

A medical-sociological perspective on doctor-patient contact and pre-perceived  
pain of surgery

(M. Watermeyer) (Baccalaurus in Occupational Therapy)

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**Supervisor: P.J.M. van Niekerk**

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## SUMMARY

**Topic:** A medical-sociological perspective on doctor-patient contact and pre-perceived pain of surgery

**Key terms:** Pain, perception, total knee replacement surgery, doctor-patient contact, Libya

As a therapist within the multi-disciplinary setting, one is confronted with a wide array of pathology and diagnoses. Care is taken to optimize treatment outcomes and overall return of function to every patient admitted to the various rehabilitation facilities. Treatment is often standardized to ensure quality care benchmarked against outcome parameters. The aforementioned is also true for medical practitioners, pharmacists and other auxiliary service providers. Research is aimed at improving quality of care, finding and establishing the best practises through all hospitals and care facilities.

Medical care has undergone a transformation over the past few decades with a strong emphasis being placed on protocols and procedures. Through applying standardized care, protocols and procedures, the researcher have come to realize that certain denominators within patient care have no prediction or outcome control. After more than a decade of treating patients in various rehabilitation settings the researcher have come to realize that one complaint exists with each and every patient under my care – pain. This was even more evident within the group of joint replacement patients. No two patients presented with the exact same pain profile or pain reports despite various commonalities such as anthropometric data (age, gender, length, mass), surgical procedure, attending physician, care facility, pathway exposure, diagnosis, radiographic findings and pharmaceutical intervention. If all the obvious factors were identical – what accounted for the different pain reports? This question is at the heart of the study – why do pain reports differ in the presence of so many similarities between patients?

It soon became apparent that pain is recognized in the organic form. Organic pain can be measured and is expected with injury, illness or surgical intervention. The entire multi-disciplinary team is aware of organic pain and ready to intervene with medication, surgery and a pathway of care. All vigorously record organic pain and adapt treatment according to the pain levels as organic pain is real pain: real pain existing through exposure to real surgical intervention. Still the question remained: if all the factors prior to surgery, during surgery and after surgery were the same, why are patients experiencing and reporting very different pain levels? This question was the catalyst for the research and lead to keen focus during patient interviews. Every patient receiving an educational session prior to surgery had very vivid ideas about the pain they will experience post-operatively. The majority of patients formed pre-conceived notions about pain prior to undergoing surgery. They presented with a clear pain rating of what they expected to feel post-operatively. The pre-conceived pain rating was constructed in almost all the cases after some form of information obtained during consultation with their surgeon or a member of the multidisciplinary team. This pain notion existed as a tangible and measurable rating in the client's mind

prior to undergoing the knee replacement surgery. In select cases perceived pain was constructed as a result of information obtained from family or friends that underwent the same procedure while other clients constructed perceived pain due to a lack of information on the proposed surgery. It became evident that education or lack thereof on surgical interventions played a primary role in the construct of perceived pain. Patients were entering theatres for procedures and already experienced a form of perceived pain. If pain could be constructed prior to experiencing surgical intervention – can perceived pain then translate into actual organic pain and account for the variable pain reports post surgery? Against this backdrop, research was directed at understanding perceived pain and the factors that aid the construction of perceived pain. As education was found to be at the heart of every pain construct, the doctor-patient consultation was evaluated as a core component to ascertain the impact this relationship has on perceived pain. Measurement of perceived pain was also performed to conclude on the impact of this pain form on organic pain. The study is aimed at addressing the variant pain reports that no pathway or procedure can predict and provide for. It is an attempt to validate pain as constructed by the patient that impacts on their post-surgical pain ratings and behaviour.

This research might contribute towards existing knowledge and understanding of the influence of doctor-patient interaction as well as the significance of this interaction on pain.

As only scant research on perception of pain has been undertaken this research can prove insightful for further studies or as supplement to existing views and opinions. It can also serve as a foundation in developing practices that will manage pain by enhancing doctor-patient interaction in the health setting.

## OPSOMMING

**Onderwerp:** ‘n Mediese-sosiologiese perspektief van dokter-pasient kontak en voor-verwagte pyn van chirurgie

**Sleutelterm:** Pyn, persepsie, totale knie vervanging, dokter-pasient konsultasie, Libië

As lid van die multi-dissiplinêre span is blootstelling aan verskeie siekte patologie, diagnoses en fisiese of funksionele inperking ‘n daaglikse verskynsel. Diensverskaffing in die mediese veld is gefokus op versorging, behandelings optimalisering en die algemene verbetering van daaglikse funksionering. Fokus word geplaas op gestandaardiseerde asook uitkoms gebaseerde behandeling ten einde resultate aan vaste parameters te koppel. Hierdie verskynsel is sigbaar in die daaglikse behandeling van dokters, aptekers en para-mediese diensverskaffers. Alle navorsing in die onderskeie velde is ook gemik op kwaliteit van dienslewering, vasstelling van optimale praktyke en gestandaardiseerde doelstellings in alle hospitale en mediese praktyke.

Mediese dienslewering het ‘n transformasie oor die afgelope dekades ondergaan met ‘n hedendaagse oogmerk op protokolle, beleide en prosedures. Deur die toepassing van gestandaardiseerde praktyke binne ‘n rehabilitasie konteks het die navorser tot die besef gekom dat verskeie faktore en verslag van pasiënte geen standaard of beleid volg nie. Na bykans ‘n dekade in die rehabilitasie veld word die navorser daaglik gekonfronteer met een element wat geen voorspelling of vooruitskating toelaat nie – pyn. In ‘n populasie van gewrigs vervanging pasiënte is die verskynsel in die oortreffende trap teenwoordig. Pasiënte met dieselfde antropometriese data (massa, lengte, geslag en ouderdom), chirurgiese intervensies, farmakologiese behandeling, dokter in bevel, diagnose, radiografiese resultate en rehabilitasie toon nooit dieselfde pyn profiel nie. Indien al die bydraende faktore dieselfde beeld vertoon, hoekom is geen pyn profiel identies nie? Hierdie vraag is die hart van die studie – waarom verskil pyn verslae as daar soveel ooreenkomste tussen pasiënte is?

Die navorser het bewus geword van die feit dat pyn erken word in ‘n organiese vorm. Organiese pyn is meetbaar en word verwag tydens besering, siekte en chirurgiese intervensie. Die multi-dissiplinêre span is bewus van organiese pyn en aksie en is gereed om in te tree met medikasie, chirurgie en behandelings protokolle. Mediese personeel notuleer organiese pyn met doelgerigheid en pas behandeling aan volgens pyn vlakke aangesien organiese pyn, werklike pyn is. Organiese pyn is werklike pyn wat sy oorsprong het as gevolg van chirurgiese intervensie. Steeds volstaan die navorser se vraag: “as alle faktore wat tot pyn bydra dieselfde konteks handhaaf – waarom die verskil in pyn verslae vanaf pasiënte?”

Hierdie vraag is die aansporing tot die navorser se studie en het aanleiding gegee tot kritiese fokus gedurende pasiënte onderhoude. Elke pasiënt wat 'n opvoedkundige sessie bygewoon het, het baie helder gedagte formasie getoon rondom hulle post-operatiewe pyn verwagting. Die meeste pasiënte het vooropgestelde idees gevorm rondom hulle pyn na afloop van chirurgie. Meeste pasiënte het 'n verwagte post-operatiewe pyn telling konstrueer na afloop van konsultasie met hul chirurg of 'n lid van die mediese span. Hierdie pyn verwagting het as 'n realistiese en meetbare ervaring deur die kliënt se persepsie na vore getree voordat hul chirurgie ontvang het. In etlike gevalle het pasiënte hierdie telling konstrueer na gelang van inligting deur vriende of familie wat soortgelyke prosedures ondergaan het terwyl ander pasiënte die telling as gevolg van onkunde rondom die chirurgiese prosedure geformuleer het. Dit het duidelik geblyk dat inligting of tekort aan inligting 'n primêre rolspeler was in pyn konstruksie of persepsie van pyn. Pasiënte het teaters binnegegaan vir chirurgie maar alreeds perseptuele pyn ervaar. As 'n individu pyn kan konstrueer voor 'n chirurgiese prosedure – bestaan die moontlikheid dat perseptuele pyn kan omskakel in organiese pyn en uiteindelik die verskillende post-operatiewe pyn terugvoere verklaar? Hierdie verskynsels het die navorser gelei na ondersoek rondom die ontstaan van perseptuele pyn asook die moontlike faktore wat bydra tot perseptuele pyn. Inligting is as kern gesien en die mees omvattende inligtings-milieu is die konsultasie tussen dokter en pasiënte. Hierdie verhouding en die dinamika is intens ondersoek om vas te stel hoe dit perseptuele pyn beïnvloed. Meting van perseptuele pyn is ook aangepak om die moontlike uitwerking daarvan op organiese pyn vlakke post-operatief te bepaal. Die studie poog om verskillende pyn verslae waarvoor geen beleid of prosedure verklaring kan bied, te ontleed. Dit is 'n poging om perseptuele pyn en die impak daarvan op post-operatiewe pyn tellings en gedrag te verklaar.

Daar word met die navorsing gepoog om huidige kennis rondom die impak van die dokter- pasiënte verhouding uit te brei asook die rol wat hierdie verhouding op die ervaring van pyn speel uit te lig. Beperkte navorsing is tans beskikbaar rondom pyn persepsie en die studie poog om insiggewende bydraes te lewer tot die huidige inligting beskikbaar. Die studie kan voorts bydra tot die ontwikkeling van modelle en beleide wat pyn in 'n meer holistiese raamwerk beskou en dus uitgebreide benaderings tot die hantering van pyn en die dokter- pasiënte verhouding bied.

## **CHAPTER 1**

### **INTRODUCTION**

#### **1. TITLE**

**Proposed Title:** A medical-sociological perspective on doctor-patient contact and pre-perceived pain of surgery.

**Outline of the Study:** Patients seen daily in an orthopaedic ward in a hospital in Libya both pre and post knee replacement surgery presented with such a diverse array of reported pain symptoms and pain complaints, that no two cases seemed alike despite similar surgical procedures, radiographic findings, similar clinical presentation and pharmaceutical interventions. This prompted the investigation into the possibility of patients constructing pain on a perceptual level prior to experiencing actual pain. The study aims to ascertain if perceived levels of anticipated pain at the pre-operative stage are more intense when the patient is poorly educated, due to no doctor-patient contact, as opposed to sufficient education and good doctor-patient contact prior to surgery.

#### **KEY WORDS**

Pain, Perception, Pain scales, Doctor-Patient contact, Education.

#### **1.1 ORIENTATION**

Pain is a topic that has been extensively researched, from many perspectives, and approached by various disciplines ranging from theology, sociology to alternative medicine, psychology and medicine. All have set out to answer the question: What is pain? How is pain triggered? When is an experience deemed to be painful? Morris (cited by Williams & Bendelow, 1998:158) concluded that one of our greatest forms of 'illiteracy' in the Western world is ignorance about pain.

Social scientists have, for more than half a century, been involved in the study of pain and have made important contributions to our understanding of the ways in which people respond to pain and other symptoms of illness. Various models, and theories from various fields and disciplines, have been developed to explain pain and the human reaction to it. Models range from purely medical to the Biopsychosocial model described by George Engel (1977:129-136), as an integrated model that incorporates mechanical and physiological processes as well as psychological and social contextual variables. The Engel model views illness as an interaction between biological, psychological and sociocultural variables. The foundation of this ambitious model rests on Freud's renewal of the mind-

body relationship “by delineating the process whereby emotions can unwittingly affect the body” (Furst, 2007:4).

One would consider pain to be a relatively uncomplicated concept in medical terminology. Its origin lies in the medical field's scientific nature and structures, and should therefore easily be explained. Sadly, as the philosopher Marshall put it in 1894, we are compelled to do something about pain and to act effectively in order to relieve it, a response that goes far beyond any one simple reflex action. This places affective processes parallel with sensory processes, yet, as the Cartesian model or dichotomy of body and mind suggests, the emotional aspects of pain are less likely to be acknowledged (*cited by* Williams & Bendelow, 1998:156-157). The void around the social factors of pain, that contemporary models of pain include, has only partially been researched from a psychological perspective (Morris, 1991:9-11).

In the 17<sup>th</sup> century the Specificity theory was developed wherein Descartes theorised that the body works like a machine. This theory was predominantly physiological in nature and the perception of pain was not specifically addressed (*cited by* Bendelow & Williams, 1995:141). “Neither of the theories could explain either pain in the absence of tissue damage or variation in pain across individuals with (apparently) the same amount of tissue damage”. (Main & Spanswick, 2000:8). The ‘gate control’ theory of pain has, to date, been the most influential and productive model of pain and has led to a widespread recognition of the necessity of the study of psychological factors in our understanding of pain (Hadjistavropoulis & Craig, 2004:4). The Gate Control Theory was conceptualized by Patrick Wall and Ronald Melzack and it provided various answers for the terminology of pain and its origin. The brain is the ultimate destination for messages and becomes the judge and jury regarding decisions on pain messages received. The brain decides which messages to ignore or to transmit. This constitutes a shift to the brain as the responsible area for the perception of physical pain (Melzack & Wall, 1965:971-979). Should the brain find pain messages inappropriate or less important, it may even ignore the pain message or prevent distribution of the message. The brain’s ability to distinguish between messages, and to select appropriate messages, led Melzack to propose that pain is ultimately in the brain (Melzack, 1993:615-629; Melzack, 2001:1378). The brain determines which stimuli are profitable to ignore over time. Thus, the brain controls the perception of pain directly. This approach offered a way of integrating pain behaviour, both as a response to pain and as behaviour that could come under environmental influences and control. The theory has encouraged the investigation of the nature of pain-associated disability and this has led to the development of biopsychosocial models wherein a wide integration of physical, psychological and social perspectives is contemplated (Main & Spanswick, 2000:11). Pain studies have been impaired through a purely medical approach, neglecting pain as an experience and multi-dimensional construct with many determinants. To reach its conclusions the study will be pursued utilizing a multi-paradigmatic approach to enhance existing knowledge about perceived pain, the impact of doctor-patient consultation on perceived pain as well as the transcendence of perceived pain into organic post-operative pain.

## 1.2 PROBLEM STATEMENT

Pain perceptions are viewed as experiences which are triggered by certain stimuli such as tissue damage. It should be fairly predictable in intensity, but individuals can experience pain without injury and may also sustain injury without experiencing pain. Patients may report very different pains resulting from the same type of injury (Main & Spanswick, 2000:19). "Many of the influences that affect symptom perception and reporting behavior are social and cultural as well as psychological and physical." (Skevington, 2004:182.) The research aims to illustrate pain perception as a multidimensional experience, underpinned by neurological involvement, emotional and environmental factors (Staats, P.S., Hekmat, H. & Staats, A.W., 2004:28-29). This aim is supported by various research papers calling on medical personnel to take cognisance of their patient's culture, beliefs, educational level and emotional status. For example Fava states that "Psychosocial and biological factors interact in a number of ways in the course of medical disease. Their varying influence determines the unique quality of the experience and attitude of every patient in any given episode of illness" (Fava, 2007:5). Viewing an individual on levels of daily function, productivity and performance of social roles, intellectual capacity and emotional stability are important factors for investigations in a clinical setting as well as in treatment programmes. These issues have become of extreme importance in chronic diseases not only to the patient but also to the caregivers and health providers (Fava, 2007:6).

For the purpose of the study the author wishes to establish the influence of health education on perceived pain and how it is influenced by the doctor-patient interaction, as patient and doctor expectation is, to a large degree, modeled by this contact (Lown, 1996:313). Perceived pain may be heavily dependent upon doctor-patient contact and, in turn, has a direct impact on the patient's recovery, the "sick role" and actual organic pain levels that the patient experiences post operatively. The type of contact, its intensity and frequency, as well as the nature thereof, have long been debated as key issues surrounding illness behavior or the lack thereof. Freidson (1988: viii), Stimson and Webb (1975:43-72), Calnan and Rutter (1986:673-678) as well as Tuckett, Boulton, Olson and Williams (1985:4), embarked on analyzing this relationship and defining models of explanation. If consultation with a physician can influence illness behaviour (Kasl & Cobb, 1966:246), can pain levels also be affected? Benedetti describes three studies conducted using the placebo effect. A placebo is very simply a simulation of medical intervention. It can be pharmacological in nature or any other intervention. The key is however that the placebo has no specific action on the disease or pathology in question. The placebo effect in turn is the outcome that follows administration of the placebo (Benedetti, 2007:7). In essence all the studies illustrate that the medical professional's words can be of crucial importance to the therapeutic outcome. Benedetti (2007) refers to the studies as illustrations of the fact that words alone can increase therapy efficacy, reduce the intake of medications and can improve the patient's quality of life. "Therefore, the therapist's words, and more generally the psychosocial context around the therapy, may affect both the patient's mind and body."(Benedetti, 2007:7.)

### **1.2.1 Research questions: What is pain? What is perception? What is perceived pain?**

- The interpretation of the term ‘pain’ is considered a hinderance to our understanding of the pain experience and it can reduce the physician’s ability to contain it when it becomes chronic and debilitating to life tasks (Backonja, 2005:9). Backonja (2005:9) is of the opinion that the word pain is required to perform multiple functions; it is applied to pain as sensory phenomenon, a signalling system as well as the complaint treated in the medical consultation rooms. Pain is also subject to self-imposed limitations by available vocabulary. Individuals are bound by a linguistic straitjacket when discussing pain in a clinical setting versus pain as a field of research. Backonja (2005:10) states that “the consequences of linguistic confusion and vagueness with respect to the terms we use to describe pain are profound”. Inadequate means to describe the problem of pain one wishes to address will hinder learning and the ability to develop sophisticated understanding of chronic pain. The researcher agrees with Backonja and therefore aims to define the terminology of pain and perceived pain in a concise and scientific manner as “improved classification and terminology will be important for the future development of more effective therapies” (Backonja, 2005: 10).

#### **What is doctor-patient contact and how can this influence perceived pain?**

- O’Neill, Jinks and Ong (2007:6) conducted research on pain thresholds and argue that patients can manipulate their threshold depending on their doctor-patient encounter. Modern technologies have now enabled scientists to investigate exactly what happens in the brain when a patient expects a therapeutic benefit by means of a placebo. The research afforded opportunities to elaborate on a mental process such as expectation and how the effect of a placebo (a drug that produces beneficial consequences for a patient as a direct result of his/her belief) and a nocebo (a drug that produces unpleasant reactions that is not chemically derived but purely experienced as a result of the patient’s pessimistic belief) translates into an effective model illustrating the impact medical personnel can have on a patient with their words. Benedetti argues that a sugar pill with a verbal suggestion of powerful pain reducing properties will in fact provide the desired pain reduction as a result of the patient’s trust in the physician, his belief in the treatment and expectations of clinical benefit. The psychosocial context around therapy and specifically the verbal input causes the placebo effect and in this case, pain reduction (Benedetti, 2007:7).

#### **Is it possible to measure pre-perceived pain levels realistically and account for variables within patient’s reports?**

- Pain is an extremely subjective matter and self report becomes the only measure (Herr *et al.*, 2006:44-52). It is however paramount to quantify pain in order to plan and assess treatment

efficacy (Flaherty, 2008:41). Pain intensity scales are widely used both clinically and in research to measure patient pain perception (Lund, 2006:2). Pain measurement are however aimed at existing pain and not anticipated pain and the scale utilized in the study will have to be benchmarked against other scales or utilized in conjunction with other scales if realistic measure is to be achieved. Assessment on a combination instrument may very well yield the answer to obtain realistic and reliable individual pain ratings as well as provide regulatory scope on the clinical and research front (Averbuch & Katzper, 2004:368-372)

**Can pre-perceived pain influence actual organic pain post-surgically? Can pre-perceived pain assist in elucidating information about post-surgical pain levels?**

- This question reaches to the heart of the study and to its conclusion. It seeks to answer and add to the discourse of the mind-body dilemma. Can the mind influence the body, are they interrelated and dependant or separated in operation. This relationship has left philosophers, psychologists and medical practitioners bewildered through the ages as powerfully illustrated by Furst (2007:2): “Even today, at the opening of the 21st century, despite the momentous advances made by medicine, it still defies complete understanding of its multiple manifestations and, above all, of its precise mechanisms”. Freud made advanced deductions and applied research to demonstrate the possibilities of mind-body interaction. It is accepted that anxiety may result in sleeplessness, anxiety can trigger a headache and examination concerns can present as stomach ache. In theory it would seem that the psychological has been reintegrated with the physical but in medical practice, application of this multidimensional approach will prove more difficult; a process that may be neither transparent nor easy in execution. Ultimately recognition of the mind-body influence becomes a great challenge for the technologically advanced field of medicine and one to which all should pay heed (Furst, 2007:4).

**1.2.2 Research objectives**

1. To understand what pain, perception and perceived pain is, as defined within various medical models.
2. To outline doctor-patient contact and its possible influence on perceived pain levels.
3. To measure perceived pain levels as well as post-operative organic pain and draw comparison and correlations between the two.

**1.2.3 Hypothesis**

The author’s hypothesis is that pain can be perceptually constructed as a result of surgery anticipation and be influenced by doctor-patient contact and can thus ultimately account for different organic pain reports after surgery.

### 1.3 PARADIGM PERSPECTIVE OF THE RESEARCH

Due to the complex nature of the proposed research topic, and its flow into various domains of human behavior, social networks and emotional involvement, together with limited recorded research on the topic, it is difficult to assign a set paradigm to the study. No fixed paradigm is presently capable of defining the research within the parameters of an absolute context. A multi-paradigmatic approach will be best suited to this research proposal. Due to the complexities of classification and treatment of pain, a multidimensional approach is needed when facing chronic pain (Backonja, 2005:12), it therefore stands to reason that the same notion will be applicable to researching such a complex topic. There are, however, certain perspectives of paradigms that are capable of consigning this research to a suitable niche and the researcher thus leans toward Interactionism.

Interactionism - a theory based on social interaction as a process consisting of actions, reactions and a mutual adaptation between two or more individuals - is probably the most appropriate paradigm (Blumer, 1986:2). This paradigm is derived from American pragmatism and particularly from the work of George Herbert Mead. Herbert Blumer was a student of Mead and an influential author in symbolic interactionism. The emphasis is generally placed on the individual. "Fundamentally, action on the part of a human being consists of taking account of various things that he notes and forging a line of conduct on the basis of how he interprets them. The things taken into account cover such matters as his wishes and wants, his objectives, the available means for their achievement, the actions and anticipated actions of others, his image of himself, and the likely result of a given line of action." (Blumer, 1969:15.) (Note: The use of sexist pronouns is retained here and in other direct quotations. The researcher is aware however that avoidance of sexist pronouns is now the internationally accepted norm in academic writing). The proposed research will focus on individuals' pain reports. The numerical pain rating, although quantitative in nature, will be derived, analyzed and interpreted based on the interaction, or lack thereof, that the individual encountered with a physician. It is well documented that professional patient communication is known to affect health outcomes (Ong, Visser, Lamnes & De Haes, 2000:145-156; Stewart, 1995:1423-1433; Wikblad, 1991:837-844). The essence of the study proposes that one individual's action can mould another individual's reaction. This proposed research of an individual's actions (pain rating) and anticipated actions (individual's wishes and wants from the physician) complies with an interactionist approach. Aspects of social interaction with the physician that are internalized by the patient, to form their perceived pain rating will be highlighted and ranked as consultation parameters that can increase or decrease pain perception. The fact that interpretation is essential in this paradigm makes for its appropriate use in a study of perception, along with the aspect of social interaction that once again offers a paradigm for the doctor-patient contact. Criticism from sociological theorists in the following disciplines will be reviewed to assist in illustrating the shortcomings of doctor-patient contact: Conflict theorists (doctors as the dominant élite), Focauldian theorists (knowledge gives power), Social constructionists (culture influences health behaviour), Feminist theorists (women seeking upliftment from dominant males in an Islamic society) as well as Critical Realists (patients are responsible for their own

health in the changing doctor-patient milieu). Criticism will also be applied from a patient perspective to provide clarification especially pertaining to behaviour or pain reports that is neither supported by the various pain scores nor pathology degrees. The research group is an exceptionally defined group specifically benchmarked against parameters of education, treatment compliance, culture, gender, social class and ideas about health and illness. The group dimensions of the study population and individual convictions can have a profound impact on research results. Criticism pertaining to acceptance of the 'sick role' becomes an educational issue as patients have limited insight into pathology and treatment compliance. This often results in 'non compliance' from the patients and in turn can impact on pain reports (Burger, 2001:79-84). Tuckett *et al.* (1985:4) claim that the doctor-patient meeting has transcended from an expert physician guiding a lay patient to an empowered patient, though this is not yet prevalent in all cases and certainly limited to a select few referred candidates. The authority and power fundamentally still belong to the expert élite and is further deepened by the neglect of gender, social class, ethnicity and culture. Despite the medical profession's propaganda of scientific orientation, it is ultimately constructed by and embodies the cultural beliefs and biases of the society that created it (Davis-Floyd, 2001:S5-S23). The 'sick role' is also viewed as a role portrayed and applicable to acute cases. Society tends to afford chronic and disabling pathology such as Osteoarthritis limited exemption time pertaining to the sick role. Chronic diseases place great demands on the patient, health care professionals and the medical encounter in handling of these conditions differs immensely in the case of acute conditions (Burger, 2001:79-84; Wikblad, 1991:837-844). It is evident that dual review of the sick role criticism from both physician and patient perspective can provide a holistic view of the sick role and can provide valuable information to inform conclusions.

This does not, however, exclude other views or paradigms which may develop during the course of the study and, more specifically, during data collection. Utilizing questionnaires and non-participant observation is a quantitative approach and is in line with Parsons' historical suggestion of a theoretical model to explain doctor-patient contact based upon a structural-functionalistic approach (Parsons, 1951:436-437).

The twin emphases of a scientific method applied to the objective social world and the use of an analogy between the individual organism and society will be suited to the proposed study.

### **1.3.1 Intellectual climate**

Many clinical judgments can be made in a more rational manner through greater sociological understanding. Present-day frustration, as reported by physicians and patients, may be overcome through an understanding of medicine as a business. The behaviour of colleagues may be better appreciated and the physician may finally be able to optimize treatment to his patients via the therapeutic skills thus obtained (Tuckett, 2003:3). Members of a group may not always act or think alike, but they do share similar conceptions and this is vital to enable them to understand the research group and the way they perceive doctor-patient interaction and pain (Tuckett, 2003:13). The intellectual climate currently

indicates that social behaviour and living conditions are considered role players in disease. This provides a research avenue to investigate. The focus upon chronic disease and associated behaviour allows scope to assess pain-related reports on patients (Cockerham & Scambler, 2009:3-4). Changes in types of disease, the hospital as an organization, the style and content of treatment, technological procedures and the reasons patients seek medical advice, are all factors indicating that doctors should be able to achieve more than an understanding of disease and organic pathology treatment – they need to master the principles that govern interpersonal relationships and understand forces influencing behaviour in the social environments of their patients. After all, the doctor-patient consultation is ultimately a social action and provides clear opportunity to focus on the evolution of medicine as a changing entity, from treating pathology or illness to treating an individual of social construct (Tuckett, 2003:10). There is currently a strong emphasis on chronic diseases and the cost of treatment and much research is aimed at addressing the financial impact of disabling conditions on the individual, the impact on the economy and on medical insurance (Brewer, 2005:4-5). Chronic pain is especially significant for the elderly and Brewer indicates that this particular population also often suffers from multiple medical comorbidities that are likely to become an even more substantial dilemma as members of the baby boom generation are approaching and surpassing the age of sixty five years (Brewer, 2005:4). The challenges of managing chronic conditions in the elderly effectively in both the medical and financial spheres is a research topic that is actively being addressed and as such the proposed study may therefore add valuable insights into the current changes seen within research in the Sociology of Medicine. It may provide exploratory avenues to assist with effective management of chronic conditions through better understanding of individualized pain perception.

### **1.3.2 Discipline**

Talcott Parsons is often considered the father of the Sociology of Medicine because of his description of the 'Sick Role' (Parsons, 1951:436-437). The research falls within the boundaries of Sociology and, more specifically, Sociology of Medicine which is the study of individual and group behaviours with regard to health and illness (Tuckett, 2003:13). Sociological approaches to the body, pain and emotions are centrally embedded to the human being as a unit of society. Concern with individual and group responses aimed at assessing well-being, maintaining health, acting upon real or perceived conditions of illness and interacting with health care systems, and maximizing health in the face of physiological or functional derangement, is at the heart of the field (Tuckett, 2003:10). It allows research into the impact of our environment on our health and serves as a creative discipline to conduct the proposed research. Sociology of Medicine remains unique amongst health-related social and behavioral sciences through the use of sociological theory. Through the employment of applied and theoretical perspectives, it provides infinite application possibilities within research (Cockerham & Scambler, 2009:3). Sociology of Medicine provides the opportunity to assess and study the relationship between health care professionals and patients, making it eminently applicable to the proposed study (Cockerham & Scambler, 2009:3-4).

### **1.3.3 Meta-theoretical assumptions and literature review**

To address the objectives in Article 1, current pain models will be explored to highlight medical and social research and existing definitions of these terms. Purely medical models, as well as integrated models, will be reviewed to provide concise definitions of the terminology. Earlier pain studies focused predominantly on one or the other of these factors. Only in later years was recognition given to a combination of factors that may influence pain (Wall & Melzack, 1984:230). These concepts will be presented within the multi-dimensional Biopsychosocial model (Engel, 1977:131-136) along with the perceptual model of pain as a possible explanation for variation in pain reactions from one individual to the next.

Much emphasis is currently being placed on an open boundary doctor-patient relationship. There is a focus on being 'cared about' and not 'cared for' (Thompson & Sunol, 1995:127-141) and there is a general move from professional control to patient empowerment (Conway & Willcocks, 1997:131-140). With this in mind, the literature in Article 2 will be approached by utilizing the three existing models defining various types of doctor-patient contact. Interactionism will underpin achievement of the objective to illustrate that the doctor's action can mould the patient's reaction. This will be analysed against three paradigms commonly employed to explain doctor's actions during consultation. These paradigms illustrate different types of interaction: distant, patient centered and holistic. The humanistic paradigm of medicine has a more human-centered approach which is compassionate and partnership oriented (Davis-Floyd, 2001:S10-S11). An holistic paradigm will also be reviewed to illustrate doctors incorporating the patient's mind, body, emotions, spirit, and environment, in the healing process (Davis-Floyd, 2001:S11). The technocratic paradigm of medicine is also relevant to the proposed research. Apart from the medical systems' roots in science, it is also molded by the beliefs and biases of the society that created it. This is especially applicable to the doctor-patient model which demonstrates the tendency of Technocratic physicians, who do not value lengthy conversations with their patients, to keep their visits short. This tendency to remain distanced from their patients is often ingrained in physicians during their period at medical school and residency, where they are taught to protect themselves by avoiding emotional involvement (Sered & Tabory, 1999:223-252).

## **1.4 RESEARCH DESIGN AND METHODOLOGY**

### **1.4.1 Approach**

Particular attention will be given to the subjective experiences of the individuals (insider-perspective). A qualitative research design will be well suited to evaluate this (Mouton, 2001:194). To translate a subjective experience into tangible data, the researcher proposes the incorporation of a quantitative leg to

the study. While qualitative methods can be utilized to aid in defining clinical problems as well as solutions (Hutchinson, 2001:505-521), the quantitative leg is likely to strengthen a study's design (Casebeer & Verhoef, 1997:130-135; Malterud, 2001:397-400; Morse, 2002:116-129; Roter, 2000:5-15). This is especially so when we take into account that, for this precise reason, medical models, such as the biopsychosocial model, includes an holistic view of illness. Casebeer and Verhoef (1997:130) discussed underlying reasons why health researchers have been presented with difficulty pertaining to collaborative work across the qualitative and quantitative research paradigms. Moving beyond adherence to a particular method of inquiry is however vital especially in cases of chronic illness. The very nature of chronic illness demands a combined approach of both qualitative and quantitative research and the success of health research in the management of these conditions lies within the shared application of research paradigms. A trend investigation was launched to ascertain research paradigms predominantly employed to study chronic disease. Medline citations spanning 1993 to September 1997 were employed and these revealed that 305 quantitative studies were published as against only 112 qualitative studies indicating the preferred continuation for quantitative analysis. Only 47 papers utilised a combination approach of qualitative and quantitative studies. The diagnostic measurement provided the qualitative measurement within what is deemed essentially quantitative, quasi-experimental designs. In other cases reviews of both qualitative and quantitative literature relevant to the chronic condition of interest were included. Thirteen studies could be categorized as true combined paradigm studies (Casebeer & Verhoef, 1997:131). Casebeer and Verhoef (1997:133) referred to a study of Kravitz *et al.* as an example of the medical field beginning to combine paradigm approaches to elicit better information. A team of physicians conducted a qualitative inquiry within a larger clinical survey. The approach offered a way to better understand patient expectations of medical care. The combination approach clearly enjoys popularity in literature reviews presently and is frequently mentioned as the way forward, specifically for chronic conditions.

