

**ASSESSMENT AND TREATMENT CHOICES OF
PHYSIOTHERAPISTS TREATING NON-SPECIFIC LOW BACK
PAIN IN RWANDA**

BY

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**A mini-thesis submitted in partial fulfilment of the requirements for the
Degree of Master of Science (Physiotherapy) in the Department of
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KEY WORDS

PREVALENCE

LOW BACK PAIN

NON-SPECIFIC

ASSESSMENT

TREATMENT CHOICES

MODALITIES

EFFECTIVENESS

EVIDENCE BASED GUIDELINE

PHYSIOTHERAPISTS

RWANDA



ABSTRACT

Low back pain (LBP) is a common condition internationally and imposes significant social and economic burden on persons affected and their families. The most common cases of LBP are non-specific and etiologic factors are not fully understood. The treatment of LBP has been a burden and frustration to those who suffer from the problem, as well as to those involved in LBP treatment. A challenge facing clinicians is the selection of treatment for patients with LBP. For many physiotherapists, accessing relevant information to their practice is further constrained by limited access to sources of evidence. There is insufficient data on the prevalence of LBP in Rwanda but it appears to be one of the major disabling and costly medical conditions. The aim of this study was to determine assessment and treatment choices of physiotherapists treating non-specific LBP in Rwanda. The main objectives were to identify the common types of LBP treated by physiotherapists, to determine the assessment and treatment modalities used by physiotherapists to treat patients with acute and chronic LBP in Rwanda, to establish physiotherapists' opinions/belief on the effectiveness of treatment modalities and to identify factors informing treatments choices of physiotherapists. A quantitative design using a cross-sectional self administered questionnaire survey guided by the researcher was utilized. The questionnaire included three case studies as examples of patient with acute LBP, acute with sciatica and chronic LBP. Closed and opened ended questions were used with the participating physiotherapists. The subjects studied were 51 physiotherapists surveyed from 3 main hospitals, 2 provincial hospitals and 6 private clinics in Rwanda. Ethically, the permission to conduct the study, informed consent, anonymity, confidentiality of information and voluntarily participation were ensured by the researcher. Data analysis by means of descriptive statistics was used to obtain the frequencies, expressed as percentages. Inferential statistics analysis was also used to determine the association between gender and belief of physiotherapists on the effectiveness of treatment modalities. Alpha level was set at 0.05. Chronic low back pain (CLBP) was the most common type of LBP reported to be treated by physiotherapists both in government hospitals and

private clinics. In general, back inspection/palpation and range of motion were the most assessment preferred by physiotherapists for acute LBP, acute with sciatica and chronic LBP. Results also indicated that the majority of physiotherapists in all case studies used patient education and exercises in their treatment. It was found that the majority of physiotherapists used and believe in the effectiveness of advising bed rest for patients with acute LBP. Massage, Heat and Ice were modalities most used by physiotherapists for patients with acute and chronic LBP. Most of physiotherapists reported to use what they were taught during training as choice of their treatment. The findings of the study will provide a baseline of information on the modalities used by Rwandan physiotherapists to manage LBP, their opinions/beliefs on the effectiveness of treatment modalities they used for LBP patients and or on what they base their practice.



DECLARATION

I hereby declare that **“Assessment and Treatment Choices of Physiotherapists Treating Non-Specific Low Back Pain in Rwanda”** is my own work, that it has been submitted for any degree or examination in any other University, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Signature:

TWAGIRAYEZU Jacques

November 2005



Witness:

Mrs P. Gurie

DEDICATION

I wish to dedicate this mini-thesis to the Lord God almighty who blessed me with wisdom and the ability to conduct this research. In addition, also to my mother MUKARWAKA J.D., brothers and sisters especially my twin sister GAKUMBA Jacqueline for their support and encouragement throughout my education.



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ABBREVIATIONS

AHCPR : Agency for Health Care Policy and Research

CLBP : Chronic Low Back Pain

LBP : Low Back Pain

MINECOFIN: Ministry of Finance and Economic Planning

MWMs : Mobilization with Movements

RCTs : Randomized Controlled Trials

SMT : Spinal Manipulation Therapy

SA : South Africa


UNIVERSITY of the
WESTERN CAPE

UK : United Kingdom

USA : United States of America

TENS : Transcutaneous Electrical Nerve Stimulation

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This chapter provides the background information that will shed light on the problem of low back pain (LBP) in the world in general and in Rwanda in particular. It describes the impact and interventions used to manage LBP. The statement of the problem, aim, objectives and the significance of the study are also described. The chapter ends with the definitions of terms used in the study.

1.2 BACKGROUND OF THE STUDY

Rwanda is a small central African country bordered to the north and east by Uganda and Tanzania respectively, to the west by the Democratic Republic of Congo and to the south by Burundi (Appendix H). It is a landlocked country with a surface area of 26 338 km² (Sentama, 2003). According to the recent survey done by *Office Nationale de la Population* in Rwanda (ONAPO, 2002), the Rwandan population was 8.2 million. Rwanda is one of the poorest countries of sub-Saharan Africa today. The civil war during the period 1990-1993 and the destruction of human life in 1994 genocide activities greatly exacerbated poverty conditions in Rwanda (MINECOFIN, 2001). The genocide increased the numbers of vulnerable citizens, destroyed a great deal of the infrastructure in the rural as well as the urban areas, resulting in substantial non-capitalization. Since 1994, stability has been restored, economic recovery has begun and the country has embarked on a new path for development (Sentama, 2003).

Low back pain is one of the major health problems in industrialized countries, and a therapeutic and socio-economic challenge for the health care services

(Storheim & BØ, 2000). Epidemiologic studies on LBP, conducted in a number of countries, strongly suggest that LBP is a very common condition internationally and that it imposes a significant social and economic burden on society (Zelege, 2000). Of the total population, 60% to 90% will experience an episode of LBP at some time, the annual incidence being 5% (Descarreux, Nomand, Laurencelle & Dugas, 2002; Pengel, Maher, & Refshauge, 2002). Statistics in the Netherlands show that 27% of all patients referred to a physiotherapist have LBP (Bekkering, Enger, Wensing, Hendricks, Van Tulder, Oostendorp & Bouter, 2003).

Among the musculoskeletal disorders affecting a large number of the Rwandan population, LBP appears to constitute a considerable burden (Mutimura, Murego, Murenzi & Nyaruhirira, 2003). According to Zelege (2000) people in lower socio-economic classes experience more LBP than those in upper socio-economic classes. The prevalence of LBP, the level of disability experienced, and the chronicity of LBP are complicated by socio-economic and psychological stress. Although there is no exact data on the prevalence of LBP in Rwanda, there is enough clinical evidence that suggests a high incidence of LBP and related disorders in the country between 1994 and 2001 (Mutimura et al., 2003).

LBP has a serious social and economic impact on persons who are affected and on their families, as it reduces the base of active work force and affects the most active age group (Frank, 1993). It is a common reason for absenteeism in most places of work. In the United States, Berkman (1999) indicated that LBP accounts for over 40% of missed workdays, and that one in five injuries involve the back. LBP constitutes one of the most difficult and costly medical problems in industrial countries (Storheim & BØ, 2000; Quittan, 2002). In the United Kingdom, absenteeism caused by LBP has increased by over 100% in the last 10 years, and LBP may account for 60% of referrals to outpatient physiotherapy departments. The cost of human suffering related to LBP has been described as unquantifiable (Middleton, 2004). According to Mutimura et al. (2003) the annual

national expenditures on patients referred outside of Rwanda for management of LBP related is estimated at US \$ 675,000 for the year 2001. For the year 2000, 65 patients were referred to South Africa at an average cost of US\$ 15 000 per person. This included direct costs of treatment such as surgery and other related management of LBP, travel and maintenance costs. The latter is approximately half a billion Rwandan Francs (499 200 000 FRW) per year at the exchange rate of US\$ 1=512 FRW. Therefore, it appears that management of back pain in Rwanda has been costly and sometimes ineffective, leading to high medical costs through referral to outside of the country (Mutimura et al., 2003). This is a lot of money that could be used in other sectors of development. Rwanda faces economic structural problems such as low agricultural productivity, low human resources development, especially in literacy and skills development; limited employment opportunities, with an oversupply of unskilled workers in comparison to their low demand; high population density and growth, environment degradation, with a chronic decline in soil fertility, poor water management and deforestation (Sentama, 2003). Thus, because of Rwanda's history, the impact of LBP is possibly worse than that of industrialized countries.

The treatment of LBP has been a burden and a frustration to those who suffer from the problem, as well as to those involved in the treatment (Gaudry, 2003). People with back pain may seek care from general practitioners, accident and emergency departments, hospital specialists, occupational health services, occupational therapists and physiotherapists (Fischbacher, 2002). According to Li and Bombardier (2001), clinicians lack consensus regarding the diagnosis and management of LBP. There is conflicting evidence from randomized controlled trials (RCTs) and systematic reviews on the effectiveness of modalities for the management of LBP. According to Grimmer, Milanese & Bialocerkowski (2003), one of the principal questions addressed by physiotherapists is how to provide the most appropriate management for LBP. For many physiotherapists, accessing relevant information for their practice is further constrained by limited access to sources of evidence. A large variety of treatment modalities that are

used are generally dependent on the clinician's experience rather than on evidence from the literature (Frost, Lamb, Moffet, Fairbank & Moser, 1998). Traditionally, the aims of assessment are to localize the exact area of pain and ask questions about the site, nature, and severity of that pain. Physiotherapists then proceed with various forms of treatment in which the patient has a passive role, for example mobilization, manipulation, traction, electrotherapy and heat. However, this may not always be the most effective and appropriate approach, especially for patients who have long-standing chronic pain (Frost & Moffett, 1992). Evidence from existing review sources show that the services most likely to be effective are those that advise the patient to remain active during acute back pain and those that provide back exercises for chronic pain (Fischbacher, 2002). Physiotherapists should be prepared to be open-minded and aware that passive treatment, as well as some advice, may for some patients lead to reduced activity and fear of spinal movement. Furthermore, whatever changes occur in the next decade, it seems clear that for physiotherapy to progress as a profession, more emphasis should be placed on the evaluation of current practice (Frost & Moffett, 1992). Physiotherapists should consult international evidence-based guideline recommendations on LBP to improve their clinical practice.

