Development and Validation of a Patient Satisfaction Monitoring Tool for the Durban University of Technology Chiropractic Clinic

by

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Dissertation submitted in partial compliance with the requirements for the

Master's Degree in Technology: Chiropractic

Durban University of Technology

I hereby declare that this dissertation is representative of my own work in both conception and execution (except where acknowledgements indicate to the contrary).

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DEDICATION

To my mum, thanks for taking the place of being a mother and a father to me.
Always remember no one can ever take the place of you in my life.

“Remember you can only change yourself, but that can change everything.”

Jay Shetty

ACKNOWLEDGEMENTS

I express my sincere thanks and abundant gratitude to the following individuals:

- My supervisors, Dr. Desiree Varatharajullu from the Department of Chiropractic and Somatology, and Dr G. Cruickshank from the Academic Development Department in the Faculty of Health Sciences. Firstly, thank you both for tolerating my lack of writing skills. You both have guided me and given me your valued time and expert input during this process and ensuring I complete my thesis. Thank you.

- To the 400 chiropractic patients who participated in this study, thank you for sharing your valued time, opinions and experiences which enabled my research to be completed.

- To my mother, Pranita Singh, thank you for instilling in me the values of sacrifice and hard work. I love you.

- To my uncle Anil Churran, thank you for being the driving force to my future success. I love you.

- To Rajiv Rampal, thank you for being my guardian angel and for pushing me to complete my goals. You made so many sacrifices in our first year of marriage, without you I would not reach this point. Every girl deserves a husband like you. You are the reason I believe blessings are real. I love you.

- To Larisha Soodhoo, thank you for being my pillar of support and ocean of love that every sister deserves. I love you.

- To Shalina Rampersadh aunt, confidant, bestie and most importantly my guiding angel. My life can never be complete without you. Thanks for always encouraging me every time I wanted to give up. I love you.

- To Dr. Gillian Cruickshank, thank you for proof-reading my thesis and adding your valuable input.

- To Mr. D. Singh and Prof. G. Matthews, I would like to express my thanks for your involvement in the statistical analysis of this study and helping me understand stats.

- To the Durban University of Technology, thank you for providing me a research fund and the opportunity in which to obtain a master's degree.

- To the Chiropractic Department, thank you for your commitment to the profession and helping me become passionate about the profession.

ABSTRACT

Background

Patient perceptions of the value of services and care they obtain at healthcare practices offer healthcare providers and staff important information to effect improvements. Studies have shown a high rate of patient satisfaction of patients receiving chiropractic care. South Africa is distinguished as the only country in Africa to offer training in chiropractic. Currently, only two tertiary establishments in South Africa, the Durban University of Technology and the University of Johannesburg offer a master's in Chiropractic degree. There is, however, no feedback system currently implemented at the Durban University of Technology Chiropractic day clinic for patients to indicate levels of satisfaction. Patient satisfaction surveys are considered as a means of gathering patients valued opinions on primary health care services that they have received. This study evaluated the patients' feedback in creating a patient satisfaction survey for use at the DUT CDC on a continual basis.

Aim

The aim of this study was to develop a valid and reliable patient satisfaction questionnaire, which could easily be used on a routine basis in order to monitor patient satisfaction levels at the DUT CDC in terms of quality of care, accessibility and interpersonal factors.

Method

This study consisted of three phases. Phase one was a preliminary review of the literature on questionnaire design and conceptual frameworks. Phase two consisted of instrument development, expert group and pilot testing. The development of the instrument and its contents was informed by the review of the literature and questionnaire exemplars from phase one. In this phase, a second questionnaire was developed and trialled with the expert group, as it was used to rate the significance of the questions on the patient satisfaction questionnaire (PSQ); subsequently the PSQ was piloted. Phase three was the handing out of the PSQ and the rating patient satisfaction questionnaire (RPSQ) to patients attending at the DUT CDC.

Results

The PSQ and RPSQ questionnaires were completed by 400 patients. The patients gave their suggestions as to which statements should be included in the final PSQ. The statements with a majority agreement were included in the final PSQ. The final PSQ was shown to be reliable with Cronbach's Alpha score of 0.93.

Conclusion

The final PSQ could help to continually monitor patient satisfaction at the DUT CDC. The clinic committee could utilise the feedback to implement or build on quality improvement initiatives, which would assist in demonstrating a commitment to patient-centred care and improve the overall healthcare experience at the DUT CDC.

KEYWORDS: Patient satisfaction, Chiropractic, Patient satisfaction surveys, Student clinic

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LIST OF ABBREVIATIONS

AHPCSA	Allied Health Professions Council of South Africa
CDC	Chiropractic Day Clinic
DUT	Durban University of Technology
IREC	Institutional Research and Ethics Committee
MGMA	The Medical Group Management Association
PHC	Primary Health Care
PSQ	Patient Satisfaction Questionnaire
PSS	Patient Satisfaction Surveys
RPSQ	Rating Patient Satisfaction Questionnaires
UJ	University of Johannesburg
WHO	World Health Organisation
WFC	World Health Federation

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Achieving and maintaining high levels of patient care is an important aspect for health care facilities such as chiropractic clinics, in order to consistently monitor levels of patient satisfaction (Harris *et al*. 1999). Patient satisfaction is an important, indirect measure of quality of care as it directly impacts on the perception of quality of care and treatment outcomes, which is of great value for the administering clinician (Moore and Bowden-Everson 2012). In order to track changes and monitor improvements, surveying only once or rarely is going to be insufficient to supply a practice with the appropriate levels of required information. To monitor and measure patient satisfaction it is therefore important to conduct surveys on a regular basis, together with follow-up surveys, in order to implement changes in response to the feedback (Smith *et al*. 2015).

Quality of health care is commonly gauged by the level at which patients are satisfied (Prakash 2010). According to Ilioudi**,** Lazakidou and Tsironi (2013) the extent to which general health care needs and condition-specific needs are met are related to patient satisfaction. Evaluating the extent to which patients are satisfied with health services is clinically relevant as this holds great value for the treating clinician (Prakash 2010). It is clinically relevant to assess patient satisfaction with health services, as this is significant for the practitioner. Patients who are satisfied are more likely to refer others, comply with treatment instructions and remain with their service provider. Legal action and/or complaints to regulatory bodies can occur if the patient is dissatisfied (Ilioudi**,** Lazakidou and Tsironi 2013). As such, patient satisfaction is not only the perceived success from the treatment but also fulfilment throughout the process.

The factors which have been shown to influence patient satisfaction include, but are not limited to: satisfaction with overall care; satisfaction at a previous visit; preference for care; the duration of the treatment; the personal aspects of care; technical quality involved; accessibility and availability of care; continuity of care; the financial arrangements and fee schedule; the physical setting; and finally, the perceived efficacy (Yeomans 2000; Powell 2001).

Questionnaires are utilised for information to be collected in a standardised way. The inference of results to the wider population could then be made when information is gathered

from a defined population. There has been an increase in recent years both nationally and internationally on the use of questionnaires in health care research (Rattray and Jones 2007).

Maintaining elevated levels of patient satisfaction should be the target of every chiropractic clinic. This target could be met and could allow for a high standard of health care to be offered at the Durban University of Technology (DUT) Chiropractic Day Clinic (CDC), through the use of a patient satisfaction questionnaire (PSQ). This is especially important since no such consistent monitoring tool has been developed at the DUT CDC in the period of its existence (more than 20 years). A study of this nature will assist in establishing a baseline monitoring tool which could be used to measure patient satisfaction, as well as highlight areas of the clinic and chiropractic curriculum that could be refined.

1.2 Research Problem

Patient satisfaction surveys give healthcare providers a means by which they can evaluate whether they are meeting the expectations of their patients or if they are lacking in any area. To compete with other medical services, it is essential that healthcare providers seek the views of their patients so that they can set standards and take action when those standards are not met. Currently there is no patient satisfaction questionnaire at DUT CDC, thus this study set out to develop a PSQ that could be used at the DUT CDC on an ongoing basis

1.3 Aims and objectives

1.3.1 Aim

The aim of this study was to develop a valid and reliable patient satisfaction questionnaire which could be easily used on a routine basis, in order to monitor patient satisfaction levels at the DUT CDC in terms of the quality of care, accessibility and interpersonal factors.

1.3.2 Objectives

1. Development of a PSQ to be as well-aligned as possible with the conceptual framework.

2. Use of the rating patient questionnaire to validate the PSQ.

3. To undertake reliability testing i.e. internal consistency reliability (Cronbach's alpha).

1.4 Rationale

Patient satisfaction surveys are more than just a platform for patients to air their views. Surveys also allow patients to be informed about new innovations or changes in companies or healthcare organisations, as well as being a means to determine patient viewpoints (Gonzalez *et al*. 2005). Even though patient interests are an essential part of service quality in modern health care systems, it has been noted by Grol *et al*. (2000) that health care providers' interaction with patients are based on their own subjective perceptions of patients' needs and experiences. Davids *et al*. (2011) stated that members of the public lack the technical knowledge to make informed decisions. The Medical Group Management Association (MGMA) (2013) revealed that nearly 80% of practices identified as 'better-performing' often used patient satisfaction surveys to assess patient satisfaction levels. Those practices that were more favourable to conducting surveys, and doing so more often when compared with other practices, were identified as high performers. Smith *et al*. (2015) also noted that high performance practices were more likely to conduct surveys on their patients and do so more frequently in comparison with practices which do not.

Chiropractic care has been shown to be high and at times superior to other forms of health care; this is especially true when it comes to the management of low back pain (Sawyer and Kassak 1993). The goal of every chiropractic clinic should be to maintain a high level of satisfaction through the use of patient satisfaction questionnaires. This is relevant, as in the 20 years of the DUT CDC's existence only one study conducted a once-off evaluation of patient satisfaction (Thoresen 2006). No such constant evaluation of patient satisfaction has been conducted at the DUT CDC.

The use of patient satisfaction surveys (PSS) in developing countries is currently advancing and becoming more frequent (Mpinganjira 2011). Professionals have recognised that a consumer oriented and systematic perspective toward patient viewpoints regarding the level of care they receive can result in feedback which is useful in promoting high quality of patient care (Peltzer 2009). The South African Department of Health's policy on the quality of health care states that public services must respond to patient need, wants and expectations (Department of Health 2007). It is therefore vital to obtain feedback from patients, as it is the experiences of healthcare services that determine the quality of care they received. Patient opinions will also facilitate more enhanced prioritisation, enhanced strategic resource allocation, enhanced value for money, improving the knowledge of decision makers, along with serving as a platform for the provision of better services (Mpinganjira 2011).

Patient satisfaction surveys are viewed as a way to determine patient views on primary health care (PHC) (Ajayi, Olumide and Oyediran 2005). Patient satisfaction surveys are being promoted as a means to understand the quality of health care services as well as assess the demand for these services in developing countries for numerous reasons (Glick 2009). Firstly, these surveys bring to the fore those aspects of care which require improvement in the health care setting (Ajayi, Olumide and Oyediran 2005). This satisfaction survey tool would provide a means for patients to give valuable feedback about their experience at the DUT CDC. The patient satisfaction information that is to be gathered would enable the DUT CDC to formally assess the quality of healthcare that is provided to its patients. Secondly, these surveys are relatively simple, cost-effective in terms of administration, and are quick to complete. Thirdly, areas of service that may require refining or improvement could be brought to the attention of the clinic staff and then dealt with appropriately. Patient satisfaction is just as important as other clinical health measures and is a primary method for measuring the effectiveness of health care delivery. Fourthly, the PSQ results could also be used as an assessment tool to monitor fifth and sixth year chiropractic students on their achievements, where the patient rates the performance of the intern's communication skills, examination skills and empathy. Lastly, they allow managerial judgement to be executed from a position of knowledge, as opposed to guesswork, in the important task of managing public expectations and resources (Glick 2009). A study of this nature would establish a baseline measure for patient satisfaction and help to develop the DUT CDC as a progressive primary healthcare facility.

1.5 Scope of study

This study was divided into three phases. Phase one was a preliminary review of the literature on questionnaire design and conceptual frameworks. Phase two consisted of instrument development and pilot testing. The development of the instrument and its contents were informed by a review of the literature and questionnaire exemplars from phase one. In this phase, a second questionnaire was developed and presented to an expert group to rate the significance of the questions in the PSQ. The PSQ was then subsequently submitted to a pilot group. Phase three was the handing out of the PSQ and rating the patient satisfaction questionnaire to 400 patients attending the DUT CDC.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a discussion on the various aspects identified to be involved in patient satisfaction, as well as those factors unique to chiropractic, teaching clinics and the South African healthcare system. The literature presented was extracted from a variety of sources such Google Scholar, Pubmed, DUT research engine (A-Z Databases) and Mednets.

2.2 Chiropractic in South Africa

International standards in chiropractic education have been achieved through the collaboration of international accrediting agencies that are recognised by the World Health Organisation (WHO). Currently, there are 41 countries offering the chiropractic programme worldwide (World Federation Chiropractic 2012). South Africa has been noted as the only country in Africa to offer qualifications in chiropractic. Only two tertiary educational facilities in South Africa, the Durban University of Technology since 1989 and the University of Johannesburg (UJ) since 1994, offer a five-year full-time course-work Master's programme. This is inclusive of a clinical practicum at the respective on-site academic clinics, the DUT CDC and the UJ Chiropractic Clinic.

2.3 The Chiropractic Day Clinic at the DUT

Chiropractic is a six-year programme inclusive of a Master's degree, which is a requirement for registration with the Allied Health Professions Council of South Africa (AHPCSA) as a chiropractor. The Bachelor's Degree in Technology: Chiropractic (B.Tech) makes up the first four years academic programme, followed by the Master's Degree in Technology (M.Tech). The Master's degree is acquired by carrying out supervised clinical experience as well as completing a research project and dissertation, and an academic component. Sixth year or more refers to students who have not completed their research project and dissertation by the end of the fifth year of studies.

The DUT CDC provides chiropractic services to the general population, primarily of the greater Durban area. The DUT CDC is a controlled, supervised environment in which senior chiropractic students are able to gain experience with managing patients prior to becoming

qualified. Students who consult with patients at the DUT CDC do so under the supervision of a registered chiropractor. These students are regarded as either fifth or sixth year students. Fifth year students are those who are completing their fifth year of academic studies as they attend classes between 08:00 to 12:30 and thereafter attend clinic from 12:30 to 18:00. The fee for a consultation with a fifth year student is currently R130 for an initial appointment and R90 for a follow-up appointment. The fifth year students are skilled to treat spinal ailments at the start of their clinical training and as their academic module tests are concluded, then the extremity regions could be treated.

Sixth year students are those students who have completed the fifth year of academic studies and attend clinic from 08:00 to 12:30. To be treated by a sixth year student the consultation fee is currently R150 for the initial appointment and R110 for a follow-up appointment. Sixth year students are able to treat all regions. All students are required to consult with the supervising clinician during the consultation e.g. history taking, physical examination, regional examination and treatment.

2.4 The patient

According to Dorland (2011) a patient is generally depicted as a person who is unwell or who is undertaking treatment for a disease or ailment. This means that the person is seeking either in-patient (hospital care) or out-patient or ambulatory care. The more severe complaints are usually related to an increased likelihood of mortality, as compared with the ambulatory care or less severe complaints, which generally have a higher morbidity and thus a reduced quality of life. Although the patient may be perceived by differences in their ability to cope, it is essential that in either instance the patient's morbidity and mortality are decreased and their quality of life increased in order ensure a decreased burden on themselves, their family and lastly, the greater society. In order to measure increased quality of life it is vital that practitioners receive feedback from patients, thus enabling improvements to their services and allowing for more effective, efficient and patient-centred care. In order to do this, the practitioner needs to understand the patient's perception, expectation and levels of satisfaction within the context of their interaction with the patient (Bowden and D'Alessando 2011; Moore and Bowden-Everson 2012; Lee 2013).

2.5 Patient Satisfaction

Patient satisfaction is known to be an important and commonly used tool to determine the quality of health care in relation to patient retention, medical malpractice claims and clinical outcomes, all of which are known to affect patient satisfaction as well as the patient-centred delivery of quality health care. Patient satisfaction is therefore a very valuable indicator for measuring the success of health care providers and facilities (Prakash 2010). The information compiled by patient satisfaction surveys mirror the care conveyed by staff and physicians. This can be used as a tool in difficult areas and a reference point for making management decisions. In addition to the above, they can be also used to provide a means of holding physicians accountable (Powell 2001).

Satisfaction, as discussed by Asadi-Lari, Tamburini and Gray (2004), could be defined as the extent of an individual's experience compared with his or her expectations. Patient satisfaction is related to the extent to which general health care needs and condition-specific needs are met. Satisfaction is said to be dynamic and changes as the patient's medical condition or expectations change, even though the care received may have remained constant (Goldstein, Elliot and Guccione 2000). Asadi-Lari, Tamburini and Gray (2004) discussed satisfaction as the degree to which an individual's experience is met by comparison with his or her expectations, and patient satisfaction is the degree to which condition-specific requirements are met.

Customer perceptions and expectations are the main thought processes of two diverse research theory themes: customer satisfaction and service delivery. Some authors state that service quality leads to customer satisfaction and behavioural intentions (Carrillata, Jaramillob and Mulkic 2009). These two theories, although seen as mutually exclusive, do in fact overlap. As such, some researchers suggest that customer satisfaction and service quality are in fact separate subjects that happen to share a number of similar qualities (Parasuraman, Zeithaml and Berry 1985).

Other researchers centred their attention on individuals' satisfaction of the health system more generally. The magnitude of both perspectives has been confirmed in the literature. For instance, satisfied patients are more likely to be compliant and co-operative as well as complete the course of treatment. Observational studies have revealed that a customer's perception of service quality and customer satisfaction directly influences the customer's

intention to positively favour an organisation or business and make use of its services on a continual basis (Shekarchizadeh, Rasli and Hon-Tat 2011).