In order to attain the goals set out in section 1.3.2, the author will utilize, predominantly, a combination of theoretical engagements with empirical work. The reason for such an approach is the fact that purely theoretical theses "don't entail empirical research, but are theses that engage purely with theoretical or policy arguments and the development of theoretical insights" (Bak, 2004:58-59). Strong emphasis is placed on sources – policies, laws, narratives, academic books, case studies and so forth. Engagement with these sources, such as analysis, literature reviews, discourses and comparative studies to obtain a substantial description that presents detail, emotions and a deep context of the individuals under research, is of paramount importance (Denzin, 1989:83). The Interactionist method allows for flexibility regarding data interpretation. It provides scope to analyse components of doctor-patient contact that can escalate or reduce perceived pain reports. It allows the researcher to investigate the quality of doctor-patient contact, critical parameters and areas of inadequacy.

The proposed study will however benefit from a measurable outcome to analyse data collected. The addition of a measurement tool combines the theoretical engagement with empirical work. Utilizing questionnaires and pain scales to collect data of scientific and measurable value provides a quantitative leg to the study. The results will be analysed and used to clarify possible outcomes or support notions or concepts that develop during the research.

## **1.5 RESEARCH METHOD**

The researcher wishes to divide the study and execution thereof into two phases. Phase one will comprise of a literature review with specific focus on content that will enable establishment of clear definitions regarding pain and perception. Literature focussed on the relationship between doctor and patient will also be investigated to allow insight into possible constructs affecting patient behaviour.

### **1.5.1 Phase 1: Literature review**

Phase one will consist of an extensive and thick descriptive literature study, reviewing existing literature on the topic. A thick description is more than a mere surface portrayal of a person. It presents detail, emotion and a deep context of the individuals (Denzin, 1989:83). It establishes the significance of an experience that is at the heart of perception and at the point of origin of the evolution of perceptual pain. Literature will be thematically organised. This strategy is prevalent in exploratory studies of both quantitative and qualitative nature (Mouton, 2001:93). Archival or documentary sources will be obtained through textual analysis, discourse analysis as well as historical analysis (Mouton, 2001:105) and integrated into the research data gathered to assist in adding various perspectives and additional nuances into the study. Literature will be organised by theme or construct (Mouton, 2001:91). The epistemological basis for this thesis will be established through a literature study focussing on:

#### **a) Pain and perception:**

Definitions of both concepts will be provided, as well as clarification, within the context of pain models and perceptual models. Description and assessment of pain in an holistic form is of great value and should encompass a multidimensional approach taking cognisance of medical etiology, pain mechanisms, psychologic comorbidity as well as quality of life (Backonja, 2005:13). Understanding pain as a comprehensive and complex aspect with concise definition and development of models will lay a foundation for realistic and in-depth conclusions.

#### **b) Doctor-Patient interaction**

In this section the focus will fall on the doctor-patient model to provide insight into the dynamics of the relationship and to aid in providing answers for internal factors, such as education, that may influence the patient's perception, as well as external factors, such as the reputation of the hospital setting, that may influence responses. Rosengren and Lefton (1969:119-144) assessed therapeutic actions (technology) of

various medical teams in terms of their differing intentions and related them to the hospital as organization (structure). Health professionals are focussed on patient care and their occupation has an intrinsic reward (nature of the task) in the form of treatment outcomes for their patients (Tuckett, 2003:246). The intrinsic reward is embedded in their needs hierarchy and often when the intrinsic reward is not present due to deficiencies or ambiguities experienced (Stanton & Schwartz, 1954:405), the health professional becomes primarily concerned with extrinsic awards such as salary (Coser, 1963:235). The work they perform becomes automated and “not as a means of satisfaction” but as a “job to be done” (Tuckett, 2003:241). Tuckett states that health professionals require intrinsic rewards to become involved in their work (2003:246). Work forms but one sphere of the needs hierarchy; it can fulfil the role of both a primary need as well as a vehicle to achieve higher needs attainment. Means versus goal-oriented attitudes of medical personnel becomes extremely valuable for this particular study as an unsatisfied health worker may produce unsatisfactory work resulting in severe implication for the patient’s care as well as leading to various perceptions around pain anticipation and experience. Thomas (1987:1200) deems the doctor to be a valuable therapeutic agent – the doctor becomes the placebo and his affect on patients is felt to a greater or lesser extent in every consultation. This powerful interaction and the affect it can possibly generate is both a fascinating avenue of exploration with a multitude of positive information possibilities and may even enhance chronic care.

### **1.5.2 Phase 2: Empirical study**

The empirical study will be conducted utilizing five steps to allow accurate execution of the proposed research. The first step will involve analysing the biographical characteristics of the sample followed by investigation and selection of an appropriate measuring scale that will allow realistic and reliable data collection. Data obtained will be statistically processed to produce results that will enable conclusions and recommendations.

#### **a) Step 1: Analyses and biographical characteristics of the sample**

Forty patients (both male and female), in an orthopaedic ward awaiting knee arthroplasties, will be randomly selected. Joint replacement surgery is in general performed in old aged patients (Felson, Lawrence, Dieppe, Hirsch, Helmick & Jordan, 2000:635-646; Juni *et al.*, 2003:516-521). Arthroplasties is a result of Osteoarthritis and long term wear and tear adding to the chronic condition (Clark, Hudak, Hawker, Coyte, Mahomed, Kreder & Wright, 2004:1366). The age of the patients is therefore anticipated to be over 50 years of age, predominantly, but the researcher does not anticipate utilizing age as a selection criteria and therefore the sample may include persons of a younger age. Consultation parameters, that constitute an ‘adequate consultation’, will be included in the questionnaire. This will assist in ascertaining whether or not the patient forms part of the consulted versus non-consulted group. Stratification will occur post-interview and therefore selection will be random. Stratification will exclude age, gender, educational level, consulting physician and previous medical conditions. Stratification will

purely be based on the intensity of the consultation that the patient was involved in. A non-consulted patient will refer to a patient exposed to a consultation lacking detail and information as set out in the desired consultation parameters. Although the patient will be admitted to surgery by a medical doctor, it does not negate a consultation as the parameters deemed as sufficient education will not be present. Medical and ethical considerations demand an observation and clinical data log by a physician to ensure that treatment is necessary. For this reason no patient can undergo joint replacement surgery without having seen a physician. Being 'seen' by a consultant will be classified as a non-consulted patient as the in-depth education and information session will be lacking, whereas a patient consulted against the benchmark parameters will constitute a 'consulted' patient for the study purposes.

### **b) Step 2: Selecting the measuring instruments and Data collection**

Data collection will take place by means of pain questionnaires in an endeavour to establish levels of perceived pain. The interviews via questionnaires may yield ethnographic inclusions as the data will be collected from within the Libyan population with comparison possibilities between Libyan consultations versus other proposed medical models. The researcher is also a foreign national observing and conversing with a Libyan population, adding to a transcultural component. Participant observation is a style of research that employs a number of methods of which observation, interviewing and document analysis are but a few (McCall & Simmons, 1969:1). This becomes extremely important to bridge the transcultural divide. As various pain questionnaires are available with differing degrees of scientific credibility (Cork, Isaac, Elsharydah, Saleemi, Zavisca & Alexander, 2004; Flaherty, 2008:41; Lund, Lundberg, Sandberg, Norrbrink Budh, Kowalski & Svensson, 2005) as well as cultural applicability, a multi-factor sensitive comprehensive questionnaire will be selected. Questionnaires will therefore either have to be translated or adapted to elicit viable answers from the patients in the study. A translator may also be required during interviews, guided by the questionnaires, to ensure accurate data capturing (Hudelson, 2005:311-316). In doing this one may sacrifice a certain degree of scientific value of the questionnaire, or one may add variants to the study which may influence the outcome, for example: if the patient misunderstood the question and gave the 'wrong' pain value. This approach can, however, also yield a benefit in terms of a second observer and participant to reduce research expectancy as a pitfall. Questionnaires that will be considered (Lund, 2006:2) are:

- the Self-rating scale
- the Facial expression scale
- the Numerical scale
- the Visual Analogue scale

Utilizing existing questionnaires, which have been designed in accordance with research into pain measurement, provides study outcome control, in that it reduces bias due to extraneous factors that may arise. The assistance of an Arabic and English-speaking therapist during questionnaire completion will also assist in reducing common research pitfalls such as research expectancy. The secondary therapist is

therefore again of paramount importance to avoid recording researcher expectancies that could have been subtly communicated during the interview process (Mouton, 2001:106). The questionnaires are generally accepted as a reliable measurement tool for pain in a surgical and rehabilitation, as well as a psychological setting, and are widely utilized by medical personnel the world over (Ware, Epps, Herr & Packard, 2006:117-125; Flaherty, 2008:41-42). The researcher may opt to utilize more than one pain scale to ensure consistency in measurement. A combination instrument may very well yield the answer to obtain realistic and reliable individual pain ratings as well as provide regulatory scope on the clinical and research front (Averbuch & Katzper, 2004:368-372). The questionnaire will be populated in the relevant fields by all forty candidates and the introduction portion of the questionnaire will include questions pertaining to doctor-patient consultation or lack thereof. The patients will not be divided into a test and control group but rather a percentage of the population that received a doctor's consultation versus a percentage that received no consultation.

As the emphasis is on Sociology of Medicine, the study will be conducted in a hospital governed by ethical considerations. These considerations will be taken into account throughout. The specific ward mission statement and the patients' rights will be adhered to and recognised, as will their right to privacy. This aspect will be discussed at a later stage when the researcher has familiarized herself with these specific rights and ethical considerations. Where required and appropriate, consent forms will be drafted and furnished to participants for perusal and signature.

### **c) Step 3: Statistical processing of data**

Pain is a subjective experience, and therefore, the description and qualification thereof is dependent on the **individual in pain**. Realising this, the researcher is faced with two methodological problems. These being: problems associated with terminology, and problems associated with research outcomes.

With reference to terminology, it is apparent that conducting the study in Libya on a sample of Libyan-speaking patients and medical doctors, who, like their fellow Libyans use various Arabic words to define, describe and conceptualise pain, this would necessitate methodological decisions prior to gathering and analysing data. By so doing, misunderstanding, misinterpretation and incorrect responding would be prevented during data-gathering. For example, by assuming that the word 'pain' (as generically used in English) could simply be translated from English into Arabic, when not realising that Libyans use different words for pain experience, or assuming that a description of 'mild pain' is equivalent to the feeling 'uncomfortable' when describing a pain experience for the same type of injury.

While the former necessitates decisions relating to validity and reliability of research outcome, the second methodological problem in addition the problem with validity and reliability, specifically relates to data-analysis. For example: when researchers without giving thought to the fact that other factors may influence an individual's description or response to pain experience, only treat such descriptions as

intensity of pain, while also not bearing in mind that factors such as age, gender and cultural prescriptions and expectations may influence response to pain, this may lead to incorrect inferences. In order to prevent methodological problems, and to control for the difference between patients' response to pre-operative pain perception and post-operative organic pain experience, the researcher will review existing pain scales in which numerical values are assigned to each descriptive pain term or illustration. Measurement of pain may differ between scales: one may describe pain through facial expressions and another in an ascending numerical fashion – they all however assign a numerical value to the description. Utilizing more than one scale may reduce the possibility of incorrect interpretation as the study population may opt to score their pain on a visual face depicting pain but this score may differ from an ascending scale of intensity (Averbuch & Katzper, 2004:368-372). It may become important to explain pain on two or more scales and require the population to indicate their pain on each scale to ensure that a “moderate pain” is interpreted in the correct intensity.

Further to this, and as previously mentioned, the doctor-patient relationship plays an important role in pain perception and pain experience. Uninformed medical doctors would not include both sides of the coin; rather, they would most probably only give attention to post-operative pain, and not to perceived pain, either before or after an intervention. Both being important to pain management and the process of healing, as the researcher will discuss later, informative education strategies would be important considerations.

Therefore, as the researcher accentuates the doctor-patient interaction, understanding of pain perception and experience, both in pre-operative and post-operative settings, and attempts to prevent misunderstanding of questions, response, interpretation and analysis, the decision was taken to utilize a numerical scale-platform. Against this background, and keeping in mind that this is a qualitative study, some data was expressed in quantitative format, using averages. The sole purpose was to ‘visually’ present the data, and not to revert to quantitative methodological analysis. The reader should thus bear this in mind, as well as the fact that the assigned values was an attempt to depict findings ‘visually’, as descriptive terminology such as ‘moderate pain pre-operative’ and ‘mild post-operative’ does not provide justifiable data to conclude on the impact of doctor-patient contact.

Data collection will be on a voluntary basis, subject to informed consent being obtained from the patients who participate in the study. As the researcher will be employed in the hospital selected for the survey, limited costs will be involved (example copying of questionnaires). This makes the study financially viable. The hospital is also an academic hospital with a high frequency of medical students. Patients are aware of studies, research and teaching taking place in the hospital on a daily basis and the study will therefore not cause unfamiliarity issues for patients. Patient confidentiality is part of the researcher's medical oath and all information will be handled accordingly. Patients will be informed of their rights

and no patient will be required to state his name or surname for publication content. Information pertaining to the patient on a personal level will be limited to:

- Age
- Gender
- Treating Physician (important as consultation contradictory to hospital protocol may have been performed by a medical student or consultant not employed within the hospital).
- Medical history pertaining to previous joint replacement surgery

The information will not be constructed in a manner that will infringe the patient's rights or confidentiality. This information will be conveyed to the patient prior to participation to aid in decision making surrounding inclusion.

#### **d) Step 4: Results**

The data gleaned from the questionnaires will be analysed with the purpose of identifying the intensity of perceived pain levels, pre-operative, in patients, with or without feedback on the procedure, as well as organic pain post-operatively. Differences in the respondents' perceived pain and organic pain will be compared to existing related discourses and theories on pain and doctor-patient interaction. Themes and concepts will be integrated to offer detailed interpretation of the data gathered. The analysis will be completed when the interpretation, and possible application, in the social world can be shared (Rubin & Rubin, 1995:226-227).

#### **e) Step 5: Conclusions, recommendations and limitations**

Finally, based on this analysis, certain tentative conclusions will be drawn and recommendations for further studies will be made. Exploring aspects of living with chronic conditions by means of a qualitative paradigm can lead the researcher to a deeper understanding of how individuals experience living with their illness. The descriptive data can often appear inconsistent especially pertaining to gender or age differences indicative that in the context of a qualitative study, both the size of the sample as well as the method are inadequate to research any apparent distinctions. By utilizing a quantitative parameter simultaneously one can test the findings through appropriate sampling (Casebeer & Verhoef, 1997:134). The researcher aims to provide a combination study approach that will add value to management of chronic conditions by taking cognisance of pain perceptions generated via doctor-patient contact or lack thereof and the implications or possible solutions this may suggest.

### **1.6 POSSIBLE SIGNIFICANCE OF THE CURRENT STUDY**

Considering the lack of research and information that exists on non-scientific perception related to pain, this dissertation may prove valuable in addressing this gap in available knowledge regarding this aspect. The work may furthermore shed some light on a previously sparsely explored research area. The

emphasis of studies thus far has been focused on pain, when there is indeed pain present (after injuries, operations or during illness, be it physical or mental). No study, that investigates how much pain a person ‘thinks’ or perceives will be experienced after an operation, could be found. Mention is also made, in studies, of the intensity of pain **as it occurs** and factors that can vary the intensity of pain when it is indeed present. Nothing could, however, be found by the researcher, on any attempt to investigate the intensity perception of pain **before it occurs**. None of the fields on either side of the spectrum, ranging from psychology to science, have given any attention to perception. Pain, in its pure form, is studied in all disciplines and researchers strive to distinguish between organic (real) and non-organic pain. All these studies are based on the assumption that pain is present. Measuring pain as a numerical value is standard practice within hospitals and consultation rooms (McCaffery & Pasero, 1999:63). Measurement scales are designed to measure organic pain (Krebs, Carey & Weinberger, 2007:1453-1458). The study will attempt to measure perceived pain in a consistent and reliable manner and compare it to post-operative organic pain in an attempt to illustrate the validity and impact of pre-perceived pain. This dissertation may contribute towards existing knowledge and understanding of the influence of doctor-patient interaction, as well as the significance of this interaction on pain. As only scant research on perception of pain has been undertaken, this research may prove valuable for further studies or useful as a supplement to existing views and opinions. It can also serve as a foundation in developing practices that endeavour to manage pain by enhancing doctor-patient interaction in the health setting and possibly reducing costs of managed care. A psychologist, Christopher Edwards placed emphasis on this precise notion that patients from various religious and ethnic backgrounds often perceive pain and the treatment thereof very differently and that the subsequent success of treatment relies on the ability of the multidisciplinary team to understand how these issues affect the patient’s compliance and willingness to partake in the proposed regime. He proactively discusses and labels patient diversity and financial issues as a unique challenge (*cited by* Brewer, 2005:7-8). Thomas (1987:1202) adds valuable insights into research such as the proposed study and the benefits it may hold and have produced over the years when he refers to the placebo effect doctors can generate within patients: “If we are going to practise, and even more important to teach, the shared consultation, we must be able to show clearly what effect it has not only on patient satisfaction but also on recovery from illness.”

## **1.7 PROVISIONAL DIVISION OF CHAPTERS**

Research will be divided into four chapters. The first chapter will be devoted to providing the reader with an orientation of the study. The second chapter will focus on combining concepts of pain and perception allowing the foundation for chapter three that will explore constructs of the doctor-patient relationship. The final chapter will consist of a summary and conclusions as well as shortcomings and contributions that the study may have generated.

## CHAPTER 1: Orientation of the study

This chapter is devoted to establishing the research framework. It aims to explore the hypothesis within the boundaries of suitable paradigms and perspectives. The reader will be orientated to the background of the research. The problem statement will be discussed and its subsequent reflection in the research questions and objectives. The author is exploring the notion that pain may be perceptually generated by the individual who experiences it. The concept in itself seems uncomplicated and fairly simple but research might prove to be quite difficult. Pain as a neurological message is embedded in a complex human being with emotions and perceptions. This had a tremendous impact on the paradigm selection of the study. If pain can be perceptually generated – it can also be influenced by various perceptual factors. A person with pain consults a doctor as an holistic being yet they are often seen as a symptom not as a person. This idea propelled the researcher into the realm of interactionism that could assist in explaining how social interaction can cause reaction and adaptation between individuals that may ultimately result in pain construction of a perceived state. Measuring pain provided a twin emphasis of a scientific measure underpinned by the use of analogy between the individual and society. The intellectual climate allows focus upon chronic disease and associated behaviour that provides scope to assess different pain-related reports in patients with seemingly identical diagnoses.

## CHAPTER 2 - Article 1: Perceived Pain: Transcending Psyche and Soma

This is a foundation article that allows the entire study to take shape. It pioneers a shift from the traditional view that pain is a message received via neurological structures as a result of injury or illness and launches pain into a more holistic experience. To enable the author to dissect pain, great cognisance was given to pain theories. Theories of origin, modulation and transmission were investigated to provide the reader with a clear understanding of pain as it is understood in modern medicine but not neglecting the less refined routes these theories stem from. The chapter attempts to find a clear definition for pain that is understandable and a solid foundation to build discourse upon. Perception plays an integral part in this article and it is therefore interrogated using the same research methodology as the term pain. The article aims to marry a clear and concise pain definition with an equally clear perception definition that can be reviewed and concluded upon in specific model applications and paradigms.

## CHAPTER 3 - Article 2: Doctor-Patient Relationship under the microscope

Pain in the perceived state is still dependant on various external components coming into play. In the previous chapter the researcher attempted to merge pain and perception into a defining term: ‘perceived pain’. This bold attempt provided a product of human construct but presented no answer to factors responsible for the core generation of the perception. During clinical exposure to the doctor-patient interview and educational setting it became evident that this contact may be at the heart of this research. A literature review investigates the dynamics, origins and change to this often neglected relationship in an attempt to provide explanatory avenues for perceived pain and actual pain ratings postsurgical intervention. The dynamics of the doctor-patient relationship along with the changes in medical

approaches applied within the confines of this relationship is explored from a number of points of view. It ultimately provides variables and insight into the different pain reports, reactions to pain and ultimately pain behaviour as an holistic experience. Both physician and patient come under the microscope to account for the roles they assume, accept or even decline. Each reaction is measured against the various sociological frameworks that investigated, accepted or critiqued this very phenomenon.

CHAPTER 4 – This chapter will focus on the summary and conclusions as well as identifying shortcomings of the study contributions made towards the existing knowledge in the field.

## **1.8 CONCLUSION**

This first chapter is an introduction to the study and is aimed at providing a broad overview of the research that the researcher plans to undertake. It contains the background and the problem statements and also declares the various paradigms and research models. It is an overview of the entire research concept that the researcher wishes to embark upon.

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**CHAPTER 2**

**ARTICLE 1**

## CHAPTER 2

### ARTICLE 1

#### Perceived Pain: Transcending Psyche and Soma

(M Watermeyer)

Subject Group Sociology, School of Behavioural Sciences, Faculty of Humanities North-West  
University, Vaal Triangle Campus.

**Abstract:** In the medical field pain is recognized in its organic form. Pain is viewed as a neurological process and transmission of pain is dependent on neurological structures (nerve endings and the nervous system). The existence of pain as a valid medical report is not in dispute. Pain studies have evolved and developed extensively over decades and are formally recognized and under constant research. The lack of discourse pertaining to the ‘unexplained’ elements of pain should, however, be noted and explored. Patients seen in a Rehabilitation unit in Libya post knee replacement surgery presented with such a diverse array of reported pain symptoms and pain complaints that no two cases seemed alike despite similar surgical procedures, almost identical radiographic findings as well as similar clinical presentation and pharmaceutical interventions. Many patients undergo total knee replacements in government and private hospitals and outcomes of these operations vary from exceptional relief and regained

functionality to extremely poor cases that require revision and chronic rehabilitation. No obvious correlation and reason for variant pain reports can be found between cases and this prompted the investigation into other possible realms that include the patient's own interpretation and perception of pain as possible explanations for the phenomenon in the absence of supporting scientific data.

**Opsomming:** In die mediese veld word pyn in sy organiese vorm erken. Pyn word as 'n neurologiese proses beskou en transmissie van pyn is afhanklik van neurologiese strukture (senuwee eindpunte en die senuwee stelsel). Die bestaan van pyn as erkende mediese simptoom word nie betwyfel nie. Pyn studies het uitgebreid gegroei en ontwikkel oor dekades en word formeel erken en geniet voortdurende navorsing. Die tekort aan inligting omtrent die "onverklaarbare" komponente van pyn is egter baie belangrik en noodsaaklik vir die ondersoek. Pasiënte na afloop van knie vervangings operasies in die rehabilitasie eenheid in Libië het met ongelooflike diverse pyn verslae, simptome en klagtes gepresenteer. Geen twee pasiënte was dieselfde nie ten spyte van identiese chirurgiese prosedures, bykans identiese radiografiese bevindinge asook kliniese beelde en farmakologiese intervensie. Baie pasiënte ondergaan 'n totale knie vervanging in staats gesubsidieerde asook privaat hospitale en chirurgiese uitkomst wissel van ongelooflike pyn verligting en herwinning van funksie tot uiters swak gevalle waar revisie chirurgie of chroniese rehabilitasie benodig word. Geen duidelike korrelasie en rede vir die wissellende pyn terugvoere kon tussen pasiënte gevind word nie en dit het die soeklig na ander sferes omtrent wat die pasiënte se eie interpretasie en persepsie van pyn as moontlike verklarings vir die verskynsel kon bied in die afwesigheid van wetenskaplike en ondersteunende data..

**Keywords:** Pain; Perception; Perceived pain; Total Knee Replacement Surgery; Libya.

**Disciplines:** Sociology; Medical Sociology, Health Sciences.

## 1. INTRODUCTION

For most people pain is a part of their daily existence much like eating, drinking and sleeping. It is a force they constantly reckon with and this is truer with chronic and debilitating diseases such as Osteoarthritis. In fact pain is such a reality that it is the second leading cause of work-related absenteeism's annually (Fox, Berger, & Fine, 2000:50-53) and costs incurred as a result of chronic pain and associated increased utilization of healthcare services was estimated as being between 85 and 90 billion dollars in the United States in 1999 alone (Gitlin, 1999:93-98). The validity of the 'medical' pain is recognized but the meaning of pain for the individual is neglected and remains undetermined (Morris, 1991:2). Knee pain is often associated with Osteoarthritis and aging and is the leading cause for knee replacement surgery (Felson, Lawrence, Dieppe, Hirsch, Helmick & Jordan, 2000:635-646). It is a chronic and disabling condition that is managed through pharmacologically avenues, surgery and long-term rehabilitation. The management of knee pain comes at great expense to the patient (medical aid expenses and deterioration in quality of life) as well as the government and health care system (Martin, 2008:1). Patients are referred for total knee replacements on a daily basis all over the world and this is no exception in Libya. In this setting the opportunity arose to study, on an ongoing basis for 1 year the unexplained phenomena of pain in a particular population of patients scheduled for knee replacement surgery due to underlying Osteoarthritis.

The patients were observed prior to surgery, during admission and post discharge from the hospital. Data collection for the purpose of this research conforms to the data definition as per Turban, Mclean and Wetherbe (2002:480): "Data include concepts, thoughts, and opinions and can be raw or summarized. Data also include documents, pictures, maps, sound, and animation, and they can be stored and organized in different ways before and after use." A standard questionnaire was developed (Annexure A) pp. 89 - 91, which enquired into, amongst other things; the patient's personal information, medical history, consultation parameters, pain

perception (pre-operatively) and real organic pain experienced (post-operatively). The latter question was developed to assist in comparative analyses and to explore the possibility of further study with regards to correlation in pre- and post-operative pain levels. Questions often asked relating to surgery and information requested by patients daily in the orthopaedic ward assisted in establishing critical parameters of importance during doctor-patient consultations (Clark, Hudak, Hawker, Coyte, Mahomed, Kreder & Wright, 2004:1367). The critical factors together with a qualitative ethnographic approach that accepts that participants respond according to their own understanding and interpretation of situations they are involved in (Becker, 1958:652), led the researcher to establish a two part questionnaire. The first portion measured parameters covered during the consultation process that could be answered by two dichotomous variables (yes or no). This aided in data stratification into consulted versus non-consulted patient groups as well as affording the opportunity to elaborate on areas of focus and importance for both patient and physician. A descriptive pain scale that allowed room for active involvement as well as reflection on the participant's individual and possibly complex reality regarding pain as opposed to the researcher's own arbitrary categories, was also included. During the pain-rating completion phase the researcher assumed a more focussed observer role in order to optimize data collection possibilities (Hammersley & Atkinson, 1983:94). Observation of the patterns and utilization of the variables aided in comparative analysis of consulted versus non-consulted groups. This approach proved valuable in a study on utilizing comparative analysis regarding consumer demand for caesarean sections in Brazil (Behague, Victora & Barros, 2002: 942-944). The questionnaire was developed in English and also translated into Arabic just above each English sentence. The filling out of the questionnaire was facilitated through an interpreter, with a sound command of English as well as the mother tongue of the relevant patient. This approach was regarded as essential to ensure that accurate data was collected taking into account that a large percentage of the patients in Libya cannot speak English and in this particular study only one patient had a slight comprehension of the English language. Good communication is

essential especially with multicultural data gathering, it is paramount to ensure that health care personnel are culturally equip and have attained skills that include acceptance of and consideration for various ethnic peculiarities . The role and utilization of interpreters in multicultural settings is also of great importance (Cooper, Beach, Johnson & Inui, 2006:S21-S27; Hudelson, 2005:311-316). This approach furthermore provided the benefit of semi-structured interviews, through the use of the questionnaires, with the relevant patients. The scope of the study area included all patients who had to undergo total knee replacement surgery during the period May 2008 and January 2009 at the hospital's orthopaedic section. Initially a group of 20 patients would have been included in the study that entered into consultation with their surgeon and 20 patients who did not receive a consultation would have also been included and measured. Due to medical and ethical considerations this was however not possible as all patients have a right to a doctor consultation prior to surgery. The medical profession is based on a trust relationship with patients and specifically relating to this profession is a: "dedication, promise or commitment." (Pellegrino, 2000:148.) Consideration was also given to measuring the patient's perceived pain levels prior to going into consultation but the post-operative pain levels could have then been influenced by this process as the patient could have created new expectations regarding pain. Instead stratification occurred post consultation, if the patient had a general consultation that included none of the consultation parameters - the patient's data would be collected under non-consulted patient. It is broadly acknowledged that accurate data collection is critical for reliable research results and furthermore that data conversion to information is fundamental to the research results. "Data become information only when they are evaluated, filtered, condensed, analysed, and organized for specific purpose, problem, individual, or time" (David, 2003:148). Data collection was initiated that included the entire population of patients scheduled to undergo total knee replacement surgery at a hospital in Libya during the period of May 2008 to January 2009 and offered a way to link pain perceptions and health trends to the particular population. The total number of patients was 40 and due to the small sample,

stratification was employed in this group to establish the consulted and non-consulted research groups post physician contact. The patient was required to indicate parameters covered during the consultation. If the critical elements were included in the consultation the patient's data would be captured as part of the consulted group. If the patient had a general consultation where no critical elements were included, the patient's data would be categorized as non-consulted. The researcher played a dual role as both observer of the doctor-patient consultation and participant's pain report as well as participant-observer in gathering pain reports via interviews. The interviews via questionnaires yielded ethnographic inclusions as the data collected on the Libyan population and clarification on Libyan consultations can be compared to the consultations in other proposed medical models. The researcher was also a foreign national observing and conversing with a Libyan population, adding to a transcultural component. This method was employed to give meaning and clarification to the various encounters and phenomena arising (Hammersley & Atkinson, 1983:16-17). Participant observation is a style of research that employs a number of methods of which observation, interviewing and document analysis are but a few (McCall & Simmons, 1969:1). Although the entire population of patients scheduled for knee replacement surgery at the hospital was included, they are still deemed as randomly selected patients since no stratification occurred prior to participation. The population included males and females with every participant being engaged through the questionnaires. All the questionnaires were filled out comprehensively and all relevant fields were populated. Data stratification utilizing a comparative approach post completion divided the patients into two groups: consulted and non-consulted patients depending on thematic areas covered by the physician. The data captured and in particular the data relating to the Pain Ratings were complemented with three pain scale assessments. In one scale the patient could select a representative 'face symbol' reflecting his/her representative experience. This further assisted in evaluating the relative correlation between the data captured and the emotional experience of the relevant patient. The use of numerical and comparative pain scales allowed for consistency in

measurement and concise feedback regarding pain levels in the form of analytical distance. Without this objective distance, research may become a mere transcript of the conversed pain reports of the various patients (Hammersley & Atkinson, 1983:103).

Many patients undergo total knee replacements in government and private hospitals and outcomes of these operations vary from exceptional relief and the regaining of functionality to extremely poor cases that require revision and chronic rehabilitation. No obvious correlation and reason for various surgery outcomes can be found between cases. Similarities were always present in the form of demographical data, medical history, pathology and treatment parameters but pain reports were seldom similar. It soon became apparent that the researcher was not the first to wonder about this nor will she be the last. Findings in a study that followed pain severity in knee osteoarthritis in sixty eight outpatients, found the popular biomedical approach that implies mechanical wear and tear causes organic pain, is insufficient to account for the heterogeneous nature of the reported osteoarthritis related knee pain. The manifest and patient reported symptoms benchmarked against the radiographic findings further escalates the discrepancies (Creamer, Lethbridge-Cejku & Hochberg, 1999:1785-1792).