According to the international forum for primary care research, one of the highest research priorities should be to determine the best strategies for treating LBP (Sung, 2003). Although physiotherapists play a crucial role in the management of LBP, there is relatively limited evidence about physiotherapy or about current physiotherapeutic management of LBP (Grace, McDonough & Baxter, 2002). Many treatments continue to be administered despite a lack of evidence. Through highly skilled clinical practice and well designed research, including randomized controlled trials and systematic reviews, physiotherapists are able to provide evidence for physiotherapy as a safe, low cost management approach (Li & Bombardier, 2001).

Despite ongoing research providing increased baseline knowledge of spinal anatomy, function and biomechanics, the incidence of LBP and the cost of its influence on society continue to rise (Goldby, 1997). Pinnington (2001) points out that

“all physiotherapists must take a more critical look at how we treat LBP. If we don’t do it, no doubt someone else will do for us and we will dislike that even more. No one is better placed and more able to manage LBP effectively than physiotherapists, but we must embrace and make change to our practice now.”

The researcher finds it imperative to establish which physiotherapy assessment and treatment modalities for LBP are used by physiotherapists in Rwanda in order to provide a source of documented information on LBP management. In Africa, and particularly in Rwanda, there is a scarcity of such information about physiotherapy management of LBP. According to Konstantinou, Foster, Rushton & Baxter (2002), information about the current practice of physiotherapy techniques is needed to facilitate future research on actual clinical practice. It seems imperative, therefore, that if LBP is to be treated properly, there is a need first to be clear on what one is going to manage.

1.3 STATEMENT OF THE PROBLEM

There is inadequacy of data regarding assessment and treatment choices for the management of low back pain by physiotherapists in Rwanda.

1.4 AIM OF THE STUDY

The overall aim of the study was to determine which assessment and treatment choices are used by physiotherapists to treat non-specific LBP in Rwanda.

1.5 SPECIFIC OBJECTIVES

The specific objectives of the study were the following:

- i. to identify the common types of low back pain treated by physiotherapists in Rwanda;
- ii. to determine what assessment and treatment modalities are used by physiotherapists to treat patients with LBP;
- iii. to determine physiotherapists' beliefs/opinions on the effectiveness of treatment modalities for patients with LBP; and
- iv. to identify the factors informing treatment choices.

1.6 SIGNIFICANCE OF THE STUDY

There is a lack of information about current assessment and treatment modalities that are used by physiotherapists to manage LBP in Rwanda. The findings of the study will provide a baseline of information on the modalities used by Rwandan physiotherapists to manage LBP, their opinions/beliefs on the effectiveness of treatment modalities they used for LBP patients and the factors informing their treatment choices or on what physiotherapists base their practice.

1.7 DEFINITION OF TERMS

The various terms used in this study are defined below.

Low back pain

LBP is defined as any pain posteriorly between the ribs and the top of the thigh, from any cause (Loney & Stratford, 1999).

Acute low back pain

According to recently published definitions, acute LBP has a duration of 0 to 4 weeks (Quittan, 2002).

Chronic low back pain

Chronic low back pain (CLBP) is defined as pain that exceeds 12 weeks' duration (Quittan, 2002; Bekkering et al., 2003a).

Non specific low back pain

Non-specific LBP is pain that occurs in the lumbosacral area of the spine that may or may not have referred pain, and is usually characterized by a painful range of motion limitations. It is generally considered to occur as a result of mechanical causes and is not related to any underlying condition such as infection, fracture, tumour, osteoporosis, inflammatory process, ankylosing spondylitis, radicular syndrome or cauda equine syndrome (Phillips, Ch'ien, Norwood & Smith, 2003).

Physiotherapy

The World Confederation of Physical Therapy (WCPT) defined physiotherapy as services to people and populations to develop maintain and restore maximum movement and functional ability throughout the lifespan (Struber, 2003).

Also called physical therapy, physiotherapy is a dynamic profession with an established theoretical and scientific base and widespread clinical application in

the restoration, maintenance, and promotion of optimal physical function (American Physical Therapy Association, 2001).

Impairments

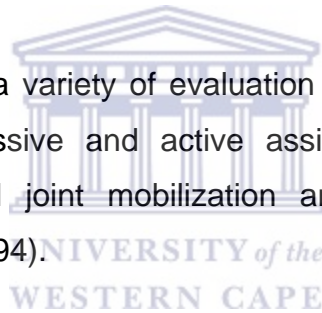
Impairments are manifestations of a disorder referring to body structure or physiological and psychological function, for example decreased muscle strength, pain, sensory impairments or fear of movement (Bekkering, Hendriks, Koes, Oostendorp, Ostelo, Thomassen & Van Tulder, 2003b).

Disabilities

The term disabilities refer to problems in the performance of activities such as bending, reaching or walking (Bekkering et al., 2003a).

Manual therapy

Manual therapy represents a variety of evaluation and treatment procedures. It may include massage, passive and active assisted range of motion, joint distraction or traction, and joint mobilization and manipulation (Fitzgerald, McClure, Battie & Riddle, 1994).



Musculoskeletal disorders (MSDs)

This is the medical term that refers to health problems affecting muscles, nerves, spinal disc, joints, cartilage, tendons and ligaments. Many of these disorders occur in the lower back and upper extremities (Vines, 2001).

Evidence-based practice (EBP)

Evidence-based practice is an approach to health care wherein health professionals use the best evidence possible, i.e. the most appropriate information available to make clinical decisions for individual patients. EBP values, enhances and builds on clinical expertise, knowledge of disease mechanisms, and pathophysiology. It involves complex and conscientious decision-making based not only on the available evidence but also on patient

characteristics, situations, and preferences. It recognizes that health care is individualized and ever changing and involves uncertainties and probabilities. Ultimately EBP is the formalization of the care process that the best clinicians have practised for generations (McKibbon, 1998).

Ergonomics

Ergonomics is the science that studies the relationship between man, the machine and the environment in workplace (Nygren & Jensen, 1999).



CHAPTER TWO

REVIEW OF LITERATURE

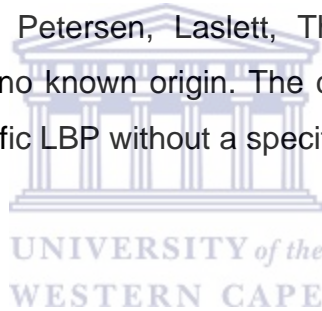
2.1 INTRODUCTION

This chapter presents an overview of the literature on low back pain (LBP). The description and definitions of LBP are given, and predisposing factors and causes of LBP are described. Reviews of studies on the prevalence, impact, challenges faced by physiotherapists and interventions used to manage LBP are presented. Finally, conflicting scientific studies on LBP treatment are highlighted.

2.2 DEFINITIONS AND DESCRIPTION OF LBP

LBP occurs in the spinal column, which is a complex system of interlocking working pieces. The bones, or vertebrae, that make up the spinal column, are separated by discs and held together by ligaments and supporting muscles (Gaudry, 2003). Structures of the spine such as bone, ligaments, muscles, joints nerves, fascia and soft tissue may contribute to the development of pain (Quittan, 2002). In general, LBP has been divided into specific and non-specific LBP. Specific LBP is defined as pain with a pathophysiologic or pathoanatomic substrate. Examples of pathophysiologic and pathoanatomic substrates are radicular compression, spinal stenosis, trauma, infection, osteoporosis, visceral dysfunction, inflammatory disease, tumour or metastasis (Oostendorp, Scholten-Peeters, Swinkels, Bekkering, Heijmans, Huijbregts & Hendriks, 2004). International convention defines non-specific LBP as pain in which no disorder in the anatomical structure can be found that sufficiently accounts for the patient's complaints (Oostendorp et al., 2004).

Of all patients with acute LBP, about 50% experience episodes of pain for longer than one week and 10% of these develop chronic LBP (Quittan, 2002). It is thought that CLBP emerges from acute pain in muscle and connective tissues, which persists in approximately 30% of acute cases and becomes chronic. This generally occurs without specific damage or symptoms that could be shown through imaging or neurophysiological techniques (Rittweger, Just, Kautzsch, Reeg & Felsenberg, 2002). Recurrent LBP is defined as a new episode after a symptom-free period of six months, but not an exacerbation of chronic LBP (Van Tulder, Malmivaara, Esmail & Koes, 2000). Sub-acute LBP is pain lasting between six weeks and three months (Pengel, Maher & Refshauge, 2002). Despite advances in knowledge of the anatomical, biomechanical, neurophysiological and psychosocial factors associated with LBP, approximately 85% of both acute and chronic LBP is considered to be non-specific (Konstantinou et al., 2002; Petersen, Laslett, Thorsen, Manniche, Eddall & Jacobsen, 2003), or having no known origin. The concept of 'low back pain' in this study refers to non-specific LBP without a specified physical cause.



2.3 CAUSES OF LBP

The causes of LBP are still the subject of discussion, and over the years opinion has varied as to what treatment should be recommended (Bentsen, Lindgarde & Manthorpe, 1997). Most back pain starts spontaneously and although people often try to explain it by relating it to a particular event, very little is understood about the causes of back pain (Moffett, 2002). Etiologic factors of LBP are not fully understood, but the pain seems to involve physical, psychological and social factors, and there is strong evidence that LBP is related to work. Most new episodes of LBP are clinically attributed to a mechanical origin (Descarreaux et al., 2002). Most LBP is caused by prolonged overstretching of ligaments and other surrounding soft tissues, resulting in the creep phenomenon, which is characterized by a continued deformation at a fixed load; the material continues

to deflect until an equilibrium point is reached. This commonly arises particularly during poor posture habits, in sitting, standing or lying (Hunter, 1998).

Mechanical causes of acute LBP include dysfunction of the musculoskeletal and ligamentous structures. Pain can originate from the disc, annulus, facet joints and muscle fibres (Bratton, 1999). A strictly anatomic or mechanical explanation for the cause of LBP and radicular pain syndromes is inadequate. Both mechanical and chemical irritation of primary sensory neurons in spinal tissues may be conveyed as pain. Neuropeptides from primary afferent neurons or endogenous inflammatory mediators from non neural tissues may sensitize nociceptors in spinal tissues to mechanical stimuli leading to a reduced threshold for responses and enhanced responses to supra-threshold stimuli (Wheeler, 1995). According to Gaudry (2003), even though the exact causes of back pain are hard to determine, problems can be classified into four main categories:

Structural changes

A structural change can be caused by a sudden mechanical problem such as in a prolapsed intervertebral disc (often referred to as a slipped disc) or it can result from general wear and tear, or from postural imbalances within the body. Occasionally people are born with mechanical abnormalities of the spine.