2.6 Importance of Patient Satisfaction

The perceived quality of care could be measured by patient satisfaction. Consequently, patient satisfaction is known to influence quality of care. It has been demonstrated that patient satisfaction scores showed a stronger correlation with high quality care than clinical performance measures. Thus the fulfilment the patient gets from the process is as a whole and not only from the success of the treatment (Prakash 2010). Evaluating patient satisfaction is clinically pertinent, as dissatisfaction could lead to financial failure as a result of a smaller number of patients attending the clinic, or legal action, as well as grievances to regulatory bodies. This could be compared with satisfied patients who are more likely to comply with treatment directions, recommendations and remain with their service provider as well as refer others (Harris *et al*. 1999; Thoresen 2006).

This is further supported by the Accreditation Association for Ambulatory Health Care (2015) which specifies that patient satisfaction is vital to the success of healthcare organisations. Results from the study stated that on average, satisfied patients would share their positive experience with five others, compared with dissatisfied patients who would complain to nine or more people. The internet encourages speedy and wide broadcasting of these views. Word-of-mouth marketing is influential, especially as patients become more astute about their healthcare choices. Powell (2001) added that the competitive atmosphere has forced healthcare facilities to focus on patient satisfaction as a way to increase and maintain market share.

Linder-Pelz (1982) stated that patient satisfaction is "a positive evaluation of distinct dimensions of health care. The care being evaluated might be a single clinic visit, treatment throughout an illness episode, a particular health care setting or plan, or the health care system in general”. Patient satisfaction is known to be a multi-dimensional healthcare construct which is affected by many variables. Healthcare quality influences patient satisfaction, which in turn affects positive patient behaviours such as loyalty. Though difficult to measure, patient satisfaction, in addition to healthcare service quality, could be operationalised by using a multi-disciplinary approach that combines patient input as well as expert judgement (Naidu 2009).

2.7 Patient satisfaction with Chiropractic Care

Patient satisfaction and chiropractic care is a prerequisite to successful clinical practice (Jamison 1998). Gaumer (2006) concluded that 83% of patients were satisfied with chiropractic treatment. Gemell and Hayes (2001) studied aspects of chiropractic care that contribute to patient satisfaction. These included the technical skills and personal manner of the chiropractor, duration of time spent waiting for the consultation, the amount of time spent on treatment, and the explanation of what was done during the treatment. In the context of the DUT CDC, it was found that patients reported an elevated level of satisfaction with the chiropractic care they received (Thoresen 2006).

2.8 Factors affecting the reliability of Patient Satisfaction Surveys

Carr-Hill (1992) indicated that there may be a response bias in support of satisfaction, while Williams (1994) suggested that dissatisfied patients may be inclined to express themselves only when they have experienced something negative. Furthermore, the wording of survey items may also be unclear in the recognition of areas of dissatisfaction, as patients appear to be less likely to agree with an item stating that an inauspicious event has occurred than to disagree that a favourable event has happened (Cohen *et al*. 1996). Hordacre *et al*. (2005) concluded that satisfaction with overall care obscures dissatisfaction with services or specific areas of care. These are a few factors which need to be taken into consideration when formulating the questionnaire, as well as in the evaluation of the results on completion of the survey.

2.9 Patient Satisfaction Surveys

Patient satisfaction surveys are seen as a means of shaping patients' outlook on PHC (Ajayi, Olumide and Oyediran 2005; Andaleeb 2001). In developing countries, surveys are increasingly being endorsed as a means of understanding healthcare service quality and the demand for these services (Glick 2009). Firstly, in a healthcare setting they draw attention to those aspects of care that need enhancement (Ajayi, Olumide and Oyediran 2005). Secondly, they are cost-effective in terms of administration, they are straightforward, and take a short amount of time to complete. Thirdly, they are essential for developing processes to amplify the usage of PHC services. Fourthly, they could bring awareness to medical providers and staff about their failures as well as their accomplishments, thereby assisting them to be more receptive to their patients' requirements. Lastly, they provide a platform for

managerial judgement to bring about changes from a position of knowledge as opposed to guesswork. It is an important duty to oversee public expectations and resources (Glick 2009).

The South African government sanctions the centrality of consumers in service delivery. The White Paper on Transforming Public Services of 1997 (Department of Public Service and Administration 1997), as well as the Department of Health's policy on quality in healthcare (Department of Health 2007), state that the customer's needs, wants and expectations should be met by public services. Feedback from consumers is required in terms of their experiences of the health services quality of care they received. Feedback from customers would not only improve knowledge of decision makers, but would also facilitate more improved prioritisation, strategic resource allocation and value for money. It would also serve as a platform for providing better services to citizens.

2.10 The Impact of Measuring Patient Satisfaction in Health care Facilities

The assessment of patient satisfaction is a significant constituent of patient care. The use of information acquired from patient satisfaction surveys aids in patient outlook into clinical practice and indicates positive outcomes after treatment. **Table 2.1** outlines the benefits of measuring patient satisfaction in healthcare facilities.

Table 2.1: The benefits of measuring patient satisfaction

References	Description of study	Population	Result
Hearnshaw *et al.* (1996).	To determine the costs of conducting patient opinion surveys in general practice and to find out how effective patient surveys are in stimulating changes which are beneficial for patient care.	Postal questionnaire to all 102 medical audit advisory groups (MAAGs) and 98 family health services authorities (FHSAs) in England and Wales, followed by postal questionnaire to 302 general practices reported to have conducted surveys, sampled by the type of questionnaire used. Numbers of MAAGs and FHSAs reporting surveys in general	Eighty-five (83%) MAAGs and 75 (77%) FHSAs responded. One hundred and fifty-four (96%) of MAAGs or FHSAs reported survey activity. Types of questionnaire used were: 1) designed by the practice; 2) designed by the MAAG or FHSA, possibly in collaboration with a practice; or 3) standard 'off-the-shelf'. One hundred and thirty-three (44%) practices

		practice; types of questionnaire used; estimated costs; changes made; and benefits identified were measured.	responded. Total costs to a practice of conducting a survey ranged from nothing to over £2200. Questionnaires designed by the practice are likely to be costlier than other designs. Some practices had surveys provided free of charge by MAAG or FHSA. Sixtyone per cent of practices said changes had been implemented and a further 22% of practices said changes were planned. The most common change was to appointment systems. Benefits were identified for patients, staff, the practice, the MAAG or FHSA and the NHS. Surveys also brought benefits in relationships and understanding. Only 8.2% of practices felt the costs of surveys outweighed the benefits.
Greco,Brownlea and McGovern (2001).	A longitudinal study in which general practitioners were randomly assigned to three models of patient feedback: a control group and two intervention groups. The major source of data gathering was through the Doctors' Interpersonal Skills Questionnaire (DISQ) which was administered to patients immediately after their consultation.	210 General practitioners registrars, 104 General practitioners supervisors and 28 156 patients.	Findings showed that patient feedback at regular intervals throughout GP training resulted in sustained levels of interpersonal skills. The most significant gains in interpersonal skills for both intervention groups occurred in the earlier stages of general practice training. Most registrars found the experience of patient feedback useful for gaining a better understanding of their interpersonal skills and

			for identifying areas in which they needed to improve. GP supervisors valued the opportunity to receive patient feedback themselves and found the activity a useful.
Boyer *et al.* (2006)	The institution is a 2200-bed teaching hospital of tertiary health care employing 8000 professionals. Patient satisfaction surveys are carried out each year using a validated questionnaire mailed to a random sample of patients. The specific results of each department are sent to the medical and paramedical managers.	Conducted a questionnaire survey on 500 care providers randomly selected in every medical and surgical department.	A total of 261 questionnaires were returned and analysed. Overall, 94% of responders had a favourable opinion of the patient satisfaction surveys. They considered that the patient was able to judge hospital service quality, especially in its relational, organisational, and environmental dimensions. The specific results for the department were less well known than the overall hospital results (60 versus 76%). These results were formally discussed in the department according to 40% of responders; 40% declared that these data resulted in improvement actions and considered that they led to modifications in their behaviour with patients.

2.11 Benefits of Patient Satisfaction in a Clinic Setting

Goldstein, Elliott and Guccione (2000) concluded that there are three main benefits to the use of PSS instruments. Patient satisfaction surveys grant several benefits for physical therapists. Firstly, the information may be used to examine the provider's facilities by characterising the structure, process and outcome of care as well as service provided. Secondly, patient satisfaction data may be used to forecast patient behaviour on the conjecture that differences in levels of satisfaction could persuade clinical outcomes to at least a small degree. Finally, the information gathered from a PSS could assist healthcare providers to build up strategies for provision of care.

2.12 Factors affecting patient satisfaction

2.12.1 Socio-demographic variables

The healthcare experiences of patients are linked to socio-demographic variables and how they are interpreted (Hughes 1991). Coulter, Hays and Danielson (1994) stated that socio-demographic variables account for only a small amount of discrepancy in satisfaction.

2.12.1.1 *Age*

Studies have shown that younger people were less satisfied than older people, who are generally more satisfied with medical care (Coulter, Hays and Danielson 1994; Grogan *et al*. 2000). Possible reasons for this could be due to older patients being treated in a more thorough or receptive manner than younger patients (Harris, Rich and Crowson 1985; Street and Buller 1988). Research indicates that some healthcare providers have negative attitudes toward younger patients and a more positive approach to older patients (Street and Buller 1988).

2.12.1.2 *Gender*

According to Slabbert (2010) and Muchna (2011) gender could predict conditions owing to different psychological, biomechanics, and occupational factors. In this way, gender may impact on the conditions presented to the DUT CDC. French *et al.* (2013) carried out a study to establish the demographic profile of patients utilising Australian chiropractic services, which concluded that more females (67%) presented to the chiropractic clinics than males

(33%). Hughes (1991) concluded that generally studies find no correlation between gender and satisfaction. Coulter, Hays and Danielson (1994) contradict Hughes (1991), showing that men have a higher satisfaction when evaluating the service received from the medical profession.

2.12.1.3 *Race*

There is limited research in terms of the relationship of ethnicity and levels of satisfaction. Satisfaction between different ethnicities remain inconclusive according to Hughes (1991), while Coulter, Hays and Danielson (1994) believed that satisfaction is higher in the white race group.

2.12.1.4 *Income*

Hughes (1991) cites several studies demonstrating that “poor people have poorer health, receive poorer health care, have less continuous relations with doctors, and have harder times getting appointments. They were also treated differently from privately insured patients to some degree. Consequently, they tend to be less satisfied.” In the same way, Coulter, Hays and Danielson (1994) were of the opinion that more satisfied patients were of a higher income group. The results of Sawyer and Kassak (1993), who analysed questionnaires that were mailed to 541 new as well as returning chiropractic patients in search of care between June 1988 and August 1989 (response rate: 69.5%), deduced elevated dissatisfaction in patients reporting a lower income.

2.12.1.5 *Occupation*

Occupation could impact on presenting complaints by affecting patients in terms of biomechanics, levels of stress (and other psychological factors), and/or financial factors (such as access to healthcare) (Higgs 2009). In South Africa the percentage of unemployment amongst economically active people is 25.7%, with females more likely to be unemployed than males (Lehohla 2012). The unemployment rate is lower in KwaZulu-Natal than the country average, however again females were more likely to be unemployed. In terms of numbers employed, the largest occupation groups were manual, public services, sales and clerical professions, with males forming the majority in all professions except public services (Lehohla 2012).

2.12.2 *Organisational care*

Higher levels of satisfaction were associated with organisational characteristics such as the physical environment, consultation process, improved learning, culture and work system, which reflect more 'personal' care and better communication. This was noted as the most consistent finding in satisfaction research (Hughes 1991). Yeomans (2000) accounts for several patient satisfaction studies revealing the following satisfaction domains: tangibles such as the physical hospital environment (accessibility or convenience); the reception staff (efficiency, assurance, listening and communication skills); the doctors (empathy, care, assurance, listening and communication skills); and other elements that are anticipated, including quality of care, outcome or efficacy of care and finance. Numerous studies have shown how satisfaction domains such as satisfaction with the previous visit; satisfaction with overall care; preference for care; convenience; accessibility; as well as financial implications of treatment, influences patient satisfaction (Linder-Pelz 1982; Thoresen 2006; Prakash 2010).

2.12.2.1 *Tangibles*

The way in which people perceive each other and their environment highlights the uniqueness of each individual and the unique expectations they and their environment can create (Pillay 2002). These expectations can be influenced by the individual's demographic and psychosocial factors. These factors strengthen and shape their personal belief system in their environment and the way in which they interact within it (North, Zewotir and Murray 2011).

The waiting room is a component in establishing satisfied patients. Certain factors that may influence the satisfaction of patients within the waiting room may be the comfort of the chairs, forms of entertainment, the hygiene of the surroundings and staff members and the interest of the staff towards the patients. Additionally, the treatment room may also influence the satisfaction of the patient. The treatment room may be uncomfortable for certain individuals, depending on their physical abilities (Hughes 1991).

2.12.2.2 *Reception*

Hughes (1991) identified that waiting for appointments (including the time it took to schedule and the waiting room period prior to the scheduled appointment), affected the perception of

the clinic and subsequently the levels of satisfaction. If either scheduling or waiting for an appointment took too long, this could lead to dissatisfaction, with the converse leading to satisfaction. This latter 'waiting' period may be negated in that the patients attending these clinics often spend this time socialising with other members of the community present at the clinics. They may or may not be seeking care at that time, therefore their perception of the time waited may not be distressing, perhaps even improving the satisfaction scores of these patients. This assertion, however, requires further investigation.

2.12.2.3 *Doctor- Patient relationship*

Hughes (1991) reported the doctor-patient relationship as a strong forecaster of satisfaction. Verhoef, Page and Waddell (1997) advocates that the longer the patients have been under the care of a particular practitioner, the more satisfied they would be. The same study added that patient satisfaction increased through ongoing treatment (more than six weeks) in spite of pain resolution (Verhoef, Page and Waddell 1997). The improvement was thought to be attributed to the growth of an intimate doctor-patient relationship.

A review by Boquiren *et al*. (2015) revealed that the majority of patient satisfaction measures are attributed to the doctor's skills, interpersonal characteristics, expertise and professional demeanour. Patient satisfaction domains such as humaneness, the doctor's technical skill, providing information pertinent to a patient's healthcare and being available, could assist a satisfactory interaction as well as build a positive, partnership between patient and doctor. Open communication and keenness to work as a team with a patient who is engaged in their healthcare are key aspects in attaining and maintaining high patient satisfaction (Boquiren *et al*. 2015).

Lin *et al.* (2001) concluded that patient satisfaction was amplified if the expected consultation time was surpassed by the physician. This could be accredited to the comfort level the patient feels in talking about their concerns or potentially because the patient feels the clinician is taking the time to evaluate them thoroughly and is not just rushing them out of the door as another 'number' and as a source of income. This showed that the length of consultation time was an important variable when considering doctor-patient communication and levels of patient satisfaction.

2.12.2.4 *Quality of care*

Healthcare experience and efforts as a result of changes in physical health status are directly attributed to outcomes. Tucker (2002) concluded that service quality is the degree to which the care provided was competent and humane. Andaleeb (2001) reinforced that competence strongly influences patient service quality evaluation, as levels of satisfaction increase to the degree at which the service provider was found to be competent. Another important impact on customer satisfaction is staff demeanour. The manner in which staff interact with the patient as well as staff sensitivity to the patient's personal experience may be important (Andaleeb 2001).

2.12.2.5 *Finance*

Dolinsky and Caputo (1990 cited in Hughes 1991) argue that people have an aversion to out-of-pocket costs and deductibles (e.g. x-ray, needles or ultrasound and blood test investigations), predominantly if they are to be paid at the site of care, thus resulting in dissatisfaction.

2.12.2.6 *Overall care*

The nature of different services makes it essential to distinguish between transaction-specific satisfaction and overall customer satisfaction (Bitner *et al* 1994). The overall level of customer satisfaction includes multiple service satisfaction (Bitner *et al* 1994). Boshoff and Gray (2004) established in their study on the relationships between service quality, customer satisfaction and buying intentions in the private hospital industry, specific service dimensions such as fees, nursing staff and meals were found to exert a positive influence on collective patient satisfaction. Satisfaction with regard to administration, reception and television services were rejected as things that influence customer satisfaction (Boshoff and Gray 2004).

2.13 Questionnaire design

Questionnaires are utilised to enable the gathering of information in a standardised manner, which when collected from a representative sample of a defined population allows the inference of results to the wider population. This is important when assessing the

effectiveness of care or treatment in healthcare. Research using questionnaires to obtain data has increased nationally and internationally. The key components of questionnaire development are crucial, in that the questionnaire design should include pre-planned methods to establish validity and reliability (Rattray and Jones 2007). Validity refers to whether a questionnaire is measuring what it intends to (Bryman and Cramer 1997). Demonstrating the validity of a developing measure is essential. Difficulty in interpreting results is due to poor development of the questionnaire.

Patient satisfaction questionnaires take one of two forms: they may be either episode-specific or more general in terms of the focus of the questions (Rattray and Jones 2007). Fitzpatrick (1991) examined patient satisfaction studies and concluded that questionnaires with added episode-specific content are inclined to generate more uniformly favourable responses from patients in comparison with somewhat more negative views elicited by means of generally worded questions. As a result, questionnaires tend to ask more specific focused questions rather than asking for global judgements of how satisfied the person is with the service. It was noted that the more clearly focused each question is, the easier it is to compare satisfaction with the different elements of care. Questionnaires have a tendency to be developed from more general ideology of attitude measurement (Leung 2001). In particular, numerous different items may ask about a single issue in the form of a Likert scale, each of which characteristically has five responses from 'strongly agree' to 'strongly disagree,' which has a known numerical score. The total score of all the items is taken to signify the patient's underlying thoughts. Psychometric analysis has established that Likert-summed scales are revealed to be more reliable than individual items (Rattray and Jones 2007).

Surveys are the finest source of information on patient satisfaction. The PSQ could be used as an assessment tool at other establishments which offer chiropractic training. There are many benefits to a written survey in that they are comparatively inexpensive to administer, target a wide number of people, as well as allowing the participant to complete it at their own convenience. They could be entirely anonymous and therefore confidential, removing the apprehension of responding honestly (Prakash 2010).

