease	Ask the patient what they prefer to be called, establish eye contact, give an indication where to sit etc.
	Demonstrate to the patient that you are listening by using appropriate body language and maintaining eye contact.
Enable the patient to elaborate presenting problem fully	Resist the temptation to interrupt at the start of the consultation, although this may be necessary later if the patient becomes repetitive.
	Use open questions to begin with e.g. *“How can I help?”; “How did you feel about that?”*
	Use prompts as appropriate e.g. *“I see”; “I understand”; “Tell me more about that”.*
	If a significant statement is made and the patient stops, repeat the last statement made by the patient, with a questioning tone to your voice.
USE OF APPROPRIATE COMMUNICATION SKILLS	
Listen attentively	In a patient-centred consultation you will receive information out of sequence. Remember key points. For example: *“You said earlier you are a smoker, how much do you smoke?”* is preferable to asking the same patient *“Do you smoke”.*
	If you need to write information down, or record data on the computer, do so in a way that does not interfere with your communication with the patient.
	Don’t stop listening to the patient whilst you think about the next question to ask.
Seek clarification of words used by the patient as appropriate	If you don’t understand what the patient means, ask them to explain.
	If the patient uses a medical or technical term (e.g. constipation) make sure you understand exactly what they mean by it.

Phrase questions simply and clearly	Avoid using 'leading' questions, i.e. those that invite only one answer e.g. (*"Your baby doesn't have diarrhoea does he?").*
	Don't use 'double' or 'nested' questions e.g. *"What is your pain like and how long have you had it?" "Is your appetite normal and have you lost weight?"*
	Tailor the questions you ask to the level of the patient's ability to understand. Don't patronise or talk down to the patient.
	Don't use technical jargon.
Use silence appropriately	Try to tolerate the discomfort of appropriate silences. Resist the temptation to talk when the patient is thinking about their response.
	If the patient is having difficulty telling the story or is distressed, allow time for the patient to regain composure.
	If you need time to think, tell the patient that you are gathering your thoughts. Make some brief notes if necessary.
Recognise the patient's verbal cues and non-verbal cues	Develop your awareness of words used by the patient that may indicate the need to probe further e.g. *"My husband's at home all day now".*
	Notice unusual words and/or surprising omissions and follow up on these.
	Be sensitive to behaviour that is incongruous e.g. the patient who laughs when stating something serious.
	Always consider the patient's demeanour and mood. Do they appear tense or relaxed, happy or sad?
Use empathy to encourage the patient to express feelings and thoughts.	Try to consider what it would be like to be in the patient's shoes and respond appropriately within professional boundaries. Appropriate responses can include verbal (e.g. *"I can see you are angry"; "I can understand that", "I can see why you are distressed about it")* and non-verbal acknowledgement of the patient's state,

PROBLEM SOLVING

PROBLEM SOLVING – THE PROCESS

COMPETENCE	**RECOMMENDED STRATEGY**
	Prior to the consultation scrutinise the patient's record to elicit key information such as age,

Access relevant and specific information from the patient’s record	significant previous medical history, including current medication, and date and reason for recent consultation(s).
	During the consultation re-examine the record where this is likely to contain information you require, particularly if the patient is unsure of factual details.
Seek relevant and specific information from the patient to help distinguish between working diagnoses	Always clarify the presenting complaint(s) first, and then seek relevant associated symptoms.
	Consciously identify in your own mind the key, i.e. diagnostic symptoms of each of your working diagnoses.
	Use focused questions to fill gaps in the information you are attempting to gather.
Seek relevant and discriminating physical signs to help confirm or refute working diagnoses	Always assess whether the patient looks well or ill, particularly in children, and consider how this might influence your working diagnoses
	Consciously ask yourself what are the diagnostic physical signs for each of your working diagnoses and focus your physical examination on them. In many instances this will mean a number of signs from different body systems, and not a full examination of one body system
Correctly interpret information obtained from the patient’s record, history, examination and investigation	Take sufficient time to consider what the information you have gathered means and how you can apply it. Explain to the patient you are taking ‘time out’ to think about their problem.
	To help your thinking summarise and reflect back to the patient what you have been told. This will confirm to the patient you have understood the problem, and will clarify your thoughts.
	If you recognise a pattern of symptoms and signs that ***nearly*** fits a diagnosis, consider very carefully any feature that does not fit, and be prepared to reinterpret the information.
	Avoid over-reliance on features that may support a diagnosis or conclusion you have reached prematurely.
	If in doubt, consult reference ranges for limits of normal values – you are not expected to memorise all of these.

	All tests are subject to error, and false positive and false negative results are common so consider this in interpreting results.
Apply knowledge of basic, behavioural and clinical sciences to the identification of the patient's problem	Remember you have a very substantial knowledge reservoir covering many subject areas. Before giving up try to extrapolate from your knowledge of the principles of basic, behavioural and clinical sciences.
	If in doubt about the nature of the problem think how your knowledge of anatomy or physiology can help you reconsider it from a different angle.
	Improve your awareness of the key features of particular diagnoses.
	Be prepared to check with books, 'on-line' sources; colleagues, etc., particularly for single items of information.
	Focus your learning on the optimal and discriminating features of diagnoses.
	Practise translating findings into abstractions (semantic qualifiers). e.g. 'last night' becomes 'acute', food getting stuck becomes 'dysphagia'.
Identify and apply information to the management of the patient's problem	Practice formulating good, answerable questions about dilemmas in patient management.
	Develop your awareness of, and skill in using, information sources that provide evidence for management.
	Consider the potential harm as well as benefits for any intervention.
	Use 'Clinical Evidence' routinely to evaluate the treatments you propose.
Be capable of recognising limits of personal competence and acting appropriately	Nobody knows everything. It is an excellent professional attribute to be able to recognise the limits of your competence.
	Do not be afraid to tell the patient you do not know something. They will usually appreciate your honesty.
	When you have reached the limits of your competence, do not guess – seek appropriate help by asking a colleague, or consulting information sources.
Exhibit a well-organised approach to gathering and giving of information	Use analytical thinking to identify key features in a systematic way.
	Summarise back to the patient the key elements from the history to check they are correct.

	Before you examine the patient, consider whether you have gathered sufficient information from the history.
	In managing the patient ensure you first reach a shared understanding, before moving on to give advice on self-care, and explain the treatment you are recommending.
HISTORY TAKING	
COMPETENCE	**RECOMMENDED STRATEGY**
Identify the patient's ideas, concerns and expectations	In every consultation you must be satisfied that you know: What does the patient believe is wrong? What are they concerned about? What do they hope can be done? Sometimes this may require gentle but persistent questioning.
	If the patient has indicated their ideas, concerns or expectations avoid direct questions. It is better to reflect back a remark they have made. e.g. *"You said your mother had headaches like these, what was the cause of her headaches?"*
	Consider when is the most appropriate time to ask about the patient's expectation for treatment. If there is still significant diagnostic uncertainty it is probably better to wait until you know what the problem is, and how you think you are going to manage it, before exploring what the patient wishes to be done.
Consider physical, social and psychological factors as appropriate	Remember that every diagnosis will have a physical, psychological and social component ('Triple Diagnosis').
	When satisfied that physical disease is present always consider its impact on the social and psychological well-being of the patient.
	Consider the impact on the patient of other social and psychological factors in their life such as their work, housing and relationships.
PHYSICAL EXAMINATION	
COMPETENCE	**RECOMMENDED STRATEGY**
Perform examination and elicit physical signs correctly	Improve technique to elicit physical signs *(specify which)* by reading; accessing video material'; asking a tutor to demonstrate it.
	Practise the examination under supervision.
Use diagnostic instruments competently	Familiarise yourself with instruments *(specify which)* and practise their use under supervision.

Display sensitivity to the patient's needs during examination	Ask the patient's permission to carry out the examination, especially 'intimate' examinations.
	Give an explanation of what you are doing to the patient, particularly if this might involve discomfort.
	Appropriately expose the part(s) to be examined with due sensitivity to the patient.
Wash hands competently, and at an appropriate moment	You must always wash your hands between encounters with different patients.
	Ensure you use the correct materials and technique to cleanse your hands adequately.
SPECIAL INVESTIGATIONS	
COMPETENCE	**RECOMMENDED STRATEGY**
Order appropriate investigations	Remember to consider the need for investigation and consciously be aware of the reasons for and against any potential investigation.
	Unnecessary investigations waste resources and generate additional patient anxiety.
	Sensitive tests that are negative provide evidence to rule out diagnoses (SnNout). Specific tests that are positive provide evidence to rule in diagnoses (SpPin).
ASSESSMENT	
COMPETENCE	**RECOMMENDED STRATEGY**
Generate appropriate working diagnoses or identify the problem depending on circumstances	Where possible try to erect specific pathological, physiological and/or psychosocial diagnoses. If this is not possible, try to identify specific problems.
	Consider whether the pre-diagnostic interpretation and sieves could assist in generating appropriate hypotheses.
	Ensure diagnostic hypotheses match your pre-diagnostic interpretation.
	In erecting any single hypothesis consciously test it with information for and against, and then try to identify and fill any gaps.
	Generate a justifiable list under headings of 'Most likely' and 'Less likely but important to consider': actively consider whether every diagnosis should be present.
	Be prepared to reject diagnoses for which there is little or no support.