If the essence of pain and reaction to it is more complex than a simplistic biomedical approach (Bendelow & Williams, 1995:139,145), investigation into other possible realms or spheres that include social contact and the patient's own interpretation of pain is of paramount importance to understand pain in the absence of supporting scientific data or input from a part of the body such as phantom limb (Melzack 1993:615-629; Melzack, 2001:1378; Wall & Melzack, 1984:651-665). Our cognitive, vestibular and visual processes as part of body perception supports the notion that various areas of the brain are involved in pain and should enjoy focus past skeletal structure into the depth of the brain where pain may be born (Melzack, 1993:615-629; Melzack, 2001:1378-1379). Is it possible to construct perceived pain prior to surgery that can ultimately

transcend and account for post-surgical pain? To verify this notion, investigation into pain, perception and the interaction of these concepts requires exploration.

### **1.1 PIONEERING A SHIFT FROM 'MEDICAL PAIN' TO HOLISTIC PAIN**

Pain is a topic that has been extensively researched, from many perspectives, and approached by various disciplines ranging from theology, sociology to alternative medicine, psychology and medicine. All have set out to answer the question: What is pain? How is pain triggered? When is something deemed to be pain? Morris (*cited by* Williams & Bendelow, 1998:158) concluded that one of our greatest forms of 'illiteracy' in the Western world is ignorance about pain.

According to Proust, Scott-Moncrieff and Blossom (2006:131), "illness is the doctor to whom we pay most heed; to kindness, to knowledge, we make promises only; pain we obey".

Social scientists have, for more than half a century, been involved in the study and have made important contributions to our understanding of the ways in which people respond to pain and other symptoms of illness. Various models, and theories from various fields and disciplines, have been developed to explain pain and the human reaction to it. Models range from purely medical in the form of the biomedical model of medicine that has been around since the mid-nineteenth century and is the predominant model used by physicians in the diagnosis of disease. This model focuses on etiological and pathophysiological explanations for chronic pain (Bendelow & Williams, 1995:140). Later models such as the Biopsychosocial model described by Doctor George Engel (1977:132-133), was developed as an integrated model that incorporates mechanical and physiological processes as well as psychological and social contextual variables. It views illness as an interaction between biological, psychological and sociocultural variables.

All these factors are viewed as having an influence on illness. These models provided broad frameworks for the study of the various spheres of the human condition that can lead to illness and disease. From these frameworks other theories were derived that focused on more specific entities within disease and illness. Theories surrounding behaviour, sick roles, doctor-patient interaction and many more were developed to give direction to the exploration and to provide, or at least attempt to provide, reasons for certain phenomena present in disease and illness. Various pain theories were also born due to pain being an integral part of illness and recovery (Bendelow & Williams, 1995:141-144). Pain theories were developed from various perspectives, criticized and, reviewed. Alternatives were regularly presented. Pain was initially a subject of interest pursued by physicians. It was studied from a purely anatomical point of view, focusing on the anatomic structures and their functions (neurons and receptors). The biology of pain could be suitably explained from a scientific approach but this explanation did not allow room for human behaviour as a contributing factor to pain (Bendelow & Williams, 1995:139). This is probably the reason for philosophers joining the discourse. They have for many centuries, been intrigued and challenged by the mind-body dilemma. Naturally, the combined school of thought did not support one specific point of view concerning this dilemma. They were divided into camps supporting Dualism (where perception of pain is viewed neurophysiologic in nature but the reaction to pain is a cognitive process) which was first introduced in Plato's middle period and also his fifth and last Greek dialogue - *Phaedo* written 360 B.C., (Robinson, 2003) and those supporting Monism, introduced by Christian von Wolff in the 18<sup>th</sup> century (Anon, 2007).

Apart from medical models, that summarized the field of illness, and models presented by philosophers, who endeavored to clarify the role of body and mind in illness, many models, specifically related to pain, were also formulated. These include: psychoanalytical, behavioral/social, learning- and cognitive/behavioral models, as well as other approaches. Each

of these approaches included a multitude of supporting theories. The volume of theories and approaches, together with researchers spending endless amounts of time on each topic, was overwhelming. One would think that pain is a relatively uncomplicated concept in medical terminology. Its origin lies in the medical field's scientific nature and structures, and should therefore be easily explained. The philosopher Marshall stated in 1894 that pain compels us to act in a manner that will effectively relieve it. This response is far more than a simplistic action fueled by reflexes. Affective processes are placed parallel with sensory processes although they are less likely to be acknowledged, especially the emotional aspects of pain are often neglected (*cited by Williams & Bendelow, 1998:156-157*). The void around the social factors of pain that contemporary models of pain include has only partially been researched from a psychological perspective. The 'gate control' theory of pain has been the most influential and productive model of pain, to date, and has led to widespread recognition of the necessity of the study of psychological factors in our understanding of pain (Hadjistavropoulis & Craig, 2004:4).

Early civilizations also examined the reasons for, and the nature of, pain. The cause was generally assigned, eagerly, to religious or magical influences. The early Greeks gave more specific consideration to the nature of pain. Plato believed that the heart and liver were the centers for the appreciation of all sensations. He theorized that pain arose not only from peripheral sensation, but also included an emotional factor that was based in the heart. Aristotle was of the opinion that the brain had no direct function in the sensory processes. The controversy as to whether or not pain is a sensation has been a dispute for many centuries and to this day no conclusive explanation has been formulated (Descartes & Cress, 1999:95).

In 1664 the Specificity theory was developed wherein Descartes theorized that the body works like a machine. The theory linked the periphery system of the body with higher centers in the

brain. It suggested that the body has a separate sensory system for perceiving pain. This theory was predominantly physiological in nature and the perception of pain was not specifically addressed (Bendelow & Williams, 1995:141). Wall and Melzack initially referred to the limitation of the theory as pain can be recorded in the absence of injury (1984:651-665) and Main & Spanswick (2000:8) also elaborated on the shortcomings, "the relationship between tissue damage and pain perception were viewed relatively simple. The sensory system responsible for mediating pain was regarded as relatively rigid and straightforward in that any tissue damage initiated a sequence of neural events that inevitably produced pain. Neither of the theories could explain either pain in the absence of tissue damage or variation in pain across individuals with (apparently) the same amount of tissue damage".

The Gate Control Theory as well as an expansion or addition to the original theory was formulated and this provided various explanations for pain and its origin. In 1962 and again in 1965, Ronald Melzack and Patrick Wall produced this gate control theory of pain. The theory asserts that perception of physical pain is modulated by differential neuron interaction. Some neurons carry pain messages and others are non-carriers. The brain is the ultimate destination of messages and it becomes the judge and jury regarding decisions on received pain messages. The brain decides which messages to ignore or which to transmit. This constitutes a shift from direct nociceptors activation as the perceiver of pain to the brain as responsible area for perception of physical pain (Melzack & Wall, 1965:971-979). Should the brain find pain messages inappropriate or of diminished importance, it can actually ignore the pain message or prevent distribution of the message. The brain's ability to distinguish between messages and select appropriate messages led Melzack to propose that pain is ultimately in the brain (Melzack, 1993:615-629; Melzack, 2001:1378). The approach created an avenue to integrate pain behaviour (Melzack, 2001:1380). Pain behaviour could be both a response to pain as well as a phenomenon that could be influenced by the environment. The theory was the foundation of

contemporary investigation into the nature of pain as well as into disability associated with pain. The biopsychosocial model that encompasses physical, psychological as well as social dimensions originated from this platform (Main & Spanswick, 2000:11). This approach offered a way of integrating pain behaviour, both as a response to pain and as behaviour that could come under environmental influences and control.

Pain perceptions are viewed as experiences that are triggered by certain stimuli such as tissue damage. It should be fairly predictable in intensity, but individuals can experience pain without injury and can also sustain injury without experiencing pain. Patients may report very different pains from the same type of injury (Main & Spanswick, 2000:19).

Emotional and environmental factors are now deemed key components in pain perception. Perceptual theories of pain were first philosophically developed in the 1960's and were predominantly influenced by Armstrong in 1962 and Pitcher in 1971. During the development of their theories the predominant view was that pain resulted from sensations emanating from injuries or damage to tissue. Pain was not viewed as perceptual at all (sense-data) (Huemer, 2004).

The non-perceptual pain concept has since been abandoned although not everyone in the field is convinced about the value of the perceptual theories of pain."Pain investigation proceeds in 7 interacting realms: basic biology, conditioned learning, language cognition, personality differences, pain behavior, social environment and emotions." (Staats, P.S., Hekmat, H. & Staats, A.W., 2004:28-29.) Skevington (2004:182) is of the opinion that pain is a good example to illustrate that symptom perception is more than a process of sensation detecting. He reasons that any action or even inaction that follows the process of sensation detection is influenced by the

meanings attached to symptoms. Symptom perception and the subsequent behaviour are influenced by various components that include social, cultural, psychological and physical denominators. Symptom perceptions are intertwined with the personality of the individual concerned but in addition to this “they are also bound up with this person's history of illness in general, and pain in particular, the beliefs and attitudes they hold about their own health and health care, and these in interaction with the attitudes and beliefs of the health carers with whom they come into contact” (Skevington, 2004:182). It has been illustrated, through Foucauldian perspectives on issues such as childbirth and dental pain, how medical approaches have shifted. We are no longer slaves of what seems to be a single dimensional approach embedded in physiology. Our approach now also includes patient subjectivity (Smith, Ehde, Legro, Reiber, Del Aguila & Boone, 1999:29-38; Williams & Bendelow, 1998:158).

For this reason it is important to attempt to find a clarification for perceived pain (anticipated pain in the absence of injury or biomedical feedback, through pain receptors due to the prevalence of pain). The emphasis of studies thus far has been focused on pain perception, when there is indeed pain present (after injuries, operations or during illness be it physical or mental). No study, that investigated how much pain a person ‘thinks’ or perceives he/she **will** experience after an operation, could be found. Mention is also made, in studies, of the intensity of pain **as it occurs** and factors that can vary the intensity of pain when it is indeed present. Nothing could, however, be found by the author, on any attempt to investigate the perception of pain or the intensity of pain **before it occurs**.

Is it possible that ‘perception of anticipated pain’ can vary and possibly be influenced by a multitude of social and emotional factors? It is important to establish the impact of health education on perceived pain and how it is influenced by the doctor-patient interaction. The perception of pain, prior to the operation, may have a direct impact on the patient's recovery and

‘sick role’. The real organic pain, at the other end of the spectrum can, in turn, possibly provide important data regarding the need for doctor-patient interaction and the recovery process.

Doctor-patient interaction, as a concept, was first introduced by Talcott Parsons, the best known American Sociologist of the 1950’s and 1960’s. Many more studies followed, such as those of Freidson (1988: viii), Calnan and Rutter (1986:673-678), Tuckett, Boulton, Olson and Williams (1985:4) and Stimson and Webb (1975:43-72). This is one of the aspects that the author wishes to explore as the other component of this research. Patient and doctor expectation is to a large degree modeled by this contact. The type of contact, as well as its intensity and frequency, not to mention the nature of the contact, have long been debated as key issues surrounding illness behaviour or the lack thereof. Education surrounding operative procedures is directly dependant on this contact. The dynamics of the aforementioned relationship, as well as studies on various types of defined doctor-patient interaction (paternalistic, mutuality, consumerist and default) needs to be analyzed and considered in an endeavor to attain a feasible outcome regarding pain perception and the influence thereof on surgery outcomes.

## **1.2 DISSECTING THE “HEART” OF PAIN**

The Oxford English dictionary (2007, 7:394) is the starting point for a suitable pain definition and is described as a “strong physical discomfort caused by illness or injury”. The definition aligns itself with the biomedical school of thought that most health professionals follow. The biomedical model of illness proposes a purely pathological/biological basis for pain, for example an aging joint is susceptible to mechanical dysfunction leading to pain, disability and decreased function, which consequently perpetuate the physical symptoms (Hurley, Mitchell & Walsh, 2003:138-143).

Tiengo makes a valuable statement when he declares that no definition of pain has been proposed that is universally successful, satisfying or scientifically comprehensive (2003:S76). The International Association for the Study of Pain (IASP) ventured a definition in 1994 and Tiengo incorporated the definition in his subsequent arguments: “Pain is an unpleasant sensorial and emotive experience associated with potential or actual tissue damage” (IASP, 1994; Tiengo, 2003:S76). Tiengo is of the personal opinion that pain is not adequately defined together with most emotive experiences from joy to nostalgia. He adds a valuable point and important fact for the current study in that if we wish to study pain, we should at least attempt to define the term. Tiengo (2003:S76) proposed the following definition: “pain is a violent and unpleasant perception that provokes an emotive alteration in the subject and a coherent defense behavior response” but in lieu of new neurophysiological advances Tiengo suggested a new definition of pain as, “the becoming conscious of a nociceptive message” and he now views pain as, “an excellent heuristic model for studying the brain-mind debate” (2003:S76).

Pain has been a topic of discourse for many centuries and therefore it is easier to treat the term in context of a past, present and future research perspective. It is rather difficult to provide a simple definition for pain as “experiencing pain” relies on intertwined principles (Wall & Melzack, 1984:230). To truly define the term, it is vital to define the processes involved in generating pain.

### **1.2.1 Pain transmission through various theoretical approaches**

Drawing inspiration from the past one would certainly agree with Melzack that Descartes played a pivotal role in the scientific method that was popular in the 17<sup>th</sup> century. He was responsible for the famous illustration of a boy with his foot in fire and a descriptive pain path from the area of contact to the region of pain interpretation. He discoursed that the body works in the same fashion as a machine and can subsequently be studied through experimental physics such as

engineered by Galileo. He acknowledged the human body to possess a soul or mind but remained convinced for the rest part it is the equivalent of a machine similar to an animal's body (*cited by Melzack, 1993:615-629*). Applying this view entails that the severity of the peripheral injury was responsible for the severity of the pain. Injury equalled pain outcome. The theory was called the specificity theory of pain. Von Frey describes how sensation of pain depends on the stimulation of specific nerve endings that are specialized for each type of sensation (*cited by Pearce, 2005:116*). M. Cameron (2007:45) summarizes the following on the specificity theory: "Thus a specific type of nerve fibre will always transmit the same sensation, no matter how intensely or frequently it is stimulated. According to this theory, specific pain fibres are responsible for the transmission of the sensation of pain". The specificity theory is consistent with Von Frey's findings that free nerve endings are widely distributed in the skin they cause sensation of pain when stimulated. These free nerve endings are viewed as specific pain fibres by Von Frey (*cited by Pearce, 2005:116*). This would mean that by severing the spinal cord or peripheral nerve, one could alleviate or rid the individual of pain. This did not, for instance, explain why a carpenter can hit his thumb and not feel much pain, while a novice is in agony, nor did it explain phantom limb pain when the signal is in fact impossible to receive, since the wiring for it is gone (Smith *et al.* 1999:29-38). It has since been found that sensation of pain does not have a one-to-one relationship with the type of receptor that is stimulated. The limitations of the specificity theory led to the development of an alternative pain theory in an attempt to explain pain perception. This theory was called the pattern theory. According to the pattern theory, temporal and spatial summation of impulses along the pathways from the skin to the cerebral levels, determines the individual's sensation of pain. The theory asserts that a wide variety of stimuli are responsible for pain sensation and it suggests a role for central influence by pain summation. It does however not account for affective or central pain modulation (Cameron, 2007:45). Current theories integrate findings from the aforementioned theories. They illustrate that the quality of pain is dependent on the type of tissue from which the stimulus originates as well as the nerve

type that transmits the pain. The intensity is dependent on the firing rate of the nerves. This is the reason for various types of pain (burning, tingling or prickling etcetera.). The intensity of the reported pain can vary depending on the intensity of receptor stimulation and certain variations in the psychological state of the individual (Melzack, 2001:1381-1382; Wall & Melzack, 1984:230; Melzack & Wall, 1988:161; Zimmerman, 1984:1053-1059). Transmission of pain is therefore dependant on neurological structures (nerve endings and the nervous system) that can be scientifically monitored and researched but pain transmission also has a less measurable branch namely the individual's psychological state (Bendelow & Williams, 1995:144). There is definite indication that a pain definition should therefore include a form of individual reaction or response (Melzack & Wall, 1988:161; Wall & Melzack, 1984:230). In lieu of this it is important to explore the modulation and control of pain for these factors can possibly involve the "individual interpretation" aspect of the definition that I wish to analyse.

### **1.2.2 Pain modulation: the role players and their roles**

A number of observations make it apparent that pain transmission and perception are subject to inhibition and modification (Melzack, 2001:1378-1379; Melzack & Wall, 1988:161; Zimmerman, 1984:1053-1059). Various theories have explored modulation and transmission of pain and assigned the functions to inhibitory nonnoxious afferent input modulated at the spinal cord, endogenous neurotransmitters (with the same effect as opiates) modulating pain at the peripheral, spinal cord and cortical levels and lastly psychological central control mechanisms were also viewed as affecting pain perception and control (Cameron, 2007: 52). Melzack and Wall (1965:971-979) compiled the Gate Control Theory of pain which is a complex theory referring to two types of pain-receptive fibres (Myelinated and unmyelinated) that carry two categories of pain messages: intense pain and chronic pain. They also make mention of large diameter fibres that do not transmit pain stimuli but instead inhibits the myelinated and unmyelinated fibre's messages. The messages are ultimately delivered to the various centres of

the peripheral nervous system. The gate control theory implies that non-transmitting fibres inhibit the message of the pain fibres thereby closing a gate and therefore rendering the message undelivered. It can also open gates to allow transmission of pain messages. It indicates how non-pain transmitting fibres can inhibit pain according to the stimulus that activates them. But like so many other theories there were many phenomena that the theory did not address and research continued (Melzack, 2001:1378-1388). The presence of pain in an amputated limb was still a very real force to be reckoned with and this provided the platform for further exploration (Melzack, 2001:1378-1388; Smith *et al.*, 1999:29-38).

The neuromatrix theory of pain was derived and “proposes that pain is a multidimensional experience produced by characteristic “neurosignature” patterns of nerve impulses generated by a widely distributed neural network—the “body-self neuromatrix”—in the brain. These neurosignature patterns may be triggered by sensory inputs, but they may also be generated independently of them.” (Melzack, 2001:1378.) Melzack states that acute pain and the transmission thereof have been investigated and are generally well understood. “In contrast, chronic pain syndromes, which are often characterized by severe pain associated with little or no discernible injury or pathology, remain a mystery.” (Melzack, 2001:1378.) The neuromatrix theory of pain provides a new conceptual framework to examine the relationship between psychological or physical stress and its association with chronic pain. Pain behaviour and experience are derived from a variety of areas in the brain. This adds a complexity element to research as Melzack (2001:1378) states that we simply do not possess adequate knowledge on the workings of the brain. The neuromatrix theory was founded against a backdrop of four principles. The first principle is that input from the body can activate and modulate brain processes, but acting in the absence of input is also a reality. Secondly it is possible to feel pain in the absence of body input. This illustrates that the quality of pain experience lies within the brain’s neural networks. The body is viewed as a unity or ‘self’, not similar to any other

individual or the surrounding world (Melzack, 2001:1379). “The experience of a unity of such diverse feelings, including the self as the point of orientation in the surrounding environment, is produced by central neural processes”, it is not simply derived from the spinal cord or the peripheral nervous system (Melzack, 2001:1379). Lastly the body-self with its distinct brain process, that is genetically specific and able to be modified by experience, should not be ignored (Melzack, 2001:1379).

The neuromatrix theory of pain steers research away from the Cartesian split where pain is viewed as a sensation produced by injury or pathology. It views pain as a multidimensional experience that is derived and produced from a wide array of influences ranging from the neuromatrix architecture that is genetically and sensory-linked to influences from other brain areas and the body itself. The neuromatrix theory of pain regards pain as having a unique signature called the ‘neurosignature’. The neuromatrix is created through sensory influences as well as individual genetics; this is the architectural essence of the neuromatrix upon which the neurosignature response of pain rests. The neurosignature is unique and can be modulated through a variety of factors and components, sensory input, cognitive events such as psychological stress to name a few as well as genetically influences on the architectural design of the neuromatrix that can predispose an individual to chronic pain. Physical as well as psychological stress may also spark occurrence as stressors act on stress-regulation systems, this in turn may produce lesions of nerve tissue, muscle, bone, tendons and ligaments, ultimately contributing to the neurosignature patterns that in turn give rise to chronic pain (Melzack, 2001:1381). “In short, the neuromatrix, as a result of homeostasis regulation patterns that have failed, produces the destructive conditions that may give rise to many of the chronic pains that so far have been resistant to treatments developed primarily to manage pains that are triggered by sensory inputs.” (Melzack, 2001:1381.)

Reference to the role of sensory inputs becomes more prevalent as theories evolve and research progresses. Sensory inputs draws attention back to the term perception. Melzack's (2001:1382) conclusion that: "The neuromatrix theory of pain—which places genetic contributions and the neural-hormonal mechanisms of stress on a level of equal importance with the neural mechanisms of sensory transmission—has important implications for research and therapy", drives the need for an holistic view of pain and perception to lay the foundation for 'perceived pain'.

### **1.3 PERCEPTION IN ISOLATION UNDER THE MICROSCOPE**

In order to have a uniformed understanding of key concepts regarding pain and surgical outcomes, one has to define terminology in an effort to establish a platform for investigation and interpretation. The terms perception, pain and sensation are frequently mentioned in the study and literature involved (Melzack, 2001:1378-1382; Wall & Melzack, 1984:230). It is paramount to have a unified definition and understanding of these terms in order to draw clear conclusion from the research results obtained.

Once again we are confronted with theories and models, medical and psychological factors in an attempt to find but one definition for each of these terms. Is it medical in nature or is it emotionally sprung or is it even a combination of the two? The Oxford English dictionary (2007, 7:407) defines perception as "the ability to perceive." The term perceive in turn is defined in the Oxford English dictionary (2007, 7:407) as "become aware of through the senses." Looking at these definitions the distinct impression dawns that the sensory system (touch, smell, taste and hearing) is at the very centre of the term perception. The awareness on the other hand suggests a cognitive process in conjunction with a sensory one.

Aristotle distinguished five special senses: vision, hearing, smell, taste, and ‘touch’ or feeling. Pearce (2005:115) states that studies of the physiology of sensation started with Johannes Müller in the 1800’s who devised the Law of Specific Nerve Energies. He was professor at Berlin and had many followers and students that published and researched sensation following his influence. Müller (*cited by* Pearce, 2005:115) found that: “The same cause, such as electricity, can simultaneously affect all sensory organs, since they are all sensitive to it; and yet, every sensory nerve reacts to it differently; one nerve perceives it as light, another hears its sound, another one smells it; another tastes the electricity, and another one feels it as pain and shock. One nerve perceives a luminous picture through mechanical irritation, another one hears it as buzzing, another one senses it as pain. He who feels compelled to consider the consequences of these facts cannot but realize that the specific sensibility of nerves for certain impressions is not enough, since all nerves are sensitive to the same cause but react to the same cause in different ways. Sensation is not the conduction of a quality or state of external bodies to consciousness, but the conduction of a quality or state of our nerves to consciousness, excited by an external cause.”

The ‘external cause’ is the only aspect within Müller’s work that immediately relates to this study. Sensation and sensory tracts or receiving sensory messages are fairly known and discussed but the external cause is still open to research.

Drawing from everyday examples one can certainly reason this to be true for instance a baby of a certain age presented with a scoop of ice cream will immediately open the mouth and display sheer excitement, whereas the same baby presented with a spoon of medication may display an almost flight and fight reaction. Taking into account a baby’s intellectual development and limited exposure opportunities to various scenarios one would certainly not deduce that frequent

repetition is required to trigger perception but rather accurate sensory input and perhaps a previous encounter, be it only once.

This phenomenon of almost ‘instant recognition’ was the cornerstone of studies performed at the University of California by Doctor Walter J. Freeman and his group of neuroscientists. Doctor Freeman (1991:78) profoundly illustrated that just a glimpse of a face or smell of your favorite food or even hearing the voice of a friend leads to instant recognition. Within an impossible fraction of a second after your sensory organs (eyes, ears, skin, tongue and nose) received the message you immediately know it is a familiar object together with whether or not the object is of danger or desire to you. The cerebral cortex is responsible for analyzing sensory messages in the brain. This provides us with a scientific validation that perception has a medical, anatomical structure. This however does not provide any explanation for the brain’s ability to combine sensory messages with past experiences and expectations. It does not elaborate on the selection process that is applied within the brain to ascertain a particular meaning a stimulus has for certain individuals nor does it explain the intrinsic processes when the brain performs more than a simple feature extraction process (Freeman 1991:78-85).

Professor Freeman and his team continued to conduct various studies over 30 years where they specifically focussed on the olfactory system. They investigated the aspects that perception depends on utilizing the olfactory (system responsible for interpreting smells) system as their vessel of research. He explains that scent is inhaled into the nasal passages where it is then absorbed by receptor neurons. The neurons are specialized in nature and not all cells react to the incoming message of smell. Those that do react fire pulses through axons and this in turn is conveyed to the cortex. If it is a smell it will be interpreted in the area of the cortex responsible for smell recognition namely the olfactory bulb. Signals are then send to other areas of the brain and combined with messages from other sensory systems (Freeman, 1991:78-85). Freeman

(1991:78-79) states: “The result is a meaning-laden perception, a gestalt that is unique to each individual. For a dog, the recognition of the scent of a fox may carry the memory of food and expectation of a meal. For a rabbit, the same scent may arouse memories of chase and fear of attack”. Professor Freeman (1991:85) concludes that: “Consciousness may well be the subjective experience of this recursive process of motor command, reafference and perception. If so, it enables the brain to plan and prepare for each subsequent action on the basis of past action, sensory input and perceptual synthesis.” Looking at Freeman’s work it is possible to assert that the term perception is therefore not entirely a physiological process but seems to be intertwined with other human dimensions and specific focus on past experiences and sensory input. In order to provide a comprehensive clarification for the term perception, it is important to research the other human dimensions that are mentioned as having a possible influence on perception such as experience that can possibly dominate a stimulus, as found by Professor Freeman (1991:84). It stands to reason that in order to define perception one has to establish what is deemed ‘perceivable’.

There is a distinct difference between what is actually seen versus what is perceived as these processes vary immensely. Is seeing only experienced when an object is real and is perception only experienced when an object is sensed? Sense-data was theorized and those who accept sense data believe that: “sense data exist whenever a person perceives anything, by any of the senses, and also whenever a person has an experience qualitatively *like* perceiving, such as a hallucination” (Huemer, 2004). The term was first introduced in the 20<sup>th</sup> century and it was intended only to denote that which we are directly aware of in perception. The term's meaning was supposed to be neutral between direct and indirect realist theories of perception, so that it was not to be assumed either that sense data must by definition be mind-dependent or that they must be mind-independent (Moore, 1953:30; Russell, 1997:12).

On the most common conception, sense data (singular: “sense datum”) have three defining characteristics:

- Sense data are the kind of thing we are directly aware of in perception;
- Sense data are dependent on the mind; and
- Sense data have the properties that perceptually appear to us. (Huemer, 2004).

To clarify the above in an effort to ensure understanding of what can be perceived, each statement is analysed and described:

- Direct awareness versus indirect awareness.

To clarify being indirectly aware of something, Jackson used an example of sitting in front of a table and observing it. He theorizes that one does not perceive the entire table and you are limited to the view of the table surface that is directly in your view. The conclusion one would reach is still to say it is a table. You therefore see the table through seeing the portion of the table surface facing you. This is indirect awareness, perceiving an object by perceiving something else (Jackson, 1977:15-20).

- Dependant on the mind.

Sense data theorists believe that the things we are directly aware of in perception are dependent on the mind of the perceiver — they cannot exist unperceived. Such things have also sometimes been called ‘mental images,’ ‘ideas,’ ‘impressions,’ ‘appearances,’ or ‘percepts’ (Huemer, 2004).

- Properties that perceptually appear to us.

When we perceive an object, we perceive qualities the object has for us. The example of a tomato is used, looking at the tomato most people conclude it to be red and round. The

perceptual properties would be redness and roundness. Sense data believers would now say that you are directly aware of a red, round object. This object relies on the believer's mind to exist. The condition is also deemed valid in the presence of a hallucination but the absence of a tomato. If I am hallucinating a tomato – I am having a tomato-like sense datum (Huemer, 2004).

Sense-datum implies that to be aware of it, you actually need knowledge and facts about the sense-datum. To perceive an individual had to become aware of direct objects and those objects were deemed sense-data. Objects have to be real – they have to exist and are not considered in the abstract form. Mental attitudes such as belief, fear and so forth are deemed not real tangible objects and therefore not sense-data. Mental attitudes do not need objects to actually exist and are said to have intentional objects. “If I am hungry, and desire an apple, and believe incorrectly that there is an apple in the fridge, then although no physical apple exists in the relevant sense, my states are described in terms of what they *represent*, or are *about*. The apple, which I falsely believe to exist, in fact lacks real existence, and has only what is called ‘intentional in-existence,’ by virtue of my representing it in my mistaken belief. But if I see or hallucinate an apple, then according to the sense-data view there is an actual red object of some kind – a sense-datum – that has real existence” (Coates, 2007).

The sense-data theory asserts that sense-data exists whenever there is perception and that although initially created to be neither mind dependant nor mind independent it is more commonly viewed especially in later years as mind dependant.

Sense-data exists whenever a person utilizes his senses to perceive. Direct awareness is required, but this does not mean that an individual can not perceive pain. Perception is **not** limited to sense-data alone. Perception can also occur through indirect awareness. Indirect

awareness or perception has validation if we look at Freud's work. Initially he pursued his career with a medical focus but soon embarked on a road to address the mind. He made a phenomenal contribution when he asserted the unconscious can translate into bodily symptoms (*cited by Furst, 2007:3*). The sense-data theory helps to define perception and builds to the description of the term as an individual matter that depends on senses of the person and the qualities the object has to the individual and is dependent on the perceiver's mind. Perception is definitely intertwined with sensory awakening and personal interpretation. It need not be alike to that of any other individual or be predictable.

### **1.3.1 Sensation and perception: a co-dependent relationship**

Although perception has been satisfactorily defined, there is still the unsolved matter of perceiving a pain-like sensation. After all, feeling or experiencing something is dependent on an individual's sensation. So, what is sensation, how is it experienced and why is it important to understand this? Sensations can be defined as the passive process of bringing information from the outside world into the body and to the brain. The process is passive in the sense that we do not have to be consciously engaging in a 'sensing' process. In short it has been proven that sensation occurs as follows:

- a) sensory organs absorb energy from a physical stimulus in the environment.
- b) sensory receptors convert this energy into neural impulses and send them to the brain (Anon, 2009; Myers, 2003:187-257).

If sensation is a passive process there must be an active pole to this process as well. The active pole in sensation can be perception, the process of selecting, organizing, and interpreting the information brought to the brain by the senses as theorized by Freeman (1991:78-85). The brain organizes the information received via the senses and translates it into something meaningful.

For information to be classified as meaningful a selection process is undertaken to establish important information from less important information. The process can be achieved via two avenues. One avenue is called selective attention, a process of discriminating between what is important and what is redundant. The sensory organs can respond to millions of stimuli simultaneously but selective attention permits only a select volume of senses to reach cognitive processing (Johnston, McCann & Remington, 1995:365). This process is greatly influenced by motivation and an example would be: students in class should focus on what the teachers are saying. Students walking by the classroom may focus on people in the room, who the teacher is, etc., and this is not the same way of responding as the students do in the class (Anon, 2009). The second denominator is perceptual expectancy. This means that our perception of the world is molded by our past experiences, culture and biological makeup (Freeman, 1991:78-85; Melzack & Wall, 1988:161). The question remains however whether or not perception of pain or anticipated pain is also molded by these variables.

#### **1.4 THE UNION OF PAIN AND PERCEPTION**

It is evident when looking at the Gate Control Theory of pain, the Neuromatrix pain theory and even the earlier theories of pain like the specificity theory that mention of sensation, body and mind in some shape or form is made. There are hundreds of theories and models, research was undertaken and proven wrong, revised and then research from another angle formed another view and reached a different conclusion. The researcher can probably write volumes on pain theories, their origins and changing contents during centuries especially taking into account that the discourse surrounding pain spans over centuries. Instead the researcher opts to draw upon Melzack's research that seems to be the most accepted and followed over the past 40 odd years. It is evident that a wider conceptualisation of pain and perception is needed as this term needs to transcend the Cartesian mind-body dilemma. Morris indicated we may need to transcend the

false dualism and reclaim pain from the exclusive jurisdiction of medicine (*cited by Bendelow & Williams, 1995:143-147*). Looking at pain utilizing three pain models, it has been established that:

- Initially pain was deemed equivalent to the peripheral input (Specificity Theory)
- Researched followed and finally we were presented with the Gate Control Theory that implies that pain messages can be transmitted or blocked according to the effect it has on the ‘gate’ it encounters. First mention of shortfalls is also made with specific focus on phantom limbs (pain/sensation reported in an amputated limb no longer present).
- The most recent product of thought – The Neuromatrix of pain that suggests pain is triggered by sensory input. Unfortunately Melzack concluded that neural mechanisms of sensory transmission is still a much needed research topic (2001:1382) and this does not facilitate the formulation of a definition of pain for this study.

