

**APPLICATION OF COMMUNICATION SKILLS IN AN
AUTHENTIC CLINICAL SETTING:
ASSESSING THE COMMUNICATION COMPETENCY OF
SIXTH YEAR MEDICAL STUDENTS DURING HISTORY
TAKING**

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A thesis submitted to the College of Health Sciences, University of KwaZulu-Natal, in
fulfilment of the requirements for the degree of

MMed Sc (Medicine)

TITLE OF STUDY

APPLICATION OF COMMUNICATION SKILLS IN AN AUTHENTIC
CLINICAL SETTING: ASSESSING THE COMMUNICATION
COMPETENCY OF SIXTH YEAR MEDICAL STUDENTS DURING
HISTORY TAKING

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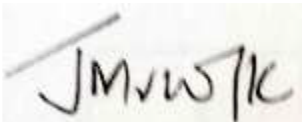
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PLAGIARISM DECLARATION

I., Ekanda Alfred Ntando (211559420) declare that

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ACKNOWLEDGEMENTS

I wish to acknowledge the contributions of:

1. Dr Jacqueline van Wyk, my supervisor for advice and assistance.
2. Dr Margaret Matthews, my co-supervisor for her pertinent critiques.
3. Mr Boikutso Tlou for statistical assistance.
4. Members of the final year MBChB in 2015 for their participation in the study.

DEDICATION

I would like to dedicate this dissertation to all medical students and medical doctors. I believe that adopting the skills of good communication with patients in your medical practice will enrich and improve your professional careers.

ABSTRACT

The Nelson R. Mandela School of Medicine (NRMSM) launched a new 6 year MBChB programme in 2010. This curriculum includes a clinical communication course which emphasises the patient-centred approach in line with the Health Professions Council of South Africa Core Competency Framework for undergraduate students. The Calgary-Cambridge Guide to the Medical Interview was adopted as a method for teaching communication. The 2015 final year medical students constituted the first cohort to have been taught clinical communication skills in this manner in the pre-clinical phase.

Aim of the study

The study was conducted to investigate the transfer of communication skills taught using the Calgary-Cambridge Method (CCM) in the pre-clinical phase to the clinical setting. This study focused mainly on the process skills of history taking and had the following objectives:

1. to determine whether students used the CCM as taught at medical school.
2. To measure and compare process skills of students in two different phases of MBChB programme.
3. To explore role modelling of the CCM by clinical teachers.
4. To describe challenges encountered by students for or in the application of the CCM.

Methods

The study was observational, analytical and cross-sectional. The population was the 2015 final year class of medical students (n=198) with exception of 13 students who were trained in a different method in Cuba. The study was conducted in the Internal Medicine wards of four teaching hospitals affiliated to the medical school in the Durban functional region.

Results

The population of the study comprised 185 eligible students; 107 participants were enrolled, and the final number of participants was 105 (57%).

In response to the four objectives of the study, the findings revealed that most students used the CCM in a modified manner. There was a marked decline in some of the process skills of history taking, specifically in subcategories such as providing structure and eliciting the patients' perspective. Educators in Internal Medicine wards did not model the use of the CCM and discouraged its application due to workload and time constraints. Challenges encountered by students included negative attitudes of clinical trainers towards the CCM and language barriers, as most patients spoke in isiZulu.

Discussion

Results demonstrated that the clinical communication teaching and learning of the pre-clinical phase had some positive impact on application, even if students only used the Calgary-Cambridge Method in a modified manner in the clinical phase. The environment of clinical training influenced the transfer, development and the progress of the communication skills learnt in the pre-clinical phase. The decline of process skills in providing structure and eliciting the patient's perspective was associated with negative attitudes and the poor role modelling of educators. This observation is contradictory to the increase shown in the process skills of building relationship and initiating the session, which probably reflects students' accumulated experience in the wards. Students encountered challenges associated with language barriers and with different approaches used for personal and organizational reasons.

Conclusion

With regard to students' attainment of the HPCSA core competency of communication, and despite communication teaching in the pre-clinical phase and its application in the disciplines of Family Medicine and Rural Health, communication was not equally valued or reinforced in all disciplines involved in undergraduate teaching on the MBChB programme.

Key words: communication skills, transfer, application, clinical setting

ABBREVIATIONS

CCM: Calgary-Cambridge Method (Calgary-Cambridge Guide to the Medical Interview)

HPCSA: Health Professions Council of South Africa

MBChB: Bachelor of Medicine, Bachelor of Surgery

NRMSM: Nelson Rolihlahla Mandela School of Medicine (School of Clinical Medicine)

UKZN: University of KwaZulu-Natal

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CHAPTER ONE: INTRODUCTION

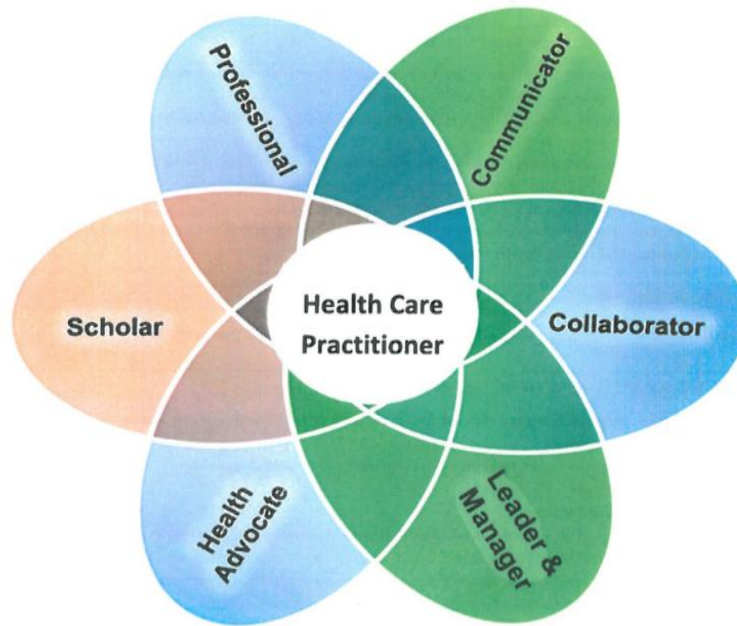
Introduction

The Nelson R. Mandela School of Medicine (NRMSM) reviewed the undergraduate curriculum in 2009 and introduced a new curriculum in 2010. The amendments included the expansion of the MBChB programme from 5 years to 6 years and the implementation of a new course in Clinical Communication Skills, starting in the first year. Training in communication was deemed essential for medical students in the light of evidence indicating the benefits of early exposure to communication teaching in helping students to manage challenging patient interactions (Bhikhoo, 2014). Many programmes have since aimed to expose students to communication skills training and to offer them sufficient opportunities to demonstrate their competence in the selected skills (Von Fragstein et al., 2008).

In South Africa, the medical profession is regulated by the Health Professionals Council of South Africa (HPCSA). This body is also responsible for the accreditation of the training programmes of medical schools (Undergraduate Education and Training Subcommittee & HPCSA, 2012). The HPCSA has adopted the Royal College of Physicians and Surgeons of Canada's competency framework (CanMEDS). This framework (as shown in Figure 1, page 2), identifies and recognizes communication as a core competency both in undergraduate and postgraduate medical training. The ability to communicate effectively is thus specified as a required outcome for qualifying and practicing physicians both at international and national levels. This is also the case at the NRMSM (College of Health Sciences Teaching and Learning Task Team, 2015).

Core Competencies for Undergraduate Students in the Clinical Associate, Dentistry and Medical Teaching and Learning Programmes in South Africa

Developed by the Undergraduate Education and Training Subcommittee of the Medical and Dental Professions Board in collaboration with Training Institutions and the South African Committees of Medical and Dental Deans



August 2012

Adapted from the CanMEDS Physician Competency Diagram with permission of the Royal College of Physicians and Surgeons of Canada. Copyright © 2005.

Figure 1: Core competencies for undergraduate students in the clinical associate, dentistry and medical teaching and learning programmes in South Africa

1.2 Background and Rationale for the study

At the Nelson R. Mandela School of Clinical Medicine, the communication course was introduced in the undergraduate programme in collaboration the Departments of Family Medicine and Rural Health. These departments were central to the implementation of *Curriculum 2010*, which has a strong focus on educating and training medical practitioners in the Primary Health Care (PHC) approach and thus for basic community service. It was expected that the communication curriculum which students embark on in year 1, would be expanded upon and become integrated in teaching of the main clinical departments. The Department of Internal Medicine of University of KwaZulu-Natal (UKZN) plays a major role in preparing graduates for medical practice as stated on the department's website. ([http://scm.ukzn.ac.za/ Homepage.aspx](http://scm.ukzn.ac.za/Homepage.aspx). date access 29/11.2016). Communication training has become one of central components of undergraduate medical education both internally and locally. The Calgary-Cambridge Guide to the Medical Interview or Calgary-Cambridge Method (CCM) (Figure 2, page 3) is a well-researched method that is used to teach the process of the medical interview (S. M. Kurtz & Silverman, 1996).

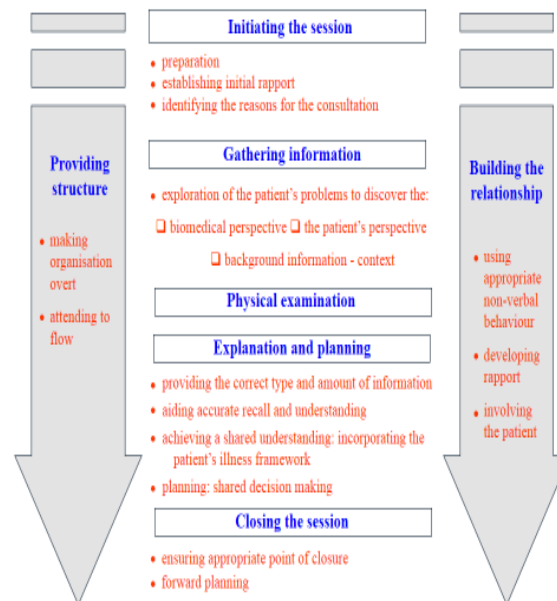


Figure 2: The Calgary-Cambridge Method (CCM) or Guide to the Medical Interview

Several medical schools in developed countries have adapted and developed their own models to achieve communication competence in their learners. Medical schools on the African continent and in South Africa have not agreed to or accepted a single model for standardised practice at a national level. Communication is thus taught differently in each of the South African medical schools. Communication training at the NRMSM starts from the second semester in the first year and the CCM is the preferred method for teaching and learning. In several medical schools in developed countries, the communication course is taught by the same members of staff who work with students both in the pre-clinical phase and in the clinical setting (S. Kurtz, Silverman, Benson, & Draper, 2003; van Weel-Baumgarten, Bolhuis, Rosenbaum, & Silverman, 2013; Windish, Price, Clever, Magaziner, & Thomas, 2005).