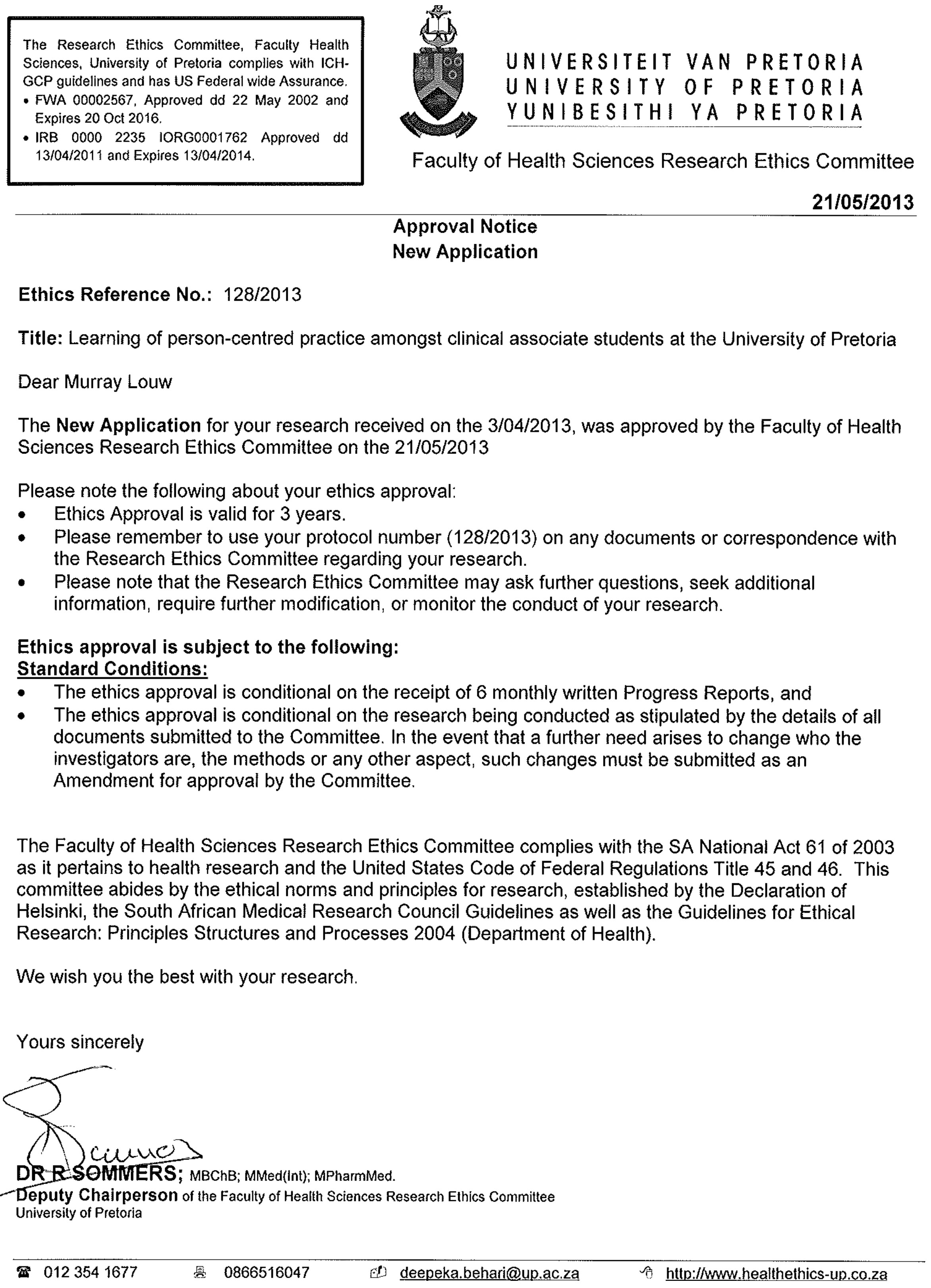
Assessment has three components	Clinical: the physical problem of the patient.
	Individual: how does this problem affects the patient. What is the patient's ideas, feelings, concerns, expectations?
	Contextual: How does the context of the patient influence the problem and the patient and how does the clinical diagnosis influence the patient context.
PATIENT MANAGEMENT	
COMPETENCE	**RECOMMENDED STRATEGY**
Plan includes clinical, individual and contextual	Plan doesn't only evolves around the physical problem, but also addresses the individual and contextual issues.
Provide appropriate advice on self-care	Remember to provide preventive advice relating to the presenting problem. For example the need to give up smoking for the patient with angina.
	Focus on areas of the patient's responsibility and what they can and should do.
Utilise drug therapy safely and rationally with regard to sound pharmacological principles	*Think about the reasons for and against prescribing a particular drug.*
	Always consider the major side effects and interactions.
	If in doubt don't guess - consult the British National Formulary.
	Ensure the patient understands how prescribed items should be taken, the expected impact and the principal side effects to be expected.
Make discriminating use of referral	Remember to consider the need for referral and consciously be aware of the reasons for and against any potential referral.
	Become familiar with the potential referral options including to a less specialised level of care, or to another health professional.
	In some cases advice to consult lay carers, non-health professionals (e.g. religious advisors) or complementary therapists may be applicable.
Act on appropriate opportunities for health promotion	Every consultation provides opportunities for promoting good health that are not directly related to the presenting problem. Be aware of these, even if you have reason not to act upon them.
	Check the patient's readiness and motivation to change before giving advice.

	Emphasise the positive benefits for making the change, as well as the harmful consequences of continuing.
COLLABORATION	
EXPLANATION TO, AND INVOLVEMENT OF PATIENT	
COMPETENCE	**RECOMMENDED STRATEGY**
Reach a shared understanding with the patient	Use clear language, avoiding technical jargon
	If necessary check what the patient already knows before beginning your explanation.
	Provide every patient with a basic explanation of your thoughts then try to reach a shared understanding of the nature of the problem.
	Whenever possible, link back in your explanation to the patient's initial ideas, concerns and expectations.
	Provide information in 'small packages' particularly if it is distressing or complex.
Support the patient in coping with the situation	Express concern and understanding. Acknowledge the patient's coping efforts and appropriate self-care.
	Indicate your willingness to help and be as positive as circumstances allow about the likely outcome.
	When discussing a patient's condition with a teacher or examiner ensure that he or she understands their condition, and is willing for it to be discussed.
Maintain friendly but professional relationship with the patient	Adopt friendly, professional behaviour and demeanour relevant to the circumstances of the individual patient and consultation.
	Be sensitive to the needs of patients from different cultural groups.
	When presenting a patient to a colleague, use the patient's name: *"This is Mr John Smith……"* in preference to the term *"This patient has…"*
Demonstrate an awareness that the patient's attitude to the doctor (and vice versa) affects achievement of co-operation	If there is uncertainty about the nature of the problem or its outcome you may need to explain the process by which you have reached your conclusion.
	The patient's views about the problem and management should be explicitly acknowledged and decision-making shared, as appropriate.
	A doctor has to be able to tolerate uncertainty. However, on occasion you may need to convey more

	certainty to the patient (with due regard to ethics) than the situation fully justifies or guarantees.
Acknowledge differences	Student is aware of difference for e.g. culture, and able to deal with it.
NEGOTIATION OF MUTUALLY ACCEPTABLE PLAN	
Collaborate with patient in negotiating a mutually acceptable plan	Think about how the patient can actively participate in decisions about their care.
	Discuss with the patient your recommendations and ensure they have sufficient knowledge to make informed decisions.
	Ask the patient whether they have understood what you have said and give them sufficient opportunity to question you.

Appendix H: Ethics approval certificates

Appendix H.1: Ethics approval Certificate



The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.
- FWA 00002567, Approved dd 22 May 2002 and Expires 20 Oct 2016.
- IRB 0000 2235 IORG0001762 Approved dd 13/04/2011 and Expires 13/04/2014.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

21/05/2013

Approval Notice
New Application

Ethics Reference No.: 128/2013

Title: Learning of person-centred practice amongst clinical associate students at the University of Pretoria

Dear Murray Louw

The **New Application** for your research received on the 3/04/2013, was approved by the Faculty of Health Sciences Research Ethics Committee on the 21/05/2013

Please note the following about your ethics approval:
- Ethics Approval is valid for 3 years.
- Please remember to use your protocol number (128/2013) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, or monitor the conduct of your research.