The above is a far cry from an answer to the research question – what is pain and what is perception? Perhaps the answer lies less in the anatomy of the field but more in the ‘feeling’ of the field. The pain theories (although very informative and valid from a medical point of view) certainly give a good foundation for a medical explanation but this still leaves many unanswered questions. Perhaps the answer is less anatomical or medical-theory orientated and warrants attention being given to models of thought; models that provide scope to marry these apparent medical phenomena namely pain with the less apparent phenomena of perception.

#### **1.4.1 Defining pain and perception through model application**

Until the mid-19<sup>th</sup> century all medicinal practises were regarded as being psychosomatic in nature. There was a general absence of knowledge of both body and mind. The patient enjoyed great personal emphasis as external factors were deemed key moulding factors in illness. Soma and psyche were essentially interdependent until the first third of the 19<sup>th</sup> century (Furst, 2007:2).

Autopsies and development of instruments led to physicians asserting that the origin of disease is local. Psychiatry was displaced by a more scientifically regarded Neurology, resulting in lesions winning over feelings and the body becoming superior over the mind. The unexplained medical phenomena such as symptoms in the absence of illness and physical manifestations of mental and emotional origins remained a thorn in the side of medicine (Furst, 2007:3). Slowly the pendulum swung back, renewed focus is now placed on mind-body unity and research is geared towards proving what was believed and accepted without question until the mid-19<sup>th</sup> century. George L. Engel is a psychiatrist that introduced the biopsychosocial model. It implies that treatment of disease processes requires that the health care team address biological, psychological and social influences upon a patient's functioning. In a philosophical sense, the biopsychosocial model states that the workings of the body can affect the mind, and the workings of the mind can affect the body (Engel, 1977:131-136).

The biopsychosocial model could be interpreted as the opposite pole of the much followed biomedical model. The biopsychosocial model is a general model that includes the 'BPS' factors (biological, psychological and social factors). These are thought to play an important role in illness and in how humans react to it (Engel, 1977:131-133). The biomedical aspects of medicine, on the other side of the spectrum, suggest that disease can be explained through deviation from normal function such as injury coming into play (Engel, 1977:130-131). Investigation into models of thought provides a better prospect for combining factors and certainly provides scope to debate pain and perception's relationship to it during illness as opposed to the two terminologies standing as isolated definitions.

The biopsychosocial model knits the 'BPS' factors together and supports the literature suggesting: that patient perception of health or disease in combination with socio-cultural barriers possibly influence their health-related behaviour such as in medication taking or in

undergoing treatment (DiMatteo, Haskard & Williams, 2007:521-528; Engel, 1977:133). If this is indeed true one could assert that the patient's perception of pain (equivalent to the 'disease' in the model) can then also influence his or her behaviour or surgical outcomes (equivalent to 'health related behaviour in the model).

The problem is that no value or weight is attributed to the 'BPS' factors thus rendering it impossible to ascertain to what degree these variables alter or influence behaviour. McLaren (2007:156-157) views the collapse of the models in the 19<sup>th</sup> century including those of psychoanalysis, biologism and behaviourism as the initiation of a search to obtain a model that incorporates body and mind. In this drive to secure an appropriate model, psychiatrists embraced the biopsychosocial model with little research or scrutiny on the validity of the model. McLaren voices a strong opinion against the model's theoretical and scientific validity and states: "If, at any time over the last three decades, they had done so, they would have found it had none. This would have forced them into the embarrassing position of having to acknowledge that modern psychiatry is operating in a theoretical vacuum "(2007:157).

Being viewed as an ambitious model with criticism such as by McLaren, the biopsychosocial model is rendered inadequate to utilize as a primary foundation for this study.

Looking back at all the models, frameworks and theories, pain has been proved to originate through real scientific and neurological structures in other words as having a real 'biology'. That fact is not in dispute but the medical explanations thus far have not provided any clear reason for the variant reaction when experiencing pain. The contributing factors to the pain behaviour are of importance in this study to understand the different reports on perceived pain levels. So while variant pain levels (when indeed present and therefore organic in nature) can be suitably explained through the medical models – the variant pain levels when only anticipated (and

therefore not yet present) cannot be explained through the previously reviewed medical models. The factors that determine the severity of perception of pain is where the answer possibly lies for a ‘perceived pain’ explanation.

In 1996 a theory of pain was published that recognized the multifaceted nature of pain. It provided a unifying framework that embraces the consideration of the various ‘levels’ involved in pain—biology, learning, pain behaviour, cognition, emotions, personality, and social context. Among these levels, a patient’s emotional state plays a fundamental role as the central translator of nociception (the physiological event that is accompanied by pain) into pain behaviour. It was termed the Psychological behaviourism theory of pain (Staats *et al.*, 1996:194-207). The theory was designed in an effort to bring pain physicians and pain psychologists to the round table as equal partners and to resolve the debate surrounding pain as emotion or pain as sensation (Bendelow & Williams, 1995:141). This theory focuses both on the anatomy of pain and on the factors contributing to reaction to pain.

Investigation into the psychological behaviourism theory revealed that it is a comprehensive model because it integrates and acknowledges the specific contributions of the various theoretical approaches to pain. After the theory was published, Staats, Staats and Hekmat (2001:267-279) conducted a series of experiments based on their theory and demonstrated how the personality trait of anxiety (that has a negative impact on emotions) can increase the experience of pain and associated pain behaviour. They applied their theory and were able to describe the nature of the placebo and how placebos can affect pain experience and behaviour (placebo is a replacement therapy that has no medicinal properties but are given in the exact manner as the therapeutic drug. It looks the same but has no effect and was utilized in studies to ascertain if test subjects would report any symptom of alleviation ‘thinking’ that they had received treatment) (Staats *et al.*, 1998:235-243; Staats *et al.*, 2001:267-279). This study is

scientific prove that perception indeed moulds pain behaviour or expectation and reaction to it. The comprehensive nature of this theory validates it in a psychological and in the medical field. It accepts the contributions that various fields make towards pain, renders us closer to finding a common and unifying terminology that could perhaps also be the birth of a new integrated model that could be recommended for future studies.

#### **1.4.2 Paradigm perspectives on pain and perception**

Pain lies at the intersection between biology and culture, making it an obvious topic for sociological investigation (Bendelow & Williams, 1995:139). Pain has been medicalised and the volume of medical pain theories supports this notion thereby reaffirming the inevitable Cartesian split between mind and body (Bendelow & Williams, 1995:139-140). To transcend the mind and body dilemma thereby achieving an holistic pain perception definition, one can certainly apply sociological frameworks that will greatly benefit our current knowledge.

“Pain is never the sole creation of our anatomy and physiology. It emerges only at the intersection of bodies, minds and cultures” (Morris, 1991:1). If focus is placed on pain and its social construct, the dualism or two-dimensional debate of pain is fuelled. Pain is much more multifaceted than social construct and pain perception has to include a multidimensional paradigm. Pain represents a category of experiences signifying a multitude of different, unique experiences having different causes and characterized by different qualities varying along a number of sensory, affective and evaluative dimensions (Melzack, 2001:1381-1382; Melzack & Wall, 1988:161). While the anatomical area responsible for ‘decoding’ the category of experiences in the brain is still under debate, we can elaborate on ‘why’ and ‘how’ the category of experiences are derived and interpreted. George Herbert Mead coined the term ‘symbolic interactionism’ and put forward an influential summary of the perspective. His perspective is based on three premises:

- Human beings act toward things on the basis of the meaning these things have for them. This includes other human beings and daily situations;
- The meanings of these things are derived from social interaction that one has with one's fellow man; and
- Meanings are handled or modified through an interpretation process that the person utilizes in dealing with his or her encounters (*cited by Blumer, 1986:2*)

General sociological and psychological approaches propagate the notion that external and internal factors produce behaviour. If you identify the initiating factor you can thereby interpret the resulting behaviour (Blumer, 1986:3). Blumer's criticism to this ancient or classical approach is the loss of the concept 'meaning'. Meaning is explained in this approach by isolating the particular psychological elements that produce meaning. In the alternative, meaning is almost deconstructed to 'realism' whereby the meaning of a chair is simply a chair. This approach limits meaning to whatever processes are involved in arousing elements that produce meaning (Blumer, 1986:4). Symbolic Interactionism as it was initially proposed and correctly applied sees meaning as arising in the process of interaction between people. The meaning of a thing for a person grows out of the ways in which other persons act toward the person with regards to the thing. It views meaning as a social product; as a creation that is formed in and through defining activities of people as they interact. It is heavily underpinned by an interpretative process whereby the actor 'acts' in two distinct steps:

- The person has to indicate to himself what things he is acting toward, he has to establish what has meaning to him and apply it as an internalized social process.
- One has to communicate with oneself and the interpretation that follows is a matter of handling the meanings (Blumer, 1986:4-5).

Pain perception has the ‘makeup’ to fit into the niche of symbolic interactionism. The different pain reports prior to surgery can certainly be attributed to individual actors acting upon different meanings the anticipated pain has for them as derived by interaction between themselves and the doctor. It is further supported if we look at Blumer’s (1986:63) explanation of hunger, “to be aware of hunger is different from being hungry. To perceive your own ‘ego’ puts one in the position of doing something with regards to it instead of merely giving expression to the ego. The process of self-interaction puts the human being over against his world instead of merely in it”. The requirement now becomes meet and handle your world through a defining process that is much more than a simplistic responding to your world. Action has to be constructed and is not simply released (Blumer, 1986:64). The individual’s reality is therefore not direct but influenced through one’s own interpretation. Reality is therefore ‘individual reality’ or the interpretation of reality as seen by the individual’s mind. Mead sees man to be a result of having a self (*cited by* Blumer, 1986:64). The literature indicates that perceived pain can be successfully defined and explained through the symbolic interactionism view and has validity to be viewed in part as ‘individually constructed’ through meaning derived for the individual through social contact but more importantly, reacted upon as decided through a defining process by the individual’s measurement of meaning.

## **1.5 MEASURING PAIN OBJECTIVELY**

As illustrated in the literature pain is a subjective matter, making self-report a primary focus (Herr, Coyne, Key, Manworren, McCaffery, Merkel, Pelosi-Kelly & Wild, 2006:44-52; Lund, 2006:2). This makes it extremely difficult to measure pain, but in order to assess treatment efficiency, in prognosis and allowing the patient control over his or her condition, it becomes paramount to quantify pain (Cork, Isaac, Elsharydah, Saleemi, Zavisca & Alexander, 2004; Flaherty, 2008:41; Lund, Lundberg, Sandberg, Norrbrink Budh, Kowalski & Svensson, 2005).

A pain scale measures a patient's pain intensity or other features. Pain scales are available for neonates, infants, children, adolescents, adults, seniors, and persons whose communication is impaired. Pain intensity scales are widely used both clinically and in research to measure patient pain perception (Disorbio & Bruns, 1999; Lund, 2006:2). Pain levels are a vital part of the patient's treatment regime and regarded as important as measuring critical vital signs (Grinstein-Cohen, Sarid, Attar, Pilpel & Elhayany, 2009:234). There are four primary types of self-reported measures of pain, which include verbal rating scales (VRS), numerical rating scales (NRS), visual analog scales (VAS), and pain drawings (PD) and other graphic methods (Disorbio & Bruns, 1999; Lund, 2006:2).

### **1.5.1 Visual Analog Scale (VAS) and Numeric Scales (NRS)**

Visual analog and numeric scales are useful where cognition, language or age is a barrier for example in pediatric cases the faces scale is very useful as well as old age as found in a study by Kim and Buschmann (2006:447-456) where a sample of 31 older adults were recruited through local senior citizen centers to examine the construct validity and the test-retest reliability of the Faces pain scale. For the concurrent validity testing, a sample of 85 older adults with chronic pain was recruited through a general hospital and an oriental medical hospital. The construct validity was examined by determining if the subjects perceive the FPS as representing pain and if they agree on the rank of each face. The test-retest reliability was examined at a 2-week interval. The concurrent validity was examined by using the Numeric Rating Scale (NRS) and the Visual Analogue Scale (VAS). The results supported the appropriateness of the FPS for use with the older adults in clinical practice to measure pain intensity. Additionally, this study provided cross-cultural evidence to evaluate usefulness of the FPS (Kim & Buschmann 2006:447-456). VAS and NRS scales can be easily compared as both scales create ratio level data (Jensen & Karoly, 1992:123-130).

Examples of these scales include vertical or horizontal positioning lines where a patient can mark his appropriate level of pain and the numeric interval is either 0 – 10 or 0 – 100. NRS scales have been found by some researchers to be the most commonly used in measure of pain reports (Price *et al.*, 1994:217-226). The faces pain scale has 6 faces linked to a value from 0 – 5 and the revised faces pain scale is six faces linked to a 0 – 10 metric rating. Downie *et al. cited in* Cameron (2007:55) found these scales are quick and easy to administer and are frequently used in clinical settings to assess severity of pain. They are easily understood and provide readily quantifiable data.

### **1.5.2 Verbal Rating/Descriptor/Categorical Scales (VRS/VDS/CS)**

These scales comprise word lists and categories as applicable to the patient's experience of pain. Descriptive words are selected by the patient to describe his or her pain experience (Cameron, 2007:56). These scales collect a wide range of information pertaining to the patient's experience of pain and provide quantifiable data for intra-and intersubject comparisons. These scales usually include assessment of categories related to pain: sensory aspects of pain, fear, anxiety, cognitive processes, and pain based on past experiences and learned behaviour. The patient is required to circle the word that best describes the pain. This scale is extremely useful in measuring pain perception prior to experiencing the pain as it allows for anxiety, fear and learned behaviour that can influence the score but the language barrier between English and Arabic is simply too great. The English descriptive words simply do not have an Arabic counterpart, rendering results null and void in both accuracy and execution. These scales also further require an intact cognitive state and a high level of literacy" which is not prevalent in the study group (Cameron, 2007:57). The scale is however useful to help the patient understands a numeric rating scale. Numbers indicated consecutively on a line and 'measuring' pain is not an everyday situation for elderly patients but describing their pain is familiar. A Verbal Descriptor

scale can aid in guiding a patient to understand what is expected of them when rating pain on a Numerical scale.

### **1.5.3 Predefined Stimulus Comparison**

Predefined Stimulus use pain quantification methods that involve comparison with a predefined painful stimulus. It is intended to provide greater intersubject reliability. A stimulus is induced (electrical, thermal or fingertip pressure) to the patient and the patient has to then compare his or her pain to the externally induced pain. It is obvious to see the limitation with this scale even though the validity for the scale is very high (Cameron, 2007:55). The patient has to experience clinical pain at the time of inducing the external stimulus. Patients are not always in pain or have learned to cope with the chronic pain (Juni, Dieppe, Donovan, Peters, Eachus & Pearson, 2003:520) having a very negative impact on research application and available time frames with patients. It is also of little value when one measures ‘perceived’ pain. Perceived pain is not yet present and can therefore not be tested via a predefined stimulus comparison. To induce pain in a patient with severe and chronically disabling pain is also not ethically acceptable. A quantitative comparison may also be lost in translation as many English descriptive terms do not exist within the Arabic language. Patients may experience a burning or numbing pain and one may be administering a tingling pain that makes comparison difficult and almost impossible with the added educational and language barrier (Cameron, 2007:56). As Cameron says: “Although comparison pain measures may allow for a reliable gauge of some types of pain, particularly experimentally induced pain or clinically acute pain that is moderate or less severe, they are not well-suited for measuring clinical pain that is severe or chronic.” (2007:56.) Osteoarthritis is the leading cause in total knee replacements and is a chronic condition (Felson *et al.*, 2000:635-646) – the comparison stimulus scale is therefore not suited to this research setting.

#### **1.5.4 Other Measures**

One can also approach pain measurement through medical observations, functional capacity evaluations, physical examinations that include posture, endurance, mobility and strength not to mention open-ended, structured interviews. Some clinical cases warrant alternative measures of pain report and for this reason the hierarchy of pain assessment techniques is valuable especially in cases where the patient is non-verbal. Typically a five step process should be followed that entails: self-report (if possible), search for potential causes of pain, observation of patient behaviour followed by obtaining 'surrogate' reporting via family and friends and lastly by applying an analgesic trial to obtain information on the patient's pain level (McCaffery & Pasero, 1999:35-102). These methods are however subject to the evaluators perception and not consistent from one individual to another. It is impossible to duplicate the research or to correlate data obtained from more than one gatherer. It is more time consuming and less easy to execute. On the other hand it provides valuable information regarding the impact of pain on activities of daily living as well as on the severity and causes of pain (Cameron, 2007:57).

#### **1.6 SELECTION OF AN APPROPRIATE PAIN SCALE**

To provide consistency in measurement three scales were utilized:

- Numeric Rating Scale (metric rating 0 – 10)
- Faces Pain Scale – Revised (metric rating 0 – 10)
- Verbal Rating/Descriptor/Categorical Scale (metric rating 0 -10)

Each scale has advantages and disadvantages. Numerous studies have found correlation or accuracy with certain pain assessment tools and poorer results with others. Selecting a tool to

provide consistency in measurement was therefore a difficult and time-consuming task.

Factors influencing the selection of an assessment battery are:

- Educational level of the study population;
- Age of the population;
- Culture of the study group;
- Time availability with a patient;
- Language barrier;
- Availability of a translator;
- Time frames prior to surgery;
- Cooperation from the patient; and
- Involvement from family members allowing assessment.

### **1.6.1 0 – 10 Numeric Pain Scale**

Assessment is based on a scale from zero to 10. Zero represents no pain and 10 is the worst pain imaginable. This scale assigns a measurable number to your pain (Jacques, 2009:1). It is easy to translate into Arabic, the use of numbers is internationally recognized and all patients had the cognitive ability to identify numbers. It was easy to run a competency test on each subject prior to administering the pain assessment by simply requesting them to write from 0 – 10 on a sheet of paper or read 0 – 10 on the scale and thus ensuring the presence of numerical knowledge. The scale bridges language barriers and allows quick and easy, cost-efficient pain assessment. Advantageous is the clear information it provides on the measurement for extreme pain (ten) and no pain (zero) but it is not without limitation regarding ratings in between these parameters. The scale has no guidance as to the difference between a three or a four rating. Patient one may view a pain rating of three as uncomfortable and patient two may view the same rating as moderate. The numeric scale allows elaboration scope when the evaluator is uncertain that the patient

understood the numeric relation to his or her pain rating. The evaluator is then allowed to say a rating between one and three constitutes mild pain and so forth (McCaffery & Beebe, 1989:22). Still mild pain will differ from one patient to another. Consistency is not guaranteed between different patients utilizing the same scale. This scale is therefore incorporated into the study because of the easy administration and limited language barrier advantages. A second scale had to be considered to address consistency and reliability.

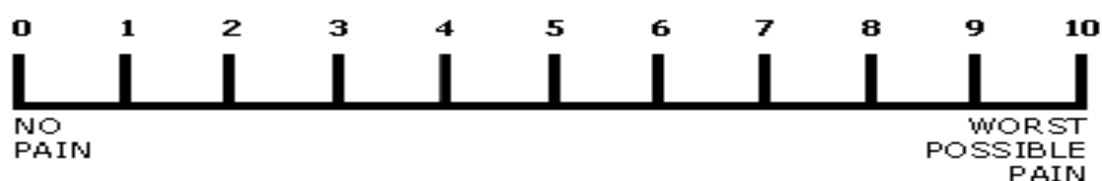


Figure 1: 0 – 10 Numeric pain scale (McCaffery& Pasero, 1999)

### 1.6.2 Faces Pain Scale

The faces pain scale is an advantageous measurement tool. It requires no language skill to administer nor is there a need for equipment. It is a line of faces with different expressions that portray pain one can possible feel. The face that matches your anticipation of pain or current experience of pain depending on when you utilize the scale is simply marked (Flaherty, 2008:41-43). The selected face links up with a numerical number that allows you to score the patient on a 0 – 5 value thereby providing the ability to describe the pain or in the researcher’s study – the anticipated pain. The face allows for real emotional value to be added to the pain report. Although represented by faces with expressions, this scale follows the same guideline as the numerical scale. The Faces Pain Scale-Revised (FPS-R) was adapted from the Faces Pain Scale (Bieri, Reeve, Champion, Addicoat & Ziegler, 1990:139-150) in order to make it possible to score on the widely accepted zero to ten metric rating (Hicks, Von Baeyer, Spafford, Von Korlaar & Goodenough, 2001:173-183). Zero is represented by a smiley face, while 10 is represented as a distraught face. This scale is useful when rating pain in children, or for adults

with mild cognitive impairments. The application of this scale in the study is extremely useful. Again limited language requirements are needed and although all the patients were not necessarily cognitively impaired they were a large population of predominantly geriatric adults in the group with limited educational background and articulation skills making a ‘point to the face’ exercise very rewarding in data gathering. It does not include a verbal component, so the FPS may also be used for individuals with language impairments or who have trouble expressing themselves verbally (Bieri *et al.* 1990:139-150).



Figure 2: Faces pain scale (Wong, Hockenberry-Eaton, Wilson, Winkelstein & Schwartz, 2001 p. 1301)

### 1.6.3 Verbal Rating/Descriptor/Categorical Scale (VRS/VDS/CS)

Numerical pain scales may include words or descriptions to better label your symptoms, from feeling no pain to experiencing excruciating pain. Some researchers believe that this type of combination scale may be most sensitive to gender and ethnic differences in describing pain (Graham, 2006:1).

In order to ensure accurate measuring, consistency and establishing whether the patient fully understood the requirements, a verbal rating/descriptor/categorical scale was also utilized. This scale has a descriptive sentence for ratings. It involves more instruction on the researcher’s part and more cognitive, verbal and auditory input from the patient. The verbal description can be linked to a numerical rating pain scale. If pain is reported as ‘mild’ it

equates to a number between one and three on the scale. Without the involvement of consistency scales as in this study one would be faced with interpretation dilemmas as mild could be either a one, two or three. This would imply that mild may not reflect the same weight or experience for every patient (Flaherty, 2008:44). The following responses are available on the scale:

- None (0)
- Mild (1-3)
- Moderate (4-6)
- Severe (7-10)

This scale was utilized as a guideline to ensure accuracy with the NRS and FPS-R. The patients were evaluated through the CS to assist in establishing a rating frame of reference. The numerical rating line was adapted to include the responses to the verbal descriptions. If a patient indicated that he/she anticipated mild pain, the mild category would be shown to the patient. Attention would be drawn to the fact that a one rating is very close to a zero but a three rating is bordering on moderate. The patients were then requested to refine their score within the descriptive group. The FPS-R were administered next and followed by the NRS as the last assessment scale.

The three scales selected for this research are culture friendly, education sensitive, language bridging, easily administered, time efficient, allow for cognitive impairment or deterioration, are age-appropriate, cost-effective and gender universal. They allow for consistency in measurement through assessing every patient on all three pain scales and through ensuring that a realistic outcome is received on all three scales.

Research was also performed on existing studies to ensure user-friendliness across gender and cultures. Ware, Epps, Herr and Packard (2006:117-125) conducted a study that included male

and female participants as well as various ethnic groups including African-American, Hispanic and Asians. They concluded that a vast majority of the study participants were able to utilize the pain assessment tools. The study also confirmed the use of these scales as valid measuring tools. In this particular study as supported by other statements, the most frequently utilized pain scales to assess older adults are the Numeric Rating Scale (NRS), the Verbal Descriptor Scale (VDS) and the Faces Pain Scale-Revised (FPS-R). All three scales are being utilized in community care as well as care for older adults in both acute and long-term care settings (Flaherty, 2008:41-42; Ware *et al.*, 2006:117-125). Flaherty (2008:42) remarks that the choice of a scale may depend on the presence of a particular language or sensory impairment and the same scale should be used consistently with each individual patient. Ware *et al.*, (2006:117-125) found the Numeric Rating Scale was the preferred scale with cognitively intact older adults and the Facial scale was preferred by cognitively impaired older patients. African-Americans, Hispanics and patients with mildly, moderately and severely impaired older patients also preferred the Faces pain scale assessment. In this particular study the revised edition Face scale was utilized.

A similar study was conducted by Averbuch and Katzper (2004:368-372) where they assessed the consistency in measurement between the Visual Analog Scale and the Categorical Scale. Since the previous research by Ware *et al.*, (2006:117-125) did not include reliability testing of the categorical scale – this study is important to illustrate the scale’s validity in pain research for this particular study. A 12-week, randomized, double-blind naproxen sodium (500 mg bid) and placebo-controlled trial was performed, using the hip osteoarthritis (OA) flare-up pain mode, in which pain was measured on both the visual analog and categorical scales simultaneously. The authors found a good correlation ( $> 0.995$ ) between the time-series average of the unconstrained visual analog scale and a 5-point categorical scale pain measurement in the Osteoarthritis pain model in both active and placebo treatment arms. The patient population has Osteoarthritis of the hip and the symptoms they experience should be similar to the study population in the

researcher's current research with Osteo-Arthritis of the knee. The VAS and Categorical scale were found effective and reliable in Averbuch and Katzper's study and should therefore be effective in this study. In conclusion Averbuch and Katzper (2004:368-372) do however indicate that a combination scale anchored by multiple cues may provide the patient with greater clarity and yield a more accurate pain measurement. The scale they propose is a visual analog type scale with metric values as well as categorical feedback. They consider that this proposed scale will be of great future value especially creating higher precision with pain ratings thereby contributing to consistency. A combination instrument may very well yield the answer to obtain realistic and reliable individual pain ratings as well as provide regulatory scope on the clinical and research front. Their research confirmed the choice of pain scales for this particular research. The three scales chosen and utilized in conjunction with each other provide a metric value together with verbal or categorical feedback and could serve as a visual analog type scale. The utilization of the three scales together is exactly what Averbuch and Katzper (2004: 368-372) propose with the design of their new pain assessment tool. The researcher is therefore of the opinion that choice of assessment scales is satisfactory to ensure consistency and reliability of the research data. This is of paramount importance and Turban *et al.* (2002:482) summarized the concept very well: "Data quality is an extremely important issue since quality determines the data's usefulness as well as the quality of the decision based on the data".

## **1.7 CONCLUSION**

The definition journey of two seemingly obvious terms: perception and pain, lead to a research path dating back from as early as 360 B.C. and it is not yet concluded, for no one author or researcher, great thinker, philosopher, physician, psychiatrist, socialist, father of some or other school of thought or average dictionary could sufficiently explain or provide the needed

comprehensive description or definition. In a last attempt the researcher will summarize own findings to order own personal and subjective thought process and will attempt to create a terminology that is deemed to be validated, plausible, possible, feasible and accurate without losing value or hopefully not stepping on any great thinker's toes.

It has been proven that pain has a neurological structure. This is supported through the various pain theories: the gate control theory, the specificity theory, pattern theory and the neuromatrix theory of pain. These theories have been widely reviewed, revised, researched and validated. For this reason it stands to reason that part of the pain perception theory should therefore include a neurological aspect (Melzack, 2001:1378-1382; Melzack & Wall, 1965:971-979). A portion of the definition should therefore mention neurological foundations and can possibly read as follows: *pain transmission is dependent on neurological structures and centres*. The pattern theory does however make prominent mention that pain sensation is received through a wide variety of stimuli. These stimuli are created through the sensory mechanisms but can be moulded by both biological and emotional processes (Cameron, 2007:45). This prompts the definition into a second section that should also include interpretation of the message and as the pain models (biomedical and biopsychosocial model) illustrated, this interpretation can be dependent on pathophysiological, mechanical and physiological processes as well as psychological and social contextual variables (Melzack, 2001:1378-1382; Merskey & Spear, 1967:19; Wall & Melzack, 1984:230). The biopsychosocial model views illness as an interaction between biological, psychological and sociocultural variables whereas the biomedical model focuses on the pathophysiological aspects of the process (Engel, 1977:129-136). Taking this information into account one could acknowledge that 'human interpretation' derived from biological (genetics), psychological (previous encounters or personality traits) and sociocultural (exposure and learnt behaviour) variables can influence pain perception.

So far, looking at theories and models surrounding pain the definition can read as follows: *pain transmission is dependent on neurological structures and centres and is moulded by human interpretation derived from biological, psychological and sociocultural variables.*

The definition that is evolving from all the research in this article is slowly but surely aligning itself with the psychological behaviourism theory of pain that embraces the various ‘levels’ involved in pain as suggested by Staats *et al.*, and earlier discussed in the article (1996:194-207).

To add to the final product it is important to review the paradigm perspectives and especially symbolic interactionism. This provides room to successfully divide reality into two categories: perceived reality and objective reality. While the latter is important, it is the first that contributes to our definition of pain perception in that it states the important reality is the individual’s own reality or interpretation of the reality within his or her own mind (Blumer, 1986:63-64).

Finally, the definition that emerges from all factors considered is as follows: “*pain is a message of physical discomfort that is transmitted or is dependant on neurological structures and centres and the interpretation thereof is moulded by biological, psychological and sociocultural variables.*” Instead of being at peace with this seemingly descriptive term, it still falls short of what was set out to define. The reason is simple: this term will suffice when pain **is** indeed present but the research is based on pain perception being constructed **prior to incurring pain.**

It has been found that factors in pain perception are not an automatic result of stimulation but that they depend on various factors - expectations, the placebo effect and personality to name but a few (Smith *et al.* 1999:29-38). Research has shown that our expectations about how much something will hurt can affect our perception (Engel, 1959: 899-918). Believing that something

will be very painful helps one prepare for it and child birth would be a good example. Women attend Lamaze classes that falsely lead us to believe it won't be that painful. Maybe if women know it will be extremely painful they can adequately prepare to handle it (Geth & Traub, 2006; Williams & Bendelow, 1998:158).

The placebo effect also demonstrates perception modulation very well. If we believe pain has stopped, it may. If we believe we are undergoing or receiving the best treatment (unaware that we are in the control group receiving the placebo treatment) we often show improvement (Benedetti, 2007:7-9).

Our personality type also influences behaviour and this is illustrated in Dr Engel's literature and studies that found some patients encompass certain characteristics and are viewed as being prone to pain (Engel, 1959:899-918). People with negative types of personalities often have more pain or report pain more easily. As an example, a very uptight person may experience muscle pains, back pains and chronic reports of pain with little to no improvement with both pharmaceutical and chronic treatments. The mood of the patient will also show similar effects. Being unhappy, angry or frustrated can also lead to the experience of increased pain. A study manipulated moods of subjects then asked them to complete questionnaires of pain perception. Those in the negative mood group reported significantly more pain than other subjects. It seems that our brains can regulate, control, determine, **and even produce pain** (Anon, 2009).

“The truth of the matter is that we will never really know what makes one ‘tougher’ than another. All people are different and therefore their perceptions are different. This difference may be due to the fact that we each have different brains and perceive pain with more or less aversiveness than others do.” (Barnes, 2002.) Scientific evidence to date has indicated that certain brain parts are activated during pain stimulation. This is emphasized when Melzack

declared the brain as the future focus of pain studies (Melzack, 1993:615-629; Melzack, 2001:1378-1379; Melzack, 2002:102). Barnes however also indicates that activation of certain areas in the brain is also interestingly enough activated, especially during the aversiveness to pain (Barnes, 2002). There are also meaningful observations suggesting the brain mediates the suppression of pain as stated by Melzack (2002:102). Referring to aversiveness of pain, one has to acknowledge that the view is based on the notion that pain is a perception and this opens the discussion on the mind-body problem again (Bendelow & Williams, 1995:139-140; Furst, 2007:2-4). “If pain is one's own perception of a stimulus, then it follows that the mind may have conscious control of these perceptions” (Barnes, 2002). The literature on pain theories indicates confidence in the scientific fact that the brain is involved in pain modulation (Benedetti, 2007:7-9; Melzack & Wall, 1988:161; Zimmerman, 1984:1053-1059). Still controversial, is which regions of the brain are in control of certain metacognitions of pain, such as perception and understanding” (Barnes, 2002). The quest in the study is not to ascertain the anatomical location in the brain where perceived pain is generated – the quest is to establish proof that perceived pain can be generated prior to experiencing surgical pain and that perceived pain can be generated in the absence of surgery and moulded by individual variables.