Communication teaching at the NRMSM in the pre-clinical phase (years 1- 3) is offered predominantly in a simulated setting of a clinical skills laboratory. The teaching is done by a team of 6-8 clinicians who have been trained specifically for the purpose of teaching on the course. The clinical teachers that are assigned to clinical duties in each of the major departments are meant to continue as mentors and tutors when they supervise students' learning in the clinical phase (years 4 - 6) of training. In this study, specific elements of the CCM are being explored, particularly the process of providing structure, building of the relationship, initiating the session and including the patients' perspective when gathering information (also indicated in Figure 3, page 4).

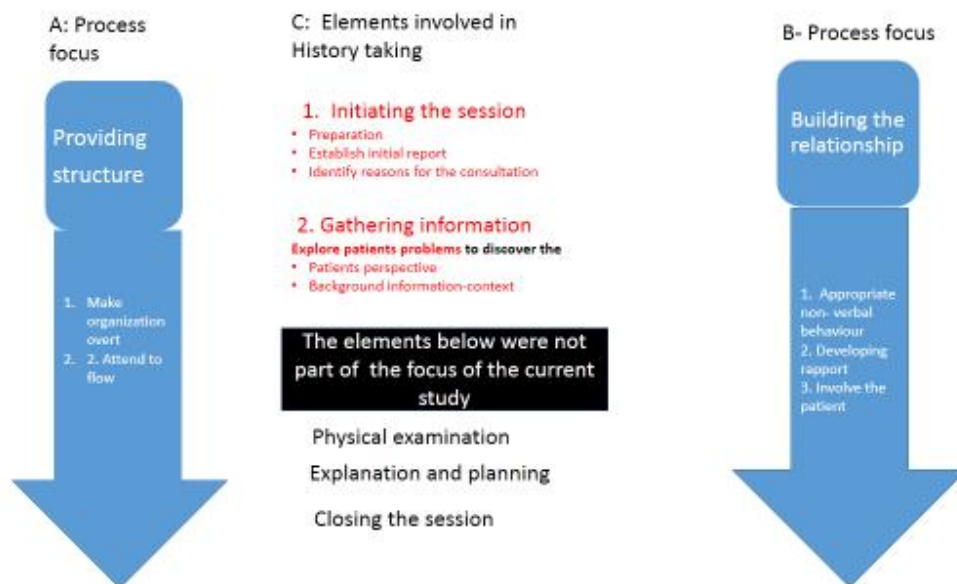


Figure 3: Elements of the Calgary-Cambridge Method considered in the study

Taking a history from a patient involves attending to A, B and C as reported in Figure 3 (page 4). These processes facilitate the gathering of information from the patient by using a stepwise process while providing structure to the interview and building a relationship with the patient. History taking is regarded as a critical step in the process to help the physician to build the relationship with the patient. The debate about the value of communication in medical practice started over three decades ago. Observations made of medical students who followed traditional curricular tracks found that students were taught to remain relatively “uninvolved” during their training (Poole & Sanson-Fisher, 1979), resulting in a lack in sensitivity and attributes needed in their profession and a disregard of the patient’s perspective during the process (Fitzgerald, 1999). These observations and studies resulted in drives to change the curriculum for medical education and subsequent implementation of clinical communication courses at medical schools.

In 2004, the Board of Medical Education of the British Medical Association (BMA) reported persistent barriers to interpersonal and communication skills teaching after reviewing studies on implementation of communication courses. They cited personal and organizational barriers that hindered its effective implementation (British Medical Association, 2004). Personal barriers included doctors lacking in capacity to provide accessible information to the patients and an inability to tailor or simplify the language for the patient; undervaluing the importance of communication; negative attitudes towards communication, lacking time; inability to address uncomfortable topics; and lacking in confidence and knowledge about conditions or treatments. The examples of organizational barriers included poor supervision due to increased demands on faculty time, pressure of work and interruptions, and low priority given to communicating with patients (British Medical Association, 2004). An inability to communicate in the language of the patient also presented a barrier during interactions (Prose, Diab, & Matthews, 2013).

Most studies in communication research had been conducted in developed settings and high income countries. Researchers generally used standardised patients in several of these studies (Pfeiffer, Madray, Ardolino, & Willms, 1998; Windish et al., 2005), unlike in this study where students’ interactions had been observed in a clinical setting with real patients.

Studies exploring students’ communication competency generally explore the integration of the process and the content of history taking (Kurtz et al., 2003), while this study only

concentrated on the process of the interview. The Objective Structured Clinical Examination (OSCE) remains the main strategy for the assessment of communication skills in both developed and in resource constrained countries because it provides a simulated environment similar to the clinical setting.

1.3 Problem statement

Communication teaching at the NRMSM starts in Year 1 and proceeds through Years 2 and 3 of the pre-clinical phase. Students first enter the wards in their third year of study. It is important that all clinical departments reinforce the methodology followed for history taking and communication training and that clinical educator's model the behaviours as expected from the graduates (Verghese, Brady, Kapur, & Horwitz, 2011). This reinforcement will ensure that students become competent communicators and that they are effective in their interactions with real patients. The final 3 years in the undergraduate programme is thus a critical phase as students are placed in clinical wards where they are mentored and tutored in their professional roles by clinical role models from the Clinical Departments.

The interaction with real patients in clinical settings furthermore offers students an authentic experience to practice the skills that were learnt in the simulated environment of their pre-clinical phase. There are however studies indicating that students are not always able to transfer and apply the skills learnt in a simulated authentic clinical setting (Bombeke et al., 2010; van Weel-Baumgarten et al., 2013).

Students at the NRMSM were taught to use the CCM to guide and structure the history taking process but research in the application of these skills in clinical settings has not yet been conducted. This study was thus conceived to explore the students' degree of transferring processes taught for communicating with patients during history taking. It also sought to explore the possible barriers that might impact on students' ability to apply the skills required for successful history taking. As resources are generally constrained in the clinical phase, it was decided to focus the observations on students' skills in the elements which are essential in the processes needed to guide their history taking i.e. building the relationship, initiating the session and focusing on patient's perspective during the information gathering stage of the CCM.

1.4 Aim of the study

The study investigated the students' ability to transfer and apply communication skills in the clinical phase after they had learnt the Calgary-Cambridge method (CCM) in the pre-clinical phase. The four following objectives were formulated:

1. To determine whether students used the CCM as taught at medical school.
2. To measure and compare process skills of students in two different phases of MBChB programme
3. To explore the role modelling of CCM by clinical teachers.
4. To describe challenges encountered by students for or in the application of CCM.

1.5 Significance of the study

This study serves to evaluate the implementation of communication skills taught at the NRMSM and its affiliated teaching hospitals where medical students are placed for their clinical training.

1.6 Operational definitions.

- Clinical communication skills in Medicine bring together the theories, models and evidence that underpin effective healthcare communication (Brown, January 2016).
- Communication: the exchange of information between individuals using symbol systems such as a spoken language or writing but also including elements such as icons, gestures, tone of voice, and facial expression (Stedman, 2012).
- Cuban collaboration students: South African citizen students who went to Cuba for undergraduate medical studies.
- Transfer: the degree to which trainees effectively apply the knowledge, skills and attitudes gained in a training context to the job (Baldwin, 1998).

1.7 Research Design and Methodology

The study was observational, analytical and cross-sectional. It investigated the transfer of clinical communication skills learnt in the pre-clinical phase into an authentic clinical setting, specifically the process of history taking. Process skills were further subcategorised into

providing structure, building the relationship, initiating the session and gathering information eliciting from patient's perspective.

1.8 Data Analysis

The analysis was based on a mixed method approach to the qualitative and quantitative data: use of thematic analysis for the qualitative data and the appropriated quantitative method for quantitative data concerning the measurement and the comparison of process skills in two different phases of MBChB programme.

1.9 Conclusion

At NRMSM, the new MBChB programme commenced in 2010 and introduced the communication course. The Calgary-Cambridge Guide to the medical interview was adopted as a method of teaching and learning. The study explores its effective implementation in the clinical phase by investigating whether students use the CCM; and their performance with respect to their process skills.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Courses to teach communication have become a central component of undergraduate medical education. There is now growing acceptance of the need to teach and assess communication skills as part of medical programmes (Makoul & Schofield, 1999). In 1991, an international Toronto Consensus Statement (Simpson, 1991) reviewed the evidence about effective communication training and deficiencies in practice at that time. The review sent a clear message to the medical education community and reaffirmed that communication skills can and should be taught. The same trend was echoed in 1993 by the General Medical Council's recommendation for continued teaching communication skills to medical students in the United Kingdom (General Medical Council, 1993), and similar statements have been made by the Association of American Medical Colleges regarding medical education in the United States of America (Association of American Medical Colleges, 1998) and Canada (Canadian Medical Association, 1992). While medical schools in these and other countries have developed a variety of methods for teaching and assessing communication skills, recent surveys on both sides of the Atlantic indicate that considerable gaps and problems exist in the implementation of communication training (Novack, 1993; Hargie, 1998).

At the NRMSM, the Calgary-Cambridge Guide to the Medical Interview is the method used for teaching and assessing communication skills. It was selected for use in 2010 as it is a well-researched and widely adopted method in many medical schools in North America, Europe (Kurtz and Silverman, 1996), Africa and South Africa (Stellenbosch University: De Villiers, 2007). It may be used successfully and adapted for use in many contexts, because it includes and emphasises the patient's contexts and beliefs. Limitations include the fact that it was not developed specifically for a South African context, and it does not include patient feedback in the framework as included in the HMS (Harvard Medical School) communication skills tool and the adapted ABIM (American Board of Internal Medicine) patient satisfaction tool (Rider et al., 2006).