Ethics approval is subject to the following:
Standard Conditions:
- The ethics approval is conditional on the receipt of 6 monthly written Progress Reports, and
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

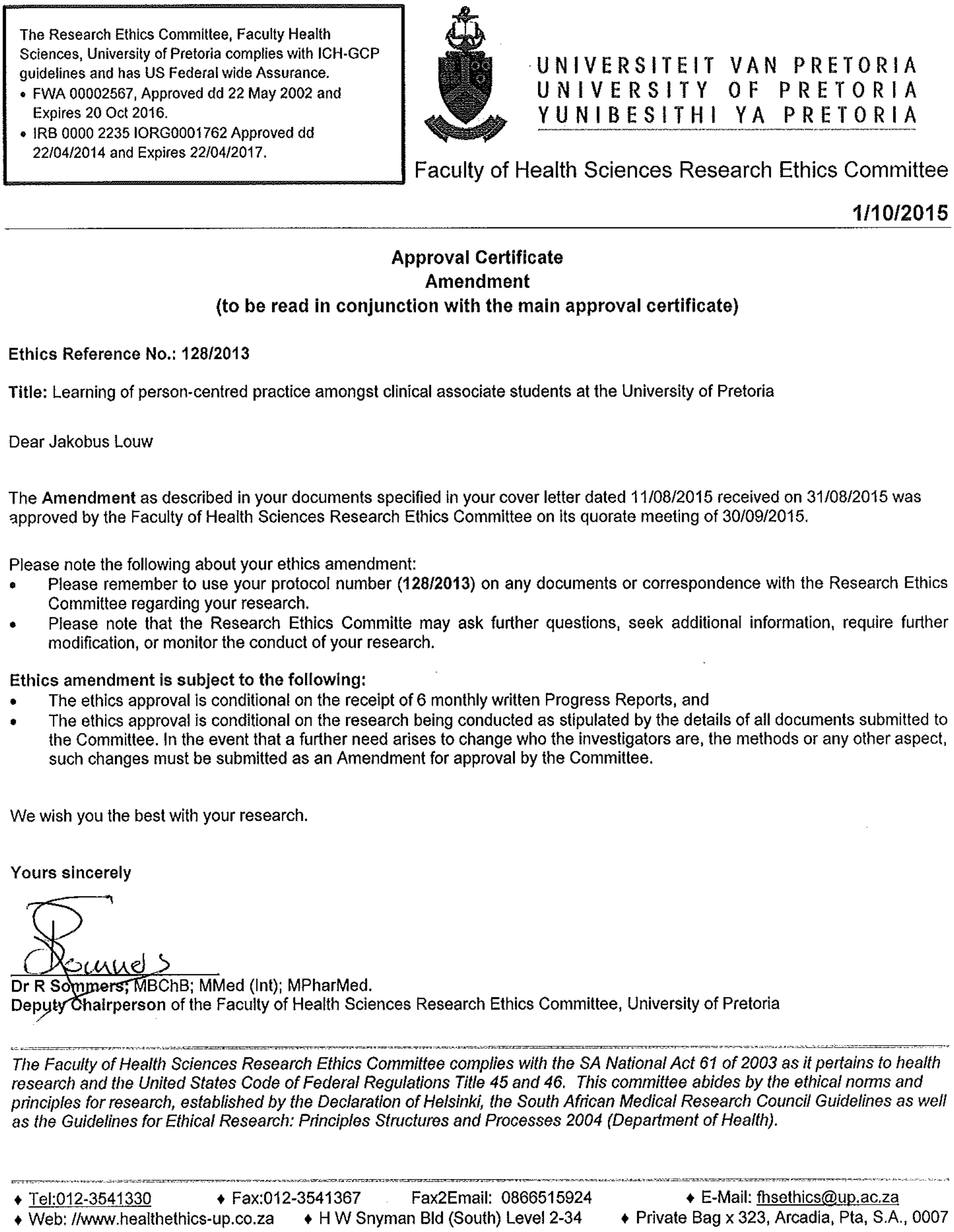
We wish you the best with your research.

Yours sincerely

DR R SOMMERS; MBChB; MMed(Int); MPharmMed.
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee
University of Pretoria

☎ 012 354 1677   🖷 0866516047   ✉ deepeka.behari@up.ac.za   http://www.healthethics-up.co.za

Appendix H.2: Ethics approval Certificate amendment



The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.
- FWA 00002567, Approved dd 22 May 2002 and Expires 20 Oct 2016.
- IRB 0000 2235 IORG0001762 Approved dd 22/04/2014 and Expires 22/04/2017.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

1/10/2015

Approval Certificate
Amendment
(to be read in conjunction with the main approval certificate)

Ethics Reference No.: 128/2013

Title: Learning of person-centred practice amongst clinical associate students at the University of Pretoria

Dear Jakobus Louw

The **Amendment** as described in your documents specified in your cover letter dated 11/08/2015 received on 31/08/2015 was approved by the Faculty of Health Sciences Research Ethics Committee on its quorate meeting of 30/09/2015.

Please note the following about your ethics amendment:
- Please remember to use your protocol number (**128/2013**) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committe may ask further questions, seek additional information, require further modification, or monitor the conduct of your research.

Ethics amendment is subject to the following:
- The ethics approval is conditional on the receipt of 6 monthly written Progress Reports, and
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

Dr R Sommers; MBChB; MMed (Int); MPharMed.
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

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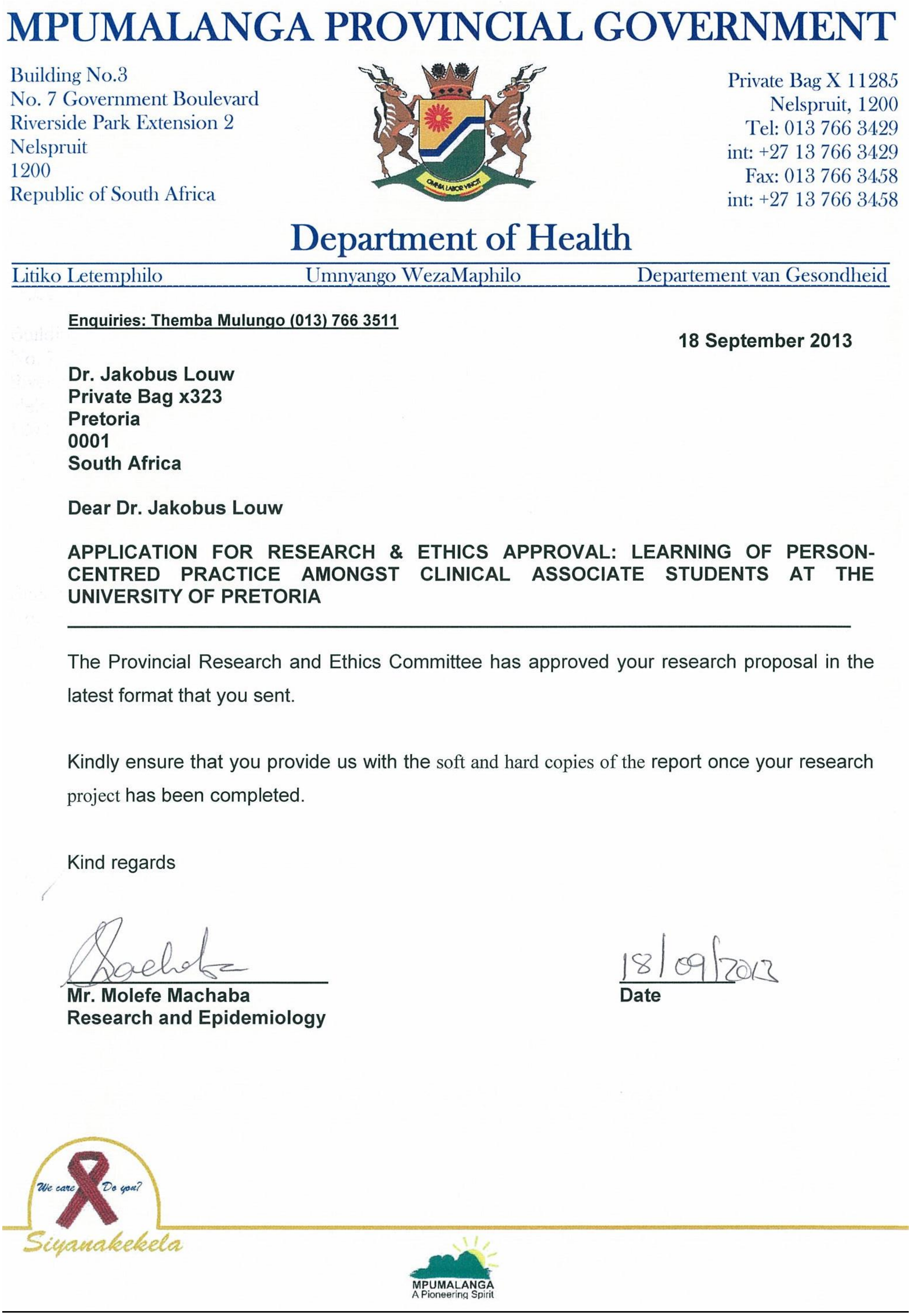
Appendix H.3: Ethics approval Mpumalanga Provincial Government