2.14 Conclusion

Boquiren *et al.'s* (2015) study of modern healthcare looking at patient viewpoints on their medical treatment experience has received considerable prominence, with these subjective

appraisals being viewed as valuable health outcomes. The evolution of healthcare assessment has been shaped by the growing recognition of patients as legitimate appraisers of medical services, which has directed the focus on planning, delivery and improvement. Healthcare providers increasingly demand the development of self-report questionnaires to assess patient satisfaction with their medical experience. Today, patient satisfaction ratings are a vital gauge of the efficacy, value and feasibility of healthcare services.

A valid PSQ that could be utilised in the South African chiropractic student clinic framework should therefore be established. A survey provides many benefits. They are fairly inexpensive to administer and could be used to analyse a wide number of individuals; they allow the respondent to fill it out at their own expediency; and they can be completely anonymous and confidential, therefore removing the fear of responding sincerely.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter deals with the research methodology utilised and the collection of data. The statistical analysis process is also discussed.

3.2 Research design

A quantitative research design was utilised to assess the validity and reliability of the PSQ for the DUT CDC. A quantitative design approach allows for statistical analysis, which highlights important facts from research data including differences between age groups and demographics (Ali and Bhaskar 2016).

3.3 Permission for this study

Permission to conduct this study was obtained from the Director of Research at DUT (Appendix A). Thereafter, ethical clearance (005/17) was obtained from the DUT Institutional Research and Ethics Committee (IREC) (Appendix B). Lastly, permission was obtained from the Clinic Director at the DUT CDC in relation to conducting research at the DUT CDC (Appendix C).

3.3 Study setting

The CDC represents the DUT and as it is the only institution in KwaZulu-Natal offering a chiropractic programme of study, it is important that the highest possible standards of healthcare are achieved and delivered at the DUT CDC. This study was conducted at the DUT CDC located in Berea, which has been operating since February 1993. The clinic provides a controlled, supervised environment in which the chiropractic students are able to gain the necessary practical experience prior to qualification. More importantly, it provides a service to the general population, primarily of the greater Durban area. At the DUT CDC students involved with their fifth year of academic studies are referred to as ‘fifth year interns’, while those who have completed their fifth year of academic studies and are in their sixth year are referred to as ‘sixth year interns’. In both instances, the students have not yet graduated from the institution, thus they are unqualified and therefore practice under the

supervision or a registered chiropractor. In 2017 there are both fifth and sixth year students attending to the patients who presented to the clinic between 8am and 5:30pm from Monday to Friday. The sixth year students worked in the clinic from 8am to 12:30pm whereas the fifth year students worked in the clinic from 12:30pm to 6pm after their morning lectures.

This study will provide a means for participants to give valuable feedback about their experiences at the DUT CDC. The participant satisfaction information that will be collected will enable the DUT CDC to formally assess the standard of healthcare that is offered to its participants. The PSQ's are simple, quick and inexpensive to administer. Participant satisfaction is a primary means of measuring the effectiveness of health care delivery. Areas of service that may require refining or improvement can be brought to the attention of the clinic staff and then dealt with appropriately.

The PSQ results can be also used as an assessment tool to monitor chiropractic Master's students on their achievements. Participants rate the performance of the intern's communication skills, examination skills and empathy towards their participants. As the PSQ is a formal document, it will allow the clinic management to act from a position of knowledge rather than presumption, as managing public expectations as well as resources is an important task (Glick 2009).

3.4 Participant recruitment

Copies of a pamphlet (Appendix D) were left at the DUT CDC reception area; the pamphlet contained information on the research topic, together with a brief outline of the research procedure. The researcher's contact details were included in the pamphlet so that participants who wished to volunteer could contact the researcher directly. A purposive, stratified sampling technique was utilised. Patton (2001) described these as samples within samples, or as cases that vary according to a key dimension. In this study, purposive (new participants and follow-up participants that who only filled the PSQ and RPSQ) stratified sampling which involved dividing the group into sub-groups/strata. This was communicated per e-mail by the statistician, Mr D. Singh (DUT), on 21 July 2015. The strata for this study were gender, ethnicity and age groups.

3.5 Study population

The population consisted of participants who sought treatment at the DUT CDC. This included all participants (public, students and DUT staff), except patients who were involved in other research studies.

3.6 Sample size and method

The average flow of patients in the year 2016 was obtained from the clinic director; this figure was on average 1000 patients per month. The sample size was then calculated using a 95% confidence level and a 5% margin of error; the minimum sample size was 375 patients who presented to the DUT CDC. A stratified sampling technique was utilised in the collection of data, which was communicated through e-mail by Singh in 2015. This technique was utilised in this research as it ensures the attendance of the key sub-group within the sample. With stratified sampling the researcher divided the population into separate groups (strata); for this study the strata were gender, ethnicity and age (Stratified Sampling 2009).

3.7 Phases of the study

This study consisted of three phases; a description of the processes follows.

3.7.1 Phase one

This phase involved a preliminary review of the literature on questionnaire design and conceptual frameworks that led to the development of the PSQ.

3.7.1.1 Research tools: Questionnaire development

The initial step in the development process of the survey instrument was to generate scales that reflected the potential variables which influence participant satisfaction. To achieve this, a review of the literature on questionnaire design was undertaken. According to Baxter and Jack (2008), the stage of data interpretation is referred to as the conceptual framework and this serves as an anchor for the study. An appropriate conceptual framework is drawn from the works of Zeithaml, Berry and Parasuraman (1996), Yeomens (2000) and Prakash (2010) (Appendix E). In addition, the review of literature produced a preliminary list of idea scales regarding aspects of services provided at the DUT CDC that were likely to predict participant

satisfaction. Scales included tangibles such as the physical clinic environment; accessibility or convenience; the reception staff (efficiency, assurance, listening and communication skills); the chiropractic students (care, assurance, listening and communication skills); and other elements that were anticipated including quality of care, outcome or efficacy of care and finance. A Likert-type scale was used as it presumes the intensity of experience i.e. on a range from strongly agree, agree, neutral, strongly disagree and disagree.

3.7.2 Phase two

A second questionnaire (Appendix F) was developed and run through the expert group as it was used to rate the significance of the questions on the PSQ (Appendix G). This was then utilised in the pilot study.

3.7.2.1 Expert group for the PSQ and PSRQ (Participant satisfaction rating questionnaire)

An expert group was established for the purpose of assessing face and content validity. The draft PSQ (Appendix G) and PSRQ (Appendix F) were given to the expert group to achieve face validity by analysing any discrepancies, uncertainties, ambiguity and deficiencies (Morgan 1997). Content validity was established by checking that the proposed questions measured the domains of the questionnaire; construct validity was established by identifying how well the items in the questionnaire represented the underlying conceptual structure (Morgan 1997). Ten individuals who were familiar in the areas of questionnaire design and chiropractic participant management were asked to review the draft PSQ to establish face and content validity. The participants included the clinic director of the DUT CDC, three chiropractic students conducting questionnaire studies, and participants attending the DUT CDC. The participants were approached directly and were asked to participate in the expert group.

Procedure for the expert group

The researcher contacted the potential participants to determine whether they were interested in participating in an expert group meeting. The researcher arranged all details regarding the location, time and expected duration of the expert group meeting. The location was the DUT chiropractic boardroom on 9th February 2017 at 11h00. Upon arrival the researcher welcomed all the participants of the expert group. Thereafter participants were

asked to sign the letter of information and informed consent (Appendix H) and code of conduct statement (Appendix I). Any questions from the participants of the expert group were answered at that stage, prior to completion of all the documents. Upon completion, the documents were collected by the researcher. The researcher informed the participants that at any point a participant of the group could raise a question with regard to any matter on the research or procedure of the meeting. The researcher informed participants that all comments regarding the validity of each statement, structure, content and wording of the PSQ would be equally valid and required discussion and unanimous agreement in order for a change to be made to the questionnaire. Notes were taken by the researcher regarding recommendations made by the expert group participants. Once the PSQ had been reviewed, the review of the PSRQ began. The same group assessed the face and content validity of the RPSQ. Upon completion of the expert group meeting, the participants were thanked and offered refreshments.

Outcomes of Expert groups

The pilot PSQ questionnaire (Appendix J) and the RPSQ (Appendix K) were developed according to the recommendations and alterations made during the expert group discussion, as noted below:

- Objective two should be removed as it does not apply to the study.
- In the demographics table the following should be added:
    - Name of intern is replaced with year of intern, i.e. 5th year or 6th year.
    - Occupation.
    - Medical aid.
    - Primary source of income.

There needed to be more statements under each sub-section for the RPSQ.

- *Tangibles:* the additional statements that were recommended in this section:

    - The clinic hours of operation are suitable.
    - The clinic met my hygiene expectations.
    - The clinic has facilities for disabled participants.
    - The waiting area at the clinic is comfortable.

- The clinic has adequate security.
- The clinic has appropriate toilet facilities.

- *Reception staff*: the following statements were recommended for inclusion:
  - The clinic staff inform me of potential delays in my appointment.
  - The reception staff explained to me the possible time duration for my consultation.

- *Intern:* the inclusion of the following statements was recommended:
  - The intern is thorough in the examination.
  - The intern explained my treatment plan.
  - The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.
  - The intern gives me advice on exercise and nutrition.
  - The intern gives me advice on how to prevent health problems from recurring.
  - The intern is dressed neatly and professionally.
  - The intern is punctual.
  - The intern made me feel comfortable during the assessment.
  - The intern spent sufficient time with me during my treatment session.
  - I prefer a female intern treating me.
  - I prefer a male intern treating me.

- *Quality of care:* the following statements were recommended for inclusion:
  - The intern is confident.
  - The care I received was of a high standard.
  - The quality of care I received met my expectations.
  - The intern ensured that I made an informed decision when agreeing to my treatment.
  - The intern made me feel important at all times.

- *Finance:* the statements that were recommended for inclusion were:
  - My medical aid/insurance provides full coverage for the cost of my care.
  - A fee reduction option was offered to me as I fulfilled the criteria for it.

- *Overall satisfaction:* the statements that were recommended for inclusion were:
  - The intern answered all of my questions.

- I would recommend chiropractic treatment and the DUT CDC to a friend or relative.
- I felt that the intern did everything possible to help me.

It was further recommended that participants should fill out the PSQ to see if the tool would work, as well as the RPSQ. This would assist as to what could be added or left out in the final questionnaire. In the PSQ regarding the 'expectation versus received' columns, it was suggested that it would be better to delete the expectation column as it may confuse the participant and skew the results. A further recommendation was that the design of the PSQ should be changed, from a landscape to a portrait orientation.

3.7.2.4 Pilot study

A pilot study is a preliminary or trial run of a larger study that is conducted in preparation for the main study, in order to determine the feasibility of the research tool (Hassan, Schattner and Mazza 2006). The aim of the pilot study was to determine if the sample population could relate to the questionnaire, and also to identify items that lacked clarity or that may not be appropriate for, or discriminate, between participants (Hassan, Schattner and Mazza 2006). There was a minimum of three participants. The researcher directly approached participants who met the inclusion criteria at the clinic and were willing to participate in the pilot study, and handed out the letter of information and consent forms (Appendix L). Subsequently the PSQ and RPSQ were distributed and the participants were requested to complete the two questionnaires.

3.7.2.5 Inclusion criteria

The following criteria were taken into consideration for this study:

- Participants who were included in the study were in the age group of eighteen years and older who presented for treatment to the DUT CDC.
- Only participants who spoke and were literate in English as a first or second language were included. Prospective participants were therefore identified through their reading, comprehension of, and subsequent signing of the consent form. The denotation of phrases and combination of words may be unclear due to interpretation despite accurate translation into another language (Scollen and Scollen 1995). The meaning may also be lost when words were taken out of context and this could take place between diverse cultures (Baynham 1995).

- Only participants who comprehended the letter of information and consent as well as signed the informed consent form (Appendix L) were included. This was confirmed by the researcher asking questions to see if participants understood the documents. The researcher asked two questions: 1) Do you understand what the letter of information and consent means?; and 2) Please can you tell me in your own words? The first question should elicit a 'Yes' response and the second question should elicit a fair explanation from the participant.
- All new and follow-up participants were eligible for the study.

3.7.2.6 Exclusion criteria:

The following criteria were taken into consideration for those participants who did not qualify for this study:

- Participants who were unable to understand what was contained in the letter of information as well as the letter of consent (Appendix L).
- Participants who participated in the expert group.

3.7.2.7 Comments from the Pilot group:

The pilot PSQ questionnaire (Appendix J) and the RPSQ (Appendix K) were realigned and amended according to the recommendations and alterations made during the expert group discussion. Participants completed both the PSQ and RPSQ, as completing the PSQ gave them a better understanding of how to answer the RPSQ. Participants said both were easy to complete.

3.7.3 Phase three

This phase involved handing out the PSQ (Appendix M) and the RPSQ (Appendix N) to participants attending the DUT CDC.

3.7.3.2 Main Study

Inclusion criteria

The following criteria were taken into consideration for this study:

- Participants who were included in the study were in the age group of eighteen years and older who presented for treatment to the DUT CDC.
- Only participants who spoke and were literate in English as a first or second language were included. Prospective participants were therefore identified through their reading, comprehension and subsequent signing of the consent form. The meaning of phrases and combination of words may be unclear due to interpretation despite accurate translation into another language (Scollen and Scollen 1995). Meaning may also be lost when words are taken out of context, and this can take place between diverse cultures (Baynham 1995).
- Only participants who read and understood the letter of information and consent and signed the informed consent form (Appendix O) were included. This was confirmed by the researcher asking questions to see if participants understood the documents. The researcher asked two questions: 1) Do you understand what the letter of information and consent means?; and 2) Please can you tell me in your own words? The first question should elicit a 'Yes' response and the second question should elicit a fair explanation from the participant.
- All new and follow-up participants were eligible for the study.

3.7.3.3 Exclusion criteria:

The following criteria were taken into consideration for those participants who did not qualify for this study:

- Participants who were unable to understand what was contained in the letter of information and/or the letter of consent.
- Participants who participated in the expert and/or pilot groups.

3.7.3.4 Research procedure

The following research procedure was utilised for the study:

- This study was conducted at the DUT CDC situated in Berea, Durban, which has been in operation since February 1993.
- Following DUT IREC approval, the researcher approached the participants in the clinic reception area after they completed their consultation and treatment.
- Copies of a pamphlet (Appendix C) which contained information on the research topic, together with a brief outline of the research procedure were left in the DUT

CDC reception area. Participants who wished to volunteer could contact the researcher directly, as contact details were included in the pamphlet.

- The researcher explained the procedure to each participant verbally. Following the verbal explanation, the participant was handed a letter of information and informed consent (Appendix K) which outlined the research. The researcher asked two questions: 1) Do you understand what the letter of information and consent means?; and 2) Please can you tell me in your own words? The first question should elicit a 'Yes' response and the second question should elicit a fair explanation from the participant.
- Any queries or issues that the participant may have had pertaining to the research were answered by the researcher, thereafter the informed consent form (Appendix K) was signed by the participant for agreeing to participate in the study.
- There was no coercion from the researcher, which allowed participation in the study to be completely voluntary.
- The questionnaires were all coded and had no names written on them, in order to maintain anonymity. A database of the participants was compiled from the informed consent forms (Appendix I)
- The researcher collected data from consenting participants at the DUT CDC by means of a questionnaire (Appendix E). Based on the participant's preference, the questionnaire was completed either in the reception area or a private room.
- A stratified sampling method was used to divide the research population into different groups called strata. For purposes of this study, the strata were gender (male: 198; female: 202), ethnicity (Black: 96, Coloured: 23, Indian: 122; White: 159) and age (zero-30: 145; 30-60: 198; 60-90: 57). The researcher used Appendix J (Post expert group PSQ) to tick off the numbers required to meet each sub-group.
- Once the forms were completed they were placed into the sealed box. A ballot box system was utilised in order to maintain anonymity.
- In order to protect the participants' anonymity and to maintain confidentiality, the completed questionnaires were viewed only by the researcher and supervisors. All information gathered will be securely kept/stored for five years on the university's premises, before being discarded through shredding (hard copies) and deletion (electronic data).

3.8 Measurement frequency

Both the PSQ and RPSQ questionnaires were administered to and collected from the participants on the same day and no further tests or questionnaires were administered thereafter.

3.9 Statistical analysis

Once the data was collected, descriptive statistics were drawn using the statistical software IBM SPSS version 24. The data was represented by means of graphs, bar graphs and tables for visual communication. The nominal data (categorical data) was for the variables of gender, age group and race group. The ordinal measurements were for the responses on the Likert scale, measured from 1 to 5 for responses 'strongly agree' to 'strongly disagree'. In order to determine whether the PSQ differentiated between different user groups (e.g. males versus females, or age groups), comparisons were made by using cross tabulations of two variables of interest, for example gender versus response to question. The chi-square test for independence was employed to test whether there were any significant associations between variables. More specifically, the chi-square test was applied to see if there were differences in the responses to questions for gender and race groups. The level of significance was set at 5%. A p value of < 0.05 was considered statistically significant per the e-mail communication with the statistician, Singh, in 2016.

3.10 Ethical considerations

To maintain anonymity participants were approached prior to the study and the study was explained to them. Upon data collection a letter of information and consent form was given to the participants before filling out the questionnaire. All questionnaires were kept separate from the letters of information and informed consent through the use of sealed boxes, so as to maintain anonymity for the participants. The researcher did not discriminate with regard to race, age (participants who were approached were eighteen years or older), and gender of participants. In maintaining justice, participating in the study was voluntary. Any participant wishing to withdraw from the study at any point was permitted to do so, which allowed autonomy. The study was conducted by a self-administered questionnaire in keeping with the principle of non-malfeasance. The questions asked were of low risk to the participants.

The participants were under no harm but participation benefited them by making improvements to the overall clinic service in keeping with the principle of beneficence.

Every patient included in this study was given a fair and equal chance to express their views and opinions free from discrimination in accordance with the principle of justice. All documents related to the research were kept safe and secure in a cabinet throughout data collection, recording, analysis and reporting, and could only be accessed by the researcher. Subsequently, the documents will be stored in the Chiropractic Programme at DUT CDC for a period of five years before the documents are shredded.

CHAPTER FOUR

RESULTS

This chapter presents the results obtained from the data collected in this study.