This research study was conducted to investigate the students' ability to transfer the skills learnt during communication training in the simulated skills laboratory setting in the pre-clinical phase to an authentic clinical setting while rotating through clinical wards. The study was

concerned with the assessment of students' communication competence in the process of history taking rather than the biomedical content. The study used the assessment tool in the clinical context of Internal Medicine to observe whether students had transferred the skills taught in Clinical Skills and Family Medicine in the biopsychosocial model as part of curriculum reform into the other disciplinary areas such Internal Medicine.

The rest of this chapter will highlight the aim of communication teaching and learning at NRMSM, the impact of early history taking teaching on students' competence in the clinical years, and research in measuring communication skills.

2.2 Communication skills teaching in the pre-clinical phase at NRMSM

2.2.1 The aim of the programme of teaching communication skills

Training in communication skills at the NRMSM is offered in the Clinical Skills Laboratory to all students enrolled on the MBChB programme (Matthews and van Wyk, 2015). Training in the pre-clinical phase i.e. years 1-3 focusses on the initiation of a conversation, and prepares students for their interactions in the patient- doctor relationship. This phase is important as it occurs even before the students encounter a "real" patient which normally occurs during their rotations through various hospital and clinical sites from the third year of their training programme.

Communication skills in history taking consist of two components: (1) the process and (2) the content. The Calgary-Cambridge Method is a well-researched framework and strategy for training of communication skills (Kurtz, 2005; Silverman, 2005; Bauml, 2008; Wouda, 2013). It is the main strategy being used to teach communication skills at the NRMSM (Figure 2, page 3), where the communication curriculum is tailored for and related to the academic level of students.

In year one, the emphasis in communication teaching is on starting the process of communicating with a patient. The students learn how to initiate the communication session and how to gather information from the patient but they are taught to do so by maintaining a focus on the biopsychosocial perspective.

Communication teaching in year two is related and linked to the organ-system which is central to the problem-based learning curriculum at the school. The emphasis in year two thus concerns the initiation of the session and gathering information from a biomedical perspective, requiring students to analyse the symptoms and to consider a systems review. The students gather the background or contextual information and the patient's perspective. In addition, they are taught the physical examination of the system being learnt and are introduced to the sections in which they explore explanation and planning for health promotion.

Teaching in year three is based on and extends the foundation curriculum that had been laid in year two. During year three, much more time is spent on the content with additional emphasis and consideration given to clinical reasoning, to obtain a differential diagnosis, with explanation and planning for intervention in this phase.

2.2.2 The importance and relevance of teaching clinical communication skills in history taking

Communication skills teaching and learning is essential to create awareness in students about patient-centred care or patient-centredness. The concept of patient-centredness is associated with a broadening of the scope of medicine from an organic disease perspective to a far wider range of dysfunctional states (Silverman, 1987).

Studies report positive associations of good communication with health outcomes (Greenfield and Ware, 1989) and also indicate that more informed patients are enabled to take greater responsibility for their health (Grol, 1990). Patient-centred medicine conceives of the patient as an experiencing individual rather than the object of some disease entity (Mead and Bower, 2000). Communication skills are beneficial to learners as medical students should be taught to integrate communication and clinical reasoning (Windish et al., 2005). Not understanding the relation between these skills may lead students to undervalue the connection between psychosocial and biomedical aspects of patient care (Windish et al, 2005).

Communication teaching has also positively impacted on medical practice after having been implemented at the postgraduate level (Kerr, 1986) and in continuous medical education (Rotthoff, 2011), and has a positive impact in medical practice. Studies also attest to the benefit of training in communication to provide doctors with the necessary skills to manage challenging patient interactions (Bhikhoo, 2014).

2.2.3 How are communication skills taught?

Communication skills teaching to first year medical students in the American setting has been described by Maguire (1977). The training includes traditional teaching followed by a session in which students are recorded (videotaped/audio recorded) during the patient interview. It offers students opportunities for immediate individual feedback from a teacher based on the videotaped patient interview.

Due to lack of human and physical resources at the NRMSM, the experiential consultation sessions with the simulated patients utilise traditional methods composed of practice and feedback, but do not include video recording. The teaching methods instead focus on instructional information and on experiential learning.

Background instructional, informative sessions are done with a cohort of approximately 250 students and include communication theory with an emphasis on process and an introduction to clinical communication skills using the Calgary-Cambridge Guide to the Medical Interview.

The experiential method occurs in the comfort and conducive atmosphere of a small group consisting of 8-15 students who are supervised by a clinician. The session is based on a clinical scenario and it incorporates the use of standardised simulated patients. These are lay people who are trained by clinicians to depict a specific condition or to give specific answers when interviewed by the students. The feedback method used is Agenda-Led Outcome-based Analysis (ALOPA) (page 13). The principles of ALOPA consist of an organised feedback process which ensures that students obtain useful feedback. The analysis and feedback lead to deeper insights and understanding in their development of specific skills.

Agenda-Led Outcome-based Analysis (ALOPA): *to organise the feedback process:*

Start with the learner's agenda

- ask what problems the learner experienced and what help he would like from the rest of the group. **Look at the outcomes learner and patient are trying to achieve**
- thinking about where you are aiming and how you might get there encourages problem solving - effectiveness in communication is always dependent on what you *and* the patient are trying to achieve

Encourage self-assessment and self-problem solving first

- allow the learner space to make suggestions before the group shares its ideas

Involve the whole group in problem solving

- encourage the group to work together to generate solutions not only to help the learner but also to help themselves in similar situations

Giving useful feedback to each other

Use descriptive feedback to encourage a non-judgmental approach

- descriptive feedback ensures that non-judgmental and specific comments are made and prevents vague generalisation

Provide balanced feedback

- encourage all group members to provide a balance in feedback of what worked well and what didn't work so well, thus supporting each other and maximising learning - we learn as much by analysing why something works as why it doesn't

Make offers and suggestions; generate alternatives

- make suggestions rather than prescriptive comments and reflect them back to the learner for consideration; think in terms of alternative approaches

Be well intentioned, valuing and supportive

- it is the group's responsibility to be respectful and sensitive to each other

Ensuring that analysis and feedback actually lead to deeper understanding and development of specific skills

Rehearse suggestions

- try out alternative phrasing and practice suggestions by role play - when learning any skill, observation, feedback *and* rehearsal are required to effect change

Value the interview as a gift of raw material for the group

- the interview provides the raw material around which the whole group can explore communication problems and issues: group members can learn as much as the learner being observed who should not be the constant centre of attention. All group members have a responsibility to make and rehearse suggestions

Opportunistically introduce theory, research evidence and wider discussion

- offer to introduce concepts, principles, research evidence and wider discussion at opportune moments to illuminate learning for the group as a whole

Structure and summarise learning so that a constructive end point is reached

- structure and summarise learning throughout the session using the Calgary-Cambridge Guides to ensure that learners piece together the individual skills that arise into an overall conceptual framework

(Silverman, 2005)

Practical sessions are formative, and summative examinations are included in the Objective Structured Clinical Examination (OSCE) in each semester. The OSCE is the preferred method of assessment as it creates a simulated clinical environment, and uses a checklist to assess both the process and the content of history taking during the session. The evidence for the continued and preferred use of the OSCE is based on a study that demonstrated how similar students reacted to real and simulated patients (Fisher & Poole, 1980). In that randomised controlled study the authors concluded that simulated patients could be a valuable asset in both the teaching and the examination of communication skills (Fisher & Poole, 1980).

2.2.4 Who teaches communication skills?

At the NRMSM, a team of clinicians trained in communication is used to facilitate the small group sessions. To date, communication has been taught mainly in Clinical Skills, Family Medicine and Rural Health.

Several studies support the importance of training academic teachers for their roles. To illustrate this, a study was done to compare students' evaluation of doctors or social scientists as teachers in small group communication skills training (Quirk & Letendre, 1986). The study found that social scientists were rated significantly higher than doctors prior to being trained in communication skills teaching (Quirk & Letendre, 1986). Studies also found that students of teachers who had been trained in experiential methods also obtained better results than students of teachers who only received training in instruction (Najiet al., 1986; Gash et al. 1991).

Aspergren's study reported that doctors became competent and effective teachers in communication skills after a relatively short session, when being assessed both for outcome and students' perception (Aspergren, 1999). Rost & Gordon' study (1989) found that experiential training of teachers made them significantly more aware of the quality of students' interviews (Rost, 1989). Gask and colleagues similarly found that clinical teachers in communication skills learned best when they received the same training as the training to be used for the students (Gask, 1991).

2.3 Research in measuring communication skills

The goal of patient-centred communication (PCC) is to help practitioners provide care that is concordant with the patient's values, needs and preferences and that allows patients to provide input and participate actively in decisions regarding their health and health care (Epstein, 2005). Measuring communication is a challenge as it remains difficult to distinguish between measures of PCC and other constructs (e.g. trust, self-efficacy) not theoretically linked to PCC (Epstein, 2005). Researchers have expressed concerns in the continuous assessment of communication in the postgraduate (Kerr, 1986) and continuous professional development levels (Rotthoff, 2011).

The issues that are addressed below relate to:

2.3.1 The choice of instruments or tools for assessment, and

2.3.2 An overview of literature on the assessment of communication skills.

2.3.1 The choice of instruments or tools for assessment

A variety of instruments or tools is available to assess students' and practitioners' competence in communication. Three studies that reviewed the assessment of the patient-doctor relationship demonstrate the complexity and the variety of available communication assessment instruments.

The first study by Boon and Stewart, (1998) offers a review of patient-physician communication assessment instruments (n=44) by classifying instruments into two types based on primary use. Tools were used either for the assessment and teaching of patient-doctor communication skills [Medical Education Category] or for the assessment of patient-doctor communication for research purposes [Research Category]. The instruments were subdivided according to the method of obtaining data for analysis including:

1. the observation and analysis of interactions in real time;
2. the use of standardised patients;
3. video-taped interactions;

4. audio-taped interactions; and
5. self-reports from the individuals involved in the interaction.