MPUMALANGA PROVINCIAL GOVERNMENT

Building No.3
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Republic of South Africa

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Fax: 013 766 3458
int: +27 13 766 3458

Department of Health

Litiko Letemphilo Umnyango WezaMaphilo Departement van Gesondheid

Enquiries: Themba Mulungo (013) 766 3511

18 September 2013

Dr. Jakobus Louw
Private Bag x323
Pretoria
0001
South Africa

Dear Dr. Jakobus Louw

APPLICATION FOR RESEARCH & ETHICS APPROVAL: LEARNING OF PERSON-CENTRED PRACTICE AMONGST CLINICAL ASSOCIATE STUDENTS AT THE UNIVERSITY OF PRETORIA

The Provincial Research and Ethics Committee has approved your research proposal in the latest format that you sent.

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

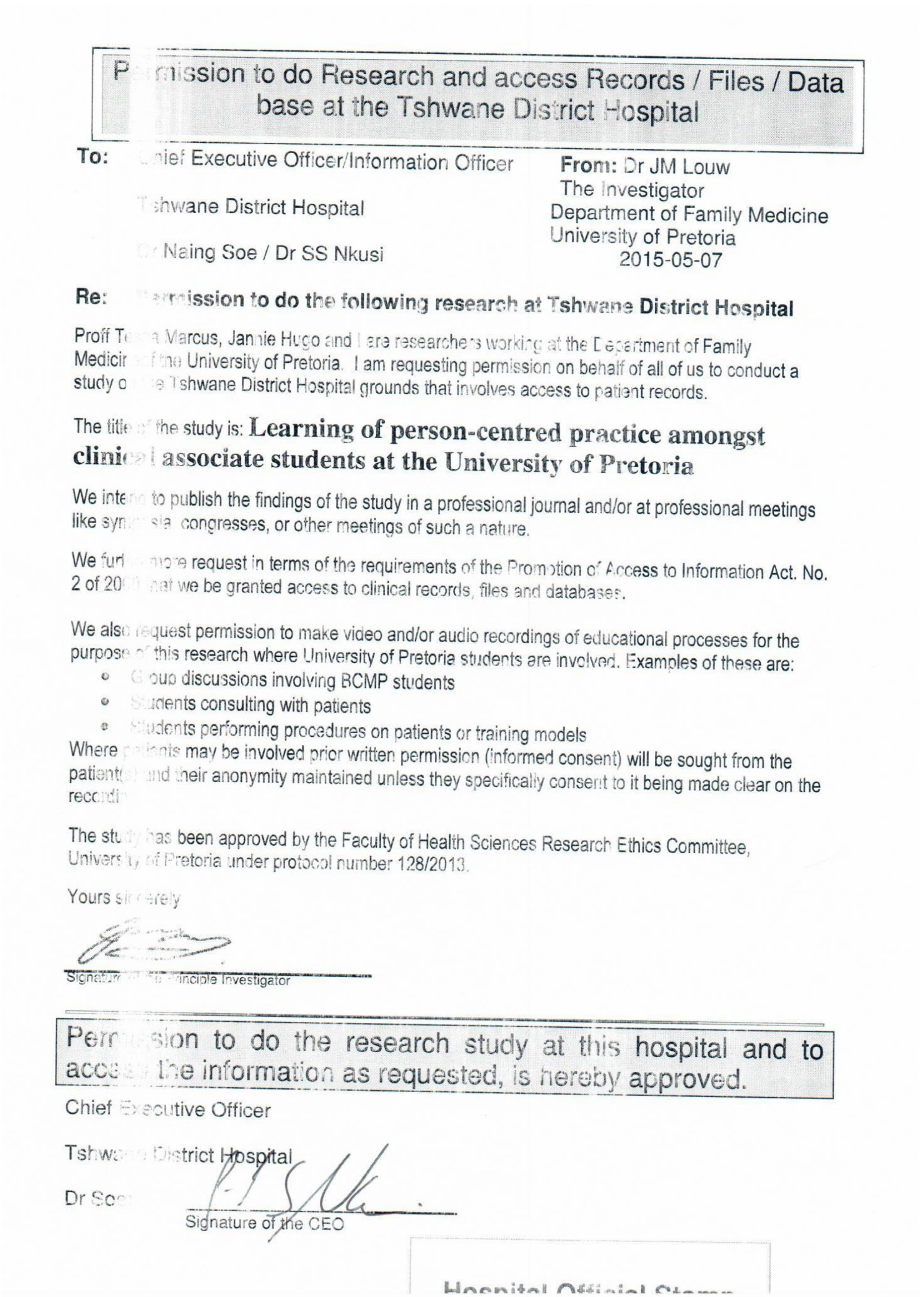
Mr. Molefe Machaba
Research and Epidemiology

18/09/2013
Date

We care Do you?
Siyanakekela

MPUMALANGA
A Pioneering Spirit

Appendix H.4: Ethics approval Tshwane District Hospital



Permission to do Research and access Records / Files / Data base at the Tshwane District Hospital

To: Chief Executive Officer/Information Officer

Tshwane District Hospital

Dr Naing Soe / Dr SS Nkusi

From: Dr JM Louw
The Investigator
Department of Family Medicine
University of Pretoria
2015-05-07

Re: Permission to do the following research at Tshwane District Hospital

Proff Tessa Marcus, Jannie Hugo and I are researchers working at the Department of Family Medicine of the University of Pretoria. I am requesting permission on behalf of all of us to conduct a study on the Tshwane District Hospital grounds that involves access to patient records.

The title of the study is: **Learning of person-centred practice amongst clinical associate students at the University of Pretoria**

We intend to publish the findings of the study in a professional journal and/or at professional meetings like symposia, congresses, or other meetings of such a nature.

We furthermore request in terms of the requirements of the Promotion of Access to Information Act. No. 2 of 2000 that we be granted access to clinical records, files and databases.

We also request permission to make video and/or audio recordings of educational processes for the purpose of this research where University of Pretoria students are involved. Examples of these are:

- Group discussions involving BCMP students
- Students consulting with patients
- Students performing procedures on patients or training models

Where patients may be involved prior written permission (informed consent) will be sought from the patient(s) and their anonymity maintained unless they specifically consent to it being made clear on the recording.

The study has been approved by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria under protocol number 128/2013.

Yours sincerely

Signature of the Principle Investigator

Permission to do the research study at this hospital and to access the information as requested, is hereby approved.

Chief Executive Officer

Tshwane District Hospital

Dr Soe

Signature of the CEO

Hospital Official Stamp

Appendix I: Supplementary data (Comparative tables of SEGUE results by task).