Reviewing the literature in this chapter and all the thoughts on pain and perception, application of the information shifts from the ‘absence of pain’ to the ‘presence of pain thoughts’ and a rephrased definition is presented to read as follows: *“Perceived pain is a message of anticipating physical discomfort when it is not yet present, that is transmitted to the neurological structures and centres and the interpretation or intensity thereof is molded by biological, psychological and sociocultural variables and is a product of the individual’s own reality within his or her own mind.”*

The definition as proposed, is affirmed, very affectively in the work of Main and Spanswick (2000:8): “Today it is known that pain perception depends on complex neural interactions where impulses generated by tissue damage, are modified both by ascending systems activated by innocuous stimuli and by descending inhibitory systems which, in turn, are activated by various environmental and psychological factors”.

## ANNEXURE 1: RESEARCH QUESTIONNAIRE

Age: رملعلا	
Diagnosis: صيخشتلأ	
Date of operation: خيرات العملية	
Attending Surgeon: حارجلا الامشرف	

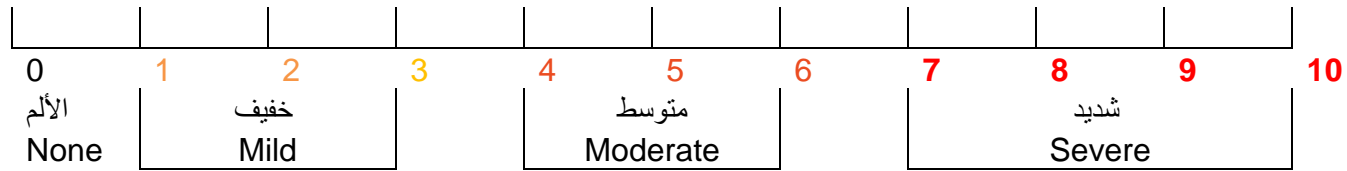
Consultation: فشك	YES	NO
How long pre-operative did you experience pain? لى عانديت فيها من الألم قبل ان يمزلا قدملا ه ام العملية ؟		
Where you anxious or nervous about the operation? هل كنت خائفاً وقلقاً من العملية؟		

Doctor-patient consultation parameters (عجارجملا) فشكلا نمضتي نأ بجي	
Step by step pre-operative investigations (blood donations etc). ةيلمعلل قعباسلا ليلاحتلا لك	
Step by step admission process. قوطخب قوطخ لوخذلا ةيلمع	
Step by step surgery process. قوطخب قوطخ حارجلا ءارجالا	
All possible complications. ةلمتحملا تافعاضملا لك	
Pain possibilities post-surgery. ةيلمعلا دعب ملأل اب روعشلأ ةينكلم	
All precautions to be taken post surgically. تاجايحتحال لك	
Preventative measures prior to surgery (weight loss etc) نزولنا دقف لثم) ةيلمعلا لبق ةيئاقولا تاءارجالا	
Model of the prosthesis. يعانص لصفم نم عون	

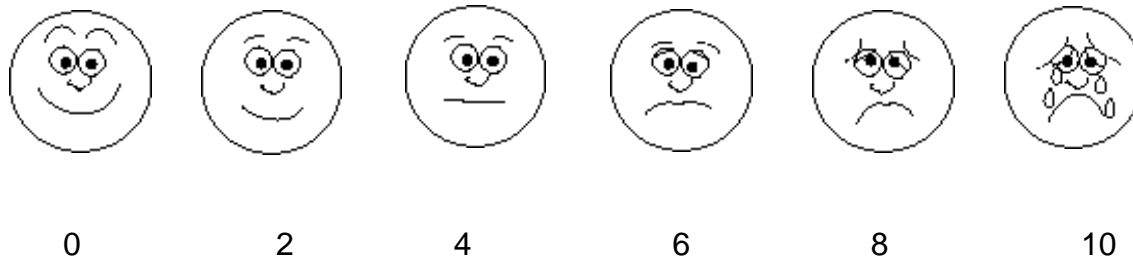
Medical history:	Do you have any existing medical condition?		
Diabetes يركسلأ ضررم	Low blood pressure ضافخن! الضغط		Respiratory problem يف لكاشم ال تنفس
Cholesterol لورتسلك	Anaemia مدرقف		Arthritis تهاب بالام فاصل
High Blood pressure عافترا الضغط	Blood clots مدلا رثخت		Osteoporosis
Any other رخأ ضررم			

### Perceived pain/anticipated pain pre operatively

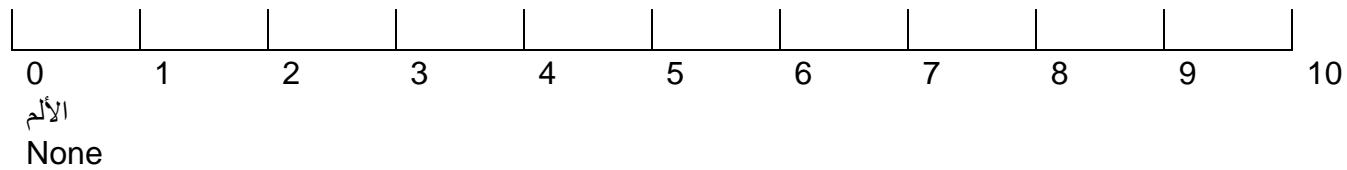
المقياس التصنيفي  
Verbal Rating Scale (VRS):



التعبير عن الألم  
Faces Pain Scale - Revised:

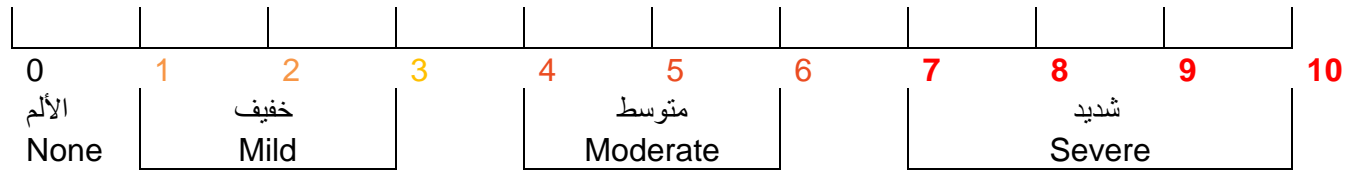


المقياس الرقمي  
Numerical Scale:

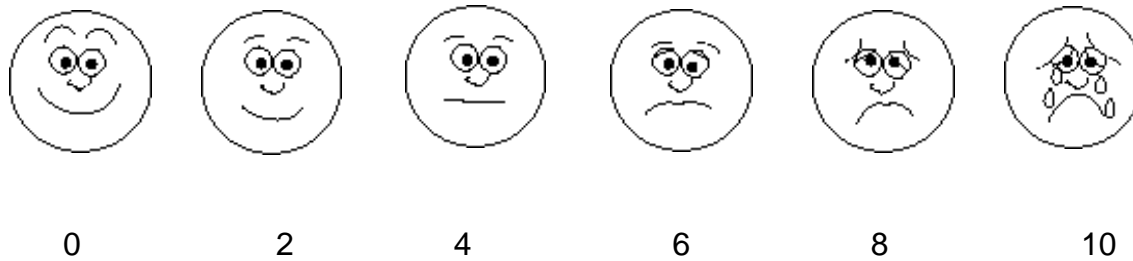


### Actual/organic pain post operatively

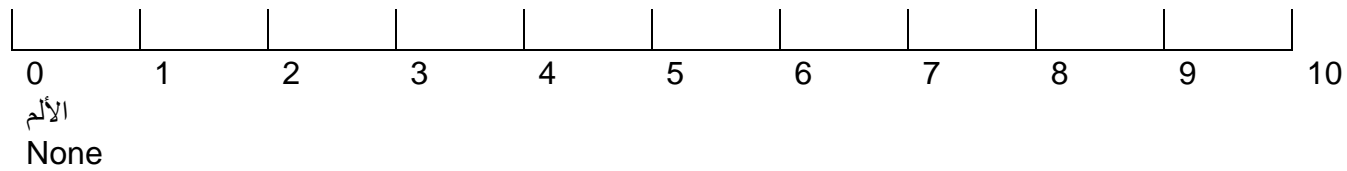
المقياس التصنيفي  
Verbal Rating Scale (VRS):



التعبير عن الألم  
Faces Pain Scale - Revised:



المقياس الرقمي  
Numerical Scale:



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**CHAPTER 3**

**ARTICLE 2**

## **CHAPTER 3**

### **Article 2**

#### DOCTOR-PATIENT RELATIONSHIP UNDER THE MICROSCOPE

(M Watermeyer)

Subject Group Sociology, School of Behavioural Sciences, North-West University, Vaal  
Triangle Campus.

**Abstract:** The doctor-patient relationship is a core construct in the medical field. It is impossible to obtain any medical intervention, advice or treatment without entering into this relationship. Through the ages there have been many developments around the dynamics of this interaction and a substantial amount of research and literature has aimed at explaining the relationship and the importance thereof. Other discourse was focussed on development of guidelines and models to conduct the relationship. The role players within this relationship have also evolved through the ages from an initial class divide where the physician was deemed to be the superior elite consulting with a lay person. The modern day doctors are often viewed as ‘fallen from grace’ to a salary recipient within a multimillion dollar business of medicine and the patient has become a highly evolved participant with access to the electronic highway rendering him more empowered and balancing the social divide scale. Against this backdrop of a changing doctor-patient relationship that is the essence of medical practise the researcher

wished to explore if this could contribute to the various pain reports from patients with apparently the same diagnosis and treatment regimes. How vital is the doctor-patient relationship to the experience of pain and how much impact can this relationship have on the construct of perceived pain and ultimately on organic pain?

**Opsomming: Die dokter- pasiënt verhouding is 'n kern konstruksie in die mediese veld. Dit is onmoontlik om enige mediese intervensie, advies of behandeling te bekom sonder om in hierdie verhouding te staan. Deur die eeue het daar baie ontwikkeling rondom die dinamika van die verhouding plaasgevind. Navorsing en literatuur het gepoog om die verhouding en die belangrikheid daarvan te illustreer. Ander navorsing was weer gefokus op die ontwikkeling van riglyne en modelle waarvolgens die interaksie moet plaasvind. Die rolspelers in die verhouding het ook deur die eeue ontwikkel vanaf 'n aanvanklike klasse verdeling waar die dokter as gesagsfiguur met 'n leek konsulteer het. Die moderne dokter word tans as onttroon tot 'n salaris trekker in 'n multimiljoen dollar besigheid van medies gesien en die pasiënt het 'n hoogs ontwikkelde deelnemer met toegang tot die elektroniese hoofweg geraak, dus meer bekragtig met die vernuf om die sosiale klas verdeling skaal te balanseer. Teen die agtergrond van 'n veranderde dokter- pasiënt verhouding wat die essensie van medici is, wou die navorser vasstel of dit kan bydra of verklarings bied vir die verskillende pyn verslae tussen pasiënt met klaarblykbare identiese diagnoses en behandelings riglyne. Hoe krities is die dokter- pasiënt verhouding in pyn konstruksie en hoe beïnvloed die verhouding vorming van perseptuele pyn en uiteindelik organiese pyn?**

**Keywords:** Doctor-patient contact; sick role; medical models.

## 1. INTRODUCTION

Within any society there exists a social or class divide and this emerges in the form of differential educational backgrounds, levels of wealth, public status or access to medical facilities (Marx, Engels & Smelser, 1973). The divide is an invisible line but with very real consequences, if you need or require something that is not attainable from within your social grouping. You may not be able to fulfil your needs due to your lack of social status or purely because of the existing conflict of interests between various classes and this is particularly true in the realm of medicine (Shorter, 1999; Zaner, 2000).

Through the decades education was one avenue to improve social status and this is clearly visible when a doctor attains recognition, wealth and status and becomes an embodiment of the elite (Shorter, 1999). Unfortunately education comes at a price and even today if you are considered of lower social class it is likely that you will not be able to afford an education and therefore you will not be able to improve your social status (Fernandez & Rogerson, 1995; Kozol & Schrag, 1991). The rich also tend to become the educated, the educated become the important and the important become the leaders. The struggle continues for economic and social equality (Low-Beer, 1975).

This natural phenomenon, known to every lay person, is very important when one studies the doctor-patient contact which is a classic example of social or class divide. One party is traditionally viewed as authoritarian due to his or her knowledge (Stewart, 1995) over the other participant (Zaner, 2000). This relationship is at the core of medicine and it has been studied and analyzed over many years and it is still evolving in today's society (Sparks & Mittapalli, 2004). The impact of this relationship can possibly answer questions regarding illness behaviour

and treatment outcomes. To really understand the relationship between the healthcare practitioner and the client one has to research the birth of the concept.

## **1.1 CLINICAL MILIEU OF THE RESEARCH**

The hospital where the study was conducted is a government hospital with a sound reputation in Libya. Along with other hospitals in Libya they also opted to move towards rendering a privatised service. Privatization is predominantly focussed on the optimization of processes, procedures, quality of care and the core difference is paying for treatment received. Most government hospitals follow a typical accreditation pathway and all the services, equipment and structural aspects are guided towards the standards of developed countries (Joint Commission International Accreditation Standards for Hospitals [JCIAS], 2008). The change is slow and frequent reluctance is experienced by the personnel especially within the clinical realm. Changing and exposing individuals to all the developments that have occurred in other countries and up-skilling and equipping hospitals is a very threatening and uncertain scenario for any population and it is no exception here. Change is difficult and strong forces will challenge those who want to change (Rosenqvist, 1995).

The study population consisted of forty patients admitted to undergo Total Knee Replacement surgery in an orthopaedic ward at a hospital in Libya. The patients had various educational levels but in general were uneducated, illiterate and of lower to moderate socio-economic status. This is not unusual and according to Garret (2006) The World Bank published the following statement that gives a clear indication of the general population in Libya:

At a time when the Gulf States are building large universities modeled after MIT and Harvard, Libya has a per capita gross national income equivalent to US\$5,500, is unwilling

to provide adult literacy data to the UN, and has a population dominated by children, 30% of Libyans are under 14 years of age. (p.514)

This phenomenon is attributed to the thirty years of isolation and the fact that Libya is a socialist country where the education drive was hampered by the system and political atmosphere within the country.

Privatization of hospitals is divided into pro- and against change groups. Some medical doctors are very eager to embrace change and align with international standards whilst others are set in their ways formed through many years of practise. Academic training for all medical and para-medical disciplines is often according to a joint agreement between universities and hospitals and is applied in much the same fashion as other countries. The permanent personnel are often responsible for overseeing the students involved in practical application of their newly acquired skills. This in itself has interesting research possibilities as the skill levels vary tremendously among doctors, consultants and students, especially amongst candidates within the same ranks.

The students tend to utilize two avenues for learning:

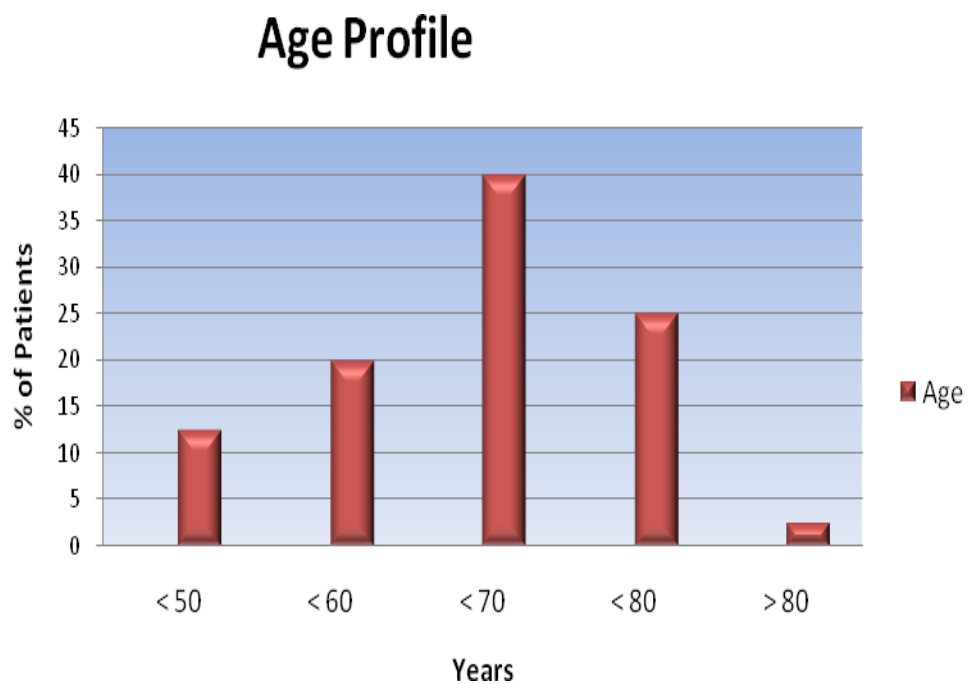
- I. Mimic the senior consultant or physicians and apply their approach as seen in ward rounds and discussed in clinical case reviews (Groopman, 2007) in other words a social learning approach where skills are acquired through observation (Coetzee, Botha, Kiley & Truman, 2007) or
- II. Apply the skills they acquired at university according to available textbooks and ideas, operating almost like a programmed computer (Groopman, 2007).

Everything the doctors apply has been either taught to them by their predecessors or textbooks and clinical exposure. In other countries such as the United Kingdom and the United States of

America there has been a transition from the traditional medical model of learning that consisted predominantly of apprenticeship. Dall’Alba and Sandberg (1996) state “we, as teachers, aim to enable students to engage in practice in ways characteristic of competent practitioners” but in order to achieve this we can however not look upon students as empty vessels awaiting knowledge infusion from competent individuals with the desired skills. Instead, achieving competence will ultimately entail refinement and a significant shift away from traditional views (Dall’Alba & Sandberg, 1996). This is also visible in the South African outcomes-based approach where learning is seen as a dynamic and continuous approach more than passive recipients, learners now actively seek opportunities to apply their new information (Coetzee et al., 2007). Unfortunately this shift is not yet prevalent within the Libyan community and physicians still regard students as empty vessels, to be filled from the storehouse of doctor’s knowledge and skills. The clinical governance applied to students harks back to the observant learning method applied in the 1800’s (Shorter, 1999).

Doctor-patient contact was followed during consultation with joint replacement patients, specifically knee replacement patients. Joint replacement surgery is in general performed in old aged patients (Felson et al., 2000; Juni et al., 2003). This condition is a result of Osteo-Arthritis and long-term wear and tear adding to the chronic condition (Clark et al., 2004). An artificial joint has a limited or projected lifespan (Clark et al., 2004) and it is often advised that the surgery be postponed as long as possible, sometimes neglecting obvious inclusion criteria. In extreme cases or multiple trauma (car accidents especially) where impact resulted in the severe dysfunction, joint replacement may be considered in young adults. Within the hospital patients are being admitted for knee replacements on a daily basis, ranging between two to four cases. The age profile of the patients varied between 36 years of age and 84 years of age which provides a good patient spread and also assists with the interpretation of the needs within various age groups. The graph below, (figure 1), depicts the summarized patient age profile. The largest

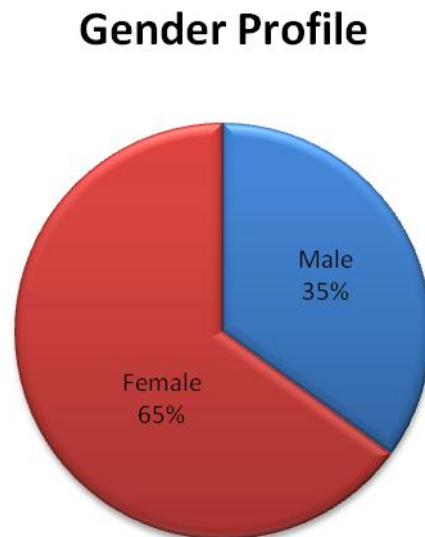
number of participants was under the age of 70 years (40%), the second highest number of patients (25%) was under the age of 80 years, 20% of the population were under the age of 60 and less than 5% of patients were over 80 years of age and less than 15% were under the age of 50 years. The population was most represented over the age of 50 years and under the age of 80 years.



**Figure 1: Patient Age Profile**

The study included 65% female patients and 35% male patients. This in itself provides information about possible cultural influences related to knee replacements. More females underwent knee replacement surgery than their male counterparts. In the Muslim community women are the ‘physical’ labourers. They clean their own homes and often to prove their worth, the dwelling of their mother in law as well. They carry children on their hips and due to regular pregnancies they place extreme wear and tear on their joint surfaces. In addition the occupations available to them have until recently often only included working in kitchens, cleaning or

laundry services that involve a great deal of mechanical strain. A large percentage of the female population is also obese adding to joint strain and this is supported by the findings of Juni et al. (2003:520). These are the possible reasons for more females undergoing joint replacement surgery. The figure below illustrates the gender participation in the study.



**Figure 2: Patient Gender Profile**

Based on the data collected, 95% of the patients experienced medical conditions which varied from hypertension and diabetes to cholesterol. No severe cardiac or neurological conditions were recorded. A total of 27% of the patients had previous TKR (Total knee replacement surgery) operations. The largest percentage of the research population was exposed to medical treatment or a hospital environment in one way or the other and was thus not unfamiliar with the clinical milieu. It is however important to monitor patients responses who had no previous exposure to joint replacement surgery (73%) versus patients who had undergone joint replacement surgery as their experience/perception may be different because of this. Figure 3 below reflects the results of the patients with pre-existing medical conditions, while Figure 4 reflects those of the patients who underwent previous TKR (Total knee replacement) surgery.

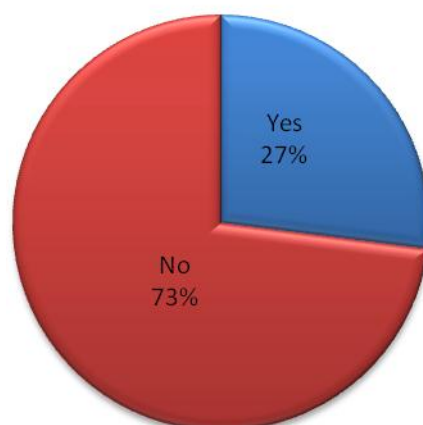
What is important to remember when one reports on previous surgery and existing medical conditions is that people with previous medical conditions or who have undergone previous surgery deem themselves to be experts in the field of ‘hospital utilization’ and are likely to feel that their expectations should be taken into account. “Most frequent users are more likely to consider as important the understanding of patient’s problems, the continuity of care, and the arrangements made in an emergency case, the discussions with physicians and having enough time for the patient.” (Bara, 2003:87.) They are more likely to list more consultation parameters that they would require adherence to and are also more likely to require more information during doctor-patient consultation.

### Existing Medical Condition



**Figure 3: Existing Medical Conditions**

## Previous Surgery



**Figure 4: Previous Surgery**

In the United Kingdom approximately 41000 knee replacement surgeries were performed in the year 2000 (Juni et al., 2003). This was however estimated at less than 75% of the required need (Holland & Harvey, 2003).

The admission pathway is important to understand and apply the research objective to ascertain if doctor-patient contact can impact on construction of perceived pain and the subsequent translation to organic pain. A patient will present with chronic or acute knee pain and depending on his pain threshold will then report to an out-patient centre. The orthopaedic consultant will then see the patient, order x-rays and diagnose treatment. A typical diagnosing session would include the following dialogue:

Doctor: "Good morning, what can I do for you?"

Patient: "I have severe knee pain."

Doctor: "Left or right?"

Patient: "Left"

Doctor: “Please go to x-ray department and laboratory with this note and come back with the results.”

This consultation follows suit to many consultations all over the world as seen in the works of Edward Shorter (1999) where he has recorded a typical consultation. The patient is seldom informed about the reason for diagnostic testing (Groopman, 2007). The doctor and nurse often do not introduce themselves to either the patient or family members. There are limited personal interactions and few questions about family or medical history is recorded, instead diagnosis is based on the Bayesian analysis, utilizing algorithms and decision trees as medically taught (Groopman, 2007). Upon the patient’s return, the doctor usually takes the x-rays, displays them on the x-ray light and tells the patient he will have to perform a total knee replacement as the patient has severe Osteo-arthritis. The patient is subsequently told to go to the admissions desk inside the hospital with an admission letter. The doctor will set a date for use of the operating theatre and the patient will only again be seen by the doctor inside the ward on the day prior to the surgery.

The consultation as described is nothing out of the ordinary – and stems from years or habitual practise and training that resulted in Groopman’s (2007) dismay when he admits to feeling unfulfilled after a ward round with students and observes they “failed to question cogently or listen carefully or observe keenly”. To the doctor or consultant, the knee replacement is the important factor and it is almost impossible for the doctor to imagine that the quality of clinical contact can have an effect on it. The doctor merely followed the rigid reliance on evidence-based medicine, statistics and numbers as proposed in the scientific world (Groopman, 2007).

Looking at post-surgical outcomes and complaints of the patients as well as results obtained during rehabilitation, one has to ask the question: If the doctor followed the same surgical

procedure from incision to suturing and the patients had the same degree of Osteo-arthritis, were in the same age group and were of the same sex – why are they presenting with vary distinctly different pain complaints? What accounts for the variable outcomes? (Creamer, Lethbridge-Cejku, & Hochberg, 1999). Doctor-patient interaction, as a concept, was first introduced by Talcott Parsons, the best known American Sociologist of the 1950's and 1960's. The many more studies that followed, such as those of Freidson (1988), Calnan and Rutter (1986), Tuckett, Boulton, Olson and Williams (1985) and Stimson and Webb (1975), prompted me to investigate this relationship as a possible influence on various surgical outcomes and pain complaints in apparently the same diagnosis's. The objective of the research is aimed at addressing the hypothesis that there may be a correlation between patient consultation and the perceived level of pain anticipated after undergoing surgery. A questionnaire was designed and is discussed in detail in chapter 2, (Article 1), it encompassed a list of eight key components as guideline to follow in consultation. The eight components are viewed as the consultation parameters and were included to provide insight into a typical consultation as well as to create avenues to explore the difference between what the surgeon and patient view as important or noteworthy. These parameters can assist in providing insight into the quality of the doctor-patient contact. It gives the opportunity to stand in both the patient and the surgeon's shoes regarding crucial information in the individual parties' 'life world' (Liebenswelt).

The parameters are as follows:

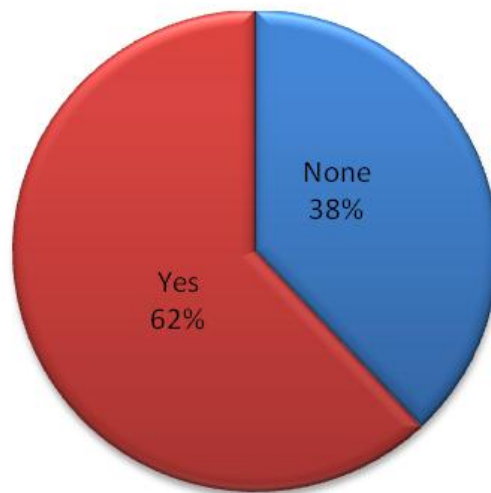
A	Step-by-Step pre-operative investigations
B	Step-by-Step admission process
C	Step-by-Step surgery process
D	All possible complications
E	Pain possibilities post-surgery
F	All precautions
G	Preventative measures prior to surgery
H	Model of the prosthesis

**Table 1: Consultation parameters**

Of the research population 62% of the patients were consulted as reflected in figure 5 below. The research population was well represented over the total age profile of the patients which assisted in the interpretation of the data and research results since it removes the potential debate pertaining to age versus surgery experience. In general consultation is limited pre-operatively as discussed in Chapter 2 but due to the existing study and discussions with surgeons – they were more inclined to consult and one can argue fear of poor reflection on their output or upliftment of skill as possible reasons for the phenomena. The in-house hospital surgeons versus the outpatient-consultants were more prone to comprehensive consultation as they are part of the ongoing privatization process within the hospital and effective consultation is a big drive within the scope of change management. A total of 38% of patients from various ages and both genders did not receive a consultation inclusive of the critical elements and some patients were pre-diagnosed in other facilities and only underwent surgery in the hospital where the study was being conducted. Their first contact with the surgeon was on the day of procedure and did not

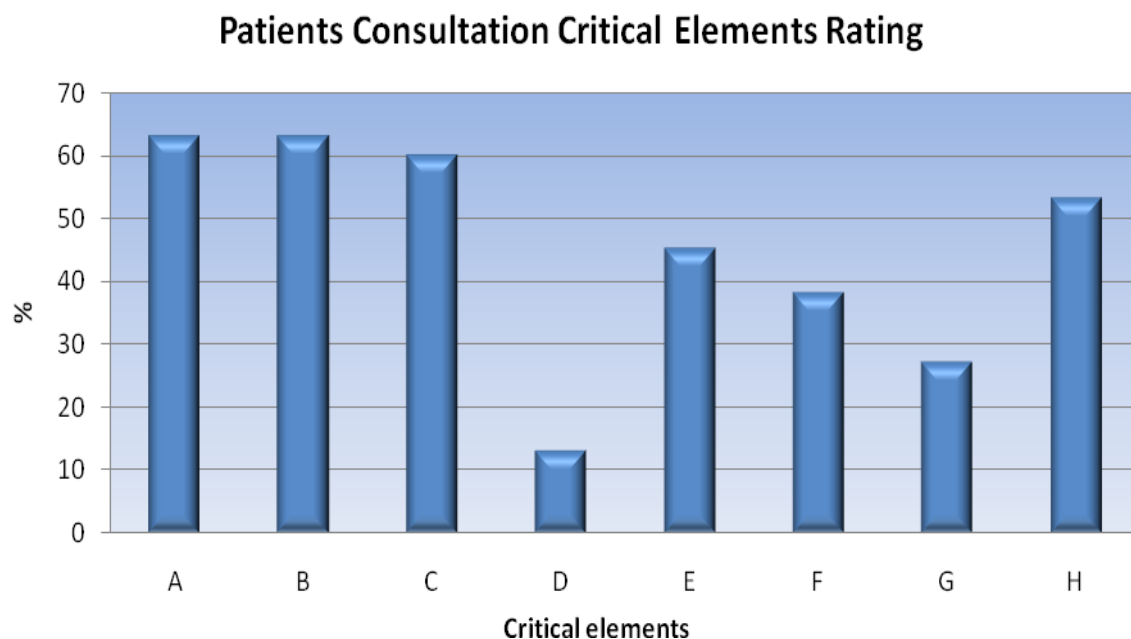
entail the critical consultation parameters but was rather focussed on obtaining medical history and reviewing documentation from the referring physicians.

## Consultation versus No Consultation



**Figure 5: Consultation versus No Consultation**

From the data gathered it suggests that physicians emphasize certain critical aspects depending on the patient being consulted. Through the conversion of the data collected into information some very interesting trends can be observed. To illustrate the observations this can best be done through a number of histograms. The histogram, figure 6, illustrates the emphasis placed on the eight consultation areas expressed in the percentage supported by the consulted population.



**Figure 6: Patient Consultation Critical Elements Rating**

The results, based on the consulted patient population suggest the physician rating order of the eight consultation areas is as follows, where one is the most important and eight the lowest from a rating perspective. It is important to note that emphasis was placed on consultation parameters depending on the patient’s questions as well as the physician’s view of importance.