The Calgary-Cambridge Referenced Observation guide, a choice method used at NRMSM was classified within the educational communication assessment tools. It is recognised as an educational communication assessment tool (Boon and Stewart, 1999) and rates highly in terms of validity and reliability amongst tools of assessment (Schirmer et al., 2005). It is also considered suitable as tool as it values both process and content in the medical interview. At this medical school, it has been used as an assessment tool in OSCEs in Clinical Skills and in Family Medicine, using simulated patients, but has not been adopted by the Clinical Medicine disciplines. In this case, it is used by an observer in an objective manner to rate a student's process skills in a clinical context.

The second study by Schirmer (2005) was a review of assessment tools. It was assessing communication competence by using the Kalamazoo Consensus Statement (KCS) as the primary evaluation criteria compared with other instruments (Makoul, 2001). Results indicated that existing communication assessment instruments vary considerably in their content, psychometric properties and usability. Many instruments use checklists (the presence/ absence of behaviours) rather than rating scales (assigned weight to an interaction). In this study, the KCS criteria were recommended as a guide to choose instruments for assessing physician-patient communication.

The third study by Zill, (2014) sought the identification of qualitative criteria for the selection of measurements tools in the assessment of physician-patient communication by using the COSMIN checklist (Consensus based Standards for the selection of health status Measurements Instruments). A total of 6001 studies were recorded and, after screening, only 26 studies were included. This systematic review of methods helps researchers to choose the appropriate tool for the research purpose. In order to enhance the quality of studies and to increase the comparability of their results, the COSMIN checklist should be considered for the future evaluation studies in psychometric properties. Despite the development of the objective structured clinical examination (OSCE), needs for tools of standardised assessment across the undergraduate education remain (Rider, 2006).

2.3.2 The overview of literature on the assessment of communication skills.

Studies that describe the assessment of communication competency may focus on the content or the processes necessary. Many more studies have been conducted on how the content had been taught and much less is known of the processes that have been followed.

A large number of studies have been conducted in developed countries and relatively few studies have investigated communication assessment in Africa. In several studies, researchers used standardised patients as opposed to real patients when investigating students' skills. In the current study, however, the researcher observed students' interaction with real patients in hospitals. Multiple researchers used instruments or tools developed from the adaptation of the Calgary-Cambridge guide; and the main tool in this study was the assessment checklist devised as the accepted tool of assessment in accordance with Calgary-Cambridge Method.

Rider et al. (2006) used a uniform communication skills assessment across the medical school curriculum in years 1-4. Research tools comprised the Harvard Medical School (HMS) Communication Skills Tool and the adapted American Board of Internal Medicine (ABIM) Patient Satisfaction Tool. The HMS tool included competencies and sub-competencies in communication skills adapted from the Kalamazoo Consensus Statement framework (Makoul, 2001). In the adapted ABIM patients' perspectives in terms of their satisfaction was added in the assessment of the learners. Patients were asked to rate the steps taken by the interviewer during the history taking process. The findings of the study (Rider, 2006) emphasised the implementation of an integrated framework and resources in the teaching and the assessment of communication and the necessity of enhancing interpersonal and communication skills training, particularly in the latter years of the MBChB programme.

A study of communication skills assessment conducted at Hill School of Medicine was extended to clinical collaborating teachers (Job, 2011). It demonstrated the real need for collaboration between medical schools and teaching hospitals and also recommended the promotion of communication skills throughout the Continuum of Medical Education. This study used AAMC Recommendations for Clinical Skills Curricula for Undergraduate Medical Education (2008).

Based on Ericsson's model of acquisition of expert performance (Ericsson, 2008), Wouda et al. (2012) assessed the communication competency of medical students, residents and consultants. They required participants to consult with simulated patients and inform the patient of a disappointing diagnosis. They used the Control, Explaining, Listening and Influencing

(CELI) instrument to assess the competency by the allocation of a score to the performance in each sub-competency. A score was also added from the patient's perspective rating the quality of the consultation. Their study found that students could not attain the "expert level" as required by CanMEDS (Frank, 2005). Most participants were able to perform only at a "satisfactory" level, but the score obtained by participants was influenced by participants' clinical experience. So, although consultants had not been taught communication skills, they were capable of reaching the performance level of residents and senior students due to their clinical experience. The study emphasised the need to attain an "expert" level with appropriate learning and the importance of emphasising and teaching communication as part of the medical school and postgraduate education (Kerr, 1986). Their conclusion was confirmed by other researchers in the field (Silverman, 2009).

The literature about communication assessment in the African context is limited and there is no specific study in the area of investigation of this study. There are specific gaps in the communication assessment of process skills during history taking. In Zambia, a new evidence-based medical curriculum was introduced in 2011. A study was conducted to evaluate the clinical skills and specifically the correlation between final-year medical students' experience and confidence. The results indicated low correlations between experience and confidence for history and communication and physical examination among final-year students (Katowa-Mukuato, 2014).

In the South African context, two studies were conducted to assess communication skills of medical students at the University of Stellenbosch. The study carried out by De Villiers (2007) compared clinical communication skills between two groups of final-year medical students in 2003 and 2004 who had been given different levels of training in clinical communication. The aim of this study was to introduce appropriate changes in the training programme. The result indicated that the 2004 group performed better than the 2003 one. So this experience-based observation inspired the development of the Stellenbosch comprehensive clinical method which is an adaptation of the Calgary-Cambridge guide to the medical interview (De Villiers, 2007).

The study conducted by Voges (2012) was to assess the verbal communication of medical students. The research instrument used was the Liverpool Communication Skills Assessment Scale (LCSAS). The scale investigated the correlation between communication skills and

overall academic performance; it was a mixed methods study of using both a checklist and a rating approach by agreement. The study was testing the usability of LCSAS in a South African context; its conclusion opted to continue with development and standardisation of an assessment scale for use by South African health professions.

For the purpose of this study, the Calgary-Cambridge Referenced Observation Guide was used as the assessment tool as it includes a process grid aimed at assessing process in the medical interview. Its use also provided consistency and a basis for comparison with process scores from years 1-3, in which it had been used summatively in each OSCE. (As scores for content were excluded, there was thus no weighting, as process scores in each of the OSCE and in the study were each converted to a hundred percent.)

2.4 The impact of early history taking teaching and training on students' competence in the clinical years

Communication is a core competency for students to attain. Attainment of learning in this context is built on and developed in a spiral manner. Studies have confirmed that training improved students' ability to interview or gain information from patients (Bogels, 1996; Greco, 1998). Early exposures of students in history taking that emphasised the patient-centred approach helped to sensitize students to the importance and central role of communication in building the patient-doctor relationship. It is also envisioned that early exposure will create awareness in students about the importance of including the patient's perspective as part of the patient-doctor partnership. Good history taking contributes to the formulation of hypothetical diagnoses through clinical reasoning. Studies demonstrated that diagnostic hypotheses may be formed early in the process as the practitioner listens to the patient's narrative (Bembassat, 2005; Windish, 2005). The positive impact of communication teaching skills to medical students has also been reported by Hook & Pfeiffer, (2007).

2.5 Challenges in the transfer of acquired communication skills

Medical educators have expressed concern about findings that indicated that students' competence in communication skills deteriorates during the course of the undergraduate medical education. This has alerted researchers to the impact of the clinical, as opposed to the educational, environment where communication is being taught, developed, assessed and applied (Verghese, 2011).

The clinical environment either exerts a negative or positive influence on the performance of the trainees in the clinical skills (Verghese, 2011). Some studies have highlighted the poor integration of communication skills during the process when eliciting medical content (van Weel-Baumgarten, 2013). Kurtz et al's study has recommended that the teaching of content and process be done concurrently during clinical method teaching programmes to address the lack of integration (Kurtz et al, 2003). Other authors have cautioned about the risk of students' communication being negatively influenced if exposed to poor role models or when placed in clinical environments that contradicted the training received by the student (Pfeiffer, 1998; Bombeke, 2010). Heaven's study pointed out that, after a training workshop, the clinical supervision impacted on enhancing the transfer of communication skills to the clinical setting (Heaven, 2006).

Studies also reported persistent barriers in medical education that circumvented the enhanced interpersonal and communication skills teaching (Windish, 2005). This was evident in areas where people demonstrated reluctance to change and or where the language became a barrier (Prose et al, 2013).

There are, however, indications that training of communication in clinical clerkships is more effective than in pre-clinical courses. Two studies done at the University of Maastricht, Netherlands indicated that an extensive communication skills training during clinical courses without clinical clerkships was poorly effective (Kraan, 1990; Bogels, 1996), while a study of a short training course within a clinical clerkship showed a lasting long-term effect (Maguire, 1986 a, 1986 b).

2.6 Summary

This chapter presented a literature review related to:

- (1) communication skills teaching in the pre-clinical phase at NRMSM,
- (2) research in measuring communication skills,
- (3) the impact of early teaching of history taking on the students' competency in clinical years and
- (4) challenges in the transfer of acquired communication skills.

It has highlighted the benefits of communication skills teaching, and how this relates to patient-centredness. Challenges related to the correct placement of communication skills training and assessment in medical curricula are discussed, and the transfer of skills from pre-clinical to clinical setting is addressed. Furthermore, the importance of continued training, reinforcement and integration of skills in the clinical phase of the curriculum is shown, highlighting that the clinical environment exerts either a positive or negative effect on students' performance. Research into the utility of assessment tools shows the challenges in assessing communication.

Thus trends in teaching, learning, assessment and research in communication were described.

The next chapter focuses on the research methodology adopted to perform the current study.

CHAPTER THREE

METHODS

3.1 Introduction

This chapter will provide details of the research process and study design. It will describe data sources, data collection, data management, measures to ensure validity and trustworthiness, ethical considerations and limitations.

3.2 Research Design.

This study was an educational research that used a mixed methods approach to collect both quantitative and qualitative data.

3.2.1 Study Design

The study was observational, analytical and cross-sectional.

3.2.2 Study Setting

The study was conducted at the Nelson R. Mandela School of Clinical Medicine in the Department of Internal Medicine and in the Internal Medicine wards of the teaching hospitals in the Durban functional region. The hospitals include Addington Hospital (ADD), King Edward VIII Hospital (KEH), Mahatma Gandhi Memorial Hospital (MGH) and Prince Mshiyeni Memorial Hospital (PMMH).