Appendix I.1: Intervention vs control groups compared by SEGUE tasks

Task	Students whose codes for the task:	Intervention group (n = 31) % (n)	Control group (n = 33) % (n)	Diff % (Intervention - Control)	p-value* (2 sided Fischer's exact test)
1. Greet the patient appropriately	Remained “Yes”	58% (18)	48% (15)	9.7%	0.256
	Improved “No” to “Yes”	10% (3)	26% (8)	-16.1%	
	Remained “No”	13% (4)	6% (2)	6.5%	
	Worsened “Yes” to “No”	19% (6)	19% (6)	0.0%	
2. Establish the reason for the visit	Remained “Yes”	100% (31)	97% (31)	3.1%	1
	Improved “No” to “Yes”	0% (0)	3% (1)	-3.1%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	0% (0)	0% (0)	0.0%	
3. Outline agenda for visit (e.g., issues, sequence)	Remained “Yes”	0% (0)	0% (0)	0.0%	1
	Improved “No” to “Yes”	3% (1)	3% (1)	0.1%	
	Remained “No”	97% (28)	93% (28)	3.2%	
	Worsened “Yes” to “No”	0% (0)	3% (1)	-3.3%	
4. Make a personal connection during visit (e.g., go beyond medical issues at hand)	Remained “Yes”	0% (0)	0% (0)	0.0%	0.738
	Improved “No” to “Yes”	3% (1)	0% (0)	3.3%	
	Remained “No”	97% (29)	97% (31)	-0.2%	
	Worsened “Yes” to “No”	0% (0)	3% (1)	-3.1%	
6. Elicit the patient’s view of health problem and/or progress	Remained “Yes”	35% (11)	25% (8)	10.5%	0.738
	Improved “No” to “Yes”	26% (8)	19% (6)	7.1%	
	Remained “No”	23% (7)	34% (11)	-11.8%	
	Worsened “Yes” to “No”	16% (5)	22% (7)	-5.7%	
7. Explore physical/physiological factors (signs/symptoms)	Remained “Yes”	100% (31)	97% (31)	3.1%	1
	Improved “No” to “Yes”	0% (0)	3% (1)	-3.1%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	0% (0)	0% (0)	0.0%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Intervention group (n = 31) % (n)	Control group (n = 33) % (n)	Diff % (Intervention - Control)	p-value* (2 sided Fischer's exact test)
8. Explore psychosocial/emotional factors (e.g., living situation, family relations, stress, work)	Remained “Yes”	13% (4)	6% (2)	6.7%	0.676
	Improved “No” to “Yes”	26% (8)	31% (10)	-5.4%	
	Remained “No”	42% (13)	38% (12)	4.4%	
	Worsened “Yes” to “No”	19% (6)	25% (8)	-5.6%	
9. Discuss antecedent treatments (e.g., self-care, last visit, other medical care)	Remained “Yes”	74% (23)	84% (27)	-10.2%	0.599
	Improved “No” to “Yes”	13% (4)	9% (3)	3.5%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	13% (4)	6% (2)	6.7%	
10. Discuss how the health problem affects the patient’s life (e.g., quality of life)	Remained “Yes”	26% (8)	22% (7)	3.9%	1
	Improved “No” to “Yes”	32% (10)	31% (10)	1.0%	
	Remained “No”	35% (11)	38% (12)	-2.0%	
	Worsened “Yes” to “No”	6% (2)	9% (3)	-2.9%	
11. Discuss lifestyle issues/prevention strategies (e.g., health risks)	Remained “Yes”	23% (7)	55% (17)	-32.3%	0.325
	Improved “No” to “Yes”	26% (8)	13% (4)	12.9%	
	Remained “No”	29% (9)	16% (5)	12.9%	
	Worsened “Yes” to “No”	23% (7)	16% (5)	6.5%	
12. Avoid directive/leading questions	Remained “Yes”	68% (21)	82% (27)	-14.1%	0.480
	Improved “No” to “Yes”	16% (5)	6% (2)	10.1%	
	Remained “No”	3% (1)	0% (0)	3.2%	
	Worsened “Yes” to “No”	13% (4)	12% (4)	0.8%	
13. Give the patient the opportunity/time to talk (e.g., don't interrupt)	Remained “Yes”	94% (29)	97% (32)	-3.4%	0.231
	Improved “No” to “Yes”	6% (2)	0% (0)	6.5%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	0% (0)	3% (1)	-3.0%	
14. Listen. Give the patient your undivided attention (e.g., face patient, give feedback)	Remained “Yes”	45% (14)	27% (9)	17.9%	0.157
	Improved “No” to “Yes”	26% (8)	36% (12)	-10.6%	
	Remained “No”	23% (7)	18% (6)	4.4%	
	Worsened “Yes” to “No”	6% (2)	18% (6)	-11.7%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Intervention group (n = 31) % (n)	Control group (n = 33) % (n)	Diff % (Intervention - Control)	p-value* (2 sided Fischer's exact test)
15. Check/clarify information (e.g., recap, ask "how much is not much")	Remained "Yes"	55% (17)	50% (16)	4.8%	0.037
	Improved "No" to "Yes"	6% (2)	31% (10)	-24.8%	
	Remained "No"	19% (6)	9% (3)	10.0%	
	Worsened "Yes" to "No"	19% (6)	9% (3)	10.0%	
16. Explain rationale for diagnostic procedures (e.g., exam, tests)	Remained "Yes"	16% (5)	9% (3)	6.8%	0.792
	Improved "No" to "Yes"	39% (12)	31% (10)	7.5%	
	Remained "No"	32% (10)	41% (13)	-8.4%	
	Worsened "Yes" to "No"	13% (4)	19% (6)	-5.8%	
17. Teach patient about his or her own body and situation (e.g., provide feedback and explanations)	Remained "Yes"	60% (18)	45% (15)	14.5%	0.626
	Improved "No" to "Yes"	20% (6)	27% (9)	-7.3%	
	Remained "No"	13% (4)	15% (5)	-1.8%	
	Worsened "Yes" to "No"	7% (2)	12% (4)	-5.5%	
18. Encourage patient to ask questions / Check his or her understanding	Remained "Yes"	13% (4)	18% (6)	-4.8%	0.583
	Improved "No" to "Yes"	27% (8)	18% (6)	8.5%	
	Remained "No"	50% (15)	45% (15)	4.5%	
	Worsened "Yes" to "No"	10% (3)	18% (6)	-8.2%	
19. Adapt to patient's level of understanding (e.g., avoid or explain jargon)	Remained "Yes"	19% (6)	12% (4)	7.2%	0.556
	Improved "No" to "Yes"	10% (3)	18% (6)	-8.5%	
	Remained "No"	55% (17)	61% (20)	-5.8%	
	Worsened "Yes" to "No"	16% (5)	9% (3)	7.0%	
20. Acknowledge the patient's accomplishments/ progress/challenges	Remained "Yes"	3% (1)	0% (0)	3.3%	1
	Improved "No" to "Yes"	0% (0)	3% (1)	-3.1%	
	Remained "No"	93% (28)	94% (30)	-0.4%	
	Worsened "Yes" to "No"	3% (1)	3% (1)	0.2%	
22. Express caring, concern, empathy	Remained "Yes"	84% (26)	82% (27)	2.1%	0.885
	Improved "No" to "Yes"	3% (1)	6% (2)	-2.8%	
	Remained "No"	0% (0)	3% (1)	-3.0%	
	Worsened "Yes" to "No"	13% (4)	9% (3)	3.8%	
23. Maintain a respectful tone	Remained "Yes"	100% (31)	94% (31)	6.1%	1
	Improved "No" to "Yes"	0% (0)	3% (1)	-3.0%	
	Remained "No"	0% (0)	0% (0)	0.0%	
	Worsened "Yes" to "No"	0% (0)	3% (1)	-3.0%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Intervention group (n = 31) % (n)	Control group (n = 33) % (n)	Diff % (Intervention - Control)	p-value* (2 sided Fischer's exact test)
24. Ask if there is anything else patient would like to discuss	Remained "Yes"	16% (5)	15% (5)	1.0%	0.884
	Improved "No" to "Yes"	26% (8)	27% (9)	-1.5%	
	Remained "No"	45% (14)	39% (13)	5.8%	
	Worsened "Yes" to "No"	13% (4)	18% (6)	-5.3%	
25. Review next steps with patient	Remained "Yes"	10% (3)	6% (2)	3.6%	0.846
	Improved "No" to "Yes"	13% (4)	15% (5)	-2.2%	
	Remained "No"	68% (21)	64% (21)	4.1%	
	Worsened "Yes" to "No"	10% (3)	15% (5)	-5.5%	
26. Discuss patient's interest/expectation/ goal for the plan	Remained "Yes"	10% (3)	22% (7)	-12.2%	0.036
	Improved "No" to "Yes"	39% (12)	13% (4)	26.2%	
	Remained "No"	26% (8)	41% (13)	-14.8%	
	Worsened "Yes" to "No"	26% (8)	25% (8)	0.8%	
27. Involve the patient in deciding upon a plan (e.g., options, rationale, values, preferences, concerns)	Remained "Yes"	35% (11)	30% (10)	5.2%	0.666
	Improved "No" to "Yes"	23% (7)	30% (10)	-7.7%	
	Remained "No"	35% (11)	30% (10)	5.2%	
	Worsened "Yes" to "No"	6% (2)	9% (3)	-2.6%	
28. Explain likely benefits of the option(s) discussed	Remained "Yes"	71% (22)	44% (14)	27.2%	0.343
	Improved "No" to "Yes"	16% (5)	28% (9)	-12.0%	
	Remained "No"	6% (2)	16% (5)	-9.2%	
	Worsened "Yes" to "No"	6% (2)	13% (4)	-6.0%	
29. Explain likely side-effects and risks of the option(s) discussed	Remained "Yes"	0% (0)	3% (1)	-3.0%	1
	Improved "No" to "Yes"	3% (1)	3% (1)	0.2%	
	Remained "No"	94% (29)	88% (29)	5.7%	
	Worsened "Yes" to "No"	3% (1)	6% (2)	-2.8%	
30. Provide complete instructions for the plan	Remained "Yes"	45% (14)	30% (10)	14.9%	0.715
	Improved "No" to "Yes"	29% (9)	21% (7)	7.8%	
	Remained "No"	6% (2)	21% (7)	-14.8%	
	Worsened "Yes" to "No"	19% (6)	27% (9)	-7.9%	
31. Discuss the patient's ability to follow the plan (e.g., attitude, time, resources)	Remained "Yes"	13% (4)	9% (3)	3.8%	0.251
	Improved "No" to "Yes"	13% (4)	30% (10)	-17.4%	
	Remained "No"	61% (19)	52% (17)	9.8%	
	Worsened "Yes" to "No"	13% (4)	9% (3)	3.8%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Intervention group (n = 31) % (n)		Control group (n = 33) % (n)		Diff % (Intervention - Control)	p-value* (2 sided Fischer's exact test)
32. Discuss the importance of the patient's role in treatment/prevention	Remained "Yes"	0%	(0)	0%	(0)	0.0%	0.193
	Improved "No" to "Yes"	16%	(5)	3%	(1)	13.1%	
	Remained "No"	77%	(24)	85%	(28)	-7.4%	
	Worsened "Yes" to "No"	6%	(2)	12%	(4)	-5.7%	