4.1 Sample Size and Response Rate

The total sample size needed for this study was 375. In total 430 questionnaires were Administered, which gave a response rate greater than 100%; of the 430 only 400 were analysed as completed questionnaires. The remaining 30 questionnaires were incomplete i.e. missing signatures barring permission and incomplete questionnaires.

4.2 Demographics

The following is a report on the demographics of the participants attending the DUT CDC which included gender, age, ethnicity, visit, area of complaint, occupation, year of intern, primary income and medical aid.

4.2.1. Gender

The male to female ratio was approximately 1:1. Of the 400 participants who participated in the study, 202 (50.5%) were male and 198 (49.5%) were female (**Table 4.1**).

Table 4.1: Gender

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	f	198	49.5	49.5	49.5
	m	202	50.5	50.5	100.0
	Total	400	100.0	100.0	

4.2.2 Age

Age groups were categorised according the following system: ‘1’ refers to 0 to 30 years; ‘2’ refers to 30 to 60 years; and ‘3’ refers to 60 to 90 years (**Table 4.2**). The majority (49.5%) of participants attending the DUT CDC were shown to be between the ages of 30 and 60 years.

Table 4.2: Participants age

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	145	36.3	36.3	36.3
	2	198	49.5	49.5	85.8
	3	57	14.3	14.3	100.0
	Total	400	100.0	100.0	

4.2.3 Ethnicity

The ethnicity of the participants at the DUT CDC is indicated in **Table 4.3**. The results showed that the majority of the participants were White (39.8%), followed by Indian (30.5%), Black (24%) and Coloured (5.8%).

Table 4.3: Ethnicity

Race					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	B	96	24.0	24.0	24.0
	C	23	5.8	5.8	29.8
	I	122	30.5	30.5	60.3
	W	159	39.8	39.8	100.0
	Total	400	100.0	100.0	

4.2.4 Visit

The percentage of participants on their initial or follow-up visit at the DUT CDC is shown in **Table 4.4**. It could be seen that there were 62% follow-up visits, 36.3% new patients and 1.8% did not indicate either option.

Table 4.4: Participants initial or follow up visit

Visit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.	7	1.8	1.8	1.8
	FU	248	62.0	62.0	63.8
	NP	145	36.3	36.3	100.0
	Total	400	100.0	100.0	

4.2.5 Area of complaint

Table 4.5 indicates the anatomical area of the main complaint of the participants at the DUT CDC. The majority of complaints were reported to be spinal (52%), extremity (28%), both spinal and extremity (14.5%); 5.3% of participants did not fill out this question.

Table 4.5: Area of complaint

Areas of complaint					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.	21	5.3	5.3	5.3
	B	58	14.5	14.5	19.8
	E	113	28.3	28.3	48.0
	s	208	52.0	52.0	100.0
	Total	400	100.0	100.0	

4.2.6 Occupation

The below information (**Table 4.6**) revealed the diversity of occupations attending the DUT CDC.

Table 4.6: Occupation

Occupation				
	Frequency	Percent	Valid Percent	Cumulative Percent
Therapist	1	.3	.3	.5
.	111	27.8	27.8	28.3
AC executive	1	.3	.3	28.5
Accountant	3	.8	.8	43.3
Admin	27	6.8	6.8	35.8
Architect	1	.3	.3	36.0
Assistant	1	.3	.3	36.3
Athlete	3	.8	.8	37.0
Attorney	1	.3	.3	37.3
Banker	1	.3	.3	37.8
Biotechnology	1	.3	.3	38.0
Business development mentor	1	.3	.3	38.3
Cashier	1	.3	.3	38.5
Chef	3	.8	.8	39.3
Coach	8	1.8	1.8	41.0
Consultant	6	1.5	1.5	42.5
Designer	3	.8	.8	43.3

Director	1	.3	.3	43.5
Doctor	1	.3	.3	43.8
Driver	1	.3	.3	44.0
Education specialist	4	1.0	1.0	45.0
Geologist	1	.3	.3	46.3
Hairdresser	1	.3	.3	46.5
Housewife	11	2.8	2.8	49.3
In-service trainee	1	.3	.3	49.5
Inspector	1	.3	.3	49.8
Journalist	2	.5	.5	50.3
Language consultant	1	.3	.3	50.5
Lecturer	6	1.5	1.5	52.0
Manager	19	4.8	4.8	56.8
Mechanic	1	.3	.3	57.0
Media	1	.3	.3	57.3
Musician	1	.3	.3	57.5
Nurse	2	.5	.5	58.0
Painter	2	.5	.5	58.0
Paramedic	2	.5	.5	58.8
Pensioner	9	2.3	2.3	61.0
Pharmacist	1	.3	.3	61.3
Photographer	2	.5	.5	61.8
Police	2	.5	.5	62.3
Real estate agent	1	.3	.3	62.8
Researcher	2	.5	.5	58.0
Retired	20	5.0	5.0	68.3
Sales	10	2.5	2.5	70.8
Self employed	23	5.8	5.8	76.5
Social worker	1	.3	.3	76.8
Spiritual guide	2	.5	.5	77.3
Student	59	14.8	14.8	92.0
Teacher	6	1.5	1.5	52.0
Technician	19	4.8	4.8	56.8
Town planner	1	.3	.3	97.5
Unemployed	8	2.0	2.0	99.5
Waitress	1	.3	.3	99.8
Wedding planner	1	.3	.3	100.0
Total	400	100.0	100.0	

4.2.7 Year of intern

Table 4.7 indicates the level of qualification of students at the DUT CDC. The majority of participants were treated by sixth year interns (40%), 33% of participants did not fill in this section, and 26.3% of respondents were treated by fifth year interns.

Table 4.7: Year of intern

		Year of intern			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.	135	33.8	33.8	33.8
	fifth	105	26.3	26.3	60.0
	sixth	160	40.0	40.0	100.0
	Total	400	100.0	100.0	

4.2.8 Primary income

The main source of income for the participants at DUT CDC is shown in **Table 4.8**. The majority of participants were: employed full-time (39.8%); students (15.8%); retired (11.5%); self-employed (11%); unemployed (9%); participants who did not fill in this question (6.5); employed part-time (5.8%); and medically boarded (0.5%).

Table 4.8: Participants primary income

		Primary income			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.	26	6.5	6.5	6.5
	EF	159	39.8	39.8	46.3
	EP	23	5.8	5.8	52.0
	MB	2	.5	0.5	52.5
	r	46	11.5	11.5	64.0
	s	63	15.8	15.8	79.8
	SE	44	11.0	11.0	90.8
	SF	1	.3	0.3	91.0
	u	36	9.0	9.0	100.0
	Total	400	100.0	100.0	

4.2.9 Medical aid

Table 4.9 indicates whether participants have medical aid or not. A slight majority of participants have medical aid (49%), 47.5% do not have medical aid and 3.5% of participants did not fill this in.

Table 4.9: Participants who have medical aid and those who do not.

		Medical aid			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.	14	3.5	3.5	3.5
	n	190	47.5	47.5	51.0
	y	196	49.0	49.0	100.0
	Total	400	100.0	100.0	

4.3 Reliability testing for the Patient Satisfaction Questionnaire

For the internal factor, Cronbach α was .95 and the SEM of the mean score was 0.20. Cronbach α for the external factor was .90, and the SEM of the mean score was 0.5 (**Table 4.10).**

Table 4.10: Reliability testing of the Patient Satisfaction Questionnaire

		N	%
Cases	Valid	398	99.5
	Excluded[a]	2	.5
	Total	400	100.0

a. Listwise deletion based on all variables in the procedure.

4.4 Results from the patient rating questionnaire

4.4.1 Gender

Participants used a Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant) to rate the significance of having gender in the PSQ. The majority of participants indicated it would be very relevant (59.4%), relevant (23.5%), somewhat relevant (8%) and not relevant (9%) (**Table 4.11**).

Table 4.11: Participants rating the significance of gender inquiry

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	36	9.0	9.0	9.0
	2	32	8.0	8.0	17.0
	3	94	23.5	23.6	40.6
	4	237	59.3	59.4	100.0
	Total	399	99.8	100.0	
Missing	System	1	.3		
Total		400	100.0		

4.4.2 Age

The majority of participants indicated it would be very relevant (63.3%), relevant (21.3%), not relevant (7%) and somewhat relevant (8.5%) (**Table 4.12**).

Table 4.12: Participants rating the significance of age inquiry

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	34	8.5	8.5	8.5
	2	28	7.0	7.0	15.5
	3	85	21.3	21.3	36.8
	4	253	63.3	63.3	100.0
	Total	400	100.0	100.0	

4.4.3 Ethnicity

The majority of participants indicated it would be very relevant (50%), not relevant (25.3%), relevant (13.5%) and somewhat relevant (11.3%) (**Table 4.13**).

Table 4.13: Participants rating the significance of ethnicity inquiry

Race					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	101	25.3	25.3	25.3
	2	45	11.3	11.3	36.5
	3	54	13.5	13.5	50.0
	4	200	50.0	50.0	100.0
	Total	400	100.0	100.0	

4.4.4 Visit

The majority of participants indicated it would be very relevant (63.3%), relevant (23.8%), not relevant (6.5%) and somewhat relevant (5.8%) (**Table 4.14**).

Table 4.14: Participants rating the significance of visit inquiry

Visit					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	6.5	6.5	6.5
	2	23	5.8	5.8	12.3
	3	95	23.8	23.8	36.1
	4	255	63.8	63.9	100.0
	Total	399	99.8	100.0	
Missing	System	1	.3		
Total		400	100.0		

4.4.5 Area of complaint

The majority of participants indicated it would be very relevant (70.5%), relevant (17.3%), not relevant (6.8%) and somewhat relevant (4.8%) (**Table 4.15**).

Table 4.15: Participants rating the significance of area of complaint

Area of main complaint					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	27	6.8	6.8	6.8
	2	19	4.8	4.8	11.6
	3	69	17.3	17.4	29.0
	4	282	70.5	71.0	100.0
	Total	397	99.3	100.0	

4.4.6 Occupation

Most participants indicated it would be very relevant (56%), relevant (19.8%), not relevant (12.3%) and somewhat relevant (12%) (**Table 4.16**).

Table 4.16: Participants rating the significance of occupation

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	49	12.3	12.3	12.3
	2	48	12.0	12.0	24.3
	3	79	19.8	19.8	44.0
	4	224	56.0	56.0	100.0
	Total	400	100.0	100.0	

4.4.7 Year of the intern

The majority of participants indicated it would be very relevant (58.8%), relevant (20.3%), not relevant (11%) and somewhat relevant (10%) (**Table 4.17**).

Table 4.17: Participants rating the significance of year of intern

Year of Intern					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	44	11.0	11.0	11.0
	2	40	10.0	10.0	21.0
	3	81	20.3	20.3	41.3
	4	235	58.8	58.8	100.0
	Total	400	100.0	100.0	

4.4.8 Primary income

The majority of participants indicated it would be very relevant (48.8%), not relevant (24.5%), relevant (14.8%) and somewhat relevant (12%) (**Table 4.18**).

Table 4.18: Participants rating the significance of primary income in the PSQ

Primary income					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	98	24.5	24.5	24.5
	2	48	12.0	12.0	36.5
	3	59	14.8	14.8	51.3
	4	195	48.8	48.8	100.0
	Total	400	100.0	100.0	

4.4.9 Medical Aid

The majority of participants indicated it would be very relevant (51%), relevant (18%), not relevant (16.8%) and somewhat relevant (14.3%) (**Table 4.19**).

Table 4.19: Participants rating the significance of medical aid in the PSQ

Medical Aid					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	67	16.8	16.8	16.8
	2	57	14.3	14.3	31.0
	3	72	18.0	18.0	49.0
	4	204	51.0	51.0	100.0
	Total	400	100.0	100.0	

4.5.1 Tangibles

These statements explore the clinic settings and the environment that the participants perceived the clinic to be in. These statements deal with factors such as safety and hygiene, comfort and accessibility.

Statement one (AT1): The clinic facilities are visually appealing.

The majority of participants indicating yes (98.8%) and no (1.3%).

Statement two (AT2): The waiting area has enough seating.

The majority of participants indicating yes (99%) and no (1%).

Statement three (AT3): There is adequate parking.

The majority of participants indicating yes (92.5%) and no (7.3%).

Statement four (AT4): The clinic hours of operation are suitable.

The majority of participants indicating yes (97.5%) and no (2.5%).

Statement five (AT5): The clinic met my hygiene expectations.

The majority of participants indicating yes (99.3%) and no (0.8%).

Statement six (AT6): The clinic has facilities for disabled patients.

The majority of participants indicating yes (99%) and no (1%).

Statement seven (AT7): The waiting area at the clinic is comfortable.

The majority of participants indicating yes (98.8%) and no (1.3%).

Statement eight (AT8): The clinic has adequate security.

The majority of participants indicating yes (98.8%) and no (1.3%).

Statement nine (AT9): The clinic has appropriate toilet facilities.

The majority of participants indicating yes (98.5%) and no (1.5%) (**Table 4.20**).

Table 4.20: Tangibles

RPSQ		Yes		No
AT1	%	98.8		1.3
	total		400	
	Missing		0	
AT2	%	99		1.0
	Total		400	
AT3	%	92.5		7.3
	Total		400	
	Missing		0	
AT4	%	97.5		2.5
	Total		400	
	Missing		0	
AT5	%	99.3		0.8
	Total		400	
	Missing		0	
AT6	%	99		1.0
	Total		400	
	Missing		0	
AT7	%	98.8		1.3
	Total		400	
	Missing		0	
AT8	%	98.3		1.8
	Total		400	
	Missing		0	
AT9	%	98.5		1.5
	Total		400	
	Missing		0	

4.5.2 Reception

The below statements dealt with the clinic reception and waiting area and will be discussed together.

Statement one (BR1): The reception staff are friendly and courteous.

The majority of participants indicating yes (98.5%) and no (1.5%).

Statement two (BR2): The reception staff are helpful in making an appointment over the phone.

The majority of participants indicating yes (99%) and no (1%).

Statement three (BR3): The reception staff attend to me promptly.

The majority of participants indicating yes (98.8%) and no (1.3%).

Statement four (BR4): The reception staff treat me with dignity and respect.

The majority of participants indicating yes (98.8%) and no (1.3%).

Statement five (BR5): The clinic staff inform me of potential delays in my appointment.

The majority of participants indicating yes (97.5%) and no (2.5%).

Statement six (BR6): The reception staff explained to me the possible time duration for my consultation.

The majority of participants indicating yes (97.3%) and no (2.8%) (**Table 4.21**).

Table 4.21: Reception

RPSQ		Yes	No
BR1	%	98.5	1.5
	Total	400	
	Missing	0	
BR2	%	99	1.0
	Total	400	
	Missing	0	
BR3	%	98.8	1.3

	Total		400	
BR4	%	98.8		1.3
	Total		400	
	Missing		0	
BR5	%	97.5		2.5
	Total		400	
	Missing		0	
BR6	%	97.3		2.8
	Total		400	
	Missing		0	

4.5.3 Chiropractic Intern

The following statements relate to the interaction of the chiropractic student/intern and the respondent.

Statement one (CI1): The intern is polite.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement two (CI2): The intern makes me feel at ease.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement three (CI3): The intern is attentive.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement four (CI4): The intern is thorough in the examination.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement five (CI5): The intern explained my condition.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement six (CI6): The intern explained my treatment plan.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement seven (CI7): The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement eight (CI8): The intern gives me advice on exercise and nutrition.

The majority of participants indicating yes (99%) and no (1%).

Statement nine (CI9): The intern gives me advice on how to prevent health problems from recurring.

The majority of participants indicating yes (99%) and no (1%).

Statement ten (C10): The intern is dressed neatly and professionally.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement eleven (C11): The intern is punctual.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement twelve (CI12): The intern made me feel comfortable during the assessment.

The majority of participants indicating yes (99%) and no (1%).

Statement thirteen (CI13): The intern spent sufficient time with me during my treatment session.

The majority of participants indicating yes (99%) and no (1%).

Statement fourteen (C14): I prefer a female intern treating me.

The majority of participants indicating yes (58%) and no (42%).

Statement fifteen (CI15): I prefer a male intern treating me.

The majority of participants indicating yes (57%) and no (43%) (**Table 4.22**).

Table 4.22: Chiropractic Intern

		Yes	No
CI1	%	99.5	0.5
	Total	400	
CI2	%	99.8	0.3
	Total	400	
CI3	%	99.8	0.3
	Total	400	
CI4	%	99.8	0.3
	Total	400	
CI5	%	99.5	0.5
	Total	400	
CI6	%	99.8	0.3
	Total	400	
CI7	%	99.5	0.5
	Total	400	
	Missing	0	
CI8	%	99	1.0
	Total	400	
	Missing	0	
CI9	%	99	1.0
	Total	400	
	Missing	0	
CI10	%	99.5	0.5
	Total	400	
CI11	%	99.5	0.5
	Total	400	
	Missing	0	
CI12	%	99	1.0
	Total	400	
CI13	%	99	1.0
	Total	400	
CI14	%	58	42
	Total	400	
	Missing	0	
CI15	%	57	43
	Total	400	
		0	

4.5.4 Quality of care

The following section deals with perception of overall care the respondent experienced.

Statement one (DQ1): The intern is knowledgeable

The RPSQ majority of participants indicating yes (99.8%) and no (0.3%).

Statement two (DQ2): The intern is confident.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement three (DQ3): The care I received was of a high standard.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement four (DQ4): Improvements in my condition took longer than I expected.

The majority of participants indicating yes (85.2%) and no (14.3%).

Statement five (DQ5): The quality of care I received met my expectations.

The majority of participants indicating yes (98.5%) and no (1.5%).

Statement six (DQ6): The intern ensured that I made an informed decision when agreeing to my treatment.

The majority of participants indicating yes (98.8%) and no (1.3%).

Statement seven (DQ7): My intern made me feel important at all times.

The majority of participants indicating yes (98.5%) and no (1.5%) (**Table 4.23**).