Inflammatory disease

Inflammation occurs in the spine and may affect the joints in a way similar to that of rheumatoid arthritis. Inflammation may also result from an infection

Bone disease

Bone disease weakens the structure of the bone. This causes back pain

Tumours

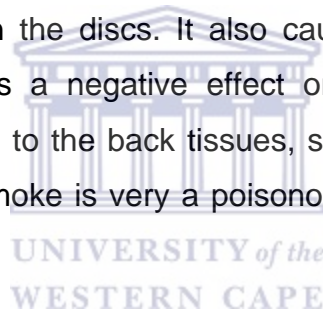
Growths of varying kinds occur in the spine, causing damage and pain.

This study focuses on the treatment of LBP resulting from unknown causes, and does not go into great detail as to the causes of LBP.

2.4 PREDISPOSING FACTORS

Most mechanical pain is presumed to arise from excessive physical stress on normal spinal structures or normal physical forces acting on abnormal structures (Frank, 1993). Poor postural habits and body mechanics in working procedures (ergonomics), certain repetitive movements, and unavoidable trauma-induced injury to the back are some of the major predisposing factors to LBP (Macfarlane, Thomas & Croft, 1999). Any of these factors contribute to the wear and tear of the structures of the spine, which may lead to LBP or injury to the back (Tancred & Tancred, 1996). According to Gaudry (2003) it has been suggested that several factors can predispose people to the development of LBP.

Smoking is one reason given, due to the fact that smoking can lead to coughing, which increases pressure in the discs. It also causes a reduction in vertebral body blood flow, which has a negative effect on the nutrition of the discs. Smoking decreases nutrition to the back tissues, since carbon monoxide that is contained in the cigarette smoke is very a poisonous and dangerous substance (Arbor, 2003)



Occupation can also be a risk factor in the development of LBP, especially for those who work in positions that involve excessive vibrating movements or positions that involve very little movement. The risk of LBP in the latter may be due to either an increase in intradiscal pressure in the seated positions, when compared to the standing position, or to the fact that sedentary occupations are at great risk of muscle atrophy, as they lack any form of exercise on the job (Gaudry, 2003). Any other occupation that involves lifting, bending and twisting is also subject to LBP. Other risk factors include obesity, drug abuse and aging. It has even been suggested that genetics may predispose individuals to LBP (Gaudry, 2003). Many attempts have been made to find common factors that link low back pain to the precise etiology, but data are often contradictory (Danneels, Cools, Vanderstraeten, Cambier, Witvrouw, Bourgois & De Cuyper, 2001).

2.5 PREVALENCE OF LOW BACK PAIN

The extensive prevalence of LBP is widely published and has not really reduced over the last five decades (Papageorgiou, Croft, Ferry, Jayson & Silman, 1995). LBP is an important public health problem in all industrialized nations (Danneels et al., 2001; Konstantinou et al., 2002). About 60-80% of the world's population will experience LBP at some stage in life (Goldby, 1977; Zekele, 2000; Aure, Nilsen & Vasseijen, 2003; Gaudry, 2003). It has further been indicated that each year 15-45% of adults suffer from LBP, and one in 20 people present to a hospital with a new episode. LBP is most common in the age group between 35-55 years (van Tulder, 2002). Consultations in general practice involving management of back pain are frequent. The most common presentation is nonspecific LBP associated with decreased spinal movement (Bekkering et al., 2003a). According to Li and Bombardier (2001), LBP cases accounted for 25% of physiotherapists' visits in outpatient settings. The recurrence rate of LBP has been estimated to be between 60% and 85%. It has been estimated that between one quarter and one half of patients treated by physiotherapists in acute care hospital, private office, and outpatient physical therapy suffer from LBP (Gaudry, 2003). In Australia, Buchbinder, Jolley & Wyatt (2001) indicate a prevalence of 15-30%, based on population surveys. In addition, other estimations show that 5 million adults in the USA consult medical practitioners due to LBP every year. In sub-Saharan Africa, hospital-based statistics have revealed LBP as the main cause for 30-40% of visits to rheumatologists (Maniadakis & Gray, 2000). In Rwanda there are no exact statistical records on the prevalence of LBP, but according to Mutimura et al. (2003), the period between 1994 and 2001 has been characterized by higher prevalence of LBP. The annual statistical records at the Central University Hospital of Kigali, which is one of referral hospitals in Rwanda, also reveal an increase in the condition of LBP for the period 1997 to 2000 (Office of the Hospital Director, 2001). It is clear; therefore, that LBP is a worldwide problem.

2.6 THE IMPACT OF LBP

The widespread incidence of back dysfunction and pain constitutes a major public health crisis. LBP has a serious social and economic impact on persons affected and their families as it reduces the base of active work force and affects the most active age group (Frank, 1993; Buchbinder et al., 2001). According to Quittan (2002) LBP is generally regarded as a self-limiting and benign problem. Recent studies show that 78% of patients who experience a first episode of LBP still have pain after six months. Twenty-six percent experience significant disability. Gaudry (2003) indicate that the enormity of the problem is not endured by sufferers alone, but also by those people in society who deal with the sufferers. These include doctors, physiotherapists, chiropractors, occupational therapists, etc. Despite the high prevalence of LBP, it is often difficult for these people not only to pinpoint the exact cause of the problem, but also to treat it.

2.6.1 Financial implications

Back pain is a common reason for absenteeism and disability (Fischbacher, 2002). Berkman (1999) indicates that LBP accounts for over 40% of missed workdays in the USA, where one in five injuries involves the back. In Sweden, LBP and neck-related problems constitute 40-45% of cases of long-term sick leave (Nygren & Jensen, 1999). In the USA alone, the prevalence is said to account for over 156 million lost working days along with 5.2 million people being disabled by LBP, of which 2.6 million are permanently disabled (Borenstein, 2000). In Germany chronic low back pain is one of the most common reasons for early retirement (Rittweger et al., 2002). According to Kjersti & Kari (2000), LBP is one of the major health problems in industrialized countries, and a therapeutic and socio-economic challenge for healthcare services. Most episodes of LBP are known to recur. Coupled with high prevalence levels, the result is high health bills with serious budgetary implications on most health departments. This would then affect other sectors of the society and the economy in most countries (Feyer,

Williamson, Mandryk, De Silva & Healy, 1992). In the USA, the direct medical and indirect costs were estimated to be more than \$US50 billion per year. In 1991, the costs of LBP to society in the Netherlands was estimated to be 1.7% of the gross national product, and 93% of these costs were caused by work absenteeism and disability (Stall, Tulder, Koke, Smid & Mechelen, 2002). It accounts for half the workers' compensation payments in the USA and Australia. It is the single greatest cause of lost work time in both in the countries, and costs \$8,000 million annually in the USA (Gaudry, 2003). According to Gaudry (2003), besides the economic cost derived from back pain, there are also personal costs, such as the excruciating pain, anguish and limitations of lifestyle, and social costs, as back pain represents the most frequent cause of inactivity among people younger than 45 years of age. In South Africa, since 1992, the Professional Provident Society (PPS) has paid out R6.2 million for permanent disability from back problems (PPS Statistics, 1998). Costs paid by the Workmen's Compensation Association (WCA) of South Africa for LBP conditions were as high as R38.4 million for 1994 (WCA, 1995). Timeous utilization of limited resources available may prevent the development of unnecessary suffering and related costs (Linton & van Tulder, 2001). Therefore, LBP has a serious impact on society. People who suffer from LBP are physically, psychologically, economically and socially affected (Tancred & Tancred, 1996).

2.6.2 Psychological effects

Chronic low back pain (CLBP) disability appears to be increasing faster than any other form of incapacity in industrialized countries (Mannion, Muntener, Taimela & Dvorak, 1999). In addition to the pain, patients with CLBP typically suffer physical disabilities and psychological distress. They may be unable to work and become depressed (Bogduk, 2004). Psychological factors are strongly associated with the change from acute to chronic pain, and with disability. Aspects such as attitudes and emotions of the patient are important: passive coping strategies, perception about pain, and emotion such as depression or fear

are highly associated with pain and disability. Psychological factors generally have a bigger impact on disabilities (Bekkering et al., 2003b). Insomnia and anxiety, which might be a manifestation of depression, are common complaints of people suffering from chronic LBP. Over time, however, psychological and behavioral factors may serve to maintain and exacerbate the level of pain, influence adjustment, and contribute to excessive disability (Twomey & Taylor, 2000).

According to Waddel (1996), patients with chronic pain tend to develop a set of negatively distorted thinking patterns that could adversely influence the response to pain treatment and rehabilitation. Such beliefs are based on the fear that pain will occur as a result of any movement and that pain signals re-injury. For instance, Frost & Moffet (1992) found that the expectation that some activities may cause pain can lead to avoidance of those activities and anything associated with them. Recognition of psychological processes that influence the outcomes of treatment is important in the acute stage as well as the chronic stage in order to prevent the development of CLBP disability.

2.7 CHALLENGES FACED BY PHYSIOTHERAPISTS IN MANAGING PATIENTS WITH LBP

Physiotherapy is well recognized as playing an important role in the management of spinal musculoskeletal problems. Recent guidelines on acute LBP have recommended an increased role for physiotherapy (Konstantinou et al., 2002). Physiotherapy is a process that seeks to enable individuals with impairments, activity limitations and participation restrictions to reach their optimal physical and/or social functional level through partnership with family, providers and the community (Gibson & Martin, 2003).

Physiotherapists should treat acute and chronic patients, principally using some types of manual techniques and advice, in keeping with guidelines on LBP

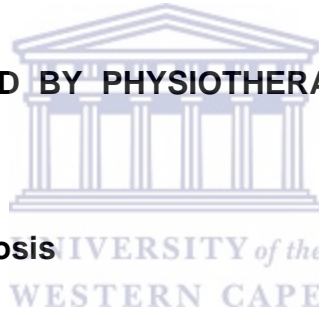
management (Grace et al., 2002). As experts in therapeutic exercises and manual techniques, physiotherapists have been assuming the role of major health care providers in treating people with spinal impairments (Li & Bombardier, 2001). Despite the major role physiotherapists play in the treatment of patients with LBP, there are no published reports of how physiotherapists perceive and approach this problem (Battie, Cherkin, Dunn, Ciol & Wheeler, 1994).