Average over the 30 tasks	Remained "Yes"	40%	12.2	37%	12	2.5%	0.620
	Improved "No" to "Yes"	16%	4.83	16%	5.3	-0.7%	
	Remained "No"	35%	10.6	35%	11.2	0.0%	
	Worsened "Yes" to "No"	10%	3.1	12%	3.83	-1.8%	

*Before Bonferroni adjustment

Appendix I.2: Third vs second year students compared by SEGUE tasks

Task	Students whose codes for the task:	3rd years (n = 21) % (n)	2nd years (n = 43) % (n)	Diff % (3rd - 2nd years)	p-value* (2 sided Fischer's exact test)
1. Greet the patient appropriately	Remained “Yes”	37% (7)	60% (26)	-23.6%	0.383
	Improved “No” to “Yes”	26% (5)	14% (6)	12.4%	
	Remained “No”	16% (3)	7% (3)	8.8%	
	Worsened “Yes” to “No”	21% (4)	19% (8)	2.4%	
2. Establish the reason for the visit	Remained “Yes”	100% (20)	98% (42)	2.3%	1.000
	Improved “No” to “Yes”	0% (0)	2% (1)	-2.3%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	0% (0)	0% (0)	0.0%	
3. Outline agenda for visit (e.g., issues, sequence)	Remained “Yes”	0% (0)	0% (0)	0.0%	0.089
	Improved “No” to “Yes”	11% (2)	0% (0)	11.1%	
	Remained “No”	89% (16)	98% (40)	-8.7%	
	Worsened “Yes” to “No”	0% (0)	2% (1)	-2.4%	
4. Make a personal connection during visit (e.g., go beyond medical issues at hand)	Remained “Yes”	0% (0)	0% (0)	0.0%	0.522
	Improved “No” to “Yes”	5% (1)	0% (0)	5.3%	
	Remained “No”	95% (18)	98% (42)	-2.9%	
	Worsened “Yes” to “No”	0% (0)	2% (1)	-2.3%	
6. Elicit the patient’s view of health problem and/or progress	Remained “Yes”	35% (7)	28% (12)	7.1%	1.000
	Improved “No” to “Yes”	20% (4)	23% (10)	-3.3%	
	Remained “No”	25% (5)	30% (13)	-5.2%	
	Worsened “Yes” to “No”	20% (4)	19% (8)	1.4%	
7. Explore physical/ physiological factors (signs/symptoms)	Remained “Yes”	100% (20)	98% (42)	2.3%	1.000
	Improved “No” to “Yes”	0% (0)	2% (1)	-2.3%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	0% (0)	0% (0)	0.0%	
8. Explore psychosocial/ emotional factors (living situation, family relations, stress, work)	Remained “Yes”	10% (2)	9% (4)	0.7%	0.003
	Improved “No” to “Yes”	55% (11)	16% (7)	38.7%	
	Remained “No”	30% (6)	44% (19)	-14.2%	
	Worsened “Yes” to “No”	5% (1)	30% (13)	-25.2%	
9. Discuss antecedent treatments (e.g., self-care, last visit, other medical care)	Remained “Yes”	71% (15)	83% (35)	-11.9%	0.063
	Improved “No” to “Yes”	24% (5)	5% (2)	19.0%	
	Remained “No”	0% (0)	0% (0)	0.0%	
	Worsened “Yes” to “No”	5% (1)	12% (5)	-7.1%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	3rd years (n = 21) % (n)	2nd years (n = 43) % (n)	Diff % (3rd - 2nd years)	p-value* (2 sided Fischer's exact test)
10. Discuss how the health problem affects the patient's life (e.g., quality of life)	Remained "Yes"	25% (5)	23% (10)	1.7%	0.263
	Improved "No" to "Yes"	35% (7)	30% (13)	4.8%	
	Remained "No"	25% (5)	42% (18)	-16.9%	
	Worsened "Yes" to "No"	15% (3)	5% (2)	10.3%	
11. Discuss lifestyle issues/prevention strategies (e.g., health risks)	Remained "Yes"	35% (7)	40% (17)	-5.5%	0.004
	Improved "No" to "Yes"	35% (7)	12% (5)	23.1%	
	Remained "No"	30% (6)	19% (8)	11.0%	
	Worsened "Yes" to "No"	0% (0)	29% (12)	-28.6%	
12. Avoid directive/leading questions	Remained "Yes"	71% (15)	77% (33)	-5.3%	0.594
	Improved "No" to "Yes"	10% (2)	12% (5)	-2.1%	
	Remained "No"	0% (0)	2% (1)	-2.3%	
	Worsened "Yes" to "No"	19% (4)	9% (4)	9.7%	
13. Give the patient the opportunity/time to talk (e.g., don't interrupt)	Remained "Yes"	100% (21)	93% (40)	7.0%	0.697
	Improved "No" to "Yes"	0% (0)	5% (2)	-4.7%	
	Remained "No"	0% (0)	0% (0)	0.0%	
	Worsened "Yes" to "No"	0% (0)	2% (1)	-2.3%	
14. Listen. Give the patient your undivided attention (e.g., face patient, give feedback)	Remained "Yes"	43% (9)	33% (14)	10.3%	0.451
	Improved "No" to "Yes"	24% (5)	35% (15)	-11.1%	
	Remained "No"	14% (3)	23% (10)	-9.0%	
	Worsened "Yes" to "No"	19% (4)	9% (4)	9.7%	
15. Check/clarify information (e.g., recap, ask "how much is not much")	Remained "Yes"	55% (11)	51% (22)	3.8%	0.314
	Improved "No" to "Yes"	30% (6)	14% (6)	16.0%	
	Remained "No"	5% (1)	19% (8)	-13.6%	
	Worsened "Yes" to "No"	10% (2)	16% (7)	-6.3%	
16. Explain rationale for diagnostic procedures (e.g., exam, tests)	Remained "Yes"	10% (2)	14% (6)	-4.0%	0.766
	Improved "No" to "Yes"	30% (6)	37% (16)	-7.2%	
	Remained "No"	40% (8)	35% (15)	5.1%	
	Worsened "Yes" to "No"	20% (4)	14% (6)	6.0%	
17. Teach patient about his or her own body and situation (e.g., provide feedback and explanations)	Remained "Yes"	35% (7)	60% (26)	-25.5%	0.120
	Improved "No" to "Yes"	40% (8)	16% (7)	23.7%	
	Remained "No"	20% (4)	12% (5)	8.4%	
	Worsened "Yes" to "No"	5% (1)	12% (5)	-6.6%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	3rd years (n = 21) % (n)	2nd years (n = 43) % (n)	Diff % (3rd - 2nd years)	p-value* (2 sided Fischer's exact test)
18. Encourage patient to ask questions / Check his or her understanding	Remained "Yes"	15% (3)	16% (7)	-1.3%	0.579
	Improved "No" to "Yes"	30% (6)	19% (8)	11.4%	
	Remained "No"	40% (8)	51% (22)	-11.2%	
	Worsened "Yes" to "No"	15% (3)	14% (6)	1.0%	
19. Adapt to patient's level of understanding (e.g., avoid or explain jargon)	Remained "Yes"	24% (5)	12% (5)	12.2%	1.000
	Improved "No" to "Yes"	14% (3)	14% (6)	0.3%	
	Remained "No"	52% (11)	60% (26)	-8.1%	
	Worsened "Yes" to "No"	10% (2)	14% (6)	-4.4%	
20. Acknowledge the patient's accomplishments/progress/challenges	Remained "Yes"	5% (1)	0% (0)	5.3%	0.371
	Improved "No" to "Yes"	5% (1)	0% (0)	5.3%	
	Remained "No"	89% (17)	95% (41)	-5.9%	
	Worsened "Yes" to "No"	0% (0)	5% (2)	-4.7%	
22. Express caring, concern, empathy	Remained "Yes"	86% (18)	81% (35)	4.3%	1.000
	Improved "No" to "Yes"	5% (1)	5% (2)	0.1%	
	Remained "No"	0% (0)	2% (1)	-2.3%	
	Worsened "Yes" to "No"	10% (2)	12% (5)	-2.1%	
23. Maintain a respectful tone	Remained "Yes"	100% (21)	95% (41)	4.7%	1.000
	Improved "No" to "Yes"	0% (0)	2% (1)	-2.3%	
	Remained "No"	0% (0)	0% (0)	0.0%	
	Worsened "Yes" to "No"	0% (0)	2% (1)	-2.3%	
24. Ask if there is anything else patient would like to discuss	Remained "Yes"	14% (3)	16% (7)	-2.0%	0.810
	Improved "No" to "Yes"	29% (6)	26% (11)	3.0%	
	Remained "No"	38% (8)	44% (19)	-6.1%	
	Worsened "Yes" to "No"	19% (4)	14% (6)	5.1%	
25. Review next steps with patient	Remained "Yes"	5% (1)	9% (4)	-4.5%	0.027
	Improved "No" to "Yes"	24% (5)	9% (4)	14.5%	
	Remained "No"	48% (10)	74% (32)	-26.8%	
	Worsened "Yes" to "No"	24% (5)	7% (3)	16.8%	
26. Discuss patient's interest/expectation/ goal for the plan	Remained "Yes"	30% (6)	9% (4)	20.7%	0.388
	Improved "No" to "Yes"	25% (5)	26% (11)	-0.6%	
	Remained "No"	30% (6)	35% (15)	-4.9%	
	Worsened "Yes" to "No"	15% (3)	30% (13)	-15.2%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	3rd years (n = 21) % (n)	2nd years (n = 43) % (n)	Diff % (3rd - 2nd years)	p-value* (2 sided Fischer's exact test)
27. Involve the patient in deciding upon a plan (e.g., options, rationale, values, preferences, concerns)	Remained “Yes”	33% (7)	33% (14)	0.8%	0.572
	Improved “No” to “Yes”	33% (7)	23% (10)	10.1%	
	Remained “No”	24% (5)	37% (16)	-13.4%	
	Worsened “Yes” to “No”	10% (2)	7% (3)	2.5%	
28. Explain likely benefits of the option(s) discussed	Remained “Yes”	43% (9)	64% (27)	-21.4%	0.396
	Improved “No” to “Yes”	29% (6)	19% (8)	9.5%	
	Remained “No”	14% (3)	10% (4)	4.8%	
	Worsened “Yes” to “No”	14% (3)	7% (3)	7.1%	
29. Explain likely side-effects and risks of the option(s) discussed	Remained “Yes”	5% (1)	0% (0)	4.8%	0.592
	Improved “No” to “Yes”	5% (1)	2% (1)	2.4%	
	Remained “No”	90% (19)	91% (39)	-0.2%	
	Worsened “Yes” to “No”	0% (0)	7% (3)	-7.0%	
30. Provide complete instructions for the plan	Remained “Yes”	29% (6)	42% (18)	-13.3%	0.076
	Improved “No” to “Yes”	43% (9)	16% (7)	26.6%	
	Remained “No”	10% (2)	16% (7)	-6.8%	
	Worsened “Yes” to “No”	19% (4)	26% (11)	-6.5%	
31. Discuss the patient’s ability to follow the plan (e.g., attitude, time, resources)	Remained “Yes”	10% (2)	12% (5)	-2.1%	0.058
	Improved “No” to “Yes”	33% (7)	16% (7)	17.1%	
	Remained “No”	38% (8)	65% (28)	-27.0%	
	Worsened “Yes” to “No”	19% (4)	7% (3)	12.1%	
32. Discuss the importance of the patient’s role in treatment/ prevention	Remained “Yes”	0% (0)	0% (0)	0.0%	0.347
	Improved “No” to “Yes”	14% (3)	7% (3)	7.3%	
	Remained “No”	71% (15)	86% (37)	-14.6%	
	Worsened “Yes” to “No”	14% (3)	7% (3)	7.3%	