Table 4.23: Quality of care

		Yes		No
DQ1	%	99.8		0.3
	Total		400	
DQ2	%	99.5		0.5
	Total		400	
DQ3	%	99.5		0.5
	Total		400	
DQ4	%	85.2		14.3
	Total		398	
	Missing		2	
DQ5	%	98.5		1.5
	Total		400	
	Missing		0	
DQ6	%	99.5		0.5
	Total		400	
	Missing		0	
DQ7	%	98.5		1.5
	Total		400	
	Missing		0	

4.5.5 Finance

The statements below dealt with finances and medical aid, and will be discussed in this section together.

Statement one (EF1): The medical attention I received is affordable.

The majority of participants indicating yes (98.3%) and no (1.3%).

Statement two (EF2): Sometimes I do not seek treatment at the DUT CDC because I cannot afford the consultation fees.

The majority of participants indicating yes (74.3%) and no (25.8%).

Statement three (EF3): The consultation fees are reasonable.

The majority of participants indicating yes (73%) and no (27%).

Statement four (EF4): My medical aid/insurance provides full coverage for the cost of my care

The majority of participants indicating yes (53.1%) and no (46.9%).

Statement five (EF5): A fee reduction option was offered to me as I fulfilled the criteria for it.

The majority of participants indicating yes (53.1%) and no (46.9%) (**Table 4.24**).

Table 4.24: Finance

		Yes		No
EF1	%	98.3		1.3
	Total		400	
EF2	%	74.3		25.8
	Total		400	
	Missing		0	
EF3	%	73		27
	Total		400	
EF4	%	53		47
	Total		397	
	Missing		3	
EF5	%	53.1		46.9
	Total		399	
			1	

4.5.6 Overall satisfaction

The following section deals with statements regarding perception of overall care the respondent experienced.

Statement one (FO1): The healthcare issue that brought me to the DUT CDC was addressed to my satisfaction.

The majority of participants indicating yes (99.5%) and no (0.5%).

Statement two (FO2): I would recommend this intern to a friend or relative.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement three (FO3): Overall, I was pleased with the service that I received from the DUT CDC.

The majority of participants indicating yes (99%) and no (1%).

Statement four (FO4): The intern answered all of my questions.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement five (FO5): I would recommend chiropractic treatment and the DUT CDC to a friend or relative.

The majority of participants indicating yes (99.8%) and no (0.3%).

Statement six (FO6): I felt that the intern did everything possible to help me.

The majority of participants indicating yes (99.8%) and no (0.3%) (**Table 4.25**).

Table 4.25: Overall care

		Yes	No
FO1	%	99.5	0.5
	Total	400	
	Missing	0	
FO2	%	99.8	0.3
	Total	400	
FO3	%	99	1.0
	Total	400	
FO4	%	99.8	0.3
	Total	400	
FO5	%	99.8	0.3
	Total	400	
FO6	%	99.8	0.3
	Total	400	

CHAPTER FIVE

DISCUSSION

This chapter presents a discussion based on the results indicated in chapter four.

5.1 Demographics

This section discusses the demographics of the DUT CDC.

5.1.1 Age

Studies in community based public clinics by Hitge (2014) concluded that the elderly population presents most often for treatment. This contrasted with the results of this study, showing that the majority of participants were found to be in the 30 to 60-year-old age group (49.5%). This contrasted with studies undertaken in private chiropractic settings (Sorensen *et al.* 2006; Mootz *et al.* 2005), as the age groups of patients in the private sector differed in that they were younger.

Patient age was associated with the interpersonal style between the intern and participant, which in turn was associated with patient satisfaction (Peck 2011). In relation to this study, the majority of participants agreed that age is a valid question and should be included in the final PSQ (**Table 4.13**). Age is an important factor in the outcomes of patient satisfaction. This is justified by Tucker (2002) who stated younger patients were more associated with being dissatisfied, whilst Grogan *et al*. (2000) concluded that older people are generally more satisfied with medical care than younger people.

5.1.2 Gender

It is more common for females to experience health-related problems and injuries when compared with males (Cunningham, Boult and Popenoe 1997). As a result, females are more likely to recognise signs of illness, seek treatment and utilise health services (Popenoe *et al.* 1997 cited in Higgs 2009). This is further supported by a study which considered the demographics of patients utilising chiropractic services in Australia (French *et al.* 2013). The results showed that more females (67%) visited chiropractic clinics compared with males (33%). These findings collectively differ from the results of this study, where 50.5% of the participants were male and 49.5 % were female (**Table 4.1**).

Gender has a significant effect on patient satisfaction (Anand and Sinha 2010). Kamra, Singh and Kumar De (2016) concluded that female respondents reported considerably higher satisfaction. The majority of participants (59.3%) in the study agreed that gender is a valid question and should be included in the final PSQ

5.1.3 Ethnicity

Results gathered by a local study (Mahomed 2007) concluded that ethnic groups of patients preferred private practice to a teaching clinic, and showed that White patients (75.66%) were four times more likely than Indian patients (15.93%) to attend a private practice. A very small percentage of Black (3.54%) and Coloured (3.98%) patients chose to attend a private practice (Mahomed 2007). This is pertinent as it is in line with the results from this study showing the major proportion of results indicating that the largest population attending the DUT CDC were Whites (39.8%), then Indians (30.5%), followed by Blacks (24%), with the least being Coloureds (5.8%) (**Table 4.3**). This was in contrast with the ethnic demographic in the greater Durban area, which indicates that the Black population comprises the largest percentage (Lehohla 2012). The majority of participants indicated it would be very relevant (50%) and the remaining half had mixed feelings towards the inclusion of ethnicity in the final PSQ, as some thought it was not relevant (25.3%), relevant (13.5%) and somewhat relevant (11.3%) (**Table 4.14**).

5.1.4 Visit

Privately based chiropractic treatment is often quite expensive and could limit the number of follow-up visits (Mahomed 2007). Patients with a lower socio-economic status may be further affected and have a reduced rate of ongoing chiropractic treatment (Myburgh and Mouton 2007). The DUT CDC is open to any member of the public with the cost of chiropractic treatment at the DUT CDC being one-third of the price when compared with private practice. This may result in an increase in the number of follow-up visits and possibly increase the referral of patients to these clinics, which may ultimately increase the patients' satisfaction of the clinics and the profession as well as create an increased awareness and knowledge of chiropractic (Rieder 2016). This was corroborated by the results of this study, which show that the majority of patients attending the DUT CDC were follow-up patients (62%) by comparison with new patients (36.3%).

The rate of follow-up patients (62%) in this study strongly indicates that they were satisfied with the care received in their previous consultation and have returned for additional care.

Through advertising and marketing of the clinic in the media, as well as by word-of-mouth communication, patients were made aware of the chiropractic services offered. Bearing this in mind, 63.8% of the participants strongly indicated that asking about whether the patient is new or a follow-up should be included in the final PSQ.

5.1.5 Area of complaint

International studies which investigated the area of complaints at private chiropractic clinics have shown low back pain being the most common (Mootz *et al.* 2005; Coulter and Shekelle 2005); the rest were noted to be musculoskeletal in origin. This was confirmed by the anatomical area of the main complaint of the participants at the DUT CDC. The majority of reported complaints were spinal (52%), extremity (28%) or both spinal and extremity (14.5%). The majority of participants indicated that it would be very relevant (70.5%) to have the area of complaint included in the final PSQ.

5.1.6 Occupation

The occupation profile of patients attending the DUT CDC revealed a diversity of job profiles (**Table 4.6**). Mahomed (2007) compared South African private practice with the DUT CDC and concluded that there are considerably more students who presented as patients, while private practice sees greater numbers of executives and clerical/liberal (e.g. lawyers) professionals. This was in line with the results of this study which found that (14.8%) of participants were students who were patients. This may be explained by the location of DUT CDC being more convenient for students and the fee reduction offered to DUT students (R50). Additionally, chiropractic students are not charged for being treated at DUT CDC. With regard to professionals attending at the DUT CTC, these were noted as admin (6.8%), technician (4.8%), sales professionals (2.5%) and teachers (1.5%).

A patient's occupation may affect the presenting complaints in terms of biomechanics, stress levels and other psychological factors, and/or financial factors such as access to healthcare (Higgs 2009). Occupation has a positive influence on patient satisfaction (Park and Seo 2014). Taking this into account, 56% of the participants strongly indicated that asking about occupation was needed in the final PSQ.

5.1.7 Year of intern

Most of the participants (66.2%) were able to correctly identify their interns as being either sixth year or fifth year students. Only a small number (33.8%) were unaware of the year of the intern treating them. This indicates a good level of doctor-patient engagement, resulting in a good doctor-patient relationship, as the participants knew, had asked or been informed about the intern's year of study. Where there is a good doctor-patient relationship (Hughes 1991; Verhoef Page and Waddell 1997), levels of satisfaction could be favourably affected at the clinic. In line with this, the majority of participants (58.8%) in this study favoured the year of the intern question being included in the final PSQ.

5.1.8 Primary income

Mummalaneni and Gopalakrishna (1995) found that income was the only socio-demographic characteristic to have an influence on patient satisfaction in a study which included socio-demographic characteristics such as age, gender, occupation, employment status, education and income. It was revealed that only income had an influence on patient satisfaction, that is, the upper income customers were more concerned with factors such as personal health delivery as well as answers they receive to medical queries. This was compared with lower income consumers who were more concerned with the costs involved and the overall physical facilities, thus indicating value orientation. The majority of participants in this study were employed full-time (39.8%); students (15.8%); retired (11.5%); self-employed (11%); unemployed (9%); participants who did not fill in this question (6.5%); employed part-time (5.8%); and medically boarded (0.3%). This is in keeping with the results of this study, with the majority of participants indicating that it would be very relevant (48.8%) to include the question on primary income in the final PSQ.

5.1.9 Medical aid

Whilst only 16% of the country subscribes to medical aid schemes, this share contributes an almost equal amount to the total spending in healthcare in SA (Department of Health 2011). In this study, 49% of the participants had medical aid while 47.5% did not have medical aid. Women, children, the elderly and low income groups are not adequately covered by any form of health insurance (Meng *et al*. 2011 cited in Department of Health 2011). These groups would, therefore, be at a disadvantage in accessing chiropractic care as chiropractic

does not play a significant role in public healthcare in South Africa (Manga 2000; Gaumer *et al.* 2002). In 2007 patients attending chiropractic private practices in South Africa were far more likely to have medical aid (81.5%) than not, with only 18.5% of the patients having no form of medical aid (Mahomed 2007). Fifty-one percent of the participants indicated that it would be very relevant that 'medical aid' be asked in the final PSQ. This could be as a result of 49% of patients having medical aid therefore seeing its relevance.

Section B

5.2.1 Tangibles

In this section, statements explored the clinic settings and the environment that the participants perceived the clinic to be in. These statements dealt with factors such as safety, hygiene, comfort and accessibility (**Table 4.1.21**). Studies by Talmage (2007) and Beattie (2011) found that the waiting room area being comfortable and hygienic contributes to patient satisfaction. This is in keeping with the results of this study, as questions (AT1) to (AT5) and (AT7) highlighted the clinic's waiting area, comfort and state of hygiene. Participants indicated that these aspects should remain in the final PSQ. Talmage (2007) stated the importance of clinic being adulate provisions and the appropriate ablution facilities being available at healthcare facilities, as the state of these contribute to patient satisfaction. This is confirmed by participants in this study as questions (AT8 and AT9) were strongly advised to remain in the final PSQ. Hughes (1991) stated that clinic safety is also a component of patient satisfaction. This is pertinent, as a strong 98.8% indicated that question AT remain in the final PSQ.

5.2.2 Reception

For a service that is mainly credibility-based knowledge, the skill and courtesy of hospital staff could offer a sense of assurance that they have the patient's interest at heart and that the services would be delivered with integrity, fairness and kindness (Naidu 2009). Hughes (1991) identified that waiting for appointments, together with the time it took to schedule an appointment, as well as the waiting room period prior to the scheduled appointment, affected the perception of the clinic and subsequently the levels of satisfaction. The above concepts are covered in questions BR2, BR5 and BR6. Baker *et al.* (2013) added that satisfaction with ambulatory care is attributable to satisfaction with one's physician, while satisfaction with inpatient experience has more to do with the quality of staff. This is outlined in questions

BR1, BR3 and BR4. Staff demeanour also has a significant impact on customer satisfaction. The manner in which staff interact with the patient and staff sensitivity to the patient's personal experience seems to be important. This was reinforced by the results from the RPSQ indicating that all statements should remain in the final PSQ (**Table 4.1.22**).

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5.2.3 Chiropractic intern

Patient satisfaction domains such as humaneness, the doctor's technical skill, providing information pertinent to a patient's condition as well as being available could assist a satisfactory interaction as well as build a positive, partnership between patient and doctor. The review by Boquerón *et al.* (2015) revealed that the majority of patient satisfaction measures are attributed to the doctor's skills, interpersonal characteristics, expertise and professional demeanour. The questions CI1 to CI13 covered the above components. With a range of 98% to 99%, participants felt strongly that the above statements need to remain in the PSQ.

Communication is the extent to which the patient is kept informed through understandable terms, afforded social interaction along with time during consultation as well as provided psychological and non-technical information (Tucker 2002). Beattie (2011) concluded that a critical component for maintaining high levels of patient satisfaction is a clear explanation of the likely reason for his or her symptoms, together with the rationale for the chosen intervention.

Patient involvement is an inherent feature in healthcare services whereby he or she influences outcome quality through compliance, describing the right symptoms, and physically undergoing treatment (Naidu 2009). Questions CI14 and CI15 had mixed responses. This could be due to participants feeling that the gender of a student doctor does not play a role in patient satisfaction.

5.2.4 Quality of care

Healthcare experiences and efforts as a result of change in physical health status are directly attributed to outcomes. Tucker (2002) concluded that service quality is the degree to which the care provided was competent and humane. Patient-determined quality literature inconclusively predicts the direction of satisfaction and quality from the patient's perspective (Tucker and Adams 2001). From this we can draw conclusions that interactions allow

perceptions to be formed leading to the development of expectations, which cause satisfaction experiences to change (Atkinson *et al.* 2000). This is confirmed by questions DQ3 to DQ5, which dealt with patients' expectations; the results showed that these should remain in the final PSQ.

Andaleeb (2001) stated that competence strongly influences patients' service quality assessments. If the service provider's competence seems to be high, then levels of satisfaction are also amplified. This correlates with the results in this study as questions DQ1, DQ2, DQ6 and DQ7 were strongly recommended to remain in the final PSQ.

5.2.5 Finance

Questions EF1 to EF3 expressed the affordability of treatment for patients attending the DUT CDC. Results showed a strong indication that these questions should remain in the final PSQ. The DUT CDC is open to any member of the public. The cost of chiropractic treatment at the DUT CDC is one-third the price compared with private practice, with a further reduction being offered to pensioners and unemployed patients who meet the criteria for a fee reduction.

In 2007 patients attending chiropractic private practices in South Africa were far more likely to have medical aid (81.5%) than to not have it, with only 18.5% of the patients having no form of medical aid (Mahomed 2007). This study showed that 49% of participants have medical aid. Question EF4 dealt with medical aid covering their treatment at DUT CDC; EF4 had a low approval percentage compared with EF1 to EF3. This could be due to South African medical aids not covering the cost of chiropractic treatment, however those who covered by medical aid have the option of paying for chiropractic treatment by using funds from their medical savings.

5.2.6 Overall satisfaction

The following section dealt with statements regarding perception of overall care the respondent experienced while at the DUT CDC (**Table 4.1.26**). In the context of healthcare, Boshoff and Gray (2004) found that loyalty was positively affected by nurses' empathy, assurance and tangibles. Patient satisfaction arises from health service quality perceptions, which then decides whether patients are loyal to their healthcare providers. Patient loyalty manifests as positive behaviours, such as recommending health services to relatives and friends, compliance, as well as higher service use thus positively impacting profitability

(Naidu 2009). This is reflected by questions FO2, FO3, and FO5. The results of this study strongly indicate that these questions should remain in the final PSQ.

Patient satisfaction can be deduced from the interaction of the partnership between patient and doctor. Questions FO1, FO4 and FO6 deal with the doctor-patient interaction. Studies indicate that building a positive partnership with good communication and respect can contribute to patient satisfaction. The results of this study strongly illustrate that these questions should remain in the final PSQ.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

In considering the aim and objectives of the study, objective one was achieved with a PSQ which was as well aligned as possible with the conceptual framework being developed by the researcher Objective two was achieved through the phases of the methodology, which consisted of instrument development and pilot testing. Objective three was achieved by undertaking reliability testing (Cronbach's alpha) of the PSQ. It was concluded that the PSQ is a reliable tool and can therefore be used to establish patient satisfaction at the DUT CDC.

6.2 Limitations

For the purposes of this study, the researcher believed that all information specified by the participants was a precise record of the participants' true reflection of their views when they completed the questionnaires. The study was reliant on the honest answers of the participants which may not have always been the case due to various unknown reasons.

6.3 Recommendations

- It is recommended that a comparable investigation be performed at the University of Johannesburg Chiropractic Clinic in order to contrast the satisfaction at the two teaching clinics of similar background in South Africa.
- Future research investigations evaluating patient satisfaction should consider altered methods of data collection (i.e. telephonic, electronically self-administered, self-administered (unsupervised)).

6.4 Practical implication

The development and validation of the PSQ was meant to develop a monitoring tool for the DUT CDC which can be used on an ongoing basis. It is suggested that the PSQ be handed to a new participant on their first visit to the clinic and thereafter to the participant on follow-up visits once every six months. This will prevent questionnaire fatigue as per guidelines on measuring client satisfaction developed by the Gauteng Department of Health (2008).

REFERENCES

Accreditation Association for Ambulatory Health Care. 2015. Physician Compensation and Production Report. Available: www.mgma.com/.../Survey%20Reports/MGMA-Physician-Compensation-Executive (Accessed March 2016).

Ajayi, I. O., Olumide, E. A. and Oyediran, O. 2005. Patient satisfaction with the services provided at a general outpatient clinic. *African Journal of Medicine & Medical Science,* 34(2): 133-140.

Ali Z, Bhaskar S. B. 2016. Basic statistical tools in research and data analysis. *Indian J Anaesth*, 60: 662-9.

Anand, S. and Sinha, R,K. 2010. Quality differentials and reproductive health service utilisation determinants in India. *International Journal of Health Care Quality Assurance,* 23(8): 718-729.