3.2.3 Study Population

The study population consisted of all the final year medical students of the 2015 cohort. One hundred and ninety eight (N=198) students were identified from the final year class list.

3.2.4 Study Sample

All students in the final year 2015 (N=198) were invited to participate with the exception of the students who joined the cohort as part of the South African-Cuban collaboration project (n=13) These students were excluded as they had completed their first three years of training at a Cuban training institution and followed a different teaching method. The number of students who were thus eligible to participate was 185 in total. The focus of this study was on students and no patients were observed.

3.3 Data Collection Sources

The following research instruments were used to collect the data.

3.3.1 Research Instruments

The instruments comprised a communication checklist used for observation by the researcher and a self-administered questionnaire to collect data from the students.

1) The communication checklist is a tool developed at Cambridge University as part of the Calgary-Cambridge Method (CCM). It includes a process and a content grid. These grids serve as scoring rubrics to be used by an educator. In this study, the process grid was used to focus on scores obtained by students for providing structure, building the relationship, initiating the session and gathering information [Appendix 2]. In this context, the researcher used the tool to score the students' process skills in the medical interview while observing the students' practice in the Internal Medicine wards.

2) The self-administered questionnaires were developed for students to provide information about the use of the CCM. It is also enquired about how clinical tutors role modelled the CCM and included an open-ended section about challenges experienced by the students in the application of the CCM [Appendix 2]. Students were initially informed of the study during their block orientation. The self-administered questionnaire was completed under the supervision of the researcher after the observation session in the clinical ward.

3.3.2 List of variables

Data collected included both quantitative and qualitative data. The quantitative data consisted of process marks as scored in year 6, and in the pre-clinical phase, Years 1 - 3. The components of these process marks have been described above. The process marks obtained in year 6 were assigned by the researcher who used the communication checklist for the direct observation of the students taking a history in the clinical setting. The scores obtained in Years 1-3 were sourced from results from a records database which is kept at the Medical School, and included OSCE results for the communication history taking from Year 1 in 2010, Year 2 in 2011 and Year 3 in 2012.

The qualitative data as described above were collected from the questionnaires.

3.4 Measures to ensure validity and trustworthiness

Two concepts were considered in the design of the study: internal validity and trustworthiness, and external validity (Denzin & Lincoln, 2005) .

Regarding the internal validity and trustworthiness of the study, information bias was minimised by the questionnaires being anonymous. Students signed informed consent after being fully informed as to the nature of the study. They were assured of confidentiality, asked to respond truthfully to the questions in the questionnaire and assured that there would be no negative consequences to negative remarks. Students were assured as the researcher is not directly responsible for their teaching and assessment and thus could not affect their academic outcomes. To avoid inter-examiner variability and ensure consistency in the scoring of the communication checklist, all observations of students in the clinical setting were done by the researcher only. The researcher had been given training in the teaching and assessment of the CCM, and in the use of the assessment tool, with which he had had extensive experience in assessing students' process skills in the medical interview in the pre-clinical years in the OSCE setting, with the use of simulated patients.

Qualitative data were checked by the researcher and supervisor and found to be consistent with anecdotal experience in the Internal Medicine setting, and were also supported by the findings in the quantitative data.

The study was conducted only in one medical school on a single group of students, so will not be generalisable to other institutions. It will, however, provide insights that will assist others involved in teaching communication in healthcare to medical students.

3.5 Conduct of the study

The study was conducted in four phases.

First phase

Meeting the students allocated in Internal Medicine on the day of orientation. The purpose was to present the objectives of the study, to obtain an informed consent and to explain the ways of collecting data in the respective health institutions ADD, KEH, MGH and PMMH. Each student received an information sheet.

Second phase

Hospitals visits were scheduled. Before going to ADD, MGH and PMMH with a small number of students, we contacted the respective administrative coordinators for setting dates and times of the visits. The direct observation of the medical interview was conducted in the medical ward. Each student was observed once in the setting and the focus of the observation was on the student and not the patient.

At KEH with a large number of students, the study was conducted during time on call or after a post intake ward-round and the medical interview took place either in the Acute Medical Admission (AMA) or in the wards N1, N2, N3 and N4. No allowances were made for the difference in patients observed either on call or on the post call phase, as they were not the focus of the study. Rather the processes of the students' engagements or efforts to engage were central to the observation. The students did not have any time constraints as would apply on an OSCE and these was hoped to accommodate for language and communication difficulty.

Before the medical interview participants signed the consent sheet and their patients were aware of the study. The clinical communication checklist was used for scoring the process skills of the student, with the student being directly observed taking a history without any sort of interference. After the medical interview, the questionnaire was handed to the participants for completion.

Third phase

This phase involved sourcing participants' marks in clinical communication skills during the summative OSCEs in 2010, 2011 and 2012, specifically the mark scored for "process" in each of the 3 OSCEs .As scores for content were excluded, there was thus no weighting as process scores in each of the OSCEs and in the study were each converted to a hundred.

Fourth phase

All collected data were gathered in an Excel spreadsheet. The process marks scored by participants in the direct observation of the interview in medical wards were captured as clinical marks, the students' marks in the 2010, 2011 and 2012 OSCEs as pre-clinical marks.

3.6 Data Analysis

3.6.1 Statistical methods

Quantitative data was subjected to descriptive and analytical statistics. Categorical data was described in terms of frequency distributions and through the use of a one way ANOVA test.

The statistical software SPSS (version 16) was used.

The qualitative data were analysed thematically and in response to the research objectives that explored the role modeling by clinical teachers and challenges to communication in the clinical setting. The qualitative data was analysed by the researcher and discussed for consensus with the supervisors. Data were reflected in appropriate figures and tables.

3.6.2 Storage of data

Electronic data are password protected and raw data are being kept under lock at the School of Clinical Medicine for 5 years. Only the researcher, the supervisor, the co-supervisor and the statistician will have access to the data.

3.7 Ethics

The educational study has been ethically reviewed and approved by the UKZN Biomedical Research Ethics Committee (BREC) Ethics No. BREC: BE 439/14.

Confidentiality for patients was ensured. The patients were not interviewed or examined as the purpose of the study was to observe and interview the medical students only.

3.8 Limitations of the study

The study was conducted in a single cohort of medical students in their final year of study. It is limited by the fact that constraints such as time and context in the medical wards would have an impact on the students' approach to the medical interview, and by a natural bias to concentrate on a biomedical approach in such circumstances. To avoid the Hawthorne effect, students had been told to take the medical history during their 6th year. This was a daily activity in their clinical training and the investigator, who taught this method to them in earlier years, was part of team of clinicians who observed their practice of the skill.

3.9 Summary of Research

The aim of the study was to investigate the transfer of communication skills from a simulated setting to an authentic clinical setting with four main objectives. The table below (Table 1, page

28) provides a summary of the research by objective and includes the types of data, tools for data collection and types of statistical analysis used.

Table 1. Summary of Research Methodology				
Research Objective	Type of Data	Sample Size n	Data Collection Tool	Type of analysis
1.To determine whether students used the CCM in Internal Medicine	Qualitative	n= 105	Questionnaire administered to students	Thematic analysis
2.To measure and compare process skills in pre-clinical and clinical setting	Quantitative	n= 105	communication checklist scored by researcher observing students in year 6 and Data base of OSCE marks in communication in Years1-3	One Way ANOVA-SPSS
3.To explore the role modelling of clinical tutors	Qualitative	n= 105	Questionnaire as above	Thematic analysis
4. To explore challenges encountered by students for or in the application of the CCM	Qualitative	n=105	Questionnaire as above	Thematic analysis

CHAPTER FOUR

RESULTS

4.1 Introduction

The previous chapter described the research methodology followed to fulfill the objectives of this study that investigated students' ability to transfer and apply communication skills as learned using the Calgary- Cambridge method (CCM) in the pre-clinical phase, to the clinical phase. One history taking session was observed and scored by the researcher for each of student participants.

This chapter presents the results and includes a description of the study population and findings in relation to the objectives below:

1. The use of the Calgary-Cambridge Method as taught at NRMSM during history taking in the wards
2. Students' competence in the process skills of the CCM in the clinical phase
3. The role modelling of clinical teachers in the application of CCM.
4. Students' challenges to transfer the acquired communication skills to the clinical setting.

4.2 Study population and setting

The study population consisted of the 2015 final year cohort of MBChB students (N=198). Sixty two percent (n=122) of the cohort are females and 38% (n=76) males and the average age of students was 24 years. Thirteen Cuban collaboration students were excluded from the sample as they had been exposed to different teaching methods. A total of 185 students were thus eligible to participate and were invited to the study. Only 107 students responded and agreed to participate, but a further two students were excluded because of inability to trace their pre-clinical marks. There were thus 105 respondents which represent a 57% participation rate.

The study was conducted at the Nelson R. Mandela School of Clinical Medicine in the Internal Medicine wards of the teaching hospitals in the Durban Functional Region. Table 2, page 30 indicates the number of respondents per hospital, namely Addington Hospital (**ADD**), King

Edward VIII Hospital (**KEH**), Mahatma Gandhi Memorial Hospital (**MGH**) and Prince Mshiyeni Memorial Hospital (**PMMH**).

Table 2: Total number of respondents and their hospital allocations

Number of students per hospital allocation				
ADD	KEH	MGH	PMMH	Total
16	64	12	15	107

4.3 The Use of Calgary-Cambridge Method

In response to the question that investigated students' use of the CCM in the clinical wards, the results, as illustrated in Figure 4 (page 31) indicate that the use of the CCM by the cohort occurred in three main categories:

- Category A consisted of the majority (n=72 ; 68.57%) who always used the CCM, although in a modified manner;
- Category B (n= 30; 28.57%) who sometimes used the CCM, although in a modified manner;
- Category C (n=3; 2.85%) who did not use the CCM at all.