Average over the 30 tasks	Remained “Yes”	38% (7.7)	39% (16.5)	-1.1%	0.483
	Improved “No” to “Yes”	21% (4.3)	14% (5.8)	7.5%	
	Remained “No”	31% (6.2)	37% (15.6)	-5.4%	
	Worsened “Yes” to “No”	10% (2.1)	11% (4.8)	-1.0%	

*Before Bonferroni adjustment

Appendix I.3: Male vs female students compared by SEGUE tasks

Task	Students whose codes for the task:	Male students (n = 33)		Female students (n = 31)		Diff % (Male - Female)	p-value* (2 sided Fischer's exact test)
		%	(n)	%	(n)		
1. Greet the patient appropriately	Remained "Yes"	64%	(21)	41%	(12)	22.3%	0.474
	Improved "No" to "Yes"	12%	(4)	24%	(7)	-12.0%	
	Remained "No"	3%	(1)	17%	(5)	-14.2%	
	Worsened "Yes" to "No"	21%	(7)	17%	(5)	4.0%	
2. Establish the reason for the visit	Remained "Yes"	100%	(33)	97%	(29)	3.3%	0.476
	Improved "No" to "Yes"	0%	(0)	3%	(1)	-3.3%	
	Remained "No"	0%	(0)	0%	(0)	0.0%	
	Worsened "Yes" to "No"	0%	(0)	0%	(0)	0.0%	
3. Outline agenda for visit (e.g., issues, sequence)	Remained "Yes"	0%	(0)	0%	(0)	0.0%	0.493
	Improved "No" to "Yes"	6%	(2)	0%	(0)	6.5%	
	Remained "No"	90%	(28)	100%	(28)	-9.7%	
	Worsened "Yes" to "No"	3%	(1)	0%	(0)	3.2%	
4. Make a personal connection during visit (e.g., go beyond medical issues at hand)	Remained "Yes"	0%	(0)	0%	(0)	0.0%	1.000
	Improved "No" to "Yes"	3%	(1)	0%	(0)	3.1%	
	Remained "No"	94%	(30)	100%	(30)	-6.3%	
	Worsened "Yes" to "No"	3%	(1)	0%	(0)	3.1%	
6. Elicit the patient's view of health problem and/or progress	Remained "Yes"	24%	(8)	37%	(11)	-12.4%	0.537
	Improved "No" to "Yes"	27%	(9)	17%	(5)	10.6%	
	Remained "No"	33%	(11)	23%	(7)	10.0%	
	Worsened "Yes" to "No"	15%	(5)	23%	(7)	-8.2%	
7. Explore physical/physiological factors (signs/symptoms)	Remained "Yes"	100%	(33)	97%	(29)	3.3%	0.476
	Improved "No" to "Yes"	0%	(0)	3%	(1)	-3.3%	
	Remained "No"	0%	(0)	0%	(0)	0.0%	
	Worsened "Yes" to "No"	0%	(0)	0%	(0)	0.0%	
8. Explore psychosocial/emotional factors (e.g., living situation, family relations, stress, work)	Remained "Yes"	6%	(2)	13%	(4)	-7.3%	0.644
	Improved "No" to "Yes"	27%	(9)	30%	(9)	-2.7%	
	Remained "No"	48%	(16)	30%	(9)	18.5%	
	Worsened "Yes" to "No"	18%	(6)	27%	(8)	-8.5%	
9. Discuss antecedent treatments (e.g., self-care, last visit, other medical care)	Remained "Yes"	79%	(26)	80%	(24)	-1.2%	0.480
	Improved "No" to "Yes"	15%	(5)	7%	(2)	8.5%	
	Remained "No"	0%	(0)	0%	(0)	0.0%	
	Worsened "Yes" to "No"	6%	(2)	13%	(4)	-7.3%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Male students (n = 33) %	(n)	Female students (n = 31) %	(n)	Diff % (Male - Female)	p-value* (2 sided Fischer's exact test)
10. Discuss how the health problem affects the patient's life (e.g., quality of life)	Remained "Yes"	24%	(8)	23%	(7)	0.9%	0.793
	Improved "No" to "Yes"	30%	(10)	33%	(10)	-3.0%	
	Remained "No"	39%	(13)	33%	(10)	6.1%	
	Worsened "Yes" to "No"	6%	(2)	10%	(3)	-3.9%	
11. Discuss lifestyle issues/prevention strategies (e.g., health risks)	Remained "Yes"	30%	(10)	48%	(14)	-18.0%	0.520
	Improved "No" to "Yes"	24%	(8)	14%	(4)	10.4%	
	Remained "No"	24%	(8)	21%	(6)	3.6%	
	Worsened "Yes" to "No"	21%	(7)	17%	(5)	4.0%	
12. Avoid directive/leading questions	Remained "Yes"	67%	(22)	84%	(26)	-17.2%	0.439
	Improved "No" to "Yes"	15%	(5)	6%	(2)	8.7%	
	Remained "No"	3%	(1)	0%	(0)	3.0%	
	Worsened "Yes" to "No"	15%	(5)	10%	(3)	5.5%	
13. Give the patient the opportunity/time to talk (e.g., don't interrupt)	Remained "Yes"	91%	(30)	100%	(31)	-9.1%	0.493
	Improved "No" to "Yes"	6%	(2)	0%	(0)	6.1%	
	Remained "No"	0%	(0)	0%	(0)	0.0%	
	Worsened "Yes" to "No"	3%	(1)	0%	(0)	3.0%	
14. Listen. Give the patient your undivided attention (e.g., face patient, give feedback)	Remained "Yes"	42%	(14)	29%	(9)	13.4%	0.489
	Improved "No" to "Yes"	24%	(8)	39%	(12)	-14.5%	
	Remained "No"	18%	(6)	23%	(7)	-4.4%	
	Worsened "Yes" to "No"	15%	(5)	10%	(3)	5.5%	
15. Check/clarify information (e.g., recap, ask "how much is not much")	Remained "Yes"	52%	(17)	53%	(16)	-1.8%	0.696
	Improved "No" to "Yes"	18%	(6)	20%	(6)	-1.8%	
	Remained "No"	12%	(4)	17%	(5)	-4.5%	
	Worsened "Yes" to "No"	18%	(6)	10%	(3)	8.2%	
16. Explain rationale for diagnostic procedures (e.g., exam, tests)	Remained "Yes"	21%	(7)	3%	(1)	17.9%	0.623
	Improved "No" to "Yes"	39%	(13)	30%	(9)	9.4%	
	Remained "No"	27%	(9)	47%	(14)	-19.4%	