It is claimed that physiotherapists traditionally treat patients with LBP by utilizing passive methods such as heat, massage and electrotherapy, aiming to relieve symptoms and decrease pain before restoring the patient to functional activities (Kjerti & Kari, 2000). This may be a generalization of the profession, yet several authors have criticized this passive approach, especially in the management of patients with long-standing LBP (Storheim & BØ, 2000; Fischbacher, 2002). According to Li and Bombardier (2001), clinicians lack consensus regarding the diagnosis and management of LBP. One of the principal questions addressed by physiotherapists is how to provide the most appropriate management for LBP. For many physiotherapists, accessing relevant information for their practice is further constrained by limited access to sources of evidence (Grimmer et al., 2003). In Rwanda, for example, it is not clear to what extent physiotherapists have access to sources of evidence-based treatment. In addition there are no official statistics on how the problem of LBP is treated.

A challenge facing clinicians is the selection of treatment techniques for patients with LBP. Patient management models based on pathology are not always helpful in treatment selection as it is estimated that a specific diagnosis can be made in only 15% of patients with LBP. Compounding this uncertainty is the lack of scientific evidence to support particular treatment approaches for patients with LBP. This complicates treatment selection, as it compels physiotherapists to predict the likely benefit for a particular treatment approach for each individual patient (Hahne, Keating & Wilson, 2004). According to Middleton (2004), in the

management of LBP, physiotherapists are confronted by two main problems. First, no single treatment modality has been proven to be universally effective, making choice of most effective treatment difficult. Second, the degree of patient compliance with treatment is low. Middleton (2004) further states that, as for other medical regimens, it has been estimated that 50-66% of patients demonstrate non-compliance with exercise regimens. According to Li & Bombardier (1994) physiotherapists practicing in many clinical settings are interested in clinical research but lack the time, resources and support to design and carry out large-scale experimental studies independently. There are, however, a number of ways in which clinicians can contribute to the body of literature. The authors add that detailed case reports of individual patients would be an excellent way for clinicians to share information and knowledge and contribute to the literature on LBP management.

2.8 INTERVENTIONS USED BY PHYSIOTHERAPISTS TO MANAGE LOW BACK PAIN



2.8.1 Evaluation and diagnosis

The process of problem solving is central to methodical physiotherapy management. This comprises the elements of referral, history taking, physical examination, analysis (including formulation of the physiotherapeutic diagnosis), treatment plan, treatment, re-evaluation, conclusion, and written final report (Bekkering et al., 2003a). One of the most important aspects of successful physiotherapy intervention is that of the initial assessment (Goldby, 1977). Physiotherapists base their assessment, not so much on disease but on the pathomechanics, functional limitations as well as symptom changes due to mechanical stresses (Konstantinou et al., 2002). The clinical examination must include inspection and palpation. The range of motion must be determined for flexion, extension, side bending and rotation. A neurological investigation including examination of dermatome integrity, muscle strength and atrophy,

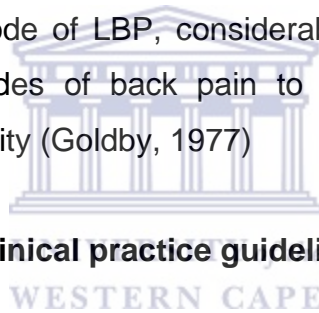
muscle stretch reflexes, neural integrity tests such as straight leg raise tests are important aspects of the work up of patients with LBP. So far, no consistent relationship between radiographic findings and non-specific LBP has been found (Quittan, 2002). Despite this lack of evidence, x-rays are routinely taken and still considered when examining a patient. An x-ray where no abnormalities are detected (NAD) would imply that there are bony abnormalities. However this does little to help in making a clinical diagnosis.

In patients with non-specific LBP it is often not possible to find impairments in anatomical structures causing the complaints. Even possibly identified impairments will not usually provide enough explanation for the development or continuation of the complaints. Therefore, the diagnostic interventions should focus on the relevant disabilities and participation problems (Bekkering et al., 2003b). The use of manual therapy is considered by many therapists to be an important component in the examination and treatment of musculoskeletal disorders. Manual therapy may include massage, passive and active assisted range of motion, joint distraction or traction, and joint mobilization and manipulation (Fitzgerald et al., 1994).

The physiotherapist assesses patients' disabilities regarding LBP (e.g. when maintaining a sitting position or picking up an object from the floor) and participation problems (e.g. with work or housekeeping) that were identified during history taking. The physiotherapist will also identify impairments (e.g. decreased muscle strength of the back extensors, decreased mobility of the lumbar spine, decreased physical fitness), which may be related to disability and participation problems. If there is no indication for physiotherapy, patients are referred back to the physician (Gibson & Martin, 2003). Etiologic factors of LBP are not fully understood, but the pain seems to involve physical, psychological and social factors, and there is strong evidence that LBP is related to work. Most new episodes of LBP are clinically attributed to a "mechanical origin" (Descarreaux et al., 2002).

In many patients with CLBP, excessive protection of the spine is caused by an exaggerated fear of pain; which induces a reconditioning syndrome. This syndrome is described as the expectation that some activities may cause pain can lead to avoidance of those activities and anything associated with them. This has important practical implications for physiotherapists in assessing a patient's pain and range of movement (Frost & Moffet, 1992).

The prognosis for a patient with an acute episode of LBP is good with 90% of patients making a full recovery within two months. However, as part of the management of these patients, prevention of further recurrence of symptoms is important in order to prevent the likelihood of recurrence (Goldby, 1977). While the main reason for physiotherapy intervention is to eradicate the disability caused by the current episode of LBP, considerable attention is focused upon prevention of further episodes of back pain to prevent the development of chronicity and serious disability (Goldby, 1977)



2.8.2 Evidence-based clinical practice guidelines

2.8.2.1 What are evidence-based guidelines?

Evidence-based practice implies the systematic use of evidence to solve the clinical problems (Herbert, Sherrington, Maher & Moseley, 2001). In light of the poor consensus regarding the management of lumbar impairment by clinicians, guidelines have been developed to provide a template for more effective clinical practice (Li & Bombardier, 2001). The physiotherapy guidelines on LBP are based on results from systematic reviews about effective and efficient physiotherapeutic care for patients with LBP. The reviews have included studies from various countries conducted in various health-care settings. Therefore, recommendations of the guidelines are universal and may be useful for physiotherapists worldwide (Bekkering et al., 2003a). The authors further state

that physiotherapy guidelines are considered to be important tools with which to close the gap between theory and practice and thus to facilitate evidence-based practice. According to Grimmer et al. (2003), guidelines are useful for physiotherapists who do not have the time, resources, or expertise to synthesize the relevant literature. Most published physiotherapy guidelines are developed by physiotherapists for physiotherapists (Herbert, Jamtvedt, Mead & Hagen, 2005).

The concept of LBP in these guidelines refers to non-specific LBP (Bekkering et al., 2003b). According Pengel et al. (2002) clinical practice guidelines do not distinguish sub-acute LBP from acute LBP, with treatment recommendations for acute low back pain (duration <6 weeks) generalized to sub-acute LBP (duration 6-12 weeks). Manual therapy is not included in these guidelines because these techniques demand specific knowledge and skills (Bekkering et al., 2003b).

2.8.2.2 Guideline recommendations

The Dutch physiotherapy guidelines recommend that the diagnostic process should focus on disability and participation problems resulting from back pain (Bekkering et al., 2003a). The treatment should consist of an active approach, in which the patients learn to take control over their back pain. It has been reported that 80-90% of patients with acute LBP in the Netherlands recover within six weeks. Patients who still suffer from their LBP at six weeks are less likely to undergo recovery, with a substantial proportion progressing to developing chronic LBP (Bekkering et al., 2003b). According to Pengel et al., (2002) clinical practice guidelines for management of acute and sub-acute LBP recommend advice, manipulation, exercise or analgesics. The starting point of these guidelines is that the referring physician has excluded a specific cause of LBP. Bekkering et al., (2003b) stated that if the physiotherapist suspects that there is a specific cause; he or she should contact the referring physician. In Rwanda, it is not clear to what extent physiotherapists follow these guidelines recommendations. Further research is needed.

➤ *Physical agents*

It is unclear whether massage or electrotherapy (including Transcutaneous electrical nerve stimulation (TENS) ultrasound or laser) is useful. The guidelines recommend that interventions of unknown effectiveness (massage, electrotherapy, traction) could be used reservedly and only in support of the active approaches (Bekkering et al., 2003b). According to the Australian Physiotherapy Association massage is not recommended as a stand-alone treatment for LBP. In light of some evidence for positive outcomes, massage is recommended as an adjunct to other more effective treatments (Rebbeck, 2002).

The Agency for Health Care Policy and Research (AHCPR) guidelines recommend that clinicians should teach self-application of heat or cold for pain control and discourage the use of modalities such as TENS, ultrasound, and biofeedback, which possess uncertain effectiveness for managing acute lumbar impairment (Li & Bombardier, 2001). TENS is not recommended as a treatment for acute and chronic LBP because there are alternative effective treatment options (Rebbeck, 2002). Traction does not seem useful in acute LBP (<6 weeks) or in chronic LBP (Bekkering et al., 2003a). Traction is not recommended as a first choice of treatment for LBP. It can, however, be used with evidence of improvement in clinical and functional outcomes. Lumbar corsets are not recommended as a stand-alone treatment for LBP. According to the Australian Physiotherapy Association, they should only be used with improvement in clinical and functional outcomes (Rebbeck, 2002). The guidelines recommend that interventions of unknown effectiveness be used reservedly and only in support of the active approach (Bekkering et al., 2003b).

➤ *Exercise therapy*

Exercise therapy is a common intervention utilized by physiotherapists in the management of LBP, yet no established guidelines exist that explain which forms of exercise provide the most benefits (Phillips et al., 2003). Exercise therapy has no added value in acute patients with LBP (< 6 weeks). Exercise therapy is useful in the treatment of chronic patients with LBP (> 12 weeks). It is not clear which exercises are best. To support the information and advice the physiotherapist may allow patients to experience that moving or being active is not harmful (Bekkering et al., 2003b). Management guidelines produced by the United Kingdom Clinical Standard Advisory Group suggest more intensive vigorous exercise programmes for the treatment of chronic LBP (Frost et al., 1998). The Agency for Health Care Policy and Research in the United States (1994) has supported this recommendation. Structured exercise is not recommended in patients with acute LBP. However, specific exercise may lead to a reduction in recurrence rates in acute LBP. According to Rebbeck (2002) supervised exercise programs are strongly recommended by the Australian Physiotherapy Association (APA) in the treatment of acute LBP. Mackenzie therapy is recommended in the management of acute LBP.