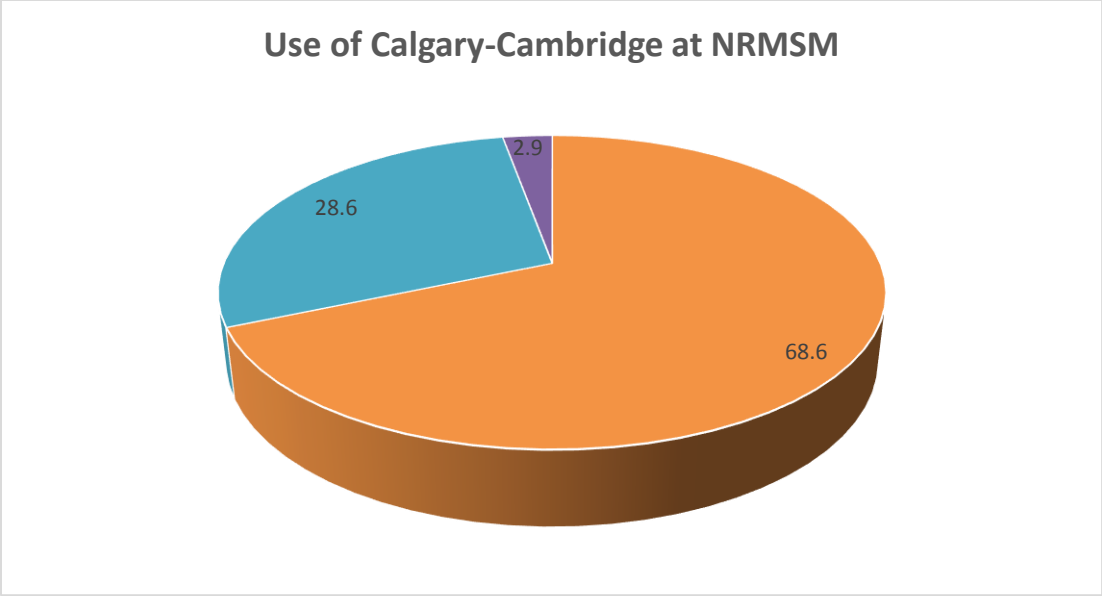


Figure 4: Observations of Students' Use of the Calgary-Cambridge Method in Clinical Wards (Participant number =105)

A: 72 (68.6%) always used in modified manner.

B: 30 (28.6%) sometimes used in modified manner.

C: 3 (2.9%) not used at all.

4.4 The comparison of process skills marks in pre-clinical and clinical phases

The results reported in this section referred to the marks obtained by students in the OSCE of the pre-clinical phase compared with the marks as scored in the clinical setting. Results from estimated marginal means of marks are presented in a table and in a single graph as follows:

- 1) overall communication process ,
- 2) providing structure,
- 3) building relationship
- 4) initiating the session, and
- 5) gathering information from the patient's perspective.

Table 3: A comparative breakdown of students' marks per academic year in the different process phases during history taking

Communication Process Skills Marks by Year					
	Overall	Providing Structure	Building Relationship	Initiating the Session	Patient Perspective
Year 1 2010	70.36	62.85	67.52	80.14	70.09
Year 2 2011	71.92	64.02	69.04	85.75	59.11
Year 3 2012	69.76	62.15	64.95	89.25	56.54
Year 4 2013	#N/A	#N/A	#N/A	#N/A	#N/A
Year 5 2014	#N/A	#N/A	#N/A	#N/A	#N/A
Year 6 2015	72.56	31.54	98.83	91.58	10.51

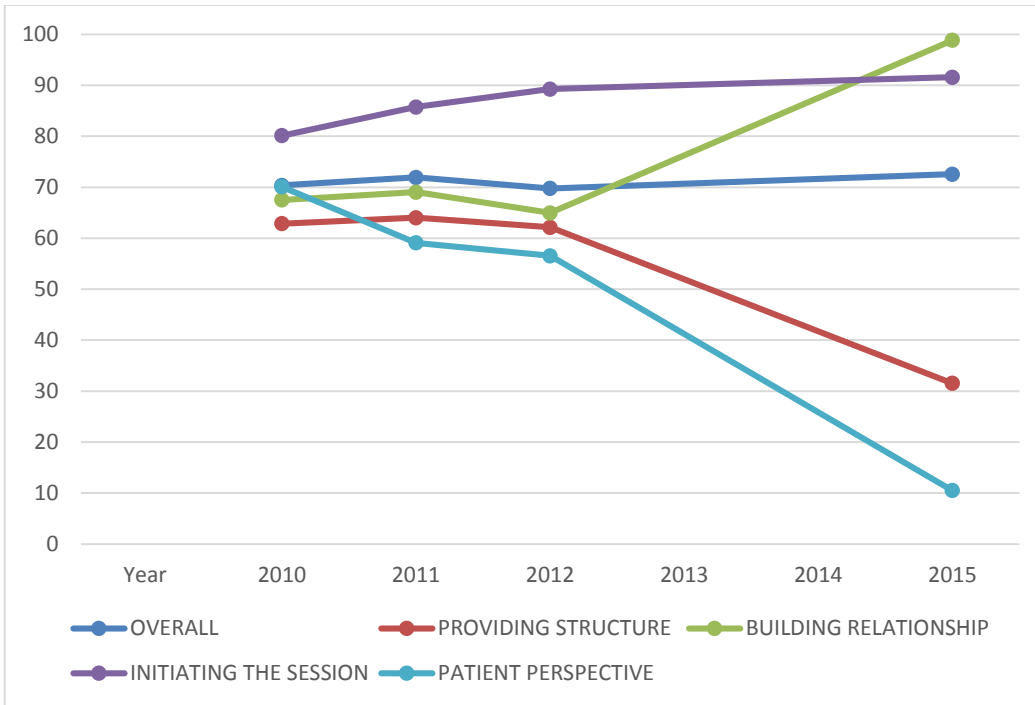


Figure 5: Graphic representation of students’ scores for process skills as plotted over a period from year 1-6 of the MBChB programme

4.5 The role modeling of clinical teachers in the application of the CCM

The evidence from the open-ended questionnaire from students report that the clinical teachers in the department of Internal Medicine expressed the lack of acceptance of the CCM .In fact, the clinical teachers modeled a different method of history taking.

“The way we are taught in skills laboratory setting is not how the clinical teachers wanted it in hospitals”

“They continue applying the old method of history taking and recommend different preferred methods.”

In some quotes from students, the clinical teachers tried to justify challenges of acceptance of the CCM in the clinical environment.

“Some doctors say that the Calgary-Cambridge guide is impractical”

“In some departments, they do not want a detailed socio-economic status and financial status of the patient, as we are taught in medical school.”

4.6 Students’ challenges to transfer the acquired communication skills to the clinical setting

The themes extracted from the open ended data indicated that students’ challenges in the application of the guide included a lack of acceptance by clinical teachers to use the guide; time and organisational challenges due to large numbers of patients and difficulties due to the language barrier as most of patients spoke isiZulu. These are illustrated in the quotes below.

The students, as trainees, only had to follow and adhere to the interview procedures modeled by their clinical teachers from the discipline of Internal Medicine.

“In most hospitals it is (the CCM) not applied fully, so once in hospitals we have to adapt to the ways the tutors teach us to take the history”

“Different doctors use different styles for history taking.”

Some people found the use of this guide time-consuming to explore the patient’s perspective in the clinical setting. Most students therefore adapted it and explained their reasons for not using the guide:

“Time is a huge constraint to properly do history taking as we were taught, especially in busy wards”

“It is not always possible to obtain a full history due to time and parts of the history are irrelevant in some situations e.g. regarding access to water/electricity etc.”

“There are many patients to be seen and listening to their thoughts and expectations would be ideal however there is no time. If a patient is sick, they require prompt treatment and other patients need to be seen as soon as possible.”

Other students thought that the pressure of work volume made difficult to listen to each patient and to deliver on all that the patient may expect from the consultation.

“If patients have certain expectations, it is often a challenge to explain if that expectation is not possible. It is also difficult to make them deviate from their ideas”

“It takes too long. There are a lot of patients waiting for consultation and they sometimes do not have time to listen to all”

“Hard to gather information in a fixed sequence and takes long to get information on the patients perspective as they often derail and give too much information.”

Students also acknowledged that their difficulty to communicate with isiZulu-speaking patients was perceived as a barrier to communication as most patients in the wards preferred to speak in isiZulu. The language might affect positively or negatively the quality of care and healthcare worker satisfaction.

4.7 Summary

Findings indicated that most of students used the CCM, but in a modified manner. A representation of their overall skills (Line1 in Figure 5, page 33) indicated a steady increase in their clinical skills up to year 3 and a leveling out after that point. Students reported time constraints, the negative attitude of clinical trainers towards the CCM and difficulty with language barriers. The language may affect the quality of care and healthcare worker satisfaction. The clinical teachers also did not encourage the use of the CCM in Internal Medicine so that the methods had also not been modeled in the clinical wards in Internal Medicine.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This study was conducted to investigate the transfer of medical students' communication skills acquired in the pre-clinical phase to the clinical setting. This chapter discusses the findings relating to the four objectives of the study:

1. the use of the CCM,
2. the comparison of process skills in history taking in the pre-clinical and clinical phases,
3. the role modelling of clinical teachers, and
4. challenges experienced by students in applying the process skills.

5.2 Discussion

5.2.1 The use of Calgary-Cambridge Method as taught at medical school

The findings suggest that the CCM as used by students during the clinical interactions was not in accordance with the philosophy of the clinical communication teaching in the pre-clinical phase. Students did however use sections from the CCM and confirmed that they found it helpful to gather information from patients.

At the NRMSM, the inclusion of the CCM as a guide occurred in collaboration with the departments of Family Medicine and Rural Health 2010. For a reminder, the curriculum reform was based on the training of graduates orientated in Primary Health Care and these two departments had to play an important role in the effective implementation of communication skills and the expansion of a standardised and uniform of the medical interview guidelines. This study however did not observe students' use of the CCM in the two departments as the purpose of the research was to investigate the reinforcement of communication skills taught and the performance of student in history taking in a clinical department.