Andaleeb, S. S. 2001. Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Social Science & Medicine*, 52: 1359-1370.

Asadi-Lari, M., Tamburini, M and Gray, D. 2004. Patients' needs, satisfaction, and health related quality of life: Towards a comprehensive model. *Health and Quality of Life Outcomes*, 2(32): 1-15.

Atkinson, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J. and Nolen-Hoeksema, S. 2000. *Hilgard's introduction to psychology.* 13th ed. Fort Worth, TX: Harcourt College.

Baker, A., Perreault, D., Reid, A. and Blanchard, C. M. 2013. Feedback and organizations: feedback is good, feedback-friendly culture is better. *Canadian Psychology/Psychologie Canadienne*, 54(4): 260.

Baxter, P. and Jack, S. 2008. Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4): 544-559.

Beattie, P. F, Nelson, R. and Murphy, D. M. 2011. Development and preliminary validation of the medrisk instrument to measure patient satisfaction with chiropractic care. *Journal of Manipulative and Physiological Therapeutics*. 34: 24-29

Bitner, M. J. Faranda, T. W., Amy R., Hubbert, A. R. and Zeithaml, A. V. 1994. Customer contributions and roles in service delivery. *International Journal of Service Industry Management*, 8(3): 193-205.

Boquiren, V. M., Hack, T., Beaver, K. and Williamson, S. 2015. What do measures of patient satisfaction with the doctor tell us? *Patient Education and Counseling,* 98(12): 1465--1473.

Boshoff, C. and Gray, B. 2004. The relationships between service quality, customer satisfaction and buying intentions in the private hospital industry. *The Journal of Business Management South Africa*, 35(4): 27-37.

Bowden, J. L. H. and D'Alessandro, S. 2011. Co-creating value in higher education: the role of interactive classroom response technologies. *Asian Social Science*, 7(11): 35-49.

Boyer, L., Francois, P., Doutre, E., Weil, G. and Labarere, J. 2006. Perception and use of the results of patient satisfaction surveys by care providers in a French teaching hospital. *International Journal for Quality in Health Care,* 18(5): 359-364*.*

Bryman, A. and Cramer, D. 1997. *Quantitative Data Analysis with SPSS 12 and 13.* East Sussex: Routledge.

Carr-Hill, R. 1992. The measurement of patient satisfaction. *Journal of Public Health Medicine*, 14(3): 236-249.

Carrillata, F. A., Jaramillob, F. and Mulkic, J. P. 2009. Examining the impact of service quality: a meta-analysis of empirical evidence. *Journal of Marketing Theory and Practice,* 17(2): 95-110.

Cohen, G., Forbes, J. and Garraway, M. 1996. Can Different Patient Satisfaction Survey Methods Yield Consistent Results? Comparison of Three Surveys Author(s). *British Medical Journal,* 313(7061): 841-844.

Coulter, I. D., Hays, R. D. and Danielson, C. D. 1994. The chiropractic satisfaction questionnaire: *Topics in Clinical Chiropractic,* 1(4): 40-44. Available: http://www.casa.co.za (Accessed 14 February 2016).

Cunningham, P., Boult, B. and Popenoe, D. 1997. *Sociology.* 1st South African ed. Englewood Cliffs, NJ: Prentice Hall.

Davids, A. S., Phaswana-Mafuya, N., Senekal, I. and Munyaka, S. 2011. *Patient Satisfaction with Primary Health Care Services in a Selected District Municipality of the Eastern Cape of South Africa*. Available: http://www.intechopen.com/books/modern-approaches-to-quality-control/patient-satisfaction-withprimary-health-care-services-in-a-selected-district-municipality-of-the-ea (Accessed 10 January 2016).

Dorland, W. A. N. ed. 2011. *Dorland's Illustrated Medical Dictionary.* 32nd ed. Philadelphia, PA: Saunders.

Fitzpatrick, R.1991. Surveys of patient satisfaction: II - Designing a questionnaire and Conducting a survey*. British Medical Journal,* 302(6785): 1129-1132.

French, S. D., Densley, K., Charity, M. J. and Gunn, J. 2013. Who uses Australian chiropractic services? *Chiropractic & Manual Therapies*, 21(1): 31.

Gaumer, G., Koren, A. and Gemmen, E. 2002. Barriers to expanding primary care roles for chiropractors: The role of chiropractic as primary care gatekeeper*. Journal of Manipulative and Physiological Therapeutics,* 25(7): 427-449.

Gaumer, G and Gemmen, E. 2006. Chiropractic users and nonusers: Differences in use attitudes and willingness to use nonmedical doctors for primary care. *Journal of Manipulative and Physiological Therapeutics*, 29(7) 529-539.

Gemmel, H. A. and Hayes, B. M. 2001. Patient satisfaction with chiropractic physicians in an independent physicians' association. *Journal of Manipulative and Physiological Therapeutics*, 24(9): 556-559.

Glick, P. 2009, 'How reliable are surveys of client satisfaction with healthcare services? Evidence from matched facility and household data in Madagascar', *Social Science and Medicine,* 68(2): 368-379.

Goldstein, M. S., Elliott, S. D. and Guccione, A. 2000. The development of an instrument to measure satisfaction with physical therapy. *Physical Therapy*, 80(9): 853-863.

Gonzalez, N., Quitana, J. M., Bilbao, A., Escobar, A., Aizpuru, F., Thompson, A., Esteban, C., San Sebastian, J. A. and De La Sierra, E. 2005. Development and validation of an in-patient satisfaction questionnaire. *International Journal for Quality in Health Care, 17(6): 465-72.*

Greco, M., Brownlea, A. and McGovern, J. 2001. Impact of patient feedback on the interpersonal skills of general practice registrars: results of a longitudinal study. *Medical Education,* 35: 748-756.

Grogan, S., Conner, M., Norman, P., Willits, D. and Porter, I. 2000. Validation of a questionnaire measuring patient satisfaction with general practitioner services. *Quality in Health Care,* 9(4): 210-215.

Grol, R., Wensing, M., Mainz, J., Jung P. H., Ferreira, P., Hearnshaw, H., Hjortdahl, P., Olesen, F., Reis, S., Ribacke, M. and Szecenyi, J. 2000. Patients in Europe evaluate general practice care: an international comparison. *British Journal of General Practice*, 50: 882-887.

Harris, I., Rich, E. and Crowson, T. 1985. Attitudes of internal medicine residents and staff physicians toward various patient characteristics. *Journal of medical education*, 60: 192-195.

Harris, L. E., Swindle, R. W., Mungai, S. M., Weinberger, M. and William, M. 1999. Measuring Patient Satisfaction for Quality Improvement. *Tierney Source: Medical Care,* 37(12): 1207-1213.

Hearnshaw, H., Baker, R., Cooper, A., Eccles, M. and Soper, J. 1996. The costs and benefits of asking patients for their opinions about general practice. *Family Practice*, 13(1): 52-58.

Higgs, M. 2009. A demographic and descriptive survey of chiropractic patients at the chiropractic clinic at Kimberly [ie. Kimberley] Public Hospital Complex. M. Tech Chiropractic, Durban University of Technology.

Hitge, C. E. 2014. Patients at Marburg Haven Clinic: a demographic and disease profile. M. Tech Chiropractic, Durban University of Technology.

Hordacre, A-L., Taylor, A., Pirone, C. and Adams, R. 2005. Assessing patient satisfaction: implications for South Australian public hospitals. *Health Consumers*, 29(4): 439–446.

Hughes, J. 1991. *Satisfaction with medical care: A review of the field*. Available: http://www.changesurfer.com/Hlth/PatSat.html (Accessed 10 November 2015).

Ilioudi, S., Lazakidou, A. and Tsironi, M. 2013. Importance of Patient Satisfaction Measurement and Electronic Surveys: Methodology and Potential Benefits. *International Journal of Health Research and Innovation,* 1(1): 67-87.

Jamison, J. R. 1998. Identifying non-specific wellness triggers in chiropractic care. *Chiropractic Journal of Australia*, 28(2): 65-69.

Kamra, V., Singh, H. and Kumar De, K. 2016. Factors affecting patient satisfaction: an exploratory study for quality management in the healthcare sector. *Total Quality Management & Business Excellence*, 27:9-10.

Lee, H. S. 2013. Major moderators influencing the relationships of service quality, customer satisfaction and customer loyalty. *Asian Social Science*, 9(2): 1-11.

Lehohla, P. 2012. *South Africa Statistics, 2011*. Available: http://www.statssa.gov.za/. (Accessed 1 August 2017).

Leung, W-C. 2001. How to design a questionnaire. BMJ, 9: 187-189.

Lin, C.T., Albertson, G. A., Schilling, L. M., et al. 2001. Is patients' perception of time spent with the physician a determinant of ambulatory patient satisfaction? *Archives of Internal Medicine.* 161(11): 1437-1742.

Linder-Pelz, S. 1982. Toward a theory of patient satisfaction. *Social Science & Medicine*, 16(5): 577-582.

Mahomed, F. 2007. Chiropractic Patients in South Africa: A Demographic and Descriptive Profile. M. Tech Chiropractic, Durban University of Technology.

Manga, P. 2000. Economic case for the integration of chiropractic services into the health care system. *Journal of Manipulative and Physiological Therapeutics*, 23(2): 118-122.

Medical Group Management Association benchmarking report: Almost 80 percent of practices deemed 'better-performers' conduct patient-satisfaction surveys. 2013. Available: https://www.mgma.com/about/mgma-press-room/press-releases/mgma-benchmarking-report-almost-80-percent-of-practices-deemed-better-performers-conduct-patient (Accessed March 2015).

Moore, D. and Bowden-Everson, J. L.-H. 2012. An appealing connection: the role of relationship marketing in the attraction and retention of students in an Australian tertiary context. *Asian Social Science*, 8(14): 65-80.

Morgan, D. L. 1997. Focus groups as qualitative research. 2nd ed. California: Sage Publications, Inc.

Mootz, R. D., Cherkin, D., Odegard, C., Eisenberg, D., Barassi, J. and Deyo, R. 2005. Characteristics of chiropractic practitioners, patients and encounters in Massachusetts and Arizona. *Journal of Manipulative and Physiological Therapeutics,* 28(9)*:* 645-653.

Mpinganjira, M. 2011. Understanding service quality and patient satisfaction in private medical practice: *African Journal of Business Management,* 5(9): 3690-3698.

Muchna, J. 2011. An epidemiological investigation into the risk factors associated with neck pain in the Indian population in the greater Durban area. MTech Chiropractic, Durban University of Technology.

Mummalaneni, V. and Gopalakrishna, P. 1995. Mediators versus Moderators of Patient Satisfaction. *Journal of Health Care Marketing*, 15: 16-26.

Myburgh, C. and Mouton, J. 2007. Developmental issues in chiropractic: a South African practitioner and patient perspective. *Journal of Manipulative and Physiological Therapeutics*, 30(3): 206-214.

Naidu, A. 2009. Factors affecting patient satisfaction and healthcare quality, *International Journal of Health Care Quality Assurance*, 22(4): 366-381.

North, D., Zewotir, T. and Murray, M. 2011. Demographic and academic factors affecting research productivity at the University of KwaZulu-Natal. *South African Journal of Higher Education*, 25(7): 1416-1428.

Parasuraman, A., Zeithaml, V. A. and Berry, L. L. 1985. A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4): 41-50.

Park, H. S., and Seo, Y. J. 2014. Determinants of inpatients satisfaction and intent to revisit oriental medical hospitals. *Journal of Korean Medicine*, 35(4): 65–73.

Patton, M. Q. 2001. *Qualitative research & evaluation methods.* 3rd ed. Saint Paul, MN: Sage Publications.

Peck, B. 2011. Age-Related Differences in Doctor-Patient Interaction and Patient Satisfaction. *Current Gerontology and Geriatrics Research,* 1-10

Peltzer, K. 2009. Utilization and practice of traditional/complementary/alternative medicine (TM/CAM) in South Africa. *Complementary and Alternative Medicines*, 6(2): 175 - 185.

Pillay, H. 2002. Understanding Learner-centredness: Does it consider the diverse needs of individuals? *Studies in Continuing Education*, 24:(1), 93-102

Polit, D., and Beck, C. 2006. *Essentials of Nursing Research: Methods, Appraisal and Utilization.* (6th ed). Philadelphia: Lippincott Williams & Wilkins.

Powell, L. 2001. *Patient Satisfaction Surveys for Critical Access Hospitals.* Boise: Mountain States Group Inc.

Prakash, B. 2010. Patient Satisfaction. *The journal of cutaneous and aesthetic medicine*, 3(3): 151–155.

Rattray, J. and Jones, M. C. 2007. Essential elements of questionnaire design and development. *Journal of Clinical Nursing*, 20(1): 165.

Rieder, S. D. 2016. Patient satisfaction at the Durban University of Technology Chiropractic

Satellite Clinics. MTech Chiropractic, Durban University of Technology.

Sawyer, C. E. and Kassak, K. 1993. Patient satisfaction with chiropractic care: *Journal of Manipulative and Physiological Therapeutics*, 16(1): 23-32.

Shekarchizadeh, A., Rasli, A. and Hon-Tat, H. 2011. SERVQUAL in Malaysian universities: perspectives of international students. *Business Process Management Journal*, 17(1): 67-81.

Slabbert, W. 2010. An epidemiological investigation of neck pain in the white population in the greater Durban area. M. Tech Chiropractic, Durban University of Technology.

Smith, M. J., Reiter, M. J., Crist, B. D., Schultz, L. G. and Choma, T. J. 2015. Improving Patient Satisfaction through Computer-Based Questionnaires. *Orthopaedics: Thorofare,* 39(1): 31-35.

Sorensen, L. P., Stochkendahl, M. J., Hartvigsen, J. and Nilsson, N. G. 2006. Chiropractic patients in Denmark 2002: an expanded description and comparison with 1999 Survey. *Journal of Manipulative and Physiological Therapeutics,* 29(6): 419-424.

South Africa. Department Service administration. 2007. *A policy on quality in health care for South Africa*. Pretoria: Government Printer.

South Africa. Department of Health. 2008. *A collaborative project between the National Department of Health and the Initiative for Sub-district Support*. Gauteng: Health Systems Trust.

South Africa. Department of Health. 2011. *National Health Insurance in South Africa*. Pretoria: Government Printer.

Street, R. L. and Buller D. B. 1988. Patients' characteristics affecting physician-patient non-verbal communication. *Human Communication Research,* 15: 60-90.

Suhr, D. 2009. Selecting a Stratified Sample with PROC SURVEYSELECT. Available: https://www.lexjansen.com/wuss/2009/cod/COD-Suhr.pdf (Accessed October 2017).

Talmage, G. 2007. An exploratory mixed-methods study to determine factors which

may affect satisfaction levels of patients outside of a clinical setting. MTech Chiropractic, Durban University of Technology.

Thoresen, B. 2006. Patient satisfaction at the Durban Institute of Technology chiropractic day clinic. MTech Chiropractic, Durban Institute of Technology.

Tucker, J. 2002. “The moderators of patient satisfaction”. *Journal of Management in Medicine,* 16(1): 48-66.

Tucker, J. and Adams, S. 2001. Incorporating patients’ assessments of satisfaction and quality: an integrative model of patients’ evaluations of their care. *Managing Service Quality: An International Journal*, 11(4): 272-287.

Verhoef, M. J., Page, S. A. and Waddell, S. C. 1997. The chiropractic outcome study: pain, functional ability and satisfaction with care. *Journal of Manipulative and Physiological Therapeutics*, 20(4): 235-240.

Williams, B. 1994. Patient satisfaction: a valid concept? *Social Science & Medicine. 38(4):* 509-516. Available: https://doi.org/10.1016/0277-9536(94)90247-X (Accessed September 2017).

World Federation of Chiropractic. 2012. *Report: The Current status of the chiropractic profession*. Available: https://www.wfc.org (Accessed October 2017).

Yeomans, S. G. 2000. *The clinical application of outcomes assessment*. Connecticut: Appleton and Lange.

Zeithaml, A. V., Berry, L .L. and Parasuraman, A. 1996. The Behavioral Consequences of Service Quality. J*ournal of Marketing*, 60(2): 31-46.

Appendix A

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4000

Tel: 031 373 2375
email: [redacted]@dut.ac.za
http://www.dut.ac.za/research/irec_ethical_issues_ethics

www.dut.ac.za

4 May 2017

IREC Reference Number: **REC 124/16**

Ms A Singh
46 Marcellin Drive
Northdene

Dear Ms Singh

Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic

The Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of your data collection tool.

Kindly ensure that participants used for the pilot study are not part of the main study.

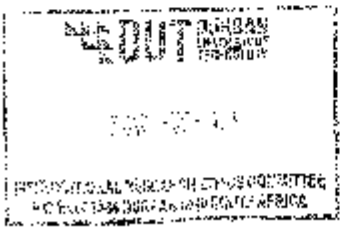
In addition, the IREC acknowledges receipt of your gatekeeper permission letters.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,

[redacted]

Professor J K Adam
Chairperson: IREC



Appendix B

Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732946
E-mail: moyos@dut.ac.za

20th February 2017

Ms Ashmindher Singh
c/o Department of Chiropractic
Faculty of Health Sciences
Durban University of Technology

Dear Ms Singh

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research Committee (IRC) has granted permission for you to conduct your research "Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic" at the Durban University of Technology.

We would be grateful if a summary of your key research findings can be submitted to the IRC on completion of your studies.

Kindest regards.
Yours sincerely

[redacted]

PROF. S. MOYO
DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT

Appendix C

MEMORANDUM

To : Prof Ross
Chair : RHDC

Prof Adam
Chair : IREC

From : Dr Charmaine Korporaal
Clinic Director : FoHS Clinic

Date : 31.05.2016

Re : Request for permission to use the Chiropractic Day Clinic for research purposes

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Permission is hereby granted to :

Ms Ashmindher Singh (Student Number: 20803913)

Research title: "Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic."

It is requested that Ms Singh submit a copy of her RHDC / IREC approved proposal to the Clinic Student Administrator (Mrs Twiggs) before she starts with her research in order that any special procedures with regards to her research can be implemented prior to the commencement of her seeing patients.