➤ *Patient education*

The Agency for Health Care Policy and Research guidelines recommend patient education as the way to limit LBP problems as experienced by the patients (Bigos et al., 1994). The physiotherapist's main contribution in the treatment of patients with LBP is coaching. The objective is to enable them to regain control with respect to function and activities. Patients should be told that LBP is usually not harmful and that structures have been damaged. Coaching may include reassurance and motivation of patients, determination of progress and rewarding by giving positive feedback (Bekkering et al., 2003b). The Australian

Physiotherapy Association does not recommend back schools for acute LBP. Back schools may be helpful in chronic LBP (Rebbeck, 2002).

➤ *Advice to stay active/ encouraging normal activity*

According to the Australian Physiotherapy Association, advice to remain active and encouraging normal activity is recommended for acute LBP. There is considerable evidence that advice to remain active and encouraging normal activity lead to faster recovery and less time off work as a result of acute LBP. Advice to remain active with prescribed light activity by a physiotherapist leads to less time off work than general practitioner care in patients with sub-acute LBP. If bed rest is unavoidable, it should be for a short period (a maximum of two days). It is useful to advise (sub-) acute patients with LBP to stay active. Advice to stay active results in a faster return to work, fewer chronic disabilities and fewer recurrence problems (Rebbeck, 2002). Furthermore, evidence-based guidelines in the United Kingdom, the USA and other countries also emphasize that patients with uncomplicated LBP should be discouraged from prescribed bed-rest as a form of management. They need to be encouraged to return to normal activities as soon as possible (Agency for Health Care Policy & Research, 1994; Royal College of General Practitioners, 1996).

➤ *Behavioral treatment*


Behavioral treatment aims to help patients to reach their individual daily life goals, to increase their activity level and to modify dysfunctional beliefs (Waddell, 1998). Behavioral treatment – either on its own or in addition to an exercise programme – is recommended for patients with chronic LBP. Clinicians should be aware that psychosocial risk factors play an important role in the development of CLBP and disability, so that early identification of these risk factors may become part of the management of patients with LBP. It is still unknown what type of patients benefit from what type of behavioral treatment (Rebbeck, 2002).

➤ *Spinal manipulative therapy*

Spinal manipulative therapy (SMT) refers to mobilization and manipulation techniques that use skilled passive movement to the joint or spinal motion segment either within or beyond its active range of motion (Quittan, 2002). SMT is recommended in the management of acute and sub-acute LBP. In light of stronger evidence for exercise, SMT is not recommended as a first-line treatment for chronic LBP. Note that in many of the RCTs manipulation was provided by a physiotherapist (Rebbeck, 2002). Recommendations also vary for chronic low back pain. Spinal manipulative therapy is recommended in the Danish and Dutch guidelines but it is either not recommended or it is absent in the other national guidelines (Assendelft, Sally, Emily, Marika and Paul, 2003). A summary of evidence-based guidelines is provided in Table 2.1 below.



Table 2.1 Summary of evidence-based guidelines

Evidence for	Evidence Against	Unknown
<ul style="list-style-type: none"> ➤ Advice to remain active and encouraging normal activity for acute LBP(Bekkering et al., 2003; Pengel,2002; Rebeck, 2002; ➤ Supervised exercise programs are recommended for acute LBP (Rebeck, 2002) ➤ More intensive vigorous exercise programmes for the treatment of chronic LBP (Frost et al., 1998., CSA G,1994); AHCPR ,1994, Bekkering et al. 2003b). ➤ SMT is recommended for acute and sub-acute LBP (Rebeck, 2002, Assendelft et al., 2003). 	<ul style="list-style-type: none"> ➤ Bed rest (Rebeck, 2002, (AHCPR, 1994; R CGP, 1996, Bekkering et al. 2003, Li & Bombardier, 2001) ➤ Back school for acute LBP (Rebeck, 2002) <div style="text-align: center;">  <p>UNIVERSITY of the WESTERN CAPE</p> </div>	<ul style="list-style-type: none"> ➤ Massage, TENS, cold, ultrasound, biofeedback, Back school, traction, corset for lumbar impairment (Rebeck, 2002, Li, Bombardier, 2001; Bekkering et al. 2003a). ➤ SMT for chronic LBP (Rebeck, 2002)

2.8.3 Conflicting scientific studies on LBP treatment

Because of the uncertainty that exists in the diagnosis of LBP, it is difficult to determine the relative efficacy of various treatments (Gaudry, 2003). Limited knowledge of the specific conditions underlying most back symptoms and their risk factors has contributed to the failure to develop effective, widely accepted treatment practices (Battie et al., 1994). The causes of LBP are still the subject of discussion, and over the years opinion has varied as to what treatment should be recommended (Bentsen, 1997). A number of different conservative treatment methods and methods for LBP have been studied, but controversy remains as to the preferred treatment (Aure et al., 2003). Relief of pain is often the primary

objective of treatment and this is usually considered before relating to functional activities (Frost & Moffet, 1992).

Manual therapy (also called manipulative therapy) is an area of specialization that has evolved within the field of physiotherapy, and is the most commonly used approach in the management of spinal symptoms in Britain, Ireland, and the USA (Konstantinou et al., 2002). Some forms of manual therapy, such as spinal manipulation techniques, have been found to be beneficial for some patients. However, problems with experimental designs in many studies have made it difficult to make definitive conclusions concerning the effectiveness of manual therapy (Fitzgerald et al., 1994). Manual therapy includes many concepts put forward by innovative practitioners such as Maitland, McKenzie, Kaltenborn and Mulligan. In the case of lumbar spine Mobilisation with Movements (MWMs), the technique involves the application of accessory glide along the plane of the zygapophyseal joint, in a weight-bearing position during active movements (Konstantinou et al., 2002). According to Quittan (2004), mobilization and manipulation techniques use skilled passive movement to a joint or a spinal motion segment either within or beyond its active range of motion. Fischbacher (2002) points out that of five systematic reviews which included a total of 36 randomized controlled trials, four reviews found conflicting evidence about the effectiveness of spinal manipulation compared with placebo or with other treatments used for acute back pain. One review found that manipulation improved recovery. Three systematic reviews concluded that the evidence relating to manipulation in chronic back pain was conflicting while a fourth review found manipulation to be slightly more effective than placebo.

Battie et al. (1994) stated that physiotherapists were likely to use a variety of treatment modalities. The Mckenzie method was said to be the most popular approach for managing patients with back pain. Education on proper body mechanics for activities of daily living, as well as stretching exercises, were among the most common treatment preferences, followed by aerobic and

strengthening exercises. Rainville, Hartigan, Jouve & Martinez (2004) emphasize that there is no evidence with regard to acute, sub-acute or chronic LBP that exercise increases the risk of additional back problems or work disability. Rainville et al. (2004) further state that for sciatic symptoms, exercise and most activities had no effect on sciatic pain. According to (Fischbacher, 2002), back exercises are unlikely to be effective for acute back pain, but may offer small benefits in people with chronic back pain. In one of eight randomized controlled trials comparing back exercises with other forms of treatment for acute pain, it was found that back exercises improved outcomes.

Several recent reviews claim a strong evidence of effectiveness for exercise therapy in chronic LBP and moderate evidence of ineffectiveness in acute LBP (Takemasa, Yamamoto & Toshikazu, 1995; Deyo & Weinstein, 2001; Rittweger et al., 2002; Aure et al., 2003). According to Rainville et al. (2004), exercise is advocated as a treatment for chronic low back pain, in part because of the observations that exercise reduces back pain intensity. Of interest, the mechanisms through which exercise reduces back pain are unexplained, but a possible effect of exercise is that it may alter pain that is anticipated before or induced by physical activities.

Some studies suggest the effectiveness of electrotherapy for pain reduction at least in the short term (Quittan, 2004). Electrotherapy equipment, found in most physiotherapy departments, is expensive and does not have the advantage of manual therapy or exercise (Fischbacher, 2002). According to Battie et al. (1994) patients without radiculopathy, ultrasound was the most common passive modality. However, ice was the treatment recommended most often for acute low back with sciatica. Five randomized controlled trials included in three systematic reviews were found to yield conflicting evidence about effects of transcutaneous nerve stimulation in acute and CLBP (Fischbacher, 2002). There is no evidence that supports the theory that techniques such as ultrasound and deep heat provide any long-lasting benefits, although they may give brief relief of pain

(Gaudry, 2003). There was no evidence that back massage was effective in acute back pain and conflicting evidence about its effectiveness in chronic back pain. Six randomized trials of massage versus other treatments in chronic back pain found conflicting results (Fischbacher, 2002).

There is also little evidence to show that traction has any benefit. Traction involves creating negative pressure in the disc, and requires the application of heavy weights, which may not be well received by a back pain sufferer (Gaudry, 2003). In one study that assessed the therapeutic benefit of traction on patients with LBP, traction was applied to 100 consecutive patients with LBP and a negative outcome was found for traction (Goldby, 1977). Education in back care cannot be classed as a treatment for LBP as such; it can be seen as a preventive measure with regard to the problem (Gaudry, 2003). A successful back school will give the person a sense of control over his/her back pain, by providing appropriate information (Moffett, 2002). Back braces are also used for the treatment of LBP, but there is no evidence to support their efficacy (Gaudry, 2003). For chronic back pain, seven randomized trials found conflicting evidence about effectiveness (Fischbacher, 2002).

The use of drugs, especially analgesics or compounds prescribed at regular intervals, effectively reduces LBP. Comparisons of effectiveness to non-steroidal anti-inflammatory drugs (NSAIDs) are inconsistent (Ari, 2000). A recent review that included 51 trials suggests that NSAIDs are effective for short-term symptomatic relief in patients with acute LBP (Quittan, 2002). Of the patients who receive treatment for chronic LBP, 79% are given medication (Phillips et al., 2003).


Combinations of modalities for the treatment of back problems are commonly used. Based on the physician's examination and diagnosis, it is important to select treatment options that specifically address the patient's deficits and needs. A thorough perusal of the pertinent literature reveals that no single therapeutic

option can be regarded as “standard treatment” at the present time (Quittan, 2002). The majority of patients with back pain are managed non-operatively, although the efficacy of standard physiotherapy treatment is questionable (Frost 1998). Many physiotherapists experience a common frustration. When they consult the research literature for answers to clinical questions, they are confronted by a range of studies with different conclusions (Herbert et al., 2005) since there is conflicting evidence from randomized control trials (RCTs) and systematic reviews on the effectiveness of modalities used for LBP patients.

Table 2.2 provides a summary of conflicting scientific studies on LBP treatment.



Table 2.2 Summary of conflicting scientific studies on LBP treatment.