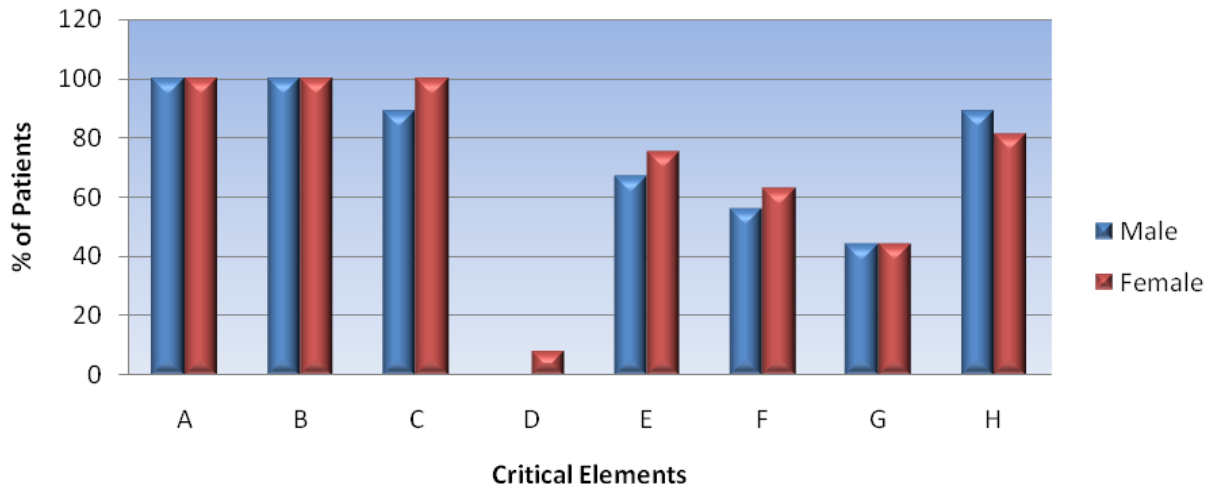
The rating is therefore two-fold indicative of areas of importance for both parties:

A	Step-by-Step pre-operative investigations
B	Step-by-Step admission process
C	Step-by-Step surgery process
D	Model of the prosthesis
E	Pain possibilities post-surgery
F	All precautions
G	Preventative measures prior to surgery
H	All possible complications

**Table 2: Critical elements ranking**

Further analysis was performed on the ranking of critical elements as the research population did not constitute a 50/50 representation within the male and female group. Furthermore it was observable during consultation that the order of questions and elaboration on information significantly differed between male and female patients. The data was thus further analysed to establish where emphasis during consultation with female patients differed or correlated positively with the male consultations. It could further aid in providing gender-related explanations regarding pain reports as well as on the cultural or social role impact in consultation. The histogram, figure 7, reflected below, was developed to assist with this analysis.

## Patient Consultation Critical Elements Rating Comparison Male versus Female



**Figure 7: Patient Consultation Critical elements Rating Comparison (Male versus Female)**

It is interesting to note that although surgeons touched on the following parameters with both genders – they were required to provide fewer males with information on these aspects:

C: Step-by-step surgery process

E: Pain possibilities post-surgery

F: All precautions post-operatively to preserve the knee.

Females in general are very concerned with understanding a procedure step-by-step as they often have to make a variety of arrangements to allow for a procedure to be completed. Female patients may have to arrange for someone to prepare meals for their husbands or tend to the tasks in the home whilst they are in hospital and will therefore require more information on time-frames of surgery and so forth (Clark et al., 2004). The same possible reason would apply to wanting information on pain possibilities post-surgery as this may result in an extended hospital stay and they would require further arrangements to support their families at home. Post-operative precautions will also be important to them as they will have to go back to their

‘manual labour’ of stooping and bending, climbing and walking to perform their activities of daily living as required in their home environment. It is fair to reason that they may have requested more information from the surgeon than their male counterparts that do not fulfil these domestic roles at home and this may account for the higher percentages within the female group. Fava (2007) also confirms this when he states that now clinical investigation and patient care consists of various core components of extreme importance: individual’s productivity, social role performance, intellectual capacity and emotional stability as well as the individual’s ability to function in daily life. Bara (2003) conducted research in Romania where she investigated what quality aspects in health care are most important for different groups of people and the parameter ‘information about risks’ was rated fourth important by the patients.

It is further interesting to see that category D: All possible complications were only focussed on by female patients and again the social role they have to play at home adequately provides an explanation for this trend. Parameter H: Model of the prosthesis in contrast to the before mentioned results were more frequently discussed with male patients. Males have a natural interest in mechanics and a model of the prosthesis would have probably been demonstrated more from an ‘interesting to see’ point of view as opposed to a factor that will improve surgery outcomes. For female patients the foreign metal object could have probably induced anxiety where males could have interpreted this metal mould as strong and reliable material that will carry his weight and improve quality of life. Or it could have simply been a case where a normal conclusion was made by the surgeon that women are not interested in mechanics and therefore less emphasis was placed on this aspect during consultation.

Although the percentages differ, for instance males and females do not absolutely agree it would be safe to argue that the generic top five patient consultation critical elements for the

physicians and patients – since more emphasis and elaboration occurred pertaining to these elements - are as follows:

One	Step-by-Step pre-operative investigations
Two	Step-by-Step admission process
Three	Step-by-Step surgery process
Four	Model of the prosthesis
Five	Pain possibilities post-surgery

**Table 3: Generic top five patient consultation critical elements**

To determine the impact doctor-patient contact can have on perceived pain, it is important to view the study population’s results obtained when perceived pain versus organic pain was measured. With reference to the collection of data pertaining to the pain rating, the questionnaire was structured to facilitate a categorical scale (CS), a numerical scale (NS) and a pain face scale-revised (FPS-R). The expression (categorical scale) of how the pain is perceived to be or experienced, example severe, mild etcetera was converted to a value to enable a comparison between the three rating areas. Furthermore facial expression symbols were also used so that the research/patient population could indicate which expression best represents their respective views. These symbols were also converted into a value to enable a comparison between the three rating areas. Throughout the data received and the analysis undertaken a direct correlation and consistency could be established within the pain rating scales and this observation is also reflected in the histograms to follow.

For the purpose of this report and to assist with the analyses the pain expected versus the actual pain experienced was analysed amongst others:

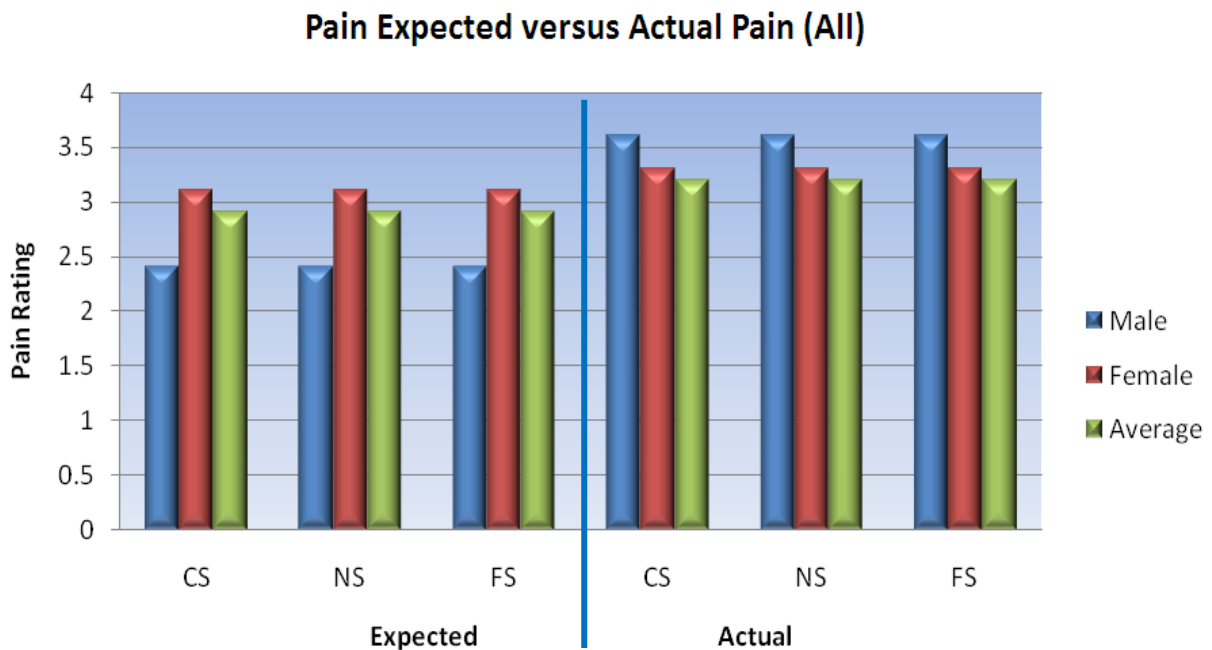
- Per gender;
- for the total research/patient population;
- for the group consulted; and
- for the group not consulted.

The first step of the analyses related to pain and consideration was given to the pain expected pre-surgery and actual pain experienced post-surgery, irrespective of whether the patient received consultation or not. It was essential to start here to establish a baseline which could be used as a reference point. It is however important to note that in order to conclude that perceived pain can be negatively or positively influenced, if at all through the doctor-patient contact, one has to measure pre-operative perceived pain levels in a consistent manner. First consideration was given to pain measured pre-operatively and then compared to organic pain levels measured post-operatively. Although it was not initially set out to measure pain levels post-operatively, the data collected could possibly assist in opening further research avenues or provide consistency with regards to pre-operative levels measured. If pre- and post-operative levels varied immensely it could be indicative of:

- Unrealistic pain perception;
- Inability to verbalize or numerate pain experience;
- Wrong interpretation of questionnaire parameters;
- Attention seeking behaviour;
- No correlation between perceived pain and organic pain;
- If perceived pain was higher than organic pain it could prompt an investigation into possible causes, or into areas that could impact on this ;

- If organic pain was higher it could be indicative of neurological feedback being stronger than perceptual feedback regarding pain experienced; and
- Assist in elaboration on influence of the doctor-patient impact on pain levels.

Whatever the outcome is the relative relationship from a pain perspective pre- and post-surgery as experienced by the research/patient group is important in contributing to conclusions. The histogram reflected in figure eight below indicates the pain expected versus the actual pain experienced as expressed by the total research/patient group irrespective of whether they were consulted with or not.

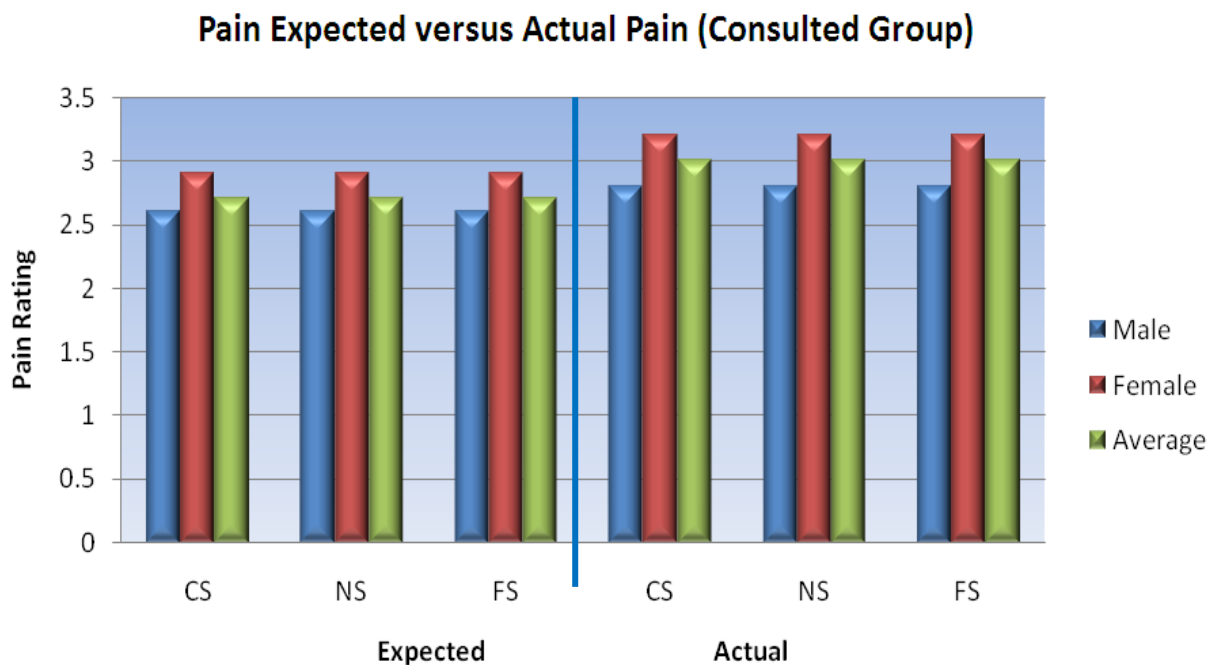


**Figure 8: Pain Expected versus Actual (All Patients)**

From figure 8 it can be concluded that both the males and females expected or were perceived to experience less pain on average than what they actually (organic pain) experienced post the surgery based on their pain perception pre-surgery. Clark et al., (2004) makes an interesting observation that can provide a possible explanation when they observe that when patients weigh benefits and risks pre-surgery, perception of pain relief and better mobility may lead to surgery

consent. Patients could possibly have anticipated long-term post-surgical pain relief and drew upon this notion to evaluate the perceived pain rating induced by surgery. The histogram also suggests that while the average pain expectation of males pre-surgery was lower than that of the females that the post-surgery actual results suggest that the males experienced more pain than the females. It is important to note that the average baseline for pre-surgery is established at 2.9 while the post surgery average baseline is established at 3.2. The importance of these baselines will be further discussed in sections to follow in this report.

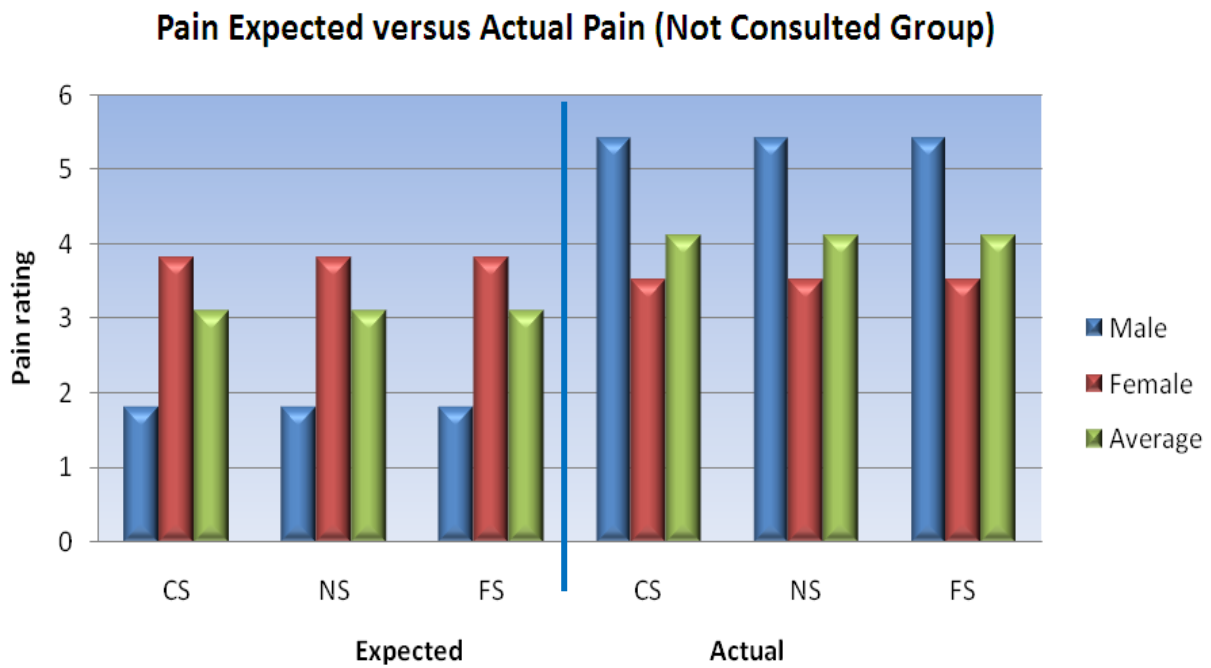
The data collected from the research/patient group that received a consultation or was involved in doctor-patient contact, was the next to be analysed and evaluated. The data was analysed for the males and females within this research/patient group. Furthermore an average was also established to be used in the final pain-rating comparison. The histogram reflected in figure 9 below indicates the results.



**Figure 9: Pain Expected versus Actual Pain (Consulted Group)**

An interesting observation based on the results reflected in figure 9 is that there is a stronger relationship between the male and female group from a pain-rating perspective pre- and post - surgery. The perceived pre-operative pain levels do not vary extensively from the organic pain reported post-operatively. The expected and actual pain ratings seem appropriate in intensity. Expected and actual pain ratings only varied by 0.3 and this can be indicative that consultation provided realistic anticipation of pain as well as a realistic post-operative score. The amount of pain the patient's expected to feel – correlates with what they actually felt on average for the entire consulted group. Benedetti (2007) maintains that words exchanged between patient and members of the multidisciplinary team, the physician specifically in the current study - are extremely important. The words, clinical setting, attitudes of the multidisciplinary team and expectations and belief in the medical procedures, can all play an integral role in creating expectations regarding medical treatments and outcomes. This can be so powerful, ultimately leading us to measure verbally induced responses regarding pain and pain expectations. In this case we can conclude that the verbal consultation induced realistic pain expectations.

For the analyses and evaluation of the data received from the research/patient group not consulted a similar approach as explained above for the group consulted was followed. The histogram reflected in figure 10 below indicates the results.



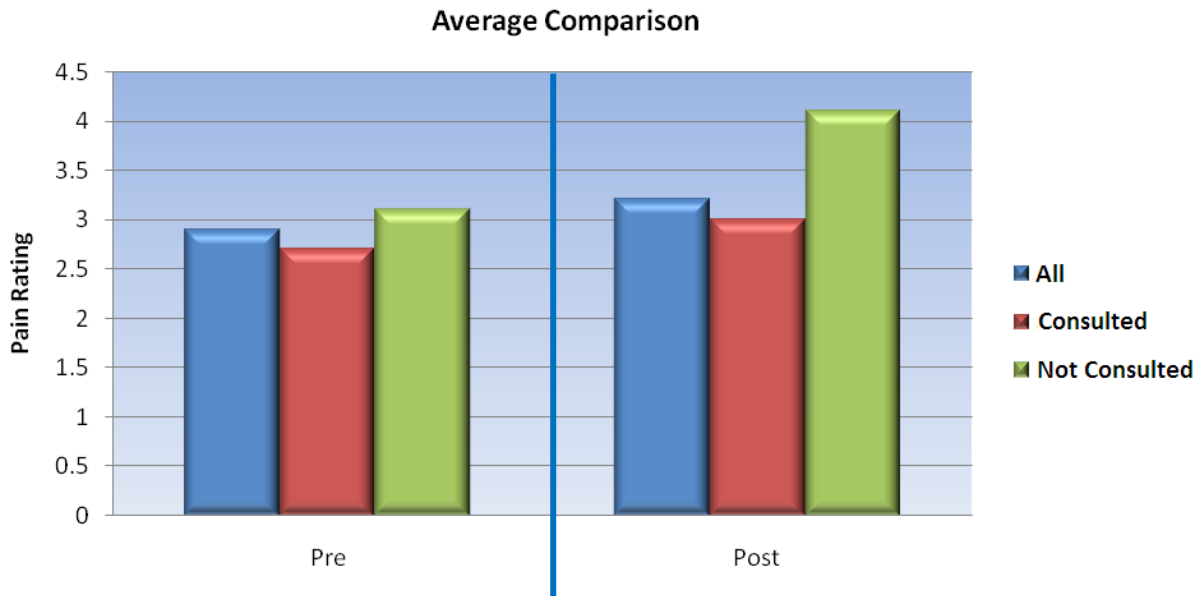
**Figure 10: Pain Expected versus Actual (Not Consulted Group)**

The results reflected in figure 10 suggest that the females within the research/patient group that had no doctor-patient contact had a significantly higher perceived pain expectation pre-operatively than what was reflected within the research/patient group consulted. It has been demonstrated that fear and anxiety about pain influences maternal behaviour in pregnant women. These factors are meaningful because they are viewed as varying and dependant on socioeconomic status, often embedded in practises of discrimination (Behague, Victora & Barros, 2002). Clark et al., (2004:1369) also found that perception of high pain levels led to a number of patients declining surgical options. Fear of pain and an underlying driving force such as no consultation leading to feelings of discrimination should therefore also be considered as possibly impacting on preoperative patient behaviour.

Their male counterparts on the other hand had lower perceived pain levels prior to surgery than the consulted male group. However, of more significant importance is that the post-surgery organic pain experience of the research/patient group not consulted is significantly higher than

their pre-surgery expectation and that of the results obtained from the consulted research/patient group experienced post-surgery. This is especially applicable to the post-operative pain ratings of the not-consulted male group. Their pain levels increased from a 1.8 value to a 5.4 value compared to the male consulted group that increased from a 2.6 value to a 2.8 value. Although the not-consulted male group had a lower perceived pre-operative pain rating their post-operative pain rating was very high. The data is possibly indicative that absence of consultation can result in unrealistically low levels of pain anticipation and then extremely high post-operative pain due to ignorance of the procedure and lack of knowledge on pain most patients report post-surgically. Studies have demonstrated that the inability to communicate with healthcare providers have a negative impact on access, trust and treatment compliance by the patient (Anderson, Scrimshaw, Fullilove, Fielding & Normand, 2003; Carrasquillo, Orav, Brennan & Burstin, 1999).

To test the sensitivity and consistency of the results derived from the data collected, a further evaluation was done to compare the results on an average base, irrespective of gender, but giving due consideration to consultation or no consultation. The histogram reflected in figure 11 below indicates the results.



**Figure 11: Average Comparison**

If the baseline established, as reflected in figure 8, is used as a reference point and treated in conjunction with the results reflected in figure 11 above, some very profound observations can be made. The results suggest that, based on averages, the pre-operative pain rating for the total research/patient group is 2.9 with a post-operative pain rating of 3.2. Pre-operative perceived pain measured lower than actual organic pain post-operatively for the entire study population.

In comparison with these results the average pain rating for the research/patient group that received a consultation, gives a pain rating pre-operatively of 2.7 and a post-operative pain rating of 3.0. Doctor-patient contact pre-operatively resulted in lower perceived pain (0.3) reports than was actually experienced post-operatively.

Furthermore the research/patient group that did not receive a consultation gives a pain rating pre-operatively of 3.1 and a post-operative pain rating of 4.1.

There is therefore a marked difference in the pain rating results, based on this research, for the research/patient group that received a doctor-patient consultation versus the research/patient group not consulted with as demonstrated in the table below:

	Consultation	No Consultation	Variance
Pre-operative	2.7	3.1	0.4
Post-operative	3	4.1	1.1

**Table 4: Variance in pain ratings of consulted versus non-consulted patients**

Looking at data collected and comparing the study group as a whole to the consulted group, the pre-operative perceived pain levels rate as follows:

	Entire population	Consultation	Variance
Pre-operative	2.9	2.7	0.2
Post-operative	3.2	3	0.2

**Table 5: Variance in pain ratings of the entire population versus the consulted group**

The consulted group presents with a value of 0.2 **less** perceived pain compared to the group as a whole.

Significantly, the figure below indicates that the study population without a consultation experienced the exact opposite – a value of 0.2 **higher** perceived pain pre-operatively versus the entire study population. More significant is the higher level of post-operative pain reports (0.9 in the non-consulted group versus 0.2 in the consulted group).

	Entire population	No Consultation	Variance
Pre-operative	2.9	3.1	0.2
Post-operative	3.2	4.1	0.9

**Table 6: Variance in pain ratings of the entire population versus the non-consulted group**

The data gleaned from the research population confirms the hypothesis that pain can be constructed in a perceived state; it can be realistically measured; and doctor-patient contact can influence the patient’s pain report. The researcher wishes to continue focus on the doctor-patient relationship as literature will further assist in clarifying possible reasons and highlight specific elements of contact that served as the catalyst of pain perception. An in-depth literature review will now elaborate on this relationship and should guide us toward clarity for the conclusions as reached in chapter 4.

## **1.2 MEDICAL SOCIOLOGY: THE BIRTH OF THE ‘SICK ROLE’**

Doctor–patient interaction is firmly set in the field of medical sociology with an emphasis on moving closer to the field of sociology *per se*. Under the current conditions of social change, medical sociologists are making greater use of sociological theory because theory promotes the explanatory power of their empirical findings (Cockerham, 2001). To understand the relationship between doctor and patient, it is paramount to understand the evolution of the theories that underpin or defined this concept.

From 1946 to 1951, the new field of medical sociology was almost completely an applied area of research. Medical sociologists were predominantly working alongside psychiatrists and

physicians. In 1951 a drastic change occurred that established the fields' academic credentials (Cockerham, 2001). Talcott Parsons published a book called *The Social System*. The structural-functional model of society and Parsons' concept of the 'sick role' were outlined in the book thereby assigning ground-breaking status to it as it was the first time an analysis of the function of medicine was included in conjunction with theories on society. Parsons researched the differing roles of professionals in capitalistic and socialist societies and utilized the topic of doctor-patient contact in his analyzes. Parsons was trained in the field of psychoanalysis and thus felt comfortable and familiar with the doctor-patient relationship. Parsons incorporated Sigmund Freud's theories along with sociological theories of Emile Durkheim and Max Weber. Parsons (1951) drew analogies between the roles of parent and child and physician and patient. Freud's structure of personality and theory of the unconscious assisted in developing the motivation of the sick (to recover or secondary gain behaviour) and Durkheim's moral authority concept in conjunction with Weber's analysis of religion were utilized to formulate the normative requirement to visit a physician as well as the dominant role of the physician. Parsons' concept of the 'sick role' was formulated directly applicable to medical sociology. He outlined four basic propositions utilized within the doctor-patient relationship as applied by the sick through their social roles (Parsons, 1951). Although Parsons' approach generated much criticism, Freidson (1988), maintains that he influenced debate and research in medical sociology especially by generating "a penetrating and apt analysis of sickness from a distinctly sociological point of view" (p. 228).

'Being Sick' is not simply a condition, it is a specifically patterned social role. In Western Societies the 'sick role' implies four major expectations which comprise two rights and two duties (Parsons, 1951).

### **1.2.1 Rights of the ‘sick role’**

A sick person is placed in a very specific social role once diagnosed or informed of being ‘sick’. The ‘sick role’ exempts the individual from normal or otherwise expected ordinary daily roles (Parsons, 1951). In terminal or chronic cases this exemption can last for months, years or the rest of the person’s natural life providing the ‘sickness’ is still prevalent and this is especially true when one investigates a chronic and debilitating disease such as osteo arthritis, deemed chronic after three months of persistent pain (Brewer, 2005). Not only does being sick exempt an individual from certain roles but it also adds rights to the individual’s portfolio. A classic example would be the right to be taken care of. The illness is viewed not as part of aspects that an individual has control over and therefore the exemption and added rights (Parsons, 1951).

### **1.2.2 Duties pertaining to the ‘sick role’**

The ebb and flow of being sick is a cyclical process. It is expected of a sick person to experience being sick as an undesirable situation (Parsons, 1951). His or her natural response should therefore involve efforts to contain it especially when it is chronic and diminishes quality of life (Baconja, 2005). Their obligation or duty is therefore to try and acquire a healthy state again. The exemption they acquired through illness can therefore only be viewed as temporary until they get better. In order to achieve health and wellness it is necessary to acquire the skills and input of a qualified health care professional with the extended burden of cooperating with medical treatment to attempt or achieve recovery (Parsons, 1951). Rights and duties are interdependent on each other. If a sick person is non-compliant with the duties or obligations placed upon him or her through illness (Burger, 2001) – he or she will forfeit the right of role exemption. Their immunity from blame may therefore be withdrawn and they inherently lose the rights they acquired through illness (Parsons, 1951).

### **1.2.3 Underlying values of the ‘sick role’**

Vulnerability is at the heart of illness and this is especially true when a patient is suddenly exposed to invasive investigations, medical surveillance and diagnostic probing, especially in an environment where problems and symptoms are often objectified (Wikblad, 1991). Patients are often not educated in the field of medicine (Stewart, 1995) and are completely dependent on their medical facilitator; they inevitably find themselves in a professional-centered encounter where the power is unequally distributed (Zaner, 2000). The relationship is unequal to a great extent and social regulation is a requirement to protect the vulnerable patient as they are open to exploitation due to their lack of knowledge and skills in the area as well as their emotional state being affected by the threatening symptoms. Social regulation is made a requirement to protect the patient through a shift of professional control to patient empowerment (Benbassat & Baupal, 2002).

On the other hand we also have the social threat that sick people pose. They are relieved from social obligations and the greater number of sick people exists, the greater the threat to society and the social system for exploitation. The medical profession actually becomes the gate keeper in this scenario; they control the access into the medical realm and subsequently decide on candidates eligible for role reduction. The primary physician plays a major role in patient screenings (Friedenberg, 2003). They strike the balance between the ‘sick role’ abusers and society (Cockerham, 2001).

The ‘sick role’ was embedded from a structural functionalist orientation and is viewed as involving the ideal type of doctor-patient contact where interaction is viewed as being in two tiers: the physician plays a guidance role and the patient applies cooperation participation (Cockerham 2001).

Criticism followed especially pertaining to the idealistic view of the ‘sick role’. Patients and doctors were viewed as ideal with no cognisance of deviance. Criticism was aimed at the

approach of the 'sick role' but not the essence thereof by other sociologists, utilizing their respective theories and frameworks (Cockerham, 2001):

Role refusal: What if the patient refuses his 'sick role'? This entails exploring a number of avenues and seeking medical advice to get better or healthy again. Not all patients are 'compliant' with medical treatments and advice (Burger, 2001).

Assumption of Autocracy: Not all sick people are ignorant or uneducated about their illness. There is not always a lay patient to superior consultant scenario. Tuckett et al. (1985, p.4) draws attention to this well when they state: "The professional-patient relationship, once characterized as a meeting between the knowledgeable expert and the ignorant lay person, is now more appropriately, and more accurately, described as a meeting between experts"

Neglect of internal factors: Social class, gender and ethnicity or culture influence the doctor-patient relationship and this is powerfully summarized by Davis-Floyd (2001) when he reasons that despite the Western medical's system pretence of scientific rigor, it is actually more grounded in its wider cultural context, it embodies the biases and beliefs of the society that constructed it.

Culture and ideas about health and illness: Looking at the rights of the sick person one can also certainly argue that not all sick people have rights according to society. Contracting HIV/Aids through drug abuse or careless sexual behaviour is certainly a much debated topic and society is less incline to allow sufferers the right of social role exemption. The stigma according to Deacon, Uys and Mohlahlane (2009) is often so pronounced that it becomes "more than just an injury to the individual, but an indicator of the health of the social environment" (p.116). Stigma is an age-old concept and writers such as Becker (1963) devoted much research to the

topic and assisted in the development of his labeling theory wherein he powerfully asserts that “the deviant is one to whom that label has successfully been applied: deviant behaviour is behaviour that people so label” (p.9). Goffman (1959, 1963, 1968) rendered valuable contributions regarding stigmatization as well and the subsequent impressions other individuals in society form about the discredited individual. He also added that society or people without illness tend to “develop conceptions, whether objectively grounded or not” (Goffman, 1968, p.66). This is especially true with sexually transmitted diseases; medical encounters occur at a stigmatized crossroads of social control and gendered norms of sexual behaviour. “When women are diagnosed and treated for chronic STDs, practitioner demeanor has an important impact on how patients will view not only their health status but also their moral status” (Nack, 2008, p.95). Interaction with the patient becomes a much focused relationship as the patient is classified in a moralizing, stigmatizing social construct. Responsibility is often placed in front of the patient with no social exemption or leeway (Nack, 2008).

Effective for acute cases, neglect chronic cases: Looking at the time frame of the model it seems to fit the bill for acute cases such as appendicitis or colds and flu. Looking at long-term or chronic and permanent illness, the exemption from social roles in order to heal first is not forthcoming. Chronic diseases place great demand on the patient, health care professionals and the medical encounter as the methods of handling these conditions differ immensely from acute conditions (Burger, 2001; Wikblad, 1991). We rather opt to empower the person to lead a normal life with all their expected roles in order to facilitate ‘getting healthy’ by not acting sick as the costs incurred from ‘sick roles’ are simply astronomical with great strain on the economy as indicated in a medical expenditure panel survey in 1997: 14.2% of adults in the United States of America reported arthritis for which direct medical costs amounted to \$51 billion. The total lost in wages for patients with arthritis and related conditions amounted to \$82 billion and

altogether direct and indirect costs amounted to \$269 billion, more than two percent of the GDP (Chen, 2005).

The 'sick role' criticism provides more scope and alternatives to contribute to the construction of 'sick role' behaviour and specifically construction in relation to the doctor-patient contact as research proved a correlation between health outcomes and professional contact (Wikblad, 1991).

### **1.3 'SICK ROLE' CRITICISM**

#### **1.3.1 Symbolic interaction**

Symbolic interactionism was the first perspective to oppose Parson's view and was moulded by George Herbert Mead and Herbert Blumer. Symbolic interactionism views social reality as a micro-level construct where individuals interact with one another on account of shared symbolic meanings. People were viewed as having the ability to think, assess situations and behave according to their interpretation of these factors, (Blumer, 1986). If the physician imparts largely negative pain expectations and reports this in the consultation with the patient, this patient may view the information negatively and demonstrate high pain anxiety. It is well documented that professional patient communication is known to affect health outcomes (Ong, Visser, Lamnes & De Haes, 2000; Stewart, 1995; Wikblad, 1991). Blumer (1986) concluded that social life exists through the interaction of individuals who chose their own behaviour and acted upon it – as opposed to a large social process or structure driving their behaviour without them having any opinion about it. The symbolic interactionist's view can indeed be an explanation for pain reports that occur but there are however more than one model in which this scenario can play out and other models are therefore also explored.