Six years after the introduction of the communication programme, the extent to which these are modelled in Internal Medicine varies considerably; the clinical teachers in Internal Medicine Departments demonstrated negative sentiments towards the CCM as reflected in students'

quotes. The explanation of this situation might be related to the presence of personal and organisational barriers in the implementation of communication curriculum as it was been reported by (BMA 2004). Examples of personal barriers are: doctors undervaluing the importance of communication, lack of time, uncomfortable topics, lack of confidence, tiredness, inconsistency in providing information; and of organisational barriers: work constraints including lack of time, pressure of work, interruptions and staff shortages. The clinical teachers were reluctant towards the CCM, because they should present lack of interest, they should be discomfort with changing their method, they should undervalue the importance of keeping patients adequately informed, and they should concern to treat illness rather to have the patient's holistic view by exploring psychological and social wellbeing.

5.2.2 The comparison of communication process skills in pre-clinical and clinical phases.

For students, the clinical training was the appropriate period of acquiring professional aptitudes and improving their clinical reasoning. Communication was amongst the skills to be developed on the recommendations for the MBChB programme.

5.2.2.1 Students' competence in process skills in communication

Students' competence in the overall history taking process as indicated by the **Line 1** (Figure 5, page 33) shows that their competence declined slightly in year 3, but gradually increased thereafter to its highest point in year 6. A similar trend has been reported in a study that aimed to demonstrate the integration of communication skills (Wouda, 2012).

The amended 6-year MBChB curriculum spans over 12 semesters. The communication course was taught in semesters 2, 3, 4, 5 and 6 of the preclinical phase. The third-year medical students started with the practice and application covered in the clinical methods course from the fifth semester. The students were thus exposed to contradictory approaches i.e. clinical teachers in the wards advocating and modelling different strategies than those taught in the preclinical phase. They were likely to have observed some methods for history taking that were used by interns and senior students of the old curriculum in the teaching hospitals.

The clinical training represents a period of professional initiation and has to be conducted in a clinical environment which stimulates the perfect integration in the real professional life and

enhances all skills taught in the pre-clinical phase (Verghese, 2011). In this study, students were supervised by clinical teachers who did not demonstrate sufficient interest in the use of the Calgary-Cambridge method. This is likely to be the reason for some students reporting becoming confused.

It is possible that this contradiction negatively impacted on students in the 3rd year when they came back for a summative OSCE in clinical skills laboratory as there was a slight decline in their scores as indicated in **Line 1** (Figure 5, page 33). Year 6 students showed an improved score for process overall, probably because they are progressively acquiring experience in history taking on a daily basis, even if they were using the CCM in the modified manner.

Evidence based on students' comments in the open ended section indicate a lack of communication integration in the clinical method due to personal and organisational barriers (British Medical Association, 2004). The results were correlated with those of the study conducted by Kurtz (2003) in Canada and the United Kingdom which recommended that content and process should be integrated in the teaching of clinical method (Kurtz, 2003). A similar finding that it was imperative to integrate communication teaching with the clinical method was made by Van Weel-Baumgarten (2013).

5.2.2.2 Providing Structure

The results indicated that students in year 6 obtained the lowest score for the section related to providing a structure to the interview. These scores represented by **Line 2** (Figure 5, page 33) showed a marked difference between the score of the students obtained in year 1 and the scores achieved in year 6. There were similarly differences between the competences in this area between the scores of the students in years 2 and 6, years 3 and 6. Overall the students' overall average scores for providing structure were the lowest in year 6, their final year.

This observation explains that the failure to integrate the CCM in the teaching hospitals also contributes to the lack of respect given to providing structure to the interview. Findings correlated with the concerns expressed by Pfeiffer (1998) and by Bombeke (2010). The first author was concerned about the rise and fall of communication skills competence, and the second about the loss of the acquired communication skills. The communication curriculum was again experiencing personal and organisational barriers of acceptance such as described by the British Medical Association (BMA).

5.2.2.3 Building Relationship

This section of the process skills is represented by **Line 3** (Figure 5, page 33) and indicated a difference more marked between year 6 and previous years. The increase is again reflected in the influence of clinical experience in the improvement of this sub competency of communication. The study conducted by Wouda (2012) highlighted the impact of experience in improving communication competency in consultants who did not take a course in communication, but who benefitted from short training sessions.

5.2.2.4 Initiating the Session

As indicated by the **Line 4** (Figure 5, p 33), the score for the process of initiating the session showed an increasing trend with a relative indifference in terms of average in years 1, 2, 3 and 6. Of note was a considerable difference in the scores between years 1 and 2, years 1 and 3 and years 1 and 6. **Line 4** showed a continuous rise indicating that the professional communication and approach towards the patient had been enforced and sensitively improved on a daily basis with the acquired clinical experience by students.

5.2.2.5 Gathering information from the Patient's Perspective

Using the statistical test "One way ANOVA test" of the SPSS version 16, students' marks in each year of the study were compared to the marks obtained of each of the other years. The results indicated in **Line 5** (Figure 5, p 33) showed a declining trend. It indicates a difference between years 1 and 2, years 2 and 3 and a much more substantial difference between years 2 and 6. It demonstrates students' attainment of a higher average in year 1 and year 2 and a trend that these competencies declined until year 6. It is possible to explain this trend as resulting from the fact that inclusion of the patient's perspective was not valued in this setting and may have been contributed to by the role modelling by the clinical teachers, who did not include a patient perspective. Bombeke (2010) observed a similar trend in a study of clinical application conducted in the Netherlands.

The reason for the new approach and the implementation of the CCM in teaching history taking was to emphasise the patient's perspective. Changes were based on the association and the

active participation of the patient in all steps of the process, including in the forming of a collaborative management plan

5.2.3 The role modeling of clinical teachers in teaching hospitals

The study had been conducted in Internal Medicine for two reasons: firstly that Internal Medicine or General medicine is known for occupying an important position in the training of medical students and secondly the use of Internal Medicine scenarios and adult simulated patients during the experiential sessions. Skills taught in the preclinical phase should be re-enforced in all clinical disciplines in the clinical phase. The clinical training represented an important phase of initiation of medical practice.

Findings revealed that clinical teachers in Internal Medicine were not modelling the CCM. The role modelling of clinical teachers had a negative impact on enhancing clinical communication skills. This highlights the influence of the environment of clinical training on the development of competencies in medical students: this environment may improve communication skills if clinical teachers continue re-enforcing and enhancing them and makes them decline or be lost when clinical teachers demonstrate neglect or reject them. The similar influence of the clinical environment was reported by Pfeiffer (1998), Bombeke (2010) and Verghese (2011) in their respective studies.

5.2.4 Challenges encountered by students

Their challenges in the application of the guide included the failure of clinical teachers to use the guide, time and organisational challenges due to large numbers of patients, and the difficulties encountered due to the language barrier as most of patients spoke isiZulu.

In 2010, a new 6 year curriculum was implemented at the Nelson R. Mandela Medical School. The inclusion of the Calgary-Cambridge method was in collaboration with the departments of Family Medicine and Rural Health with the intention to improve the core competency of communication and expand this into other clinical departments such as Internal Medicine. This study has shown that the method is not used in Internal Medicine as illustrated by the quotes of students. This situation was contrary to the concept of a curriculum which is developed as

a result of a consensus from all educators involved in teaching and learning. The curriculum implementation needed the engagement of all stakeholders involved in teaching, not only selected disciplines. A study by Silverman (2009) demonstrated the importance of an evidence base and use of a national framework of communication teaching as developed in many countries such as Canada (Canadian Medical Association, 1992), UK (General Medical Council, 1993), USA (Association of American Medical Colleges, 1998).

The organisational barriers should also be taken into account as the CCM was considered as a time consuming method. Students' inability to speak isiZulu constituted a language barrier. A similar finding was made by Prose et al. (2013) in a study conducted in downtown Durban, where students also had difficulty with isiZulu, despite the introduction of a medical isiZulu course the MBChB programme.

The lack of acceptance of the CCM and the lack of time highlighted in the quotes of students had been already approached in the personal barriers to an effective communication.

5.3 SUMMARY

In relation with the communication course in the improved MBChB programme at NRMSM School of Clinical Medicine, we expected that students from the pre-clinical training would have opportunities to enhance their skills in the authentic clinical settings whilst consulting with real patients. These settings would have given them an opportunity to integrate the theory and practical work while paying attention to the patient's perspective in the clinical setting. Results demonstrated that the communication teaching and learning in the pre-clinical had a positive impact on the learning, even if students adapted the Calgary-Cambridge Method and used it in a form other than the way it has been taught at medical school as illustrated in building relationship and initiating the session. The clinical training environment where clinical teachers had negative attitudes towards the CCM appears to have had a negative impact as highlighted in the scores for providing structure and patients' perspective. Whilst medical students had to follow instructions from their clinical teachers, they also started to lose aspects of process skills taught in the pre-clinical phase. Furthermore, students experienced challenges such as personal language barriers as most patients were isiZulu first language speakers. Students also battled to traverse the disciplinary silos in which different approaches to history taking were emphasised.

CHAPTER SIX

CONCLUSION & RECOMMENDATIONS

6.1 Introduction

“Communication skills play a central role in patient-oriented medicine, as the quality of communication between doctors and their patients, and between doctors and fellow healthcare professionals , influences the quality of patient care” (Watson, Hewett& Gallois, 2012; Hewett,2009)

The Calgary-Cambridge Guide to the Medical Interview or The Calgary-Cambridge Method (CCM) is a framework for clinical communication teaching, training, assessment and research. It has been locally adapted in many medical schools. At the NRMSM, it is the method of reference for communication teaching, learning, and assessment since the implementation of the new 6 years MBChB programme in 2010.

This study was conducted to investigate the students' ability to transfer and apply communication skills in the clinical phase after they had learnt the Calgary-Cambridge method (CCM) in the pre-clinical phase. The four objectives were formulated:

1. To determine whether students used the CCM as taught at medical school.
2. To measure and compare process skills of students in two different phases of MBChB programme.
3. To explore the role modelling of CCM by clinical teachers.
4. To describe challenges encountered by students for or in the application of CCM.

6.2 Findings of the study

In response to objective one, the study found that students in the clinical phase have adopted and transferred certain aspects of the CCM. However constraints have resulted in this being used in a modified manner. The transfer in this way is not necessarily viewed as a weakness, rather it showed the students' adaptability to respond to the time-constraints and demands of clinical educators in internal medicine.

Findings in response to objective two indicated that students were not able to adapt specific process skills namely “providing structure to the interview” and the “inclusion of patient’s perspective” in the interview.