Evidence for effectiveness	Against effectiveness	Conflicting /Effectiveness unclear
<ul style="list-style-type: none"> ➤ exercise therapy for chronic LBP (Rainville et al.2004,Takemasa et al. 1995; Rittweger et al., 2002, Deyo & Weinstein, 2001; Aure et al., 2003; Quittan, 2002; Descarreaux et al., 2002) 	<ul style="list-style-type: none"> ➤ advice to take bed rest for (sub)acute LBP patient (Goldby, 1977; Smith & McMurray, 2000; Bekkering, et al. 2003b) ➤ traction for (sub)acute LBP patient (Bekkering, et al., 2003b). ➤ Exercise for patients with acute LBP. (Takemasa et al., 1995). 	<ul style="list-style-type: none"> ➤ thermal modalities, transcutaneous electrical nerve stimulation, mechanical traction, ultrasound, and back braces (Goldby, 1977;Quittan, 2004; Fischbacher, 2002; Gaudry, 2003). ➤ spinal manipulation (Fitzgerald,1994; Fischbacher, 2002; Aure et al., 2003) ➤ Exercises for acute LBP (Fischbacher, 2002, Rittweger et al. 2002; Deyo & Weinstein 2001; Aure et al., 2003)

2.9 SUMMARY

Chapter 4 described the review of literature of the study. It explained causes and impact of LBP in general. It explained also evidence based guideline recommendations for LBP and challenges faced by physiotherapists in managing patients with LBP. Physiotherapists are confronted by a range of studies with different conclusions when they consult the research literature for answers to clinical questions. The next chapter will discuss the methodology of this study.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

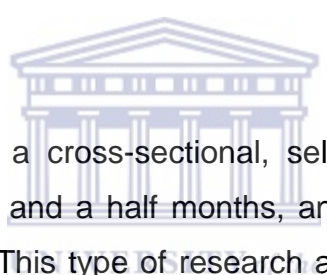
This chapter describes the research setting in which the study was carried out. It also examines the methods used in the study. The study design, study population and sampling method, instrumentation and data collection are described. Description of the pilot study, and how data analysis was carried out, is given. Finally, the ethical considerations relating to the study are provided.

3.2 RESEARCH SETTINGS

The study was carried out at five government hospitals of which three are referral hospitals and two are provincial hospitals, five private clinics, and one private hospital where physiotherapy services are offered. All private clinics are situated in Kigali, the capital of Rwanda. Rwanda is a landlocked country situated in East Central Africa just south of the equator. It is bordered by the Democratic Republic of Congo to the west, Uganda to the north, Tanzania to the east, and Burundi to the south. It covers an area of 26 338 square kilometers and a total population of about 8.2 million people spread out in 12 provinces. Altogether 7.5% of the population (approximately 608141 people) reside in Kigali (Rwanda Country Report, 2004). The hospitals include Central University Hospital of Kigali, which is a national referral and teaching hospital located in the capital city of Kigali. Most patients from remote rural areas throughout the country are referred to this hospital for treatment or rehabilitation. Butare University Hospital, which is also a referral and teaching hospital, is situated in the town of Butare, about 138 km south of Kigali. Kanombe Military Hospital is a referral hospital mainly for military personnel, although the hospital serves a large number of civilian persons. Ruhengeri Hospital, which is a provincial hospital, is situated in the north-west of

the country, about 97 km from Kigali, the capital of Rwanda. It is a provincial hospital which receives LBP patients and patients with different pathologies. Rwamagana Hospital, which is situated in the southern part of the country, also receives patients with LBP as well as patients with different pathologies. One private hospital, the King Faycal hospital, provides consultation to both in-patients and out-patients. The government of Rwanda has plans to upgrade the hospital into a tertiary referral centre for the whole country. The well-equipped physiotherapy department is also on site. Private polyclinics, namely the Biomedical Centre, Polyclinic du Plateau, Polyclinic La Medica, Polyclinic du Carrefour, and one private physiotherapy clinic, namely MAKINES, are all situated in Kigali city. Private physiotherapy clinics are only found in the capital of Rwanda and all of them were selected in the study.

3.3 STUDY DESIGN



A quantitative design using a cross-sectional, self-administered questionnaire survey over a period of one and a half months, and guided by the researcher, was utilized (Appendice D). This type of research attempts to answer questions about the current status of the subject or topic of the study and involves studying the preferences and practices of some groups of people (Gay & Airasan, 1999). In this type of survey the respondent can complete the questionnaire when it is convenient and can check personal records if necessary. Such a survey also offers anonymity and avoids interviewer bias. In addition, it is very effective, and response rates may be high for a target population that is well educated or has a strong interest in the topic or the survey organization (Neuman, 2003).

3.4 STUDY POPULATION AND SAMPLING

3.4.1 Sample size

Based on the total number of physiotherapists registered with the Rwandan Association for Physiotherapists, all 70 physiotherapists registered with the association were invited to participate in the study. Inclusion criteria were physiotherapists registered with the association working in government hospitals, private hospitals and clinics, who would voluntarily agree to participate in the study. Exclusion criteria were physiotherapists who no longer treated patients and were employed in other departments than the medical field or who were out of the country. Eight physiotherapists met the exclusion criteria. .

3.4.2 Sampling technique

A purposive sampling method was applied to recruit physiotherapists based on the inclusion criteria. According to De Vos (2002), the purposive sampling method is based on the judgment of the researcher, in that a sample is made of elements that embrace the most characteristic, representative or typical attributes of the population to be studied.

3.5 METHODS OF DATA COLLECTION

3.5.1 Instruments

Data collection comprised of a self-administered questionnaire with a number of closed-ended questions. The questionnaire used was developed by the researcher using available literature on physiotherapy management of LBP (Battie et al. 1994; Li & Bombardier, 2001). Three written case studies were used as a proxy measure of physiotherapists in assessment and treatment of patients

with non-specific LBP. The questionnaire comprised four sections (see Appendix D).

Section A: This section covered information that was collected and that pertained to the socio-demographic characteristics such as age, gender, level of education, years of practising physiotherapy and the approximate number of LBP patients seen by a physiotherapist per day. The respondents were required to fill in their age for question 2, the number of year they have been practicing physiotherapy for the question 4 and the approximate number of patients conditions of LBP treated per day. Question 3 required the respondents to indicate their level of education (Diploma A2, Advanced diploma or A1, first degree or A0). The training of advanced diploma (A1) takes three years after secondary school has been completed. There is one paramedical tertiary institution (Kigali Health Institute), which offer advanced diploma (A1) in physiotherapy in Rwanda. The curriculum design for physiotherapy undergraduate students includes research modules and clinical practice. Other qualifications in the study were first degree or A0 and A2 diploma. First degree A0 takes four years after secondary school has been completed while A2 takes 3 years after senior three has been completed. A0 and A2 diploma were obtained outside the country because education of Rwanda does not offer these programs.

Section B: Physiotherapists surveyed in the study were asked to choose assessment and treatment modalities that are commonly used by physiotherapists for patients with acute LBP and chronic LBP. The questionnaire required respondents to tick an appropriate box from a list of assessment and treatment modalities that were thought to be used by physiotherapists or provide Yes/No response. After each section, open-ended questions were included to obtain additional information from the physiotherapists.

Section C: In this section physiotherapists were asked to provide their opinions on the effectiveness of 10 treatment modalities on the management of LBP. The questionnaire required respondents to tick an appropriate box, which indicated 4 points Likert rating scale responses, (4 = effective, 3 = not very effective, 2 = not effective, 1 = don't know). In addition open-ended questions were asked to help physiotherapists to determine the assessment and treatment modalities that were not included in the list.

Section D: In this section physiotherapists were asked questions on factors informing their treatment choices. In the first 5 questions (1-5) in this section, respondents were requested to tick the appropriate box. The last question (6) was an open-ended question and required the respondents to give the list of courses they attended during the last five years.

3.5.2 Reliability and validity of the instruments


According to Cole et al. (1994), reliability refers to the degree of repeatability when the measurement is repeated on more than one occasion. It is the ability of the instrument to produce consistent results (Sarantakos, 1998). Validity determines the extent to which an instrument measures what is supposed to be measuring (Sirard & Russell, 2000). The instrument used in this study, was adapted and modified from one, which was developed by Li & Bombardier (2001). The questionnaire covered areas related to physical examination, treatment and physiotherapists opinions on the effectiveness of treatment modalities of LBP. The modification was based on another questionnaire, which was developed and validated in the literature, to measure the evaluation technique and treatment preferences of physiotherapists treating patients with LBP. A modification of the adapted questionnaire was done with consideration to the current study. The pilot study tested the content validity of the adapted questionnaire among physiotherapists working in hospitals and private clinics in Rwanda, prior to the main study. Questions, which were not understood by the

physiotherapists, were rectified and those evaluations and treatment options were revised to include a wider variety of treatment modalities thoughts to be used by Rwandan physiotherapists.

3.5.3 Translation

Since some of the participants did not understand English, a professional translator translated the questionnaire from English to French in order to give the respondents the opportunity to answer in the language most convenient to them. Translation of the questionnaire was done in both languages (from English to French and back) order to maintain the content (Appendix E). By doing this, validity of the instrument was confirmed.

3.6 PROCEDURE



Informed consent was obtained from the president of the Rwandan Association for Physiotherapists and the Ministry of Health. Physiotherapists registered with the Association were requested to participate in the study. For a period of two weeks, the researcher distributed self-administered questionnaires to willing participants. The researcher followed this up and collected the questionnaires at the participants' places of work. Participants were requested to seal the completed questionnaires carefully and to return them within one week at least. After two weeks the researcher collected questionnaires from participants who had not been able to return them within one week. It was necessary to let respondents fill in the questionnaire at their own convenient time. Anonymity was maintained as participants were not required to identify themselves.

3.7 PILOT STUDY

According to De Vos (2002), a pilot study offers the researcher the opportunity of testing the effectiveness of the questionnaires. A pilot study using four

physiotherapists was carried out for content validity. Explanations were given for clarification before the respondents were required to complete the questionnaire. The changes which were noted helped the researcher to design more appropriate instruments that were more valid and well understood by the participants. Thereafter minor modifications were made to a small number of questions to improve the clarity of their wording.

3.8 DATA ANALYSIS

Data were numerically coded and captured in Excel, using an SPSS 12.0 version software programme. Descriptive statistics of data, namely frequencies expressed as percentages were used to obtain information on the assessment and treatment modalities preferred by physiotherapists to treat non-specific low back patients' case studies. A descriptive analysis of data was presented as tables. Inferential statistics analysis was used to determine the associations between gender and belief of physiotherapists on the effectiveness of treatment modalities. This was done in the form of cross-tabulations. Inferential statistics were reported as chi-square and p values. Alpha level was set at 0.05.