### **1.3.2 Sociological criticism, inevitable contribution to the ‘sick role’**

Conflict theory was born out of the work of Karl Marx and Max Weber. Conflict theorists in essence maintain that within society there exists a great divide between groups struggling for position. They focus greatly on class and class divisions within society (Marx et al., 1973). Weber was very clear on social inequality and reasoned it not to be driven by money and property alone but also by status and influence in the political arena. The life cycle of the conflict theory would be the inequality in all social systems that fuels conflict and forces social change (Cockerham, 2001). Inequality is viewed as a trait of social life and the conflict that springs from this is responsible for social change. If society is held together by shared values and norms then Marx's perspective in conflict theory is seen in the rejection of that view as they assert (Marx et al., 1973):

- The dominant élite dictate society's norms and values.
- The dominant élite enforce their values on the less privileged in society.
- Enforcing values of the dominant group leads to maintenance of supremacy.

According to Cockerham (2001):

Conflict theory allows us to chart the manoeuvres of various entities, like the medical profession, insurance companies, drug companies, the business community, and the public, as they struggle to acquire, protect, or expand their interests against existing government regulations and programmes and those under consideration. (p. 11)

In the current research, elements of the conflict theorist's views could definitely be applied. The physicians and surgeons are educated individuals and are often viewed as the upper class in society (Shorter, 1999). Their behaviour, needs and requests dictate outcomes for the patients especially within the professional-centred encounter with a strong emphasis on inequality of

power (Zaner, 2000). Interestingly enough the theories in the twenty first century, specifically structuralism and poststructuralism which analyzed culture in terms of signs, symbolic codes, and language, and took the position that the individual was not autonomous but constrained in social action by discourse, aligns with Marx's notions. Michel Foucault (1973), as cited in Cockerham (2001) focussed on the relationship between power and knowledge. Knowledge gave expertise and this was in turn utilized in professions to shape behaviour. Foucault focussed intensely on the medical profession. He emphasized the use of medical knowledge as a means of social control. Siegler (1998) confirms that the age of paternalism lasted for more than a thousand years, from about 500 BC to 1965. The physician was in charge, and the patient trusted the physician's technical skills, morals, and ethics; this was characterized by patient dependency and physician control. Today government and insurance companies are adding to the social struggle, reviewing and approving patient care, forcing the physician to become more disease-oriented and even less patient-centered (Friedenberg, 2003). This together with private health care decreased the doctor's reign of supremacy and in effect reduced them to employees controlling their output (Cockerham, 2001). Ritzer and Walzack (1988) observe that government policies emphasizing greater control over health care costs and the profit-driven change within medical milieus, created a focus shift from ideals such as serving the patient to a stricter and formal approach driven by rules, regulation and standardization. Friedenberg (2003) points out that doctors have become disillusioned by their declining income and loss of autonomy, also leading to less patient-centred attitudes and a diminished doctor-patient relationship.

Max Weber (1978), as cited in Cockerham (2001) made contributions with his concepts of formal rationality and lifestyles. He distinguished between two types of rationality: formal and substantive. Formal rationality can be defined as purposefully planning the most effective tools to utilize in goal attainment. Substantive rationality is the 'soft issue' rationality whereby one would achieve values and ideals through tradition, custom, culture or personal devotion. His

rationality contributed to the 'deprofessionalization' of physicians that entails a decline in power due to a decline in professional characteristics.

Weber's work also included the study of health lifestyles that in turn comprises life conduct and life chances. Life conduct can be clarified as choice in behaviour and life chances on the other hand refers to class position or the probability of finding satisfaction for needs. Life chances is not based on pure chance but rather on chances afforded to the individual through their social situation (Weber (1978) as cited in Cockerham (2001)). In the research setting, Weber's concept of health lifestyles provides further clarification of the 'sick role' criticism whereby health and illness are surrounded by culture and ideas but these concepts are somewhat underdeveloped and often neglected. Collective patterns of health-related behaviour based on choices available to people, equates to healthy lifestyles. The chances include factors such as age, gender, culture and these shape lifestyle choices. It is the interplay of choices and chances and that can result in negative or positive health consequences (Weber, (1978) as cited in Cockerham, (2001)). In a study by Belizan, Althabe, Barros and Alexander (1999) there is a powerful illustration of how life chances are viewed as affecting choices pertaining to caesarian sections. According to the women in the study they viewed the refusal of a caesarian section and forced natural delivery as medical negligence based on social and economic prejudice. Poor and uneducated women, teenage mothers and those viewed as having too many children were least likely to receive optimal medical attention.

Judith Lorber (1997), as cited in Cockerham (2001), applied a social constructionist approach, also closely tied to the Foucauldian perspective and an important contribution to this study is her work in 1997 wherein focus was placed on how symptom expression is shaped by cultural and moral values, experienced through interaction with other individuals and influenced by beliefs about health and illness. Focus is placed on the social nature of emotion as oppose to the

biological nature thereof. Culture plays a definitive role in health behaviour of the research population, women specifically are required to tend to their households by squatting and kneeling to clean, the diet is high in saturated fats and carbohydrates such as breads and pastas, adding to obesity. All these factors fuel degenerative disease and impact on joints as osteoarthritis can result from severe joint injury as well as systemic factor interaction such as age and gender. Biomechanical factors such as obesity, occupational activities in the form of repetitive motion, kneeling and squatting are also viewed as contributing factors to this debilitating disease (Chen, 2005). The life chances shaped by the culture inevitably results in poor body mechanics, added loads on joints and often joint replacement surgery.

The feminist theory is also bound up in poststructural views and again focuses on social and cultural assumptions that influence body perceptions and that within a male dominated society where the male body is the blueprint for medical studies and development, females are stigmatised to experiencing less desirable emotional traits pertaining to illness and illness behaviour and this is reiterated in the obstetrics world where screaming for medical attention is viewed as being psychologically inept, attention seeking and even signs of not wanting the child (Behague et al., 2002).

From a conflict and symbolic interaction point of view focus is placed on the sexist treatment of women patients by male doctors (Cockerham, 2001). The feminist theory comes into its own in an Islamic society. None of the study population was treated by a female physician as they are very scarce phenomena, especially in a specialized field such as orthopaedics. Almost all female patients were accompanied by their husbands or male relatives and in extremely limited cases a female companion. During the consultation most female patients were guided by their husbands or male family member regarding questions or information. If the physician asked a question the husband would either answer it or translate it into what seemed to be 'more understandable

terms' for his wife. Bourdieu (1990) offered an interesting extension to the issue when he married aspects such as class and capital, to lifestyle construction in a very noteworthy fashion. Behaviour is not classed as expected or usual but driven by the norms of a particular group or class. A process of selective perception is applied to bring forth action. Bourdieu (1990), studied cultural consumption and revealed how class habitus shaped health and lifestyles. He found that middle-aged working class males had lower life expectancy in Russia and Eastern Europe due to their low social position that lead to unhealthy behaviour such as smoking and alcohol consumption. This in turn reduced life expectancy. Behaviour was norm established and the opportunities afforded to them played a vital role in their behaviour and reduced healthy lifestyle. It almost creates a 'full circle' impression back to the beginning of Weber's health lifestyles studies (Bourdieu, 1990).

Ultimately we are left with postmodernism and critical realism. Postmodernism was born out of poststructuralism. It disagrees with order and continuity concepts and was driven to find answers for the disruptions of late modern social change. Few value ideas surfaced pertaining to individuals now carrying greater personal responsibility for their health and individuals having greater self-control over their bodies. Unfortunately it is still an unwritten book with a multitude of abstract concepts that are not yet firmly established enough to base conclusion on. It is however the time for a new theory as society has undergone numerous changes within itself and in applied spheres such as medicine (Cockerham, 2001). It would seem that critical realism has also not yet evolved into a fully-fledged and research-applicable theory. Archer (1995) described the theory's position and stated that the social system is open to change and that people are the actors with the ability to shape the structure and they are in turn also shaped by the social structure. The key concept is that the individual has the capacity to transform and produce variable outcomes. The concepts touched on, such as self-control and responsibility for your own health are important factors as illustrated in the changing relationship of doctor and

patient today (Armstrong, 1979). Patients now voice opinions about healthcare, physicians and apply their rights. There is great emphasis being placed on an open relationship, a focus on ‘cared about’ and not ‘cared for’ (Thompson & Sunol, 1995) and a general move from professional control to patient empowerment (Conway & Willcocks, 1997).

## **1.4 DOCTOR-PATIENT RELATIONSHIP**

Friedenberg (2003) makes an interesting observation when he assigns start of the deterioration of the patient-doctor relationship to multiple technologic advances after World War II that led to increased specialization in medicine with patients increasingly referred to consultants, inevitably diminishing the relationship with their personal physicians. The patient-doctor relationship also suffered when corporate and group medical practices became common, resulting in various physicians seeing the same patient on subsequent visits. Physician corporations also moved medicine from individual practices to big financial-driven businesses. Friedenberg (2003, p. 306), views the 1990’s as influential “when managed care made the insurer responsible for patient management and the physician responsible for patient treatment. This division severely damaged patient trust in the system.” The doctor-patient relationship is at the heart of medicine; moreover, the physician is a crucial construct in the relationship with his attitudes and intentions that can impact on the patient’s health (Thomas, 1987). Analysis of pitfalls within this relationship is therefore crucial to elaborate on perceptions that may be constructed by the patient as a result of this.

### **1.4.1 Barriers within the doctor-patient contact**

The health care sector is facing a multitude of problems: financial cutbacks, staff shortages resulting in an increased workload and patient dissatisfaction, to name but a few. Stress and job dissatisfaction among physicians with their decline in autonomy and decreased financial status

may have negative effects on the care of patients (Firth-Cozens, 2001). Physicians focussing on a professional-centred approach as oppose to a patient-centred approach may cause further strain on the relationship, ultimately leading to angry and frustrated patients that have unrealistic time and service demands and ultimately turns their backs on medical care because of failed expectations (Roter, 2000).

Patients predominantly complain about:

- Physicians and other medical personnel not listening to them (Paterson & Sloan, 1994) resulting in poor communication Stewart (1995) and Street (2002).
- Professional-centred approach as opposed to a patient-centred approach (Little et al., 2001; Markson et al., 2001)

These concepts when taken together reveal that a lack in one area, ultimately results in a complaint in another domain. The doctor-patient relationship is a constantly evolving dynamic (Armstrong, 1979) or at least it should be. A study performed by Sparks and Mittapalli (2004) focused on communication facets of patients diagnosed with cancer. The authors describe three identities that can help explain the population's cancer-related social processes. They identified primary identities that are associated with large collective groups such as cultural groups. The secondary identities were health behaviours and the tertiary identities were associated with cancer. In the communicative practices they make mention of miscommunication between health-care providers, patients and family members.

In all countries physicians are faced daily with communication barriers and obstacles during consultation, this was evident in the research group and places an additional strain on the physician as 'older, more culturally and ethnically diverse and as such, should be progressively

more aware of the strengths and weaknesses in their communicative practices in such intergenerational interactions' (Sparks & Mittapalli, 2004, p. 383).

While observing the study group during consultation I heard the phrase: "What I meant to say is..." quite frequently. This phrase was predominantly employed by patients and the synonym phrase from physicians was often: "You misunderstand what I am telling you..." This is more than a simple case of misunderstanding or miscommunication but rather a case of knowledge inequality (Stewart, 1995) and expectation variance (Darby, 1996). The study group was mostly poorly educated and not articulate or to ask the 'right' questions and provide the 'appropriate information' that was consultation specific. Doctors were looking for information (Wikblad, 1991) while patients were seeking empathy, comfort and answers. An enormous portion of the consultation value was 'lost in translation' not only to me as consultation occurs in Arabic (a translator attended the sessions to interpret communications to me) but also to the patient as they did not speak the same 'language'. The doctor's 'language' was focussed on getting specific pathology-related indicators (for instance: how long has the patient had pain?) while the patient focussed on the level of pain and impact on life.

Naturally there is a burden on both parties to optimize articulations within the consultation setting but realizing the barriers first is paramount to understanding what is wrong with the articulation (Poskiparta, Liimatainen, Kettunen & Karhila, 2001).

Verbal communication mistakes happen on both sides of the consultation desk. Patients are often guilty of verbal communication mistakes in the form of:

- Seeking emotional support as opposed to clinical help (Wikblad, 1991)
- Lack of knowledge surrounding their illness (Stewart, 1995), while more educated patients tend to diagnose as oppose to verbalize problems.

- Poor cooperation (Burger, 2001)
- Unrealistic outcomes and as Lown (1996, p.314) states: “In this age of hype, patients have come to expect the impossible.” Service demands have also been linked to unrealistic media portrayal that results in exaggerated patient expectations (Behague et al., 2002).

Doctors on the other hand also make verbal communication errors:

- Interrupting patients due to receiving unnecessary information. A large proportion of doctors interrupted the patient’s opening statement (Marvel, Epstein, Flowers & Beckman, 1999).
- Limited time spent in consultation due to high patient loads and staff shortages.
- Seeking compliance and not concordance (Mullen, 1997; Wilson, Holt & Greenhalgh, 2001).
- Limited empathy due to uncooperative patients (Burger, 2001)

Looking at the two parties’ verbal communication barriers it is observable that the lack of one aspects results in the lack of a counter aspect. Emotional need from the patient and lack of empathy from the doctor results in poor cooperation from the patient, and so the only reaction chain within the verbal communication is a negative one. This is affirmed in studies using a patient-centred focus that aim to account holistically (work, expectations, anxieties, family etcetera) for patient’s illness (Wikblad, 1991). If the positive verbal communication was as reactant as the negative verbal communication, a much more powerful partnership would have been formed with satisfaction on both sides of the spectrum: patients would be more involved in decision making, care and treatment with ultimately better medical results (Little et al., 2001; Markson et al., 2001). Studies on racialized reactance consider implicit racism/perceptions of racism and paternalism in the interracial doctor-patient relationship, are also valuable to understand action/reaction from physician and patient within the consultation process. Reactance

is exhibited through noncompliance with the physician's medical recommendations (Wright, 2008). It would seem that the reactance theory nestles into a critical realism framework whereby the consultation (structure) shapes the patient (individual) and the patient (individual) in turn reacts and shapes the outcome of the consultation (structure).

Patients are often interpreting their illness and were frequently observed in this study. As opposed to saying: "I have knee pain", they would say: "I think I have Arthritis". The physician would have benefited from symptom description to allow him to make a diagnosis but instead the patients diagnose and only wish affirmation of their diagnosis. The priorities in the consultation differ between physician and patient (Wensing, Jung, Mainz, Olesen & Grol, 1998). Patients ask irrelevant questions and often have unreasonable outcomes in mind (Lown, 1996). Patients during consultation would often say: "My knee pain is quite severe; I have no car and need to walk to the shops. When will this be resolved so that I can resume my activities of daily living?" The surgeon should be picking up the subtle hint of possible lack of emotional, physical and social support that is a stressor to the patient but the patient should also realise that he or she is articulating an unrealistic expectation and lack of illness knowledge. Innuendos of emotional support are presented to the physician during verbal information communication. "The patient desires to be known as a human being, not merely to be recognized as the outer wrappings for a disease," says Lown (1996, p.313) M.D., emeritus professor at Harvard School of Public Health. This reiterates the need for a patient-centered approach (Little et al., 2001; Markson et al., 2001).

Apart from the approach requirement to be patient-centered, there is also a requirement concerning information that the patient wishes to receive. Some patients may express emotional problems in the hopes of finding medical solutions. There is a tendency for educated patients to seek more discussion, to require to be taken seriously and they wish to be informed of the risks

(Bara, Van Den Heuvel & Maarse, 2002). As a result of this, some patients are seeking knowledge on the internet. Lee, Hwang and Hawkins (2006) surveyed 122 women with breast cancer and their information-seeking behaviour. They specifically monitored the internet sites they explored and found that patients are going outside the proverbial marriage of the traditional doctor-patient relationship to external parties (blogs and websites) in an attempt to satisfy their needs and requirements. Their findings revealed that emotional support insufficiency was positively related to the amount of Internet use. The internet's use is a visible conclusion that patients are expecting to receive emotional or intellectual support from their medical consultation. The fact that so many individuals are sourcing the internet knowledge is a confirmation that not all doctors are handling the consultation in a satisfying manner or that physicians are not providing all the services in that consultation that would make the contact successful. Patients are seeking information on the internet because the web information pool is as much available to them as it is to the surgeon (Lee et al, 2006).

The desired verbal communication requires the conveying of the right amount of information that will add value to the consultation without raising unrealistic expectations. What is required is a positive attitude of optimum cooperation while listening and interpreting correctly what is articulated back. Effective professional patient communication is well documented and known to affect health outcomes (Ong et al., 2000; Stewart, 1995; Wikblad, 1991). This clearly indicates that a patient may have rights and responsibilities pertaining to the 'sick role', but he or she has even more responsibilities pertaining to the doctor-patient contact. The patient's verbal communication capacities are in effect the doctor's verbal communication rights. The doctor's verbal communication criteria in turn equates to the patient's rights.

## **1.5 MODELS OF MEDICINE APPLIED TO THE DOCTOR-PATIENT RELATIONSHIP**

It is important to note that apart from physician-patient contact obstacles, there is also the added obstacle of the physician working within a certain model. The model of medicine a physician aspires to, is often embodied in his demeanour of contact with the patient and therefore of great importance when evaluating patient's perceptions.

### **1.5.1 The technocratic model of medicine**

The technocratic model of medicine is probably the most applicable model applied to the study population. Its main fundamental is a clear separation between body and mind. The mind-body dilemma is an ongoing focal point. In the 17<sup>th</sup> century Descartes (17<sup>th</sup> century, as cited in Bendelow & Williams, 1995) focussed on the dilemma and provided a philosophical separation of mind and body that resulted in the 'body as a machine' term, we frequently refer to. It reduces the individual to components and is the main principle applied in technocratic medicine. It means that mind and soul can be 'effectively unaffected' when we examine and take apart, analyze or repair the 'machine' that metaphorically speaking is the body. It is important to note that when the model refers to the body – reference is actually made to the male of the species as the male body is the clinical exploration blueprint (Davis-Floyd, 2001). By viewing the body as a machine, the responsibility for mind is absent from the physician's concerns. This alienation concept is often manifested in medical school as a defence mechanism to reduce emotional attachment and often results in a lack of empathy for the patients. Patients are often treated as numbers or machines (Sered & Tabory, 1999). So evident is this lack that medical schools now aim to familiarise students with general practise earlier in an attempt to optimize understanding of patient's perceptions and communication skills with an ultimate hope of new physicians being able to recognize patients as human beings and of them valuing the doctor-patient relationship

(Hampshire, 1998; Lassen, Larsen, Almind & Backer, 1989; Valkova, 1997). The strong autocratic doctor in comparison to the submissive patient results in little attention being paid to the mind of the patient. They are involved with the inner workings and mechanisms of the 'machine'. They are procedure and professionally driven as opposed to patient driven (Zaner, 2000). The patient becomes a number and a procedure and as Scherger (2001) rightfully states we forget that the patient is coming to see the doctor and not the disease. The problems or symptoms are objectified (Wikblad, 1991). Alienation between patient and practitioner is the end result (Davis-Floyd, 2001).

Part of the technocratic model is an outside-in treatment and diagnosing regime along with hierarchical structures and standardized care (Cockerham, 2001). The medical system is a rigid hierarchy with power allocated to physicians and emphasis on speciality over primary care. Individuals entering a private hospital are immediately subjected to standardized care that is generally viewed as risk-reducing (JCIAS, Joint commission of international accreditation standards, 2008). So effective is the propaganda that a study performed by Belizan et al. (1999), found that of 12 Latin American countries recently reviewed, Brazil had the second highest rate of caesarean sections. Many lower to middle class women sought caesarean sections to avoid what they considered poor quality care and medical neglect, resulting from social prejudice (Behague et al., 2002). Despite the apparent reduced risk of techno-medicine, there are patients that often demand a more humanistic approach and this need is recognised when Friedenber (2003, p.306), states: "the future evolution of health care will be driven by the conflict patients have with the humanistic aspects of managed care today". The technocratic system has tried to listen to the cries in some instances whereby women in labour may be allowed to have her husband present, wear her own clothes and choose the birthing position easiest for her; unfortunately standardized care still demands periodic electronic monitoring and analgesics (Davis-Floyd, 2001).

The study was undertaken at a time of change in the management of health care. Some procedures are still performed under government funding while limited numbers of operations are performed within the early stages of a privatization initiative. The impact is not yet seen in treatment and will possibly account for little deviance in results. Authority and responsibility in a technocratic environment lies with the ‘white coat’ and titled name tag (Davis-Floyd, 2001). Treatment options are presented as the answer and not a choice. In modernized environments with proper infrastructure and regulation in place – this often results in medico-legal suits as poor results and unsatisfactory outcomes are simply laid in front of the attending physician or managed care facility (Behague et al., 2002). It is generally accepted that consulting a physician has legal dimensions and initiating the process, one is amidst the first dimension – the contractual phase. Consent prior to treatment and adherence to applicable standards of care would be the second and third dimension. Fiduciary law applies to doctors especially in lieu of the traditional premise: powerful party versus a submissive party. The party possessing the power (physician) is also the party that carries a higher legal burden as stipulated in principles of contracts. (Healy and Dowling, 1991) In developing and under-developed countries failure is simply a product of circumstance and medico-legal suits are not encountered as a result of limited resources (Behague et al., 2002). In the study population where limited education, minimal socio-economic means and cultural bounds are present, doctor superiority is easily enforced through a few technical abbreviations and years of education or practical application despite the ugly truth according to Harrison (2007) that “autonomy of clinical practice is only justified where the relevant knowledge is genuinely esoteric, that is, based on science and therefore requiring expert knowledge of a kind not accessible to lay people” (p.251). The great divide between patients and the autonomous physicians is visible daily, with limited reference to fiduciary law especially since the application of live-and-let-live is very true whereby doctors are not inclined to threaten colleagues’ livelihoods (Harrison, 2007).

The increasing growth of technology and the stigma involved with not having the latest technologies at your disposal is so prevalent in the medical field – that doctors are often unable to practise without the aid of their trusty monitoring systems. They rely on the machine’s diagnosis as opposed to their own ability and clinical observations. The technically advanced are deemed supreme and the physicians without the impressive machinery are viewed as ancient and ignored (Davis-Floyd, 2001). The general public assume that the speciality fields and advanced equipment are scientific as they also assume their physician is a scientist with the ability to analyse and research. The sad reality is however that tutoring is not considered optimal in the medical educational process (Burger, 2001). Science and speciality is super-valued without ascertaining its true benefit or clinical accuracy, the fast lifecycle of equipment and quick advancement allows for little clinical research (Davis-Floyd, 2001). A crucial aspect to consider is also the hegemonic state of medicine, a field that is driven by technology. Alternative options to treatment are often discarded as unscientific and risky (Davis-Floyd, 2001). The natural response to treatment in a technocratic setting is expensive invasive surgery where the pharmaceutical company is a big beneficiary in financial terms. “The concept of physician corporations seems to have moved medicine from an individual practice to a big business where finances supersede patient-doctor relationships” (Friedenberg, 2003, p.306). The money to be generated from illness is of foremost important and alternative options are often discarded. Options are not presented, the operative procedure is held as the only rational choice and from diagnosis to surgery is a very short but extremely expensive journey (Davis-Floyd, 2001).

Anthropologist Reynolds (1991), as cited in Davis-Floyd (2001) coined the term: the ‘one-two punch’ of technological intervention whereby he indicated how our end product of “we saved the world” was actually the result of us tampering with the world in the first place. Humans with their technology invent, change, modify and in the end have to cure – we did not achieve through science but instead have to rectify due to science. The obstetrics world has very

tangible examples. Birth as a natural and normal process is often mangled by techno-medicine and often escalates from a quite normal and natural process into a fearful situation where we have to induce labour, perform an emergency caesarean section and then pull the baby out with instruments. We complement ourselves with ‘saving the day’ where in truth we only rectified a problem we created initially by hastening the natural process through induction, we created poor dilation and risked oxygen deficiency to the fetus, thereby having to rectify the outcome with an emergency operation. The physician did not save the day – he caused the problem (Davis-Floyd, 2001). The total knee replacement patients are also exposed to daily technological submission. Physicians may aim to prevent post-operative nausea by utilizing a spinal anaesthetic and in effect keeping the patient aware of the procedure, creating anxiety. There is also a risk of leakage of spinal fluid post-operatively that can result in excruciating headaches. The physician then performs a secondary procedure whereby he takes the patient back to theatre to introduce fluid into the spine, thereby eliminating the headache and saving the day – whereas in reality, the physician with his technology was the cause for the second operative procedure. It becomes a circle of minimizing the risk that results in a complication and ends with trying to solve the created problem.

Friedenberg (2003) provides a powerful summary: “...when multiple technologic advances led to increased specialization in medicine. Patients were increasingly referred to consultants, which diminished the relationship with their personal physicians” (p.306). Change in the healthcare system is slow partly due to the complex structure and inevitably resulting in the authoritarian physician remaining despite official abandonment of this approach (Plsek & Greenhalgh, 2001).

### **1.5.2 Humanistic model applied**

Although the situation in the study environment fits the technocratic model, especially now in lieu of a shift to private standards and the ‘best equipment purchase drive’, it is none-the-less

important to investigate alternative models as a portion of the hospital and physicians do not comply with the typical technocratic criteria. The Humanistic model aims to personalize the technocratic model of medicine from the inside thereby adding compassion and alternatives, seeking concordance not compliance from patients (Mullen, 1997; Wilson, Holt & Greenhalgh, 2001). It does not separate mind and body as in the technocratic model nor does it bind them as one as seen in the holistic model. It instead views the two aspects as having an influence on each other (Davis-Floyd, 2001). The mind-body connection is of importance to this study as perception is possibly mind-generated and pain is body-originated and as Freeman (1991) concluded the brain can possibly prepare for action as a result of perceptual synthesis and sensory input. Outcomes of perceived pain levels would be better explained through the humanistic model but the clinical milieu of the study is rooted in a technocratic model. The humanistic model would be the ideal application to the setting but should rather be viewed as the ideal to move to as oppose to the reality within the hospital presently. Unlike the technocratic model which views the body as a machine the humanistic model views it as a living organism that feels pain and responds to it emotionally (Davis-Floyd, 2001). This reinforces the concept of measuring perceived pain and how factors such as doctor-patient contact can influence pain levels as illustrated by Skevington (2004). It builds on the biopsychosocial model that illustrates biology, psychology and social factors influencing behaviour or outcomes (Engel, 1977). Again it paints the ideal scenario of the course doctor-patient contact should follow but it is not a reflection of the reality during knee replacement surgery in the research. Humanists treat their patients as subjects they enter into a relationship with. They apply a patient-centred approach thereby increasing the patient's autonomy and involvement in decision-making (Benbassat & Baumal, 2002; Little et al., 2001; Markson et al., 2001). They prefer building connections between practitioner and patient as opposed to the technocratic approach of separation or the holistic approach of integration (Davis-Floyd, 2001).

Robert Smith (1996), as cited by Davis-Floyd (2001), referred to an open-ended learning approach – it is called ‘the patient-centered interview’ whereby the patient is encouraged to express his concerns and symptoms as opposed to a rapid-fire question session aimed at fulfilling the physicians tick sheet with his wish list of questions that need answering. The humanistic model emphasizes healing from the outside-in as well as the inside-out, reiterating Engel’s (1977) view of the mind that can affect the body and vice versa. They try to walk the golden mean of practising medicine, trying to allow for both institutional organizations combined with the patient’s individual needs. They share information and responsibility between patient and physician and counterbalance technology with humanism (Davis-Floyd, 2001).

Arthur Kleinman (1988), as cited by Davis-Floyd (2001), drew attention, in 1988, to the patient’s rights. He was of the opinion that a doctor should listen carefully to his patient’s concerns. He should experience their illness as they perceive it. He should acknowledge that their symptoms may be results of deeper emotional issues. A further burden on the physician is to view the patient in an holistic form with one or more problems that can affect life and health (Wikblad, 1991). Focus is drawn to the placebo effect that can be activated through doctor-patient contact and can be a powerful healing opportunity (Staats, Hekmat, & Staats, 1998; Staats, Staats, & Hekmat, 2001). The Humanistic model agrees with science application within the medical field but it directs the application in conjunction with a more individually desired motive. It allows for aspects such as science application but creates room for patient input (Davis-Floyd, 2001). The humanistic model applied would mean that if a patient is diagnosed with Osteo-arthritis, instead of booking immediate surgery, the physician would allow for actions such as weight loss, blood pressure stabilization or counselling prior to operative intervention (Chen, 2005). The physician would explore alternatives during surgery for example spinal anaesthetic as opposed to general anaesthetic – the physician would move away from a

typical Bayesian approach (Groopman, 2007). Humanism and science are brought into harmony. Humanistic doctors also lean towards primary care – disease prevention as opposed to cure (Davis-Floyd, 2001). Physicians will focus on preventative medicine in an effort to reduce complications and additional medical interventions. Primary care is viewed a routine and practised in physician practises and hospitals (Skelton, 2001). Out-patient clinics for Diabetic patients are a good example. Information sessions on foot care will be provided in an attempt to prevent foot injuries, possible amputation of limbs, heart, eyes and kidney complications. In Osteo-arthritis focus would be on early detection and primary care programmes would involve information sessions on ergonomic movement, strain and repetitive injury prevention and pain management through conservative avenues such as exercise to optimize soft tissue structures and provide better joint protection. Preventative medicine requires effective patient communication and intervention (Rosenqvist, 1995).

It is a compassion-driven system that is open-minded to other modalities of treatment. Although all complementary fields are not scientifically based or newly researched like the ancient arts of zonal healing and energy healing, humanistic doctors tend to present the option to patients without judgement but rather support in the hope that the patient will benefit (Davis-Floyd, 2001). Support for ‘alternative medicine’ is more visible in complementary services such as lifestyle changes and dietary clinics that a patient can utilize as part of a preparation regime or prophylactic approach to postpone invasive surgery, exercise and an active lifestyle have proven benefits in the management of knee pain and Osteo Arthritis (Van Baar, Assendelft, Dekker, Oostendorp & Bijlsma, 1999).

### **1.5.3 Holistic models of medicine**

The holistic model of medicine is the marriage of the fore-mentioned models. It allows every thinker a place in the sun. The holistic model involves right-brained thinking. The right

hemisphere is responsible for perceiving the whole picture, environmental, social, emotional, and physical and every other realm involved in creating the entire gestalt. The body, mind and spirit are truly unified in this approach. The Cartesian model is included in the holistic view, unlike many authors, holistic physicians do not struggle with a mind-body dilemma – in their opinion it is unified. It provides scope to include religion as a treatment avenue or for support but in reality Eastern and New Age modalities are predominantly employed by patients within this healing paradigm (Davis-Floyd, 2001). It moves far beyond the body-as-machine or body-as-organism and views the body as energy. It opens the door to development and use of energetic treatment modalities such as Reiki, magnetic field therapy, acupuncture and therapeutic touch modalities (Davis-Floyd, 2001). In essence all these modalities are a very real part of the physical and functional rehabilitation applied to total knee replacement patients. Yet physical and occupational therapy are considered scientific, medically sound professions and not alternative in nature. At the very least, resistant doctors would classify these professions as para-medical in nature but not alternative as they are therapeutic extensions of non-medical professionals (Harrison, 2007). Yet, looking at basic modalities of ‘alternative medicine’, it is evident that physiotherapy modalities are closely allied to them (Cameron, 2007):

- Acupuncture as alternative medicine versus Dry needling in Physiotherapy;
- Magnetic Field therapy versus Electrical and Microwaves physiotherapy; and
- Therapeutic touch and hands-on-healing versus manual massage and manipulation techniques in Physiotherapy.