Findings in response to objective three showed the limited and negative role modelling from educators in the clinical phase.

Findings to objective four indicated that students felt obliged to adapt the CCM due to time-constraints, resource-poor clinical settings and language barriers.

6.3 Strengths and limitations

The outcomes of this study could add to the evidence to improve the implementation of the longitudinal and spiral teaching of communication in the undergraduate programme at the Nelson R Mandela School of Medicine.

This study concentrated on students only in one discipline, namely Internal Medicine. It is envisaged that similar observations in the Family Medicine rotation would have yielded different results.

6.4 Conclusion and Recommendations

In response to attempt to implement the HPCSA core competency of communication in students on the undergraduate programme, it was found that, despite its teaching in the clinical skills laboratory and its application in the Family Medicine and Rural Health disciplines, students’ communication skills were not optimal due to the failure to apply a full vertical integration of the principles taught.

This aim of this exploratory study was to raise awareness and to provide insights to assist in improving and standardising the teaching and learning communication skills, particularly process skills, to medical students and to emulate and extend the collaboration among the clinical departments and affiliated teaching hospitals of the School of Clinical Medicine, Nelson R. Mandela School of Medicine.

The implementation of a competency based framework is currently underway in the College of Health Sciences (CHS). In the context of the study it is recommended that the role of communicator be valued in Health Professions Education across the disciplines. Similarly, there should be greater emphasis on a patient-centred approach.

Further recommendations include additional training and greater interdisciplinary consultations for all staff teaching on the undergraduate programme to enhance the implementation of the core competencies.

Ongoing and longitudinal training in isiZulu communication up to year 3 is currently being offered to non-isiZulu speaking students. In view of the significant challenges of language barriers, this training should be extended into the clinical years.

The current MBChB programme should create a system of cooperation with the affiliated teaching hospitals of the medical school. It would help if clinical tutors from departments can be informed and share new developments in their discipline on the clinical skills communication training to improve integration of clinical teaching, learning and assessment. Further research in local contexts is needed and it is recommended that appropriate tools for communication assessment be developed. All clinical teachers should be aware of their modelling role in the application of the core competencies for the communicator role as taught currently in the Calgary-Cambridge Method at the medical school.

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This reference was added to value the importance of language for scoring the interview:

Levin M E . Effects on quality of care and healthcare worker satisfaction of language training for healthcare workers in South Africa. June 2011, Vol.3, N⁰1 AJHPE

APPENDICES

Appendix 1:

Ethical Approval Biomedical Research Ethics Committee **of the** UKZN

Appendix 2 :

2A-Information for participants

2B-Consent

Appendix 3: Data Collection instruments

3A-Questionnaire

3B-Communication checklist

Appendix 1: Ethical Approval



28 January 2015

Dr Ekanda Ntando
ntando@ukzn.ac.za

Dear Dr Ntando

PROTOCOL: Application of communication skills in an authentic clinical setting: Assessing the communication competency of 5th year medical students during history taking: Degree Purposes (MMedSc) - School of Clinical Medicine (Paediatrics). BREC REF: BE439/14.

EXPEDITED APPLICATION

A sub-committee of the Biomedical Research Ethics Committee has considered and noted your application received on 06 October 2014.

The study was provisionally approved pending appropriate responses to queries raised. Your response to queries dated 20 January 2015 to BREC letter dated 03 December 2014 has been noted by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval.

This approval is valid for one year from 28 January 2015. To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2004), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be **RATIFIED** by a full Committee at its meeting taking place on 10 March 2015.

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Prof V Rambiritch
Deputy Chair: Biomedical Research Ethics Committee

Biomedical Research Ethics Committee

Professor D R Wassenaar (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 2490 FACSIMILE: +27 (0) 31 260 4904 Email: brec@ukzn.ac.za

Website: <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>



Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

Appendix 2A: Consent To Participate In Research

I (Name) have been informed about the study entitled (provide details) by (provide name of researcher/fieldworker).

I understand the purpose and procedures of the study (add these again if appropriate).

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any treatment or care that I would usually be entitled to.

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000 KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604769 - Fax: 27 31 2604609

Email: BREC@ukzn.ac.za

_____	_____
Signature of Participant	Date
_____	_____
Signature of Witness	Date
(where applicable)	
Signature of Translator	Date
(where applicable)	

Appendix 2B: Information Sheet to participate in Research

Date

Good day, Ms/Mrs/Mr _____

My name is Alfred Ntando from the Clinical Skills Department of the School of Clinical Medicine.
College of Health Sciences.

My contact details:

Telephone 031 260 4191/031 260 4611 Cellphone 0711 469 712

E-mail Ntando@ukzn.ac.za / alntando@yahoo.fr

You are being invited to consider participating in a study that involves the application of communication skills in an authentic clinical setting. The aim and purpose of this research are to evaluate the effective implementation of the patient-centred method taught as contained in the Calgary-Cambridge guide to the medical interview and to assess the communication competency of medical students during history taking. The study is expected to enroll final year medical students during their clinical training in the teaching hospitals in the Durban region. The study is focused on the Process and not on the content of the medical history. No procedures will be performed. The duration of your participation, if you choose to enroll and remain in the study, will be a period of one to two months.

The study is categorised as educational research and in the category of no risk to participants. . It is not funded and will not provide any direct benefits to participants. It is hoped that the study would impact on the effective implementation of communication by applying the patient-centred method in health care institutions linked to the Nelson R. Mandela School of Medicine.

The study has been ethically reviewed and approved by the UKZN Biomedical Research Ethics Committee BREC (**BREC REF: BE 439/14**). In the event of any problems or concerns, questions, you may contact the researcher at provide contact details or the BREC contact below:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604769 - Fax: 27 31 2604609

Email: BREC@ukzn.ac.za

Your participation in this research is voluntary and you will not be penalized if you decide to refusal/withdrawal. There are no costs incurred by participants as a result of participation in the study. We will protect your confidentiality and personal information by using only your student number. These will not be published and only used to report trends. The study will not identify your patients. The data will be kept for five years under lock as required for ethical purposes and the rules of the institution.

I thank you so much for your attention and your collaboration.

Dr E A Ntando

Appendix 3A: Data Collection instruments: Questionnaire

1: SELF-ADMINISTERED STUDENT QUESTIONNAIRE

The questionnaire concerns the integration of the communication skills following the patient-centredness contained in the Enhanced Calgary-Cambridge Guide to the Medical interview.

Please answer by ticking Yes or No

1. Application of the Calgary-Cambridge guide

Do you apply the Calgary-Cambridge guide during history taking? Yes/No

Comment.....

2.

When observing your clinical teachers during history taking

- Do supervisors use the Calgary-Cambridge guide ?
Yes/No
- Do they attentively listen to patients, while taking history, minimizing interruption? Yes/No
- Do they progressively ask the patient for consent at any step of history taking? Yes/No
- Do they use signposts? Yes/No
- Do they show interest to the patient's perspective (ideas, concerns, expectations, effects on life, feelings)? Yes/No
- Do they use empathy to communicate appreciation of the patients' feelings? Yes/No
- Do they formulate a general summary and invite the patients to correct their interpretation or provide further information ? Yes/No

3. Trainees' challenges

3.1.a Do you encounter challenges for and in the application of the communication skills as taught at the medical school ? Yes/ No

If yes , list these challenges -----

-----**3.1.b**

What factors contribute to these challenges ?-----

-----**3.2** Are you

happy with your experience in Medicine thus far?

Comment -----

-----**3.3**

How do expect to maintain and enhance your communication skills ?

Comment-----

Participant's student number:

Clinical setting.....Date.....

APPENDIX 3B: Clinical Communication Skills Checklist

PROCESS GRID	Good 1	Ade- quate (0.5)	Not done/ Poor(0)	CONTENT GRID	Mark	Yes
Initiating the Session				Presenting symptoms/Biomedical perspective		
Greets patient and obtains patient's name and age				1 Elicits presenting symptom(s)	2	
Introduces self ,explains role and nature of interview , obtains consent				2 Elicits details of the episodes	2	
Demonstrates interest and respect , attends to patient 's physical comfort				3 Accurate chronological history	2	
Uses appropriate opening question				4 Screens for other symptoms	2	
Gathering information. Problem identification and	Exploration			Context		
Listens attentively, minimizing interruption and leaving space for patient- must identify main problems				5 Past medical history(previous illnesses)	1	
Encourages patient to tell the story of the problems from when first started to the present				6 Hospital admissions ,surgical problems	1	
Checks and screens for further problems				7 Medications	1	
Uses open and closed questions ,appropriately moving from open to closed one				8 Allergies	1	
Facilitates patient's responses verbally and non-verbally e.g. silence ,repetition ,paraphrasing				9 Family history:-parents	1	
Picks up and responds to verbal and non-verbal cues (body language ,speech ,facial expression)				10 – brother(s) and sister(s)	1	
Clarifies statements which are vague or in need of amplification				11 Personal and social history: -marital status(about partner)	1	
Periodically summarises & invites patient to correct interpretation or provide further information				12 -occupation	1	
Uses clear , easily understood language ,avoid jargon				13 –children(age ,occupation ,relationship)	1	
Patient perspective				14 –residence (type of housing , electricity , water)	0.5	
Actively determines patient's perspective (ideas ,concerns expectations ,effects on life , feelings)				15 Lifestyle : -alcohol and smoking	1	
Appropriately and sensitively responds to and further explores patient's perspective				16 – diet , exercise	0.5	
Building the relationship & Developing rapport				Patient perspective		
Demonstrates appropriate non-verbal behavior e.g eye contact posture ,position , movement, facial expression use of voice				17 Ideas	2	
Acknowledges patient's views and feelings is not judgmental				18 Concerns	2	
Uses empathy to communicate appreciation of patient's feelings or predicament				19 Expectations	2	
Provides support and expresses a willingness to help				20 Effects on life	2	
Providing structure				21 Feelings	2	
Progresses from one section to another using signposting : includes rationale for next section				TOTAL CONTENT (max 29)	29	
Structures interview in logical sequence ,attends to timing keeps interview on task						
TOTAL PROCESS (max 21)						
TOTAL (PROCESS + CONTENT max 50)					50	