3.9 ETHICAL CONSIDERATIONS

Ethical clearance was obtained from the University of the Western Cape Higher Degrees Committee (Appendice A). A request to carry out a study in hospitals and private clinics was obtained from the Ministry of Health (Appendice B) and the president of the Rwandan Association for Physiotherapists (Appendice C). Informed consent was requested from the participants. It was explained in the questionnaire (Appendice D) that participation in the study was anonymous and voluntary, and that the information obtained would be highly confidential.

3.10 SUMMARY

Chapter 3 described the methodology used in the study. It explained the research setting, the study design and the whole process used to collect and to analyse the data. The next chapter will discuss the results of this study.



CHAPTER 4

RESULTS

4.1 INTRODUCTION

In this chapter, results of the study are described. The first section describes the demographic data of physiotherapists in the study. Section B, reports on the physical assessment and treatments modalities preferred by physiotherapists for case study patients with acute, acute with sciatica and chronic non specific LBP. Section C, reports on physiotherapist's belief on the effectiveness of treatment modalities for patients with LBP. Finally, Section D describes factors informing treatment choices of physiotherapists.

4.2 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Out of a total of 58 respondents who received the questionnaires, 51 physiotherapists who returned questionnaires were eligible for data analysis. Thus the response rate was 72.8%. Twelve respondents of the total number of registered physiotherapists were not included in the study as they were outside the country for further studies (n=8) or not involved in the treatment of patients (n=4). Five questionnaires were not returned and two returned were incomplete and were not eligible for data analysis. The questionnaires covered demographic data of physiotherapists including gender, age, level of education, years of practice of physiotherapy, the place of work and types of LBP treated per day.

4.2.1 Gender of participants

Table 1 shows that the majority of respondents 28 (54.9%) were males while 23 (45.1%) were females.

Gender	Number of participants (N)	Percentage (%)
Males	28	54.9
Females	23	45.1
Total	51	100.0

Table 4.2.1 Gender of participants (n=51)

4.2.2 Age of participants

Table 2 represents the age group of physiotherapists. The highest number was in age group 30 to 34 years 21 (41.2%) followed by the age group 25 to 29 years 17 (33.3%). At these ages the majority of physiotherapists have finished their studies, gained some clinical experience and are working. Other respondents were aged between 35 to 39 years (13.7%). The lowest percentage of respondents was in the age group 20 to 24 years (2%) and 45 to 49 years (2%).

Age	No. of participants	%
20-24	1	2.0
25-29	17	33.3
30-34	21	41.2
35-39	7	13.7
40-44	2	4.0
45-49	1	2.0
50-54	2	4.0
Total	51	100%

Table 4.2.2 Ages of participants (n=51)

4.2.3 Level of education of participants

In terms of the level of education, the results showed that 44 (86.3%) of the respondents had obtained their advanced diploma (A1) in physiotherapy followed by 6 (11.8%) respondents who had an A2 diploma. In Rwanda, the training takes three years after secondary school is completed to obtain the advanced diploma in physiotherapy. Diploma A2 is obtained after secondary school. Only 1 (2%) of

respondents had their first degree in physiotherapy. At present, the education system in Rwanda does not offer the A2 or first degree in physiotherapy. Therefore those physiotherapists would have obtained these qualifications outside the country.

Qualifications	N	%
Diploma (A2)	6	11.8
Advanced diploma (A1)	44	86.3
First Degree (A0)	1	2.0
Total	51	100.0

Table 4.2.3 Level of Education (n=51)

4.2.4 Years of practicing physiotherapy

The majority of respondents 24 (47%) practiced physiotherapy for between 3 to 5 years while 20 (39.2%) practiced physiotherapy for less than 2 years.

Of the 51 participants, 6 (11.7%) practiced physiotherapy more than 9 years while only 1 (2%) practiced physiotherapy between 6 to 8 years.

Years of practice	N	%
< 2 years	20	39.2
3-5 years	24	47.0
6-8 years	1	2.0
>than 9 years	6	11.7
Total	51	100%

Table 4.2.4 Years of practicing physiotherapy (n=51)

4.2.5 Working places (practice settings)

Table 5 shows that the majority of respondents were working in governmental hospitals 38 (74.5%) while 13 (25.5%) were working in private settings.

Working places	N	%
Governmental hospitals	38	74.5
Private settings	13	25.5
Total	51	100.0

Table 4.2.5 Working places (n=51)

4.2.6 Types of LBP patients treated per day by physiotherapists

There was a difference between types of LBP seen by physiotherapists per day in all settings. The approximate total number of LBP patients was obtained from the total number of patients seen per one physiotherapist per day. Out of the total number of LBP patients (n=269) seen by all physiotherapists in governmental hospitals, CLBP was the most common type of LBP treated by physiotherapists followed by acute LBP 57(21.1%). The least common type of LBP treated by physiotherapists was acute LBP with sciatica. Seven patients with LBP was the average number of patients treated by a physiotherapist per day. Of the total number of patients (n=90) seen by physiotherapists in private's settings, CLBP was the most common type of LBP treated followed by acute and sub-acute LBP (23.3%).

In all settings, chronic LBP was the most common type of LBP treated by physiotherapists while seven patients was the average number of LBP patients treated by a physiotherapist treated per day or 35 patients per week. Therefore while more patients are seen in government hospitals, the patient physiotherapist ratio appears proportionate in government and private practices (1 physiotherapist : 7 patients).

Types of LBP	Governmental hospitals % (N)	Private settings % (N)
Acute LBP	21.1 (57)	23.3 (21)
Acute LBP with sciatica	13.3 (36)	17.7 (16)
Subacute LBP	20.4 (55)	23.3 (21)
Chronic LBP	44.9 (121)	35.5 (32)
Total	100 (269)	100 (90)

Table 4.2.6 Types of LBP patients treated per day by physiotherapists (n=51)

4.3 ASSESSMENT, TREATMENT MODALITIES AND PHYSIOTHERAPIST'S BELIEF/ OPINIONS ON THE EFFECTIVENESS OF TREATMENT

4.3.1 Case study 1: Acute low back pain (0-6 weeks)

A 28 year old woman has suffered from acute LBP after lifting a 10 kg box at work a week ago. She has been unable to do her job managing a cafeteria since then. While anxious to return to work, she feels immobilized by the pain. In terms of activities, she sits about 10 minutes and walks one block before she has to stop due to pain. She is able to sleep through the night; however, her back is stiff in the morning and the stiffness lasts about 10 minutes. There is no history of trauma. The pain is limited to the low back area, without radiation. She has not been seen by any medical professional and now refers herself to your outpatient clinic.

4.3.1.1 Physical assessment modalities used by physiotherapists for patient 1

Table 7 shows physical assessment modalities used by physiotherapists to assess patient 1. This is an example of acute LBP. Back inspection/palpation was used by all respondents followed by 41 (80.4%) participants who preferred to assess abdominal muscle strength. Lumbar spine range of motion was preferred by 40 (78.4 %) of respondents while joint accessory movements were

preferred by 27 (52.9%). The slump test was preferred only by 11.8 % of respondents.

Physical assessment	Case study 1 : Acute LBP		
	yes % (N)	no % (N)	missing % (N)
Back inspection/palpation	100 (51)	-	
Abdominal muscle strength	80.4 (41)	19.6 (10)	
Lumber spine range of motion	78.4 (40)	21.6 (11)	
Back extensor muscle strength	74.5 (38)	25.5 (13)	
Straight leg raising test	58.8 (30)	41.2 (21)	
Joint accessory movements	52.9 (27)	47.1 (24)	
Sensation	45.1 (23)	54.9 (28)	
Reflex test	29.4 (15)	70.6 (36)	
Lower extremity muscle strength	27.5 (14)	72.5 (37)	
Prone knee bend	17.6 (9)	5.9 (3)	76.5 (39)
Slump test	11.8 (6)	3.9 (2)	84.3 (43)

Table 4.3.1.1 Physical assessment modalities preferred by physiotherapists (n=51)

4.3.1.2 Treatment modalities and advice used by physiotherapists for patient 1

Table 8 illustrates treatment modalities preferred by respondents for patient with acute LBP. The majority of respondents 90.2% (46) preferred to use individual patient education while a lumbar corset was preferred by 5.9% (3) of respondents. Of the 51 respondents, 82.4% (42) answered that they would use exercise at the clinic for the patient while 72.5 % (37) of respondents preferred to

use exercises at home for acute LBP patients. The results show that 41.2 % (21) of participants advised patients with acute LBP bed rest of 3 to 4 days while 21.6% (11) advised bed rest of 1 to 2 days.

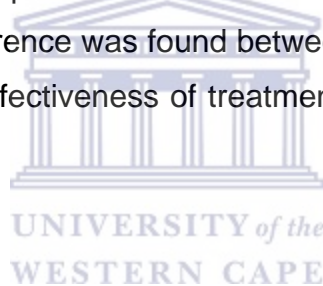
Treatment modalities and advice	Case study 1: Acute LBP	
	yes % (N)	no % (N)
Individual patient education on back care	90.2 (46)	9.8 (5)
Exercises at clinic	82.4 (42)	17.6 (9)
Exercises at home	72.5 (37)	27.5 (14)
Infrared irradiations	64.7 (33)	35.3 (18)
Massage	58.8 (30)	42.2 (21)
Ultrasound	57.9 (27)	42.1 (24)
Ice	49.0 (25)	51.0 (26)
Back school	49.0 (25)	51.0 (26)
Transcutaneous electrical nerve stimulation	33.3 (17)	69.7(40)
Short wave diathermy	31.4 (16)	68.6 (35)
Mechanical spinal traction	21.6 (11)	78.4 (40)
Lumber corset	5.9 (3)	94.1 (48)
Bed rest: 1-2 days	21.6 (11)	78.4 (40)
3-4 days	41.2 (21)	58.8 (30)
> 4days	37.3 (19)	62.7 (32)
Other treatments:		
Non steroid anti-inflammatory drugs	3.9(2)	

Table 4.3.1.2 Treatment modalities and advices preferred by Physiotherapists (n=51)

4.3.1.3 Physiotherapist's belief/ opinions on the effectiveness of treatment modalities for patient 1

When physiotherapists were asked to indicate their opinions on the effectiveness of 10 treatment modalities for acute LBP, the majority of respondents believe that back education followed by bed rest 92.2% (47) are effective with acute LBP patients. Of 51 participants, 21.6 % (11) of respondents believe that heat is not very effective while 52.9 % (27) of respondents believe it to be effective. Sixty two percent of respondents believe that ice is effective with acute LBP patients while 23.5% don't know about its effectiveness. Ultrasound intervention has been reported to be effective by 43.1 % (22) of respondents while 29.4 % (15) reported that they don't know about its effectiveness. The majority of respondent's 66.7% (34) believe that both TENS and manipulation techniques are effective interventions for patients with acute LBP.