It further acknowledges the impact of microwave ovens and power plants, resulting in hostility derived through electromagnetic fields (Davis-Floyd, 2001). It notes anger vibrations and crystal healing, the non-physical reality is indeed a reality in the holistic approach and more importantly, the relationship between matter and energy are being acknowledged and employed in treatments more often now. Medical research would have to restructure completely to include all these modalities or more likely, these modalities will have to polish the ‘outside’ with a more

scientific paint brush to gain recognized access to the current medical profession because the doctors that are now set in technocratic ways still have to 'evolve backwards in time' to a more humanistic approach before we can reach holistic pathways. A simple example would be the impact of the investigator on research. The Heisenberg Principle put forward by physics recognizes the influence of observer on the observed. The intention of the experimenter can influence the experiment as illustrated by Wiseman and Schlitz (1996), as cited by Davis-Floyd (2001). Acceptance of the interdependence between the two parties would acknowledge that energy fields between parties involved in any setting is in constant interaction with each other and can influence behaviour and outcomes. This is extremely important in a changing environment of doctor-patient contact and provides the first step towards motivating for proper consultation.

The holistic approach naturally implies holistic healing – to heal one aspect one has to heal all aspects or spheres of the individual. The present study produced a very tangible example of this approach. Culturally, Muslim women receive little sympathy or opportunity to talk about their life and daily obstacles. A pending operation, due to a scientifically proven problem, is often their only opportunity to receive any form of recognition. Symptoms can be magnified to provoke spousal interaction or in the obstetrics example of birth to 'obtain the desired attention' (Behague et al., 2002, p.249).

To only treat pain in the knee without emotional support or empowering information would only aid in the organic pain being treated, but still leaving the non-organic or emotionally derived pain, untouched. This can possibly account for high pain intensity ratings in spite of optimally utilizing and prescribing surgical and pharmacological modalities. Aspects that flow from this are the drive of holistic medicine to move away from the terminology of 'patient' and refer to a 'client' instead. This tendency is often visible when a government-funded hospital embarks on a

privatization drive. The tendency is however less driven to promote unity of practitioner and patient but more towards the concept of a paying patient becoming a client (Friedenberg, 2003). The holistic model meant for this concept to entail unity of doctor and patient because their energy would interflow making them one in one unified goal or outcome. Through this energy interflow the physician would develop a natural intuition that would allow them to diagnose and heal from the inside out (Davis-Floyd, 2001). A typical description would be to rely on your 'gut feeling'. This again is misunderstood in many medical institutions. The 'gut feeling' became the term for years of experience and seeing the same 'sort of cases' but is being presented in the consultation room as opposed to the insight obtained through tuning into the patient's dialogue and feelings. The holistic healer is therefore focussed on individualized, patient-centred care (Wikblad, 1991). They expect anything and everything without assumptions of norm or normal or guidelines of protocols and procedures. They know that perception that suddenly dawns on an individual can start healing or diminish it instantly. They are flexible to follow the individual's needs. Ideally one would reason that if I pay for a service, I wish to dictate my care. In reality what is happening is the opposite, because you pay for care, you are dictated to by a hierarchy and standardized climate (Friedenberg, 2003).

The holistic healer is in contrast quite happy to follow individual needs. Focussing on individual needs leads to another tenet of holistic medicine in that the individual is ultimately responsible for his or her healing process (Davis-Floyd, 2001). Giving up smoking to reduce the risk of operative complications or losing weight to increase the lifespan of an artificial joint are typical examples in an orthopaedic setting (Chen, 2005). The holistic healer sees himself or herself as a part of the medical process but the most important participant is the client. This is certainly an ideal situation except where this is not in line with a patient's wishes. Some patients prefer to take recommendation from the surgeon and view it as the solution and not an option. They do

not wish to fulfil any participative role and prefer to be dictated or prescribed to. This again can be culturally driven or individual moulding (Davis-Floyd, 2001).

In an holistic medicine model, science has a place. Not as prominent as within the technocratic setting, nor absent as in the humanistic approach but somewhere in the second place. Holistic healers allow the usage of technical advancements within treatment and present them as options to their patients but never as the only solution nor as the culprit. They allow all modalities to be introduced and trailed. They coordinate care, guide patients and allow access to treatment modalities without leaning toward any preference (Friedenberg, 2003). Technocratic doctors often complain about patient's non-compliance to prescription where holistic doctors often voice dismay at patients not committing to their own health and well-being. Holistic doctors are often frustrated by the need for a 'quick fix' with no acknowledgement to predisposing factors. They have to invest endless amounts of time into changing a culture of thought and behaviour to produce changes in health behaviour (Davis-Floyd, 2001). Education and primary care receive focus (Skelton, 2001).

An interesting view of holistic healers is often seen as defeat to technocratic healers. An holistic healer's belief in energy of mind, body and spirit leads to the view that death is part of an ongoing process and that it is not by any means final. The energy of the body returns to the earth, the energy of the soul can be reincarnated if the healer follows eastern beliefs or the energy can join other energies in eternal life in some western beliefs. Whatever the passage the energy follows, it means to say that death is not final. Holistic healers do not embrace death in the sense that they abdicate from trying to heal; they just simply find trust in the universe and the ways of the world. Holistic practitioners zoom in on healing. Healing is their core 'business' not money. Although they understand money is required to make a living they tend to practise in environments where it is less prominent or the generation thereof, focussed on. The holistic

doctor and patient relationship is a deep experience of adding value to each other's energy realms as the primary reward (Davis-Floyd, 2001).

## **1.6 CONCLUSION**

Hospitals in general are very complex environments (Plsek & Greenhalgh, 2001). In Libya, this is even more evident, where most hospitals are government-funded and they have only recently started to move towards the idea of standardized care and aligning with international guidelines and privatization (Sagher, 2008). There is strong evidence to suggest a change in physicians, attempting to alter their old way of downward communication and allowing themselves empathy for their patient and presenting treatment options and encouraging participation (Little et al., 2001; Markson et al., 2001). There is however also a different change visible in counter clinical groups that lean towards the technocratic drive to achieve international accreditation built on standardization, optimizing financial earnings and relying on short, cost-effective treatments and reduced time spent in consultation (Friedenberg, 2003). Often a patient may be exposed to a 'lucky packet' adventure. You may be seen by a physician with a humanistic approach or be treated by the complete different approach of a technocrat (Friedenberg, 2003). In this particular study most consultations were not compliant with any medical model. It seems to be more status driven and based on social prejudice (Behague et al., 2002). Patients are mostly treated with an 'educated stronghold' approach that leaves little scope for empathy or involvement of the patient (Stewart, 1995). Although the medical facility is undergoing change from one medical model into another, the change within physicians is less definable. The medical facility may be equipped with the best diagnostic monitors but the doctor may not be able to use these. The availability of the technological advanced equipment makes the hospital part of a technocratic approach but the inability of the physician to utilize it in some cases, leaves the doctor undefined. No model is an absolute match to the study environment nor is any theory

definitively applicable to the patients undergoing the surgery. The study population is influenced by social interactions, the dominant elite dictating down to them especially male to female contact (Cockerham, 2001), education inequality (Stewart, 1995) as well as influences that can be defined into every and each available opposing view to Parson's initial 'sick role' concept. Looking at the patient's behaviour and available theories, various applications evolved to account for perceived pain outcomes. Outcomes can be based on external and internal factors: external factors such as the type of physician-patient encounter (patient-focussed or professionally-focussed), the medical model in which the encounter takes place (Technocratic, Humanistic or Holistic), the status of the institution (private, public or a combination) as well as inherent aspects (culture, class, socio-economic means, and education).

The researcher is certain that the Libyan population or similar socialist populations have tremendous research possibilities to expand on current theories and frameworks or possibly define new parameters for further studies. In an article written in *The Tripoli Post* the anonymous author (2009) described what the healthcare system in Libya should entail and he made mention that hospital and health-care management is about people within the community, huge resources, modern technology, effective management and leadership and most of all – being genuinely committed to the cause. The author knits aspects of the Technocratic, Humanistic and Holistic models into one. This author's notion of what healthcare should be reinforces my thoughts about research possibilities in developing countries. In this particular study setting there are indications of assigning male and female patient behaviour to cultural bounds and beliefs. Females assume a submissive role as culturally expected of them especially during consultation with an authoritarian physician. The male population in the study are subdued by limited education and financial means – their consultation could be influenced by social class or prejudice, the social class they did not choose but were assigned to them through the political state within the country. The influence of physician autonomy was so evident

especially benchmarked against the lack of patient power and participation. The technocratic model application was often visible during diagnosing (dependant on technology) and intervention (severely lacking primary education).

The need for change is evident when reviewing an article: *The Unfortunate Reality of the Healthcare System* on 12 June 2009, the author remarked: “The reality of the Libyan health-care system is a very dim one as it has almost entirely lost its effectiveness and reputation at all levels from top-to-bottom. There is no one who wouldn’t prefer to consider other options before resorting to the Libyan health-care system, this is the unfortunate reality. It is continuing to fail people on a daily basis and everyone knows this: locals, foreigners, patients, students, doctors, nurses, old, young, white, black...you name it!” (Anon, 2009)

Every consultation within this study concluded with either the physician or the patient saying: “En’shala”. I asked my interpreter what the meaning was and she indicated that it translates as: “God willing” or “Hopefully”. This was probably the best conclusion pertaining to the doctor-patient contact research and I summarize:

Hopefully, one day, patients and doctors would have a mutual, beneficial and symbiotic relationship, presently severely inept. Sadly as the author in the *Tripoli Post* stated: “At the end of the day, the finger is pointed at the doctor as he/she is the main interface between the external environment and the health-care system. Little do people know that doctors with all their might and knowledge can do very little if anything about the situation” (Anon, 2009).

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## **CHAPTER 4**

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### **SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

#### **4. INTRODUCTION**

The research was aimed at measuring a patient's anticipated pain prior to undergoing surgery. The study is not focused on real pain that the patient experience post-surgery although the data was collected to aid in possible further research and outcome elaboration. The measurement in essence was a sensory phenomenon not yet present. It is research aimed at a patient's pain report or self report of what he or she is anticipating with regards to the surgical procedure and how perception may be moulded by the clinical interaction within the doctor-patient relationship in lieu of the view that study of disease that includes symptoms such as pain should apply a total system approach that involves the individual, the body as well as the environment as vital components to achieve totality (Fava, 2007:4-6). Attitudes and words of the medical team have a significant impact on patients (Egbert, Battit, Welch & Bartlett, 1964:825-827). Measuring an emotional or perceived state, however, still requires a valid, recognized and outcome-based evaluation tool. There are existing assessment tools and methods to ascertain pain levels that are either experimental or clinically induced. These methods are effective to qualify and quantify pain ratings (Cameron, 2007:54). The selected tool is concise and practical in application and still provides realistically measurable outcomes within an older, semi-educated study population (Bieri, Reeve, Champion, Addicoat & Ziegler, 1990: 139-150). The dissertation aims to ascertain whether or not perceived levels of anticipated pre-operative pain are more intense when the patient receives a poor consultation with limited information and involvement, as opposed to sufficient education prior to surgery in an orthopaedic ward at a hospital in Libya. This research report was developed through the interpretation of the data collected from patients who were operated on at the hospital's orthopedic section. The research report is to assist in the situational analyses and development of conclusions and recommendations pertaining to patients' perceived pain levels prior to undergoing surgery as well as the possible contribution of doctor-patient contact on the recorded anticipated pain levels. Literature has revealed that medical personnel play a crucial role during consultation; their words and interaction with the patient can influence treatment efficacy, therapeutic outcome and even quality of life. Words exchanged as well as the psychosocial context of a therapeutic setting may ultimately affect not only the patient's body but also his or her mind (Pollo, Amanzio, Arslanian, Casadio, Maggi & Benedetti, 2001:77-84). Lipowski, (1986:2-21) found that once a patient receives disease-related information or is informed about the presence of an illness, even asymptomatic, a psychological response occurs influencing the patient's experience, illness behaviour, treatment outcomes as well as response.

## **4.1 METHODOLOGICAL CONSIDERATIONS**

A combination approach was utilized in the study with emphasis on qualitative research aided by a complimentary quantitative leg. The requirement of a measurement tool to ascertain perceived pain levels combines the theoretical engagement with empirical work. Utilizing questionnaires and pain scales to collect data of scientific and measurable value provided a quantitative leg to the study. Qualitative methods can be utilized to aid in defining clinical problems as well as solutions (Hutchinson, 2001:505-521). Qualitative research assists in studying core components of clinical knowledge. It provides scope to analyse human and social experience, communication, thoughts, expectations and meanings (Malterud, 2001:397-400). The debate regarding the combination of both a qualitative and quantitative approach in research is based on the premise that their underlying paradigms are different thereby thrusting research into murky waters (Lonka & Lindblom-Ylänne, 1996:5-24). This is however not the ultimate truth as a mixed-method study does not necessarily negate a mixed paradigm but rather the technique of combination and usage can reflect the de facto underlying paradigms (Sandelowski, 2000:246-255). The underlying paradigms or epistemological basis (view of knowledge) and ontology (worldview) in this study are complex and Blumer's statement effectively alludes to this: "action on the part of a human being consists of taking account of various things that he notes and forging a line of conduct on the basis of how he interprets them. The things taken into account cover such matters as his wishes and wants, his objectives, the available means for their achievement, the actions and anticipated actions of others, his image of himself, and the likely result of a given line of action"( Blumer 1969:15). Human perception and doctor-patient contact are extremely complex topics and a combination of qualitative and quantitative methods, is likely to strengthen a study's design (Casebeer & Verhoef, 1997:130-135; Malterud, 2001:397-400; Morse, 2002:116-129; Roter, 2000:5-15) especially if we take into account that for this precise reason medical models such as the biopsychosocial model includes an holistic view of illness resulting from the interaction between environmental, interpersonal as well as cellular levels (Fava, 2007:4-6). Holman elaborates on a clear need for medical research to include quantitative and qualitative methods as this combination can be both complementary to each other as well as assist in interpretation, this is even more evident and important in chronic disease (Holman 1993:29-36).

## **4.2 RIGOUR IN RESEARCH**

Utilizing both qualitative and quantitative methods within research presents the researcher with a variety of challenges as these approaches vary in ontological and epistemological foundations. Qualitative research is not defined with determined quality criteria, (Sparkes, 2001:538-552) although there are parameters currently employed: credibility, dependability, conformability and transferability (Hamberg, Johansson, Lindgren & Westman, 1994:176-181). In this study credibility was achieved through interviews with the aid of an Arabic translator and keen observation as well as a scientifically proven measurement scale. The researcher aimed to describe the study process and findings in an easy

understandable fashion with flow of logical reasoning and in-depth analysis of material to achieve dependability and transferability. Quotes from interviews and narratives were utilized to achieve conformability and indicate that the research is grounded in the material without any researcher bias.

#### **4.2.1 Meeting objectives**

##### **The following objectives were articulated:**

- In article 1 the researcher indicated that the empirical study will be aimed at: Understanding pain, perception and perceived pain.
- Outline and investigate the doctor-patient relationship and consultation as possible influential factors impacting upon the construct of perceived pain levels.
- Measure perceived pain prior to surgery and ascertain if this pain can influence actual organic pain.

Chapter 2, article 1 provided an in-depth literature review that delivered concise definitions for the three terms as set out in the objectives: pain, perception and perceived pain. The chapter entailed an in-depth analysis of the research population's characteristics. This invited the reader to form a clear understanding of the particular research group and against this backdrop, to understand their specific behaviour. The researcher also emphasized the need for a valid measurement tool thereby preventing a mere transcript of pain reports by the various patients. Measurement tools were discussed indicating the validity of the various tools and ultimately focussing attention on the selected tool and reasons for it. The reader was guided through measuring pain in a reliable and scientific manner that would enhance empirical literature being reviewed. The chapter concluded that pain in a perceived state is possible to exist. Not only is perceived pain constructed by the individual but it is also heavily susceptible to environmental factors. Perceived pain as constructed by the individual is as real and valid as organic pain induced by injury or pathology.

The researcher launched chapter 3, article 2 with a detailed look at the clinical milieu of the study. Introduction to concepts of discourse and specifically the doctor-patient relationship was discussed followed by an in-depth look at the pain ratings as perceived by the study population. The ratings reflected the patient's perceived pain levels as well as their importance ranking of the doctor-patient consultation parameters. The data revealed with absolute certainty that the doctor-patient consultation, the content of the meeting as well as the absence of consultation in some cases – influenced perceived pain ratings. The researcher was further able to argue that the perceived pain rating could also serve as explanatory cornerstone for organic pain ratings measured post-operatively. The literature review continued in article 2 to provide the reader with details of, historical and recent paradigm shifts within the doctor-patient consultation that would facilitate conclusions on the data obtained from the research group.

### 4.3 DATA VALIDITY

The research supports that doctor-patient consultation prior to undergoing total knee replacement surgery lowers pain perception of anticipated or perceived pain post-surgically. In this study the perceived pain levels of the consulted patient group measured a 0.4 less in value than the non-consulted patient group. The doctor-patient contact impacted positively on the patients and lowered their anticipation or perception of pain levels that they anticipated to experience post-surgically.

The research further proves that not only perceived pain levels but also post-operative organic pain levels measured lower in the group of patients that had doctor-patient contact. The group with no consultation not only had higher perceived pain levels but also remarkably higher post-operative pain levels (1.1 value higher than the consulted group and 0.9 value higher than the entire group). If an antagonistic relationship with a physician along with a poor hospital environment can often result in traumatic birthing experience as illustrated in the study by Behague, Victora and Barros (2002:942-944), the same can then be argued for anticipated pain as well as post-operative pain should the patient experience the contact with his or her physician as antagonistic, reduced or insufficient thereby instilling a feeling of marginalisation.

Gender-related the research also demonstrated interesting facts and other studies have demonstrated similar findings pertaining to female patient related pain scores. Lund (2006:2) states that women tend to perceive higher levels of pain, for longer durations and higher intensity and this may provide valuable insights with regards to trends observed during the study:

- Female patients required more information from the surgeon during pre-operative consultation;
- Only female patients received and requested information on all the possible complications of surgery. The surgeon did not discuss the complications with the male patients at all, nor did they request information;
- The female consulted group received more elaborative information during their session with their surgeon and presented with higher perceived pain levels pre-operatively than their male counterparts who received less involved information;
- Females with no doctor-patient contact reported higher perceived pain levels (3.8) pre-operatively than the consulted female group (2.9);
- The entire female population presented with higher perceived pain levels than their male counterparts;
- Consulted female patients reported 0.3 less post-operative pain than their non-consulted counterparts;
- Males with no doctor-patient contact reported lower perceived pain levels pre-operatively (1.8) than their consulted counterparts (2.6);

- Non-consulted male patients reported significantly higher post-operative pain levels (5.4) compared to the consulted male group (2.8);
- The non-consulted male group's pain value increased with a 3.6 value post-operatively compared to the consulted male group that presented with a value increase in pain reports post-operatively of only 0.2;
- Consulted males versus consulted female patient's report on expected pain only differed with a 0.3 value;
- Both male and female in the consulted group experienced only slightly more pain post-surgically than anticipated initially (Female: increase of 0.3, Male: increase of 0.2);
- Males with no consultation had significantly lower perceived pain reports pre-operatively than their female counterparts (2.0);
- Males with no consultation had higher pain reports post-operatively (5.4) than their female counterparts (3.5);
- Females who received no consultation had the highest pain perception scores prior to surgery (3.8);and
- Females with no consultation is the only group that measured less pain post-operatively compared to their pre-operative perceived pain levels (<0.3).

According to the research it is evident that doctor-patient consultation in general lowers perceived pain a patient anticipates to experience post-surgically. Sufficient consultation can also impact on post-operative pain reports and the study population that received a consultation measured lower pain ratings post-surgery compared to their non-consulted counterparts. Other studies support this findings, they utilized a positive and negative consultation as opposed to a consulted versus non-consulted patient group. The positive consultation was aimed at assuring the patient that treatment would be effective or, where appropriate, patients were told they are in need of no treatment at all. The negative consultation entailed no assurance and patients were informed that the physician was unsure about a diagnosis and unsure that the prescribed treatment would yield any benefits. Two weeks post-consultation evaluations indicated recovery was significantly higher in the positive consultation group as opposed to their counterparts, indicative that the words of the doctor were a critical construct in the recovery process (Thomas, 1987:1200-1202). Organic pain or real pain after invasive surgery measured higher than an individual's perceived or expected pain prior to undergoing surgery. Consultation with female patients resulted in higher levels of expected pain after surgery but it produced a more realistic pain experience post-surgically. Female patients that did not receive consultation expected very high pain levels. This may be attributed to anxiety and stress about undergoing surgery. A population-based study conducted by Juni *et al.*, (2003:516-521) supports this possibility and they found that the poor uptake of TKR (Total Knee Replacement) in England could be due to the negative perceptions of surgery among both patients and general practitioners. Although no consultation with a female patient could have been the result of the high ratings of expected pain, it in turn provided lower actual pain post-surgically. It is possible that the

unrealistic expectation was so high that they literally prepared for the worst case scenario and this may be the reason for reports of lower actual pain levels post-operatively in this study. The pain they experienced was not as much as what they anticipated. One can therefore conclude that although expected pain was high it did not have a negative effect on outcomes post-surgically. What is important however is that the anticipation or expectation of pain may cause non-consulted female patients to postpone knee replacement surgery or cause them not to visit a hospital or doctor for fear of having to undergo surgery. This was explored in a study by O'Neill, Jinks and Ong in 2007 where their findings indicated that decisions about undergoing TKR (Total Knee Replacement) surgery is a complex matter with numerous factors to consider. Osteoarthritis is viewed as a natural aging illness, the result of cumulative wear and tear. Patients adapt their lifestyle and apply pain coping strategies and mechanisms. "Social and cultural categories of aging have shaped expectations of this condition, and this in turn shapes expectations of treatment options. For instance, many patients believed that they needed to be in constant pain and virtually unable to move before they would seriously consider surgery. While others had negative perceptions of TKR surgery, because of the risks they associated with surgery." (O'Neill, Jinks & Ong, 2007:6.) This can result in extremely poor cases needing more invasive surgery and poor rehabilitation results post-surgically as well as a general poor prognosis pertaining to regaining functionality. Singh, Gabriel and Lewallen (2008:1528-1532) performed a study in 2008 to assess the impact of gender, age, and preoperative pain severity on pain after Total Knee Replacement (TKR) surgery and found that female gender, younger age, and worse preoperative pain predict greater risk of moderate-severe pain postoperatively in patients with primary and revision TKR (Total Knee Replacement). It is therefore possibly reasonable to conclude that the same would be applicable to expected pain.

Research by O'Neill *et al.* (2007:6) also suggests that the doctor-patient contact is extremely important and this has an influence on patient's shifting their threshold. This is supported in the research of Magee in 2003 that found that patients believe that only family relationships are more important than the doctor-patient relationship (*cited in O'Neill et al.* 2007:7). It is then reasonable to conclude that the doctor-patient contact will have a definite impact on perceived or expected pain as well as post-operative actual pain reports. Studies on expectations have been launched via placebo therapies. Expectations can be created by treatment presented and induced verbally similar to a consultation. Placebo research was previously launched from a platform to understand mechanisms of expectation and conditioning involved in the placebo effect. It was found that cognitive aspects such as anticipation, expectation, belief and trust were vital components at play along with contextual cues that acted as a conditioned stimulus. Modern technologies have now enabled scientists to investigate exactly what happens in the brain when a patient expects a therapeutic benefit by means of a placebo. The research yields new possibilities for clarifying the mind-body dilemma and affords opportunities to elaborate on a mental process such as expectation of a future occurrence and the biological process that is activated (Benedetti, 2007:7). Yet, some doctors in

the full knowledge of the impact their consultations can have on a patient and on surgical outcomes, still do not consult with their patients. This assertion is supported by this study.

Possible reasons for the lack of consultation or poor information passed on to the patient can be found in the work of Clarke. According to Clarke, *cited by* Bara, (2003:87) there are four explanations for not informing the patient:

- underestimation by the doctors of the patients desire to be informed;
- to ensure patient compliance;
- dealing with medical uncertainty; and
- difficulties in communicating information.

The results from this research demonstrate beyond reasonable doubt that there is a direct correlation between effective patient consultation and the level of pain experienced prior to as well as after undergoing surgery. While consultation with both female and male patients can initially lead to higher levels of expected pain it is transformed into realistic and manageable pain levels post-operatively. No consultation leads to either an unrealistic low pain expectation (male population) post-surgically or an opposite unrealistic high pain expectation post-surgically (female population). Unrealistic expectation can hamper long-term prognosis and recovery. It is therefore essential that an effective, informative and parameter-filled consultation takes place with all patients pre-operatively irrespective of their age, gender, culture, education or socio-economic background to assist in maintaining reasonable pain experience pre- and post-operatively. The effect of a placebo and a nocebo translates into an effective model of the impact that the medical personnel can have on a patient with their words. A placebo is a simulation treatment that has no clinical impact on the course of disease. The placebo effect is the result obtained through administering the placebo treatment. Benedetti claims that a sugar pill with a verbal suggestion of powerful pain reducing properties will in fact provide the desired pain reduction as a result of the patient's trust in the physician, his belief in the treatment and expectations of clinical benefit. The psychosocial context around therapy and specifically the verbal input causes the placebo effect and in this case, pain reduction (Benedetti, 2007:7).

#### **4.4 RECOMMENDATIONS**

Based on the research results it is recommended that:

- Patient consultation takes place prior to any surgery or procedure;
- That patient consultation takes place in the mother tongue of the patient;
- That the consultation be structured and focussed; and
- That what is important to know, from the patient's perspective, be identified and addressed during the consultation.

#### 4.5 STRENGTHS AND LIMITATIONS

The study was conducted on a fairly small population with set parameters and the utilization of already proven reliable, measurement scales. The research could be realistically evaluated and concluded especially in lieu of the systematic literature review. Although small in quantity, it provided scope to dissect and analyze the literature in a focussed manner. If the subject under review was more widely researched, synthesising and translating the synthesis maybe more problematic due to the quantity of data and potential contradictions in the findings. The research was conducted by one individual with the aid of a competent and recognized translator who is fluent in both English and Arabic. A physiotherapist also assisted the translator to ensure that medical information was accurately translated to the patient and back to the researcher.

On the other side of the coin this is also possibly the limitation of the study. Due to translation some information may be lost. The Arabic language is a very old language with many dialects. Patients came from various towns and even areas bordering the desert for treatment and surgery. Their dialect or pronunciation differed from the translator at times and she was forced to simplify concepts to obtain ratings. This was taken into account from the outset and therefore the utilization of three scales to ensure consistency in measurement. Translation barriers are often so severe as denoted in the case of Schapira *et al.*, (2008:587) where the translator was instructed to inform the family to prepare the patient for a comfortable death as there was nothing else to be done, instead the translator informed the family that the patient had an infection to be treated by antibiotics and all will be well. An Arabic bystander drew attention to the conversation stating that the interpreter understood what he was suppose to say but due to his lower socio-economic stance than the patient and his family, he could not possibly convey such an upsetting message. The Faces Pain Scale - Revised also proved invaluable in instances such as the aforementioned as little language understanding and education were necessary to obtain a realistic score. The other scales could then be employed as measurement for accuracy obtained from the Faces Pain Scale – Revised.

Another dilemma was descriptive words that do not exist or upon which there is no consensus in the Arabic language. As an example, the term ‘moderate’ does not necessarily exist and is translated through describing the word. Intensity can therefore be added to the word that would otherwise not have been interpreted. This can ‘add weight’ to the patient’s interpretation and lead to wrong scale ratings. Again the other two scales aided in preventing this phenomenon to a large extent.

There are a number of limitations to this study in terms of culture. Informed consent did not form part of the hospital code at the time of research. It is an academic institution as well as a government hospital and therefore participation issues or issues of consent were not formally enforced from the hospital side. They were not enforced when student doctors treated patients or when para-medical students worked in

or entered the hospital. Consent was rather translated as ‘allowance of participation’ It was an individual matter – the patient being the individual. Patients participated out of free will and due to a lack of education and illiteracy a document is of no value to sign that gives informed consent. At most a fingerprint could have served as an initial but would carry no weight ethically as the patient did not understand fine print and research jargon. Consent was treated differently. The proposed participant was asked if he or she had any objections to the researcher ‘sitting in’ on clinical consultation. Again it was not a leap of faith as para-medical staff often attends clinic sessions as part of pathway generation and skills optimization. As a medical personnel member of staff, a code of ethics applies to all and every daily activity. Research was therefore still conducted within the scope of practise and according to the parameters of the medical and dental council. Accreditation further alleviated consent barriers as training on aspects such as research and development is paramount to the hospital staff as part of the accreditation achievement. Basic rules governed the process:

- Patients were informed that their data will be collected, collated, analyzed and interpreted as part of a study;
- No photos will be taken;
- No personal details will be divulged;
- The husband/male family member could refuse participation culturally; and
- No patient should partake unless willingly.

Not only did this serve as inclusion but also exclusion criteria. If a male family member dictated ratings to his female friend, mother or wife, data would not be included. The measurement was viewed as tainted by what they think is acceptable for their female family member to experience or perceive. This was however not prevalent in the study but should be taken into account for future studies of larger numbers where more than one researcher is involved. Cultural barriers provided various difficulties that could influence data. Female patients were accompanied by their husbands or sons; they often looked to the male members prior to answering a question as if seeking approval or appreciation for their situation. Feelings of subordination to the male gender and finally being in position to obtain ‘sympathy’ may have escalated female pain responses. Individual assessments did not ascertain personality type and, as earlier mentioned, it was recognised that some patients are pain prone, these patients could typically escalate pain scores. As no assessment and therefore no exclusion criteria were utilized for personality type, one cannot exclude the possibility that some data were more ‘personality’ driven and possibly less ‘pain’ driven. The researcher however indicated that gender-related results were similar to other studies (Lund, 2006:2) and that this phenomenon (if present) was present to a lesser extent.

One aspect of importance to note is the fact that the research population presented with definitive osteoarthritis and therefore experienced chronic pain on a daily basis. It is possible that pain has become a part of daily living (Juni *et al.*, 2003:520) thereby influencing perceived pain scores as either higher (since they are experiencing constant pain and cannot imagine relief) or in the alternative providing lower

ratings (patients are desensitized to chronic pain as a result of daily presence). To eliminate this, it would have been beneficial to obtain a rating of pain as the patient experiences it currently then moving onto the expected or perceived rating. The pain scores were however very similar and equally distributed and possibly indicative that those results were not impacted by this possibility.

#### **4.6 CONCLUSION**

This study proved that doctor-patient contact has an influence on expected pain pre-operatively as well as actual pain post-operatively. Similar studies were performed on post-operative pain levels of patients. Patients were divided into three groups and they received a painkiller on request and a placebo pain infusion (no pharmacological action). The importance and effect of words and verbal cues was demonstrated. The first group received no verbal input about the infusion, the second group received a message of uncertainty regarding the treatment efficacy and the third group were assured it is a strong and reliable pain killer and pain will subside. The third group that was reassured of the potent painkiller infusion showed a marked decrease in painkiller tablet requests, indicative that words are powerful tools in treatment and consultation (Pollo *et al.*, 2001:77-84). The doctor-patient contact is extremely important within the healthcare system yet it is often grossly neglected. Many articles are placed daily in the *Tripoli Post*, relating to the general community's dismay and disappointment in Libyan healthcare. They call for change and urge physicians to optimize skills and improve on doctor-patient partnership. Unfortunately the wheels of change are slow and it is unlikely that every patient planning surgery will receive the much needed interaction with their doctor. With more medically qualified foreigners coming into Libya and the drive to privatize and upskill some hospitals, it may eventually result in people's cries for better service being answered. Unfortunately, currently employed treatment parameters and clinical approaches were developed over many years. Due to isolation and the inability to access medical research, new technologies, improved pathways and medical advancement the healthcare systems were prevented to evolve and grow. Pathways that the rest of the world has forgotten, are often news. Every suggestion needs a slow implementation approach that entails: highlighting the benefit, showing the research, meeting with the clinicians, proving the worth, and training on the new concept, testing the new system and repeatedly monitoring and re-training (Richardson, Gill & Woolf, 2008). It is a long and tedious process and often hampered by the reluctance to change and the inability to envisage a future with no familiar 'old' approach. A future where science is so advanced and training so specific provokes anxiety and often possibly feelings of inadequacy. It is a system where medical personnel have to change their entire mind set and push cultural boundaries aside to catch up on 30 years of advancement. Friedenber (2003:308) provides a powerful statement that should serve as a mission and vision for each and every member of the multidisciplinary team: "Scientific aspects of care are always delivered in the context of a personal relationship, the patient-doctor relationship, which is based on a healing bond of trust between a patient and physician and serves the needs of both". The reality is that an unwillingness

to take responsibility for the state of healthcare within the hospitals will result in change being but a word and doctor-patient contact but a concept in an old medical sociology textbook.

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