Thank you for your time.

Kind regards

[redacted]

Dr Charmaine Korporaal

Clinic Director : FoHS Clinic

Cc: Mrs L Twiggs : Chiropractic Day Clinic
Dr D Varatharajullu : Research supervisor
Ms G Cruikshank : Research co-supervisor

Appendix D

PAMPHLET: Would you like to participate in my research?

Title of the research study:

Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic.

The purpose of the study:

My study will involve 375 patients currently being treated by students at DUT Chiropractic Day Clinic, the purpose of which is to help develop and test the patient satisfaction questionnaire for the DUT CDC.

Procedure:

You will be asked to read this Letter of Information and a Consent form. If you willing to participate you will be handed a patient satisfaction questionnaire (PSQ) and the rating patient satisfaction questionnaire (RPSQ) and will be asked to use the RPSQ to rate the relevance of each statement make in the PSQ. The average amount of time required to complete the questionnaire will be no more than 15 minutes. All questionnaires will be strictly confidential and anonymous.

Benefits:

The results of this study will be used to establish a baseline level of satisfaction at our clinic and to possibly highlight areas of our clinic that need improvement.

Risks:

There should be no risks involved.

Confidentiality:

All the information obtained from the questionnaire will be dealt with only by my supervisor and myself, in order to produce the relevant results. The information will be retained for five years securely at the university and then destroyed through shredding.

Remuneration:

Participation in this study will be entirely voluntary and without remuneration. You are free to leave the research at any time. If you need to discuss any further matters or participate, please feel free to contact me (Ashmindher Singh at the DUT CDC, on 031-3732205). Thank you very much for your participation and co-operation.

Yours Sincerely

Ashmindher Singh (Chiropractor Intern)

Appendix E

Conceptual frame work

Phase one was a preliminary review of the literature on questionnaire design and conceptual frameworks.

⇩

Phase two consisted of instrument development and pilot testing. The development of the instrument and its contents was informed by the review of the literature and questionnaire exemplars from phase one. In this phase, a second questionnaire was developed and put through the expert group as it was used to rate the significance of the questions on the PSQ, This was then put through a pilot group.

⇩

Phase three was the handing out of the PSQ and the rating patient satisfaction questionnaire to 400 patients attending the DUT CDC.

⇩

Final PSQ

Appendix F

Pre expert group RPSQ:

CHIROPRACTIC DAY CLINIC

PATIENT RATING SATISFACTION QUESTIONNAIRE

The purpose of this questionnaire is to rate the **Patient Satisfaction Questionnaire (PSQ)** that was handed to you together with this questionnaire. The PSQ contains statements about the DUT Chiropractic Day Clinic and the Chiropractic care you had receive there. Patients filling in the PSQ are required to read each question carefully, thinking about the service level they ***EXPECT*** (to be answered in **column A**) and the service level they ***RECEIVE*** (to be answered in **column B**). The patient is then asked to decide **how strongly he/she agrees or disagrees** with each statement in the PSQ.

In this questionnaire, you are required to rate the relevance of each question that appeared in the PSQ by using a 4-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant). If you have any questions please feel to ask the researcher.

Section A

Please rate the relevance of each question pertaining to the patient's demographics.

No.		1 = Not relevant	2 = Somewhat relevant	3 = Relevant	4 = Very relevant
1.	Age (in years)				
2.	Gender				
3.	Race				
4.	Visit				
5.	Area of main Complaint				
6.	Occupation				
7.	Name of Intern				

Section B

Firstly, please indicate if the following statements should be included in the PSQ by ticking Yes or No. Secondly, feel free to comment or make suggestions regarding the wording or relevance of each statement.

	STATEMENTS	Yes	No	Comments
A. Tangibles (Physical Setting, clinic environment, accessibility/convenience)				
1	The clinic facilities are visually appealing.			
2	The waiting area does not have enough seating.			
3	There is adequate parking.			
4	The clinic hours of operation are convenient.			
B. Reception Staff (Sections B and C will include empathy, care, assurance, listening and communication)		**Yes**	**No**	**Comments**
1	The reception staff are always friendly and courteous.			
2	The receptionist is helpful in making an appointment over the phone.			
3	The reception staff attended to me promptly.			
4	The reception staff treated me with dignity and respect.			
C. Chiropractic intern (Sections B and C will include empathy, care, assurance, listening and communication)		**Yes**	**No**	**Comments**
1	The intern is polite to me.			
2	The intern makes me feel at ease.			
3	The intern listens to me during my consultation.			
4	The intern needs to be more thorough in examining me.			
5	The intern explains my condition and treatment plan.			
6	The intern involves me in the decisions about my treatment and rehabilitation programme/exercise programme.			
7	The intern gave me advice on exercise and nutrition.			

8	The intern gave me advice on how to prevent health problems from occurring.			
9	The intern was dressed neatly and professional.			
D. Quality of Care		**Yes**	**No**	**Comments**
1	The intern is knowledgeable and confident.			
2	The care I received was good.			
3	Improvements in my condition took longer than I expected.			
4	The quality of care I received met my expectations.			
E. Finance		**Yes**	**No**	**Comments**
1	I feel confident the medical attention I receive does not set me back financially.			
2	Sometimes I do not receive chiropractic treatment at DUTCC because I cannot afford the consultation fees.			
3	The consultation fees are reasonable.			
4	My medical aid/insurance provided full coverage for the cost of my care			
F. Overall satisfaction		**Yes**	**No**	**Comments**
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.			
2	I would recommend this intern to a friend or relative.			
3	Overall, I was pleased with the service I received from DUT CDC.			
4	I would recommend this clinic to friends or relatives.			
	Any comments concerning the clinic and interns.			

Any additional Comments:

Thank you for your valuable input and time.

Appendix G

Pre expert group PSQ:

CHIROPRACTIC DAY CLINIC

PATIENT SATISFACTION QUESTIONNAIRE

Section A:

This section will provide the clinic with information on participants completing the survey.

Please answer each question by placing a tick in the appropriate box where necessary.

1	**Age (in years)**					
2	**Gender**	Female	Male			
3	**Race**	Other	Black	Coloured	Indian	White
4	**Visit**	New patient	Follow-up			
5	**Area of main complaint**	Spinal (e.g. neck, back)	Extremity (e.g. ankle, knee, elbow)			
6	**Occupation**					
7	**Name of intern**					

Section B:

Below are some statements about the DUT Chiropractic Day Clinic and the chiropractic care you have received. Please read each question carefully thinking about the service level you ***EXPECT*** (to be answered in **column A**) and the service level you ***RECEIVED*** (to be answered in **column B**).

Please indicate **how strongly you agree or disagree** with each statement by ticking the appropriate box? in each row of each column.

Today's date: d d / m m / 2 0 y y

STATEMENTS		A How do you rate the service level you **EXPECT**?					B How do you rate the service level you **RECEIVED?**				
A. Tangibles (Physical setting, clinic environment, accessibility/convenience)		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The clinic facilities are visually appealing.										
2	The waiting area does not have enough seating.										
3	There is adequate parking.										
4	The clinic hours of operation are convenient.										
B. Reception Staff (Sections B and C will include empathy, care, assurance, listening and communication)		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The reception staff are always friendly and courteous.										
2	The receptionist is helpful in making an appointment										

	over the phone.										
3	The reception staff attend to me promptly.										
4	The reception staff treat me with dignity and respect.										

STATEMENTS		**A**					**B**				
		How do you rate the service level you **EXPECT**?					How do you rate the service level you **RECEIVED?**				
C. Chiropractic intern (Sections B and C will include empathy, care, assurance, listening and communication)		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The intern is polite to me.										
2	The intern makes me feel at ease.										
3	The intern listens to me during my consultation.										
4	The intern needs to be more thorough in examining me.										
5	The intern explains my condition and treatment plan.										
6	The intern involves me in the decisions about my treatment and rehabilitation programme/exercise programme.										
7	The intern gives me advice on exercise and nutrition.										
8	The intern gives me advice on how to prevent health problems from reoccurring.										

9	The intern is dressed neatly and professional.										

STATEMENTS		**A**					**B**				
		How do you rate the service level you **EXPECT**?					How do you rate the service level you **RECEIVED?**				
D. Quality of care		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The intern is knowledgeable and confident.										
2	The care I received was good.										
3	Improvements in my condition took longer than I expected.										
4	The quality of care I received met my expectations.										

STATEMENTS		**A**					**B**				
		How do you rate the service level you **EXPECT**?					How do you rate the service level you **RECEIVED?**				
E. Finance		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The medical attention I receive does not set me back financially.										
2	Sometimes I do not attend for treatment at the DUT CDC because I cannot afford the consultation fees.										
3	The consultation fees are reasonable.										
4	My medical aid/insurance provides full coverage for the cost										

	of my care.					

STATEMENTS		**A**				
		How do you rate the service level you **EXPECT**?				
F. Overall satisfaction		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.					
2	I would recommend this intern to friend or relative.					
3	Overall, I was pleased with the service I received from DUT CDC.					
4	I would recommend this clinic to friend or relative.					

B				
How do you rate the service level you **RECEIVED?**				
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

Any comments concerning the clinic and interns

Thank you for your valuable input and time.

Appendix H

EXPERT GROUP: LETTER OF INFORMATION

Dear Participant,

Welcome to my study and thank you for your interest.

Title of research project: Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic.

Name of Research Student: Ashmindher Singh (Chiropractic Intern)

Name of supervisor: Dr. Desiree Varatharajullu (M.Tech: Chiropractic) (031-2662288)

Name of Co Supervisor: Ms. Gillian Cruickshank (M.Ed: Higher Education) (031-3732706).

Name of Institution: Durban University of Technology.

The purpose of the expert group:

The purpose of this expert group is to establish "face validity" of the questionnaire that shall be used to develop a tool that could measure patient satisfaction at the clinic, however the purpose of this expert group is to adapt the questionnaire to suit the environment under which the study is to be conducted (student-clinic environment). Your participation is much appreciated and it is assured that your comments and contributions will remain confidential. You are at any point permitted to disagree, however if this is the case, please give your reasons for this, as it will assist in the research process. The results of this expert group will only be used for research purposes. The material discussed will be kept confidential.

Procedure:

Patient Satisfaction Questionnaire

The questionnaire is divided into 2 sections, A and B. Section A contains questions relating to demographics and patients' experiences with chiropractic. Section B contains the body or the questionnaire and is made of 32 statements to which the patient can: Strongly agree, Agree, remain Undecided, Disagree, and Strongly Disagree.

Rating Patient Satisfaction Questionnaire:

This questionnaire purpose will be used to rate the significance of each of the statements in the PSQ. Each statement will be scored from 1 to 4, 1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant.

Risks and discomforts:

None to be expected from the study

Benefits:

The results of this study will be used to establish a baseline tool that could measure satisfaction at our clinic and to possibly highlight areas of the DUT CDC that needs improvement.

Reason why a Participant may withdraw from the study:

You, as the participant may withdraw from the study at any time. There will be no adverse consequences for the participant.

Cost:

Your participation in this research is free of charge.

Confidentiality:

Your personal information will remain confidential by the use of a coding system for data analysis and reporting. Identity will not be revealed in the write up. Your participation in this study is voluntary and refusal to participate will not result in any adverse consequences. You are free to withdraw from the study at any time.

Should there be a research related injury:

None to be expected from the study.

Persons to contact in the event of any Problems or Queries:

Name of Research Student: Miss Ashmindher Singh

Name of supervisor: Dr.Desiree Varatharajullu(M.Tech:Chiropractic) (031-2662288)

Name of Co Supervisor: Ms. Gillian Cruickshank (M.Ed Higher Education) (031 - 3732706).

Complain Research Director: Prof S Moyo (031 373 2382)

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher,

  Ashmindher Singh, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance

  Number: _____,

- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature/Right Thumbprint**

I, _____

(name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Researcher Full Name of	**Date**	**Signature**

_____	_____	_____
Full Name of Witness (If applicable)	**Date**	**Signature**

_____	_____	_____
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

Appendix I

Code of Conduct Agreement for Expert Group

This must be completed by every member of the expert group prior to starting the expert group meeting.

As a member of the expert group I agree to abide by the following conditions:

A) All information in the research document and any information discussed during the focus group meeting will be confidential, especially any information that may identify any of the participants in the research process.

B) The information from the focus group will be made public in terms of journal publication, which will not identify any participant of the research.

Member's name	Signature	Contact numbers

Appendix J

Post expert group PSQ: Used for pilot study

CHIROPRACTIC DAY CLINIC

PATIENT SATISFACTION QUESTIONNAIRE

Section A:

This section will provide the clinic with information on participants completing the survey. Please answer each question by placing a tick in the appropriate box where necessary.

Demographics								
1	Age (in years)							
2	Gender	Female		Male				
3	Race	Black	Coloured	Indian	White	Other:		
4	Visit	New patient		Follow-up		Number of follow- up visits		
5	Area of main complaint	Spinal (e.g. neck, back)		Extremity (e.g. ankle, knee, elbow)			Both	
6	Occupation							
7	Year of intern	5th Year		6th year				
8	Primary income	Employed full time	Employed part-time	Medically boarded	Retired	Student / Scholar	Self employed	Unemployed
		Other						
9	Medical Aid	Yes		No				

Section B:

STATEMENTS		A How do you rate the service level you RECEIVED?				
A. Tangibles		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The clinic facilities are visually appealing.					
2	The waiting area has enough seating.					
3	There is adequate parking.					
4	The clinic hours of operation are suitable.					
5	The clinic met my hygiene expectations.					
6	The clinic has facilities for disabled patients.					
7	The waiting area at the clinic is comfortable.					
8	The clinic has adequate security.					
9	The clinic has appropriate toilet facilities**.**					
B. Reception Staff		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The reception staff are friendly and courteous.					
2	The reception staff are helpful in making an appointment over the phone.					
3	The reception staff attend to me promptly.					
4	The reception staff treat me with dignity and respect.					
5	The clinic staff inform me of potential delays in my appointment.					
6	The reception staff explained to me the possible time duration for my consultation.					
C. Chiropractic intern		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The intern is polite.					
2	The intern makes me feel at ease.					
3	The intern is attentive.					
4	The intern is thorough in the examination.					
5	The intern explained my condition.					
6	The intern explained my treatment plan.					
7	The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.					
8	The intern gives me advice on exercise and nutrition.					
9	The intern gives me advice on how to prevent health problems from recurring.		90			
10	The intern is dressed neatly and professionally.					

11	The intern is punctual.					
12	The intern made me feel comfortable during the assessment.					
13	The intern spent sufficient time with me during my treatment session.					
14	I prefer a female intern treating me.					
15	I prefer a male intern treating me.					
D. Quality of care		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The intern is knowledgeable					
2	The intern is confident.					
3	The care I received was of a high standard.					
4	Improvements in my condition took longer than I expected.					
5	The quality of care I received met my expectations.					
6	The intern ensured that I made an informed decision when agreeing to my treatment.					
7	My intern made me feel important at all times.					
E. Finance		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The medical attention I received is affordable.					
2	Sometimes I do not seek treatment at the DUT CDC because I cannot afford the consultation fees.					
3	The consultation fees are reasonable.					
4	My medical aid/insurance provides full coverage for the cost of my care.					
5	A fee reduction option was offered to me as I fulfilled the criteria for it.					
F. Overall satisfaction		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.					
2	I would recommend this intern to a friend or relative.					
3	Overall, I was pleased with the service that I received from the DUT CDC.					
4	The intern answered all of my questions.					
5	I would recommend chiropractic treatment and the DUT CDC to a friend or relative.					

6	I felt that the intern did everything possible to help me.					
Any additional comments:						

Appendix K

Post expert group RPSQ: Used for pilot study

CHIROPRACTIC DAY CLINIC

PATIENT RATING SATISFACTION QUESTIONNAIRE

The purpose of this questionnaire is to rate the **Patient Satisfaction Questionnaire (PSQ)** that was handed to you together with this questionnaire. The PSQ contains statements about the DUT Chiropractic Day Clinic and the Chiropractic care you had receive there. Patients filling in the PSQ are required to read each question carefully, thinking about the service level they ***RECEIVED***. The patient is then asked to decide **how strongly he/she agrees or disagrees** with each statement in the PSQ.

Section A

In this section, you are required to rate the relevance of each statement that appeared in the PSQ by using a 4-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant). If you have any questions please ask the researcher. Please rate the relevance of each question pertaining to the patient's demographics.

No.		1 = Not relevant	2 = Somewhat relevant	3 = Relevant	4 = Very relevant
1.	**Age (in years)**				
2.	**Gender**				
3.	**Race**				
4.	**Visit**				
5.	**Area of main complaint**				
6.	**Occupation**				
7.	**Year of intern**				
8	**Primary income**				
9	**Medical Aid**				

Section B

Firstly, please indicate if the following statements should be included in the PSQ by ticking Yes or No. Secondly, feel free to comment or make suggestions regarding the wording or relevance of each statement.

STATEMENTS: A. Tangibles		Yes	No	Comments
1	The clinic facilities are visually appealing.			
2	The waiting area has enough seating.			
3	There is adequate parking.			
4	The clinic hours of operation are suitable.			
5	The clinic met my hygiene expectations.			
6	The clinic has facilities for disabled patients.			
7	The waiting area at the clinic is comfortable.			
8	The clinic has adequate security.			
9	The clinic has appropriate toilet facilities.			
B. Reception Staff		**Yes**	**No**	**Comments**
1	The reception staff are friendly and courteous.			
2	The reception staff are helpful in making an appointment over the phone.			
3	The reception staff attend to me promptly.			
4	The reception staff treat me with dignity and respect.			
5	The clinic staff inform me of potential delays in my appointment.			
6	The reception staff explained to me the possible time duration for my consultation.			
C. Chiropractic intern		**Yes**	**No**	**Comments**
1	The intern is polite.			
2	The intern makes me feel at ease.			
3	The intern is attentive.			
4	The intern is thorough in examining me.			
5	The intern explained my condition.			
6	The intern explained my treatment plan.			
7	The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.			
8	The intern gives me advice on exercise and nutrition.			
9	The intern gives me advice on how to prevent health problems from recurring.			
10	The intern is dressed neatly and professionally.			
11	The intern is punctual.			
12	The intern made me feel comfortable during the assessment.			
13	The intern spent sufficient time with me during my treatment session.			
14	I prefer a female intern treating me.			
15	I prefer a male intern treating me.			