	Worsened "Yes" to "No"	12%	(4)	20%	(6)	-7.9%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Male students (n = 33)		Female students (n = 31)		Diff % (Male - Female)	p-value* (2 sided Fischer's exact test)
		%	(n)	%	(n)		
17. Teach patient about his or her own body and situation (e.g., provide feedback, explain)	Remained “Yes”	66%	(21)	39%	(12)	26.9%	0.739
	Improved “No” to “Yes”	25%	(8)	23%	(7)	2.4%	
	Remained “No”	3%	(1)	26%	(8)	-22.7%	
	Worsened “Yes” to “No”	6%	(2)	13%	(4)	-6.7%	
18. Encourage patient to ask questions / Check his or her understanding	Remained “Yes”	13%	(4)	19%	(6)	-6.9%	0.474
	Improved “No” to “Yes”	28%	(9)	16%	(5)	12.0%	
	Remained “No”	44%	(14)	52%	(16)	-7.9%	
	Worsened “Yes” to “No”	16%	(5)	13%	(4)	2.7%	
19. Adapt to patient’s level of understanding (e.g., avoid or explain jargon)	Remained “Yes”	15%	(5)	16%	(5)	-1.0%	0.846
	Improved “No” to “Yes”	12%	(4)	16%	(5)	-4.0%	
	Remained “No”	58%	(19)	58%	(18)	-0.5%	
	Worsened “Yes” to “No”	15%	(5)	10%	(3)	5.5%	
20. Acknowledge the patient’s accomplishments/ progress/ challenges	Remained “Yes”	3%	(1)	0%	(0)	3.1%	0.738
	Improved “No” to “Yes”	0%	(0)	3%	(1)	-3.3%	
	Remained “No”	94%	(30)	93%	(28)	0.4%	
	Worsened “Yes” to “No”	3%	(1)	3%	(1)	-0.2%	
22. Express caring, concern, empathy	Remained “Yes”	85%	(28)	81%	(25)	4.2%	0.885
	Improved “No” to “Yes”	6%	(2)	3%	(1)	2.8%	
	Remained “No”	0%	(0)	3%	(1)	-3.2%	
	Worsened “Yes” to “No”	9%	(3)	13%	(4)	-3.8%	
23. Maintain a respectful tone	Remained “Yes”	100%	(33)	94%	(29)	6.5%	0.231
	Improved “No” to “Yes”	0%	(0)	3%	(1)	-3.2%	
	Remained “No”	0%	(0)	0%	(0)	0.0%	
	Worsened “Yes” to “No”	0%	(0)	3%	(1)	-3.2%	
24. Ask if there is anything else patient would like to discuss	Remained “Yes”	12%	(4)	19%	(6)	-7.2%	0.306
	Improved “No” to “Yes”	33%	(11)	19%	(6)	14.0%	
	Remained “No”	36%	(12)	48%	(15)	-12.0%	
	Worsened “Yes” to “No”	18%	(6)	13%	(4)	5.3%	
25. Review next steps with patient	Remained “Yes”	12%	(4)	3%	(1)	8.9%	0.393
	Improved “No” to “Yes”	12%	(4)	16%	(5)	-4.0%	
	Remained “No”	58%	(19)	74%	(23)	-16.6%	
	Worsened “Yes” to “No”	18%	(6)	6%	(2)	11.7%	

*Before Bonferroni adjustment

Task	Students whose codes for the task:	Male students (n = 33)		Female students (n = 31)		Diff % (Male - Female)	p-value* (2 sided Fischer's exact test)
		%	(n)	%	(n)		
26. Discuss patient's interest/ expectation/goal for the plan	Remained "Yes"	3%	(1)	30%	(9	-27.0%	0.134
	Improved "No" to "Yes"	36%	(12)	13%	(4)	23.0%	
	Remained "No"	39%	(13)	27%	(8)	12.7%	
	Worsened "Yes" to "No"	21%	(7)	30%	(9)	-8.8%	
27. Involve the patient in deciding upon a plan (e.g., options, rationale, values, preferences, concerns)	Remained "Yes"	39%	(13)	26%	(8)	13.6%	0.383
	Improved "No" to "Yes"	27%	(9)	26%	(8)	1.5%	
	Remained "No"	30%	(10)	35%	(11)	-5.2%	
	Worsened "Yes" to "No"	3%	(1)	13%	(4)	-9.9%	
28. Explain likely benefits of the option(s) discussed	Remained "Yes"	70%	(23)	43%	(13)	26.4%	0.676
	Improved "No" to "Yes"	24%	(8)	20%	(6)	4.2%	
	Remained "No"	0%	(0)	23%	(7)	-23.3%	
	Worsened "Yes" to "No"	6%	(2)	13%	(4)	-7.3%	
29. Explain likely side-effects and risks of the option(s) discussed	Remained "Yes"	0%	(0)	3%	(1)	-3.2%	1.000
	Improved "No" to "Yes"	3%	(1)	3%	(1)	-0.2%	
	Remained "No"	91%	(30)	90%	(28)	0.6%	
	Worsened "Yes" to "No"	6%	(2)	3%	(1)	2.8%	
30. Provide complete instructions for the plan	Remained "Yes"	52%	(17)	23%	(7)	28.9%	0.365
	Improved "No" to "Yes"	21%	(7)	29%	(9)	-7.8%	
	Remained "No"	9%	(3)	19%	(6)	-10.3%	
	Worsened "Yes" to "No"	18%	(6)	29%	(9)	-10.9%	
31. Discuss the patient's ability to follow the plan (e.g., attitude, time, resources)	Remained "Yes"	12%	(4)	10%	(3)	2.4%	0.159
	Improved "No" to "Yes"	12%	(40)	32%	(10)	-20.1%	
	Remained "No"	64%	(21)	48%	(15)	15.2%	
	Worsened "Yes" to "No"	12%	(4)	10%	(3)	2.4%	
32. Discuss the importance of the patient's role in treatment/ prevention	Remained "Yes"	0%	(0)	0%	(0)	0.0%	0.291
	Improved "No" to "Yes"	15%	(5)	3%	(1)	11.9%	
	Remained "No"	79%	(26)	84%	(26)	-5.1%	
	Worsened "Yes" to "No"	6%	(2)	13%	(4)	-6.8%	

Average over the 30 tasks	Remained "Yes"	39%	13.0	37%	(11.3)	2.3%	0.542
	Improved "No" to "Yes"	17%	5.5	15%	(4.6)	1.7%	
	Remained "No"	33%	10.8	36%	(11.0)	-3.2%	
	Worsened "Yes" to "No"	11%	3.5	11%	(3.5)	-0.9%	

*Before Bonferroni adjustment