D. Quality of care		Yes	No	Comments
1	The intern is knowledgeable			
2	The intern is confident.			
3	The care I received was of a high standard.			
4	Improvements in my condition took longer than I expected.			
5	The quality of care I received met my expectations.			
6	The intern ensured that I made an informed decision when agreeing to my treatment.			
7	The intern made me feel important at all times.			
E. Finance		**Yes**	**No**	**Comments**
1	The medical attention I received is affordable.			
2	Sometimes I do not seek treatment at the DUT CDC because I cannot afford the consultation fees.			
3	The consultation fees are reasonable.			
4	My medical aid/insurance provides full coverage for the cost of my care.			
5	A fee reduction option was offered to me as I fulfilled the criteria for it.			
F. Overall satisfaction		**Yes**	**No**	**Comments**
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.			
2	I would recommend this intern to a friend or relative.			
3	Overall, I was pleased with the service I received from the DUT CDC.			
4	The intern answered all of my questions.			
5	I would recommend chiropractic treatment and the DUT CDC to a friend or relative.			
6	I felt that the intern did everything possible to help me.			
Any additional comments:				

Thank you for your time.

Appendix L

PILOT: LETTER OF INFORMATION

Dear Participant,

Welcome to my study and thank you for your interest.

Title of the research study:

Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic.

The purpose of the study:

A pilot study is a preliminary or trial run of a larger study that is conducted in preparation for a main study to determine the feasibility of a research tool. The aim of the pilot study is to determine if the sample population can relate to the questionnaire and to identify items that lack clarity or that may not be appropriate for, or discriminate between respondents.

Procedure:

Participation in this pilot study is voluntary. If you are interested in participating then you will be asked to read this Letter of Information and a Consent form. Once you have read and understood the nature of the pilot study and have signed the Consent form, you will be handed a patient satisfaction questionnaire (PSQ) and the rating patient satisfaction questionnaire (RPSQ) and will be asked to use the RPSQ to rate the relevance of each statement make in the PSQ. The average amount of time required to complete the questionnaire will be no more than 15 minutes. All questionnaires will be strictly confidential and anonymous.

Risks:

There should be no risks involved

Benefits:

The results of this study will be used to establish a baseline level of satisfaction at our clinic and to possibly highlight areas of our clinic that need improvement.

Reason why a Participant may withdraw from the study:

You, as the participant may withdraw from the study at any time. There will be no adverse consequences for the participant.

Remuneration:

Participation in this study will be entirely voluntary and without remuneration. You are free to leave the research at any time. If you need to discuss any further matters, please feel free to contact my supervisor (Dr Desiree Varatharajullu 031373 2288) Or Ashmindher Singh at the DUT CDC, on 031-3732205. Thank you very much for your participation and co-operation.

Cost:

Your participation in this research is free of charge.

Confidentiality:

All the information obtained from the questionnaire will be dealt with only by my supervisor and myself, in order to produce the relevant results. The information will be retained for five years securely at the university and then destroyed through shredding.

Should there be a research related injury:

None to be expected from the study.

Persons to contact in the event of any Problems or Queries:

Name of Research Student: Miss Ashmindher Singh

Name of supervisor: Dr.Desiree Varatharajullu(M.Tech:Chiropractic) (031-2662288)

Name of Co Supervisor: Ms. Gillian Cruickshank (M.Ed Higher Education) (031 - 3732706).

Complain Research Director: Prof S Moyo (031 373 2382)

PILOT STUDY: LETTER OF CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, _____ (name of researcher), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, _____ (name of researcher) herewith confirm that the above participant has been full informed about the nature, conduct and risks of the above study.

Full Name of Researcher	**Date**	**Signature**

Full Name of Witness (If applicable)	**Date**	**Signature**

Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

Appendix M

Final PSQ

CHIROPRACTIC DAY CLINIC

PATIENT SATISFACTION QUESTIONNAIRE

Section A:

This section will provide the clinic with information on participants completing the survey. Please answer each question by placing a tick in the appropriate box where necessary.

Demographics								
1	Age (in years)							
2	Gender	Female		Male				
3	Race	Black	Coloured	Indian	White	Other:		
4	Visit	New patient		Follow-up		Number of follow- up visits		
5	Area of main complaint	Spinal (e.g. neck, back)		Extremity (e.g. ankle, knee, elbow)				Both
6	Occupation							
7	Year of intern	5th Year		6th year				
8	Primary income	Employed full time	Employed part-time	Medically boarded	Retired	Student / Scholar	Self employed	Unemployed
		Other						
9	Medical Aid	Yes		No				

Section B:

Below are some statements about the DUT Chiropractic Day Clinic and the chiropractic care you have received. Please read each statement carefully thinking about the service level you ***RECEIVED***.

Please indicate **how strongly you agree or disagree** with each statement by ticking the appropriate box in each row of each column.

If you change your mind, cross out your old response and make your new choice. We are interested in your opinions, whether positive or negative.

STATEMENTS		A How do you rate the service level you RECEIVED?				
A. Tangibles		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The clinic facilities are visually appealing.					
2	The waiting area has enough seating.					
3	There is adequate parking.					
4	The clinic hours of operation are suitable.					
5	The clinic met my hygiene expectations.					
6	The clinic has facilities for disabled patients.					
7	The waiting area at the clinic is comfortable.					
8	The clinic has adequate security.					
9	The clinic has appropriate toilet facilities**.**					
B. Reception Staff		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The reception staff are friendly and courteous.					
2	The reception staff are helpful in making an appointment over the phone.					
3	The reception staff attend to me promptly.					
4	The reception staff treat me with dignity and respect.					
5	The clinic staff inform me of potential delays in my appointment.					
6	The reception staff explained to me the possible time duration for my consultation.					
C. Chiropractic intern		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The intern is polite.					
2	The intern makes me feel at ease.					
3	The intern is attentive.					
4	The intern is thorough in the examination.					
5	The intern explained my condition.					
6	The intern explained my treatment plan.					
7	The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.					
8	The intern gives me advice on exercise and nutrition.					
9	The intern gives me advice on how to prevent health problems from recurring.					
10	The intern is dressed neatly and professionally.					

11	The intern is punctual.					
12	The intern made me feel comfortable during the assessment.					
13	The intern spent sufficient time with me during my treatment session.					
14	I prefer a female intern treating me.					
15	I prefer a male intern treating me.					
D. Quality of care		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The intern is knowledgeable					
2	The intern is confident.					
3	The care I received was of a high standard.					
4	Improvements in my condition took longer than I expected.					
5	The quality of care I received met my expectations.					
6	The intern ensured that I made an informed decision when agreeing to my treatment.					
7	My intern made me feel important at all times.					
E. Finance		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The medical attention I received is affordable.					
2	Sometimes I do not seek treatment at the DUT CDC because I cannot afford the consultation fees.					
3	The consultation fees are reasonable.					
4	My medical aid/insurance provides full coverage for the cost of my care.					
5	A fee reduction option was offered to me as I fulfilled the criteria for it.					
F. Overall satisfaction		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.					
2	I would recommend this intern to a friend or relative.					
3	Overall, I was pleased with the service that I received from the DUT CDC.					
4	The intern answered all of my questions.					
5	I would recommend chiropractic treatment and the DUT CDC to a friend or relative.					

6	I felt that the intern did everything possible to help me.					
Any additional comments:						

Thank you for your time.

Appendix N

Final RPSQ

CHIROPRACTIC DAY CLINIC

PATIENT RATING SATISFACTION QUESTIONNAIRE

The purpose of this questionnaire is to rate the **Patient Satisfaction Questionnaire (PSQ)** that was handed to you together with this questionnaire. The PSQ contains statements about the DUT Chiropractic Day Clinic and the Chiropractic care you had receive there. Patients filling in the PSQ are required to read each question carefully, thinking about the service level they ***RECEIVED***. The patient is then asked to decide **how strongly he/she agrees or disagrees** with each statement in the PSQ.

Section A

In this section, you are required to rate the relevance of each statement that appeared in the PSQ by using a 4-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant). If you have any questions please ask the researcher. Please rate the relevance of each question pertaining to the patient's demographics.

No.		1 = Not relevant	2 = Somewhat relevant	3 = Relevant	4 = Very relevant
1.	**Age (in years)**				
2.	**Gender**				
3.	**Race**				
4.	**Visit**				
5.	**Area of main complaint**				
6.	**Occupation**				
7.	**Year of intern**				
8	**Primary income**				
9	**Medical Aid**				

Section B

Firstly, please indicate if the following statements should be included in the PSQ by ticking Yes or No. Secondly, feel free to comment or make suggestions regarding the wording or relevance of each statement.

STATEMENTS: A. Tangibles		**Yes**	**No**	**Comments**
1	The clinic facilities are visually appealing.			
2	The waiting area has enough seating.			
3	There is adequate parking.			
4	The clinic hours of operation are suitable.			
5	The clinic met my hygiene expectations.			
6	The clinic has facilities for disabled patients.			
7	The waiting area at the clinic is comfortable.			
8	The clinic has adequate security.			
9	The clinic has appropriate toilet facilities**.**			
B. Reception Staff		**Yes**	**No**	**Comments**
1	The reception staff are friendly and courteous.			
2	The reception staff are helpful in making an appointment over the phone.			
3	The reception staff attend to me promptly.			
4	The reception staff treat me with dignity and respect.			
5	The clinic staff inform me of potential delays in my appointment.			
6	The reception staff explained to me the possible time duration for my consultation.			
C. Chiropractic intern		**Yes**	**No**	**Comments**
1	The intern is polite.			
2	The intern makes me feel at ease.			
3	The intern is attentive.			
4	The intern is thorough in examining me.			
5	The intern explained my condition.			
6	The intern explained my treatment plan.			
7	The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.			
8	The intern gives me advice on exercise and nutrition.			
9	The intern gives me advice on how to prevent health problems from recurring.			
10	The intern is dressed neatly and professionally.			
11	The intern is punctual.			
12	The intern made me feel comfortable during the assessment.			

13	The intern spent sufficient time with me during my treatment session.			
14	I prefer a female intern treating me.			
15	I prefer a male intern treating me.			
D. Quality of care		**Yes**	**No**	**Comments**
1	The intern is knowledgeable			
2	The intern is confident.			
3	The care I received was of a high standard.			
4	Improvements in my condition took longer than I expected.			
5	The quality of care I received met my expectations.			
6	The intern ensured that I made an informed decision when agreeing to my treatment.			
7	The intern made me feel important at all times.			
E. Finance		**Yes**	**No**	**Comments**
1	The medical attention I received is affordable.			
2	Sometimes I do not seek treatment at the DUT CDC because I cannot afford the consultation fees.			
3	The consultation fees are reasonable.			
4	My medical aid/insurance provides full coverage for the cost of my care.			
5	A fee reduction option was offered to me as I fulfilled the criteria for it.			
F. Overall satisfaction		**Yes**	**No**	**Comments**
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.			
2	I would recommend this intern to a friend or relative.			
3	Overall, I was pleased with the service I received from the DUT CDC.			
4	The intern answered all of my questions.			
5	I would recommend chiropractic treatment and the DUT CDC to a friend or relative.			
6	I felt that the intern did everything possible to help me.			
Any additional comments:				

Thank you for your time.

Appendix O

MAIN STUDY: LETTER OF INFORMATION

Dear Participant,

Welcome to my study and thank you for your interest.

Title of the research study:

Validation of a patient satisfaction monitoring tool for the Durban University of Technology Chiropractic Clinic.

Name of Research Student:	Ashmindher Singh (Chiropractic Intern)
Name of supervisor:	Dr. Desiree Varatharajullu (M.Tech: Chiropractic) (031-2662288)
Name of Co Supervisor:	Ms. Gillian Cruickshank (M.Ed Higher Education) (031-3732706).
Institution:	Durban University of Technology.

The purpose of the study:

The purpose of the study is to help develop and test a patient satisfaction questionnaire for the DUT CDC that can be used on a consistent basis.

Procedure:

Participation in this study is voluntary. If you are interested in participating in the study then you will be asked to read this Letter of Information and a Consent form. Once you have read and understood the nature of the study and have signed the Consent form, you will be handed a patient satisfaction questionnaire (PSQ) and a rating patient satisfaction questionnaire (RPSQ). You will then be asked to use the RPSQ to rate the relevance of each statement made in the PSQ. The average amount of time required to complete the questionnaire will be no more than fifteen minutes. All questionnaires will be strictly confidential and anonymous.

Risks:

There should be no risks involved.

Benefits:

The results of this study will be used to establish a baseline level of satisfaction at the chiropractic clinic and to possibly highlight areas that require improvement.

Withdrawal from the study:

You may withdraw from the study at any time for any reason, without any adverse consequences.

Remuneration:

Participation in this study will be entirely voluntary and without remuneration. You are free to leave the research at any time. If you need to discuss any further matters, please feel free to contact my supervisor (Dr Desiree Varatharajullu 031373 2288) or Ashmindher Singh at the DUT CDC, on 031-3732205. Thank you very much for your participation and co-operation.

Cost:

Participation in this research is free of charge.

Confidentiality:

All the information obtained from the questionnaire will be dealt with only by the researcher and supervisors in order to protect participant anonymity and confidentiality. The information will be retained securely for five years at the university and then destroyed through shredding (hard copies) and deletion (electronic data).

Should there be a research related injury:

None is to be expected from the study.

Persons to contact in the event of any Problems or Queries:

Name of Research Student: Miss Ashmindher Singh

Name of supervisor: Dr.Desiree Varatharajullu(M.Tech:Chiropractic) (031-2662288)

Name of Co Supervisor: Ms. Gillian Cruickshank (M.Ed: Higher Education) (031-3732706).

Complaints: Prof S Moyo: Research Director (031-3732382)

MAIN STUDY: CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, **Ashmindher Singh**, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature/Right Thumbprint**

I, _____ (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher	**Date**	**Signature**
Full Name of Witness (If applicable)	**Date**	**Signature**
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

Appendix P

Final PSQ

STATEMENTS: A. Tangibles		Adapted from
1	The clinic facilities are visually appealing.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
2	The waiting area has enough seating.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
3	There is adequate parking.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
4	The clinic hours of operation are suitable.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
5	The clinic met my hygiene expectations.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
6	The clinic has facilities for disabled patients.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
7	The waiting area at the clinic is comfortable.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CARE
8	The clinic has adequate security.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
9	The clinic has appropriate toilet facilities.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
B. Reception Staff		
1	The reception staff are friendly and courteous.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION

		OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CARE
2	The reception staff are helpful in making an appointment over the phone.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
3	The reception staff attend to me promptly.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
4	The reception staff treat me with dignity and respect.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
5	The clinic staff inform me of potential delays in my appointment.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
6	The reception staff explained to me the possible time duration for my consultation.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
C. Chiropractic intern		
1	The intern is polite.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
2	The intern makes me feel at ease.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
3	The intern is attentive.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
4	The intern is thorough in examining me.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
5	The intern explained my condition.	An exploratory mixed-method study to determine factors that may affect satisfaction levels of athletes receiving chiropractic care in a nonclinic setting. Talmage 2008
6	The intern explained my treatment plan.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION

		OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
7	The intern involves me in the decisions about my treatment and rehabilitation or exercise programme.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
8	The intern gives me advice on exercise and nutrition.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
9	The intern gives me advice on how to prevent health problems from recurring.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
10	The intern is dressed neatly and professionally.	An exploratory mixed-method study to determine factors that may affect satisfaction levels of athletes receiving chiropractic care in a nonclinic setting. Talmage 2008
11	The intern is punctual.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
12	The intern made me feel comfortable during the assessment.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
13	The intern spent sufficient time with me during my treatment session.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
D. Quality of care		
1	The intern is knowledgeable	A Brief Instrument to Measure Patients' Overall Satisfaction With Primary Care Physicians 2011 Mohammadreza Hojat, PhD; Daniel Z. Louis, MS; Kaye Maxwell; Fred W. Markham, MD; Richard C. Wender, MD; Joseph S. G
2	The intern is confident.	A Brief Instrument to Measure Patients' Overall Satisfaction With Primary Care Physicians 2011 Mohammadreza Hojat, PhD; Daniel Z. Louis, MS; Kaye Maxwell; Fred W. Markham, MD; Richard C. Wender, MD; Joseph S. G
3	The care I received was of a high standard.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire

		measuring patient satisfaction with general practitioner services.
4	Improvements in my condition took longer than I expected.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
5	The quality of care I received met my expectations.	S Grogan, M Conner, P Norman, D Willits, I Porter 2000 Validation of a questionnaire measuring patient satisfaction with general practitioner services.
6	The intern ensured that I made an informed decision when agreeing to my treatment.	A Brief Instrument to Measure Patients' Overall Satisfaction With Primary Care Physicians 2011 Mohammadreza Hojat, PhD; Daniel Z. Louis, MS; Kaye Maxwell; Fred W. Markham, MD; Richard C. Wender, MD; Joseph S. G
7	The intern made me feel important at all times.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
E. Finance		
1	The medical attention I received is affordable.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
2	Sometimes I do not seek treatment at the DUT CDC because I cannot afford the consultation fees.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
3	The consultation fees are reasonable.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
F. Overall satisfaction		
1	The health care issue that brought me to the DUT CDC was addressed to my satisfaction.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
2	I would recommend this intern to a friend or relative.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
3	Overall, I was pleased with the service I received from the DUT CDC.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC CAR
4	The intern answered all of my questions.	Beattie, Nelson and Murphy (2011). DEVELOPMENT AND PRELIMINARY VALIDATION OF THE MEDRISK INSTRUMENT TO MEASURE PATIENT SATISFACTION WITH CHIROPRACTIC

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5	I would recommend chiropractic treatment and the DUT CDC to a friend or relative.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.
6	I felt that the intern did everything possible to help me.	*Paul F Beattie, Mary Beth Pinto, Martha K Nelson, Roger Nelson* (2002.)Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation.

Appendix Q

Participants completed the final PSQ

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