However, no significant difference was found between gender and belief/opinions of physiotherapists on the effectiveness of treatment modalities for acute LBP in this study. ($p > 0.05$).



Variables	Effective	Not very effective	Not effective	Don't know
	% (N)	% (N)	% (N)	% (N)
Back education	96.1(49)	2(1)	2(1)	-
Bed rest	92.2(47)	2(1)	3.9(2)	2(1)
Exercises at clinic	70.6(36)	11.8(6)	13.7(7)	3.9(2)
Manipulation	66.7(34)	13.7(7)	7.8(4)	11.8(6)
TENS	66.7(34)	13.7(7)	11.8(6)	7.8(4)
Heat	52.9(27)	21.6(11)	17.6(9)	7.8(4)
Mobilization	51.0(26)	17.6(9)	23.5(12)	7.8(4)
Ice	62.7(32)	11.8(6)	2(1)	23.5(12)
Mechanical traction	45.1(23)	19.6(10)	27.5(14.5)	7.8(8)
Ultrasound	43.1(22)	5.9(3)	21.6(11)	29.4(15)

Table 4.3.1.3 Physiotherapist's belief/ opinions on the effectiveness of treatment modalities.



4.3.2 Case study 2: acute low back pain with sciatica (0-6 weeks)

A 55 year old man sees you the day after helping his friends move. Although he felt well initially, he was unable to sleep last night because of increasing pain in the lower back and referred pain on the left side. On examination, the ankle reflex is depressed and straight leg rising is positive. (There is no serious spinal pathology, hip disorders, or suspected referral pain from the viscera).

4.3.2.1 Physical assessment modalities preferred by physiotherapists for patient 2

Table 10 shows that all respondents preferred to use straight leg raise test when assessing a patient with acute LBP and sciatica. The sensation test which forms part of a neurological examination was used by 82.4 % (42) of respondents while

31.4 % (16) of respondents reported to use the slump test. Passive accessory movements were preferred by 86.3% (44) of respondents while 27.5% (14) preferred to use prone knee bend assessment.

Physical assessment	Acute LBP with Sciatica		
	yes % (N)	no %(N)	missing %(N)
Straight leg raising test	100(51)	-	
Back inspection/palpation	96.1(49)	3.9(2)	
Lumber spine range of motion	86.2(44)	13.7(7)	
Joint accessory movements	86.2(44)	13.7(7)	
Sensation	82.4(42)	17.6(9)	
Abdominal muscle strength	76.4(39)	23.5(12)	
Back extensor muscle strength	76.4(39)	23.5(12)	
Reflex test	72.5(37)	27.4(14)	
Lower extremity muscle strength	70.6(36)	29.4(15)	
Slump test	31.4(16)	19.6(10)	49.0(25)
Prone knee bend	27.5(14)	52.9 (27)	19.6(10)

Table 4.3.2.1 Physical Assessment modalities preferred by Physiotherapists (n=51)

4.3.2.2 Treatment modalities and advice used by physiotherapists for patient 2

The majority of respondents used exercises at the clinic 92.2% (47). Ninety percent preferred to use infrared radiation followed by 80.3% (41) who preferred to use massage to treat acute LBP patients with sciatica. Ultrasound was the

least used treatment modality 21.6% (11) among respondents for patients with LBP and sciatica.

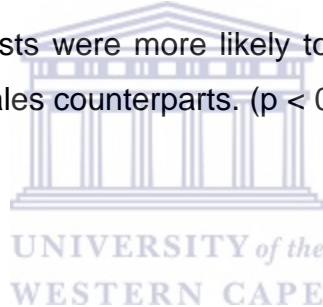
Treatment modalities and advices	Acute LBP with Sciatica	
	Yes %	no %
Exercises at clinic	92.2(47)	7.8(4)
Individual patient education on back care	90.1(46)	9.8(5)
Infrared irradiations	90.1(46)	9.8(9.8)
Massage	80.3(41)	19.6(10)
Exercises at home	76.4(39)	23.5(12)
Mechanical spinal traction	58.8(30)	41.1(21)
Back school	52.9(27)	47.0(24)
Transcutaneous electrical nerve stimulation	50.9(26)	49.0(25)
Lumber corset	39.2(20)	60.7(31)
Ultrasound	21.6(11)	78.4(40)
Short wave diathermy	35.3(18)	64.7(33)
Ice	33.3(17)	69.7(34)
Bed rest: 1-2 days	23.5(12)	76.4(39)
3-4 days	35.2(18)	64.7(33)
> 4days	41.1(21)	58.8(30)
Other treatments:		
Swimming: 3.9 (2%)		

Table 4.3.2.2 Treatment modalities and advice preferred by Physiotherapists for patient 2. (n=51).

4.3.2.3 Physiotherapist's belief/ opinions on the effectiveness of treatment modalities for patient 2

Table 12 illustrates physiotherapist's opinions on the effectiveness of treatment modalities for patients with acute LBP and sciatica. The majority of respondents 96.1 % (36) believe that back education is effective followed by TENS and exercises at the clinic 82.3% (42). Of the 51 of participants 27.5 % (14) believe that ultrasound is not effective while 19.6% (10) don't know the effectiveness of ultrasound. Fifty six percent of respondents believe that mobilization is effective while 13.7 % (7) don't know about its effectiveness. Exercises at the clinic were reported to be effective with 82.3% (42) while 7.8% (4) of the respondents reported that it was not effective.

Significant relationship was found between gender and believe of physiotherapists on the effectiveness of treatment modalities for patient 2 in this study. Female physiotherapists were more likely to report that mobilization was effective compare to their males counterparts. ($p < 0.05$).



Variables	Effective	Not very effective	Not effective	Don't know
Back education	96.1(39)	-	-	3.9(2)
TENS	82.3(42)	3.9(2)	9.8(5)	3.9(2)
Exercises at clinic	82.3(42)	11.8(6)	7.8(4)	5.9(3)
Bed rest	78.4(40)	7.8(4)	-	5.9(3)
Manipulation	72.6(37)	17.6(9)	3.9(2)	5.9(3)
Heat	64.7(33)	5.9(3)	11.8(6)	17.6(9)
Mechanical traction	60.8(31)	7.8(4)	19.6(10)	11.8(6)
Ice	56.9(29)	3.9(2)	21.6(11)	17.6(9)
Mobilisation	56.9(29)	19.6(10)	9.8(5)	13.7(7)
Ultrasound	41.2(21)	11.8(6)	27.5(14)	19.6(10)

Table 4.3.3.3 Physiotherapist's belief/ opinions on the effectiveness of treatment modalities. (n=51)

4.3.3 Case study 3: Chronic low back pain (period > 3 months)

A 40 year old woman comes to see you for the first time, complaining of LBP and right buttock pain. The pain began 6 months ago when she was transferring a patient at her job as a nurse's aid. She has been unable to return to her work since the incident. Her neurological examination is normal, and she was given a diagnosis of lumbar strain by her physician.

4.3.3.1 Physical assessment modalities preferred by physiotherapists to treat patient 3

When physiotherapists were asked which assessment to use for the case study patient with chronic low back pain, the majority of physiotherapists used back inspection or palpation, lumbar range of motion and back extensor muscle strength tests. Abdominal muscle strength assessment was chosen by 84.3% (43) of the respondents while 70.6 % (36) choose to assess lower extremity muscle strength of the patient.

Physical assessment	Chronic LBP		
	yes % (N)	no %(N)	missing %(N)
Back inspection/palpation	98.0(50)	2.0(1)	
Lumbar spine range of motion	96.1(49)	3.9(2)	
Back extensor muscle strength	92.2(47)	7.8(4)	
Abdominal muscle strength	84.3(43)	15.7(8)	
Straight leg raising test	82.4(42)	17.6(9)	
Lower extremity muscle strength	70.6(36)	29.4(15)	
Joint accessory movements	62.7(32)	37.3(19)	
Sensation	51.0(26)	49.0(25)	
Prone knee bend	41.2(21)	49.0(25)	9.8(5)
Reflex test	41.2(21)	58.8(30)	
Slump test	19.6(10)	35.3(18)	45.1(23)

Table 4.3.3.1 Physical assessment modalities preferred by physiotherapists

4.3.3.2 Treatment modalities and advices preferred by physiotherapists for patient 3

Table 14 presents treatment modalities used by physiotherapists for chronic LBP patient. The majority of respondents preferred to use exercises at the clinic, at home and individual patient education on back care. However 88.2% (45) of respondents used massage for chronic LBP while 68.6% (35) chosen to use mechanical spinal traction. Only 21.6 % (11) used ice for the patient.

Treatment modalities and advices	Case study 3	Chronic LBP
	yes %	no %
Exercises at clinic	98(50)	2.0(1)
Exercises at home	96.1(49)	3.9(2)
Individual patient education on back care	92.2 (47)	7.8(4)
Massage	88.2(45)	11.8(6)
Mechanical spinal traction	68.6(35)	31.4(16)
Infrared irradiations	64.7(33)	35.3(18)
Lumber corset	64.7(33)	35.3(18)
Ultrasound	62.7(32)	37.3(19)
Back school	62.7(32)	37.3(19)
Short wave diathermy	45.1(23)	54.9(28)
Transcutaneous electrical nerve stimulation	45.1(23)	54.9(19)
Ice	21.6(11)	78.4(40)
Bed rest: 1-2 days	31.3(16)	68.6(35)
3-4 days	50.9(26)	29.4(15)
> 4days	17.6(9)	82.3(42)

Table 4.3.3.2 Treatment modalities and advices preferred by Physiotherapists to treat chronic LBP.

4.3.3.3 Physiotherapist's belief/ opinions on the effectiveness of treatment modalities for patient 3

When physiotherapists were asked to give their opinions on the effectiveness of the 10 treatment modalities for patients with chronic LBP, the majority of respondents 94.1% (48) believed that bed rest and back education to be effective followed by manipulation 88.3% (45). Of 51 respondents, 13.7 % (7) believed that TENS is not very effective while 74.5 % (38) of respondents believe that TENS is effective. However, fifty one percent 51% (26) of the respondents reported ice to be ineffective whilst 33.3% (17) reported not to know about its effectiveness. Only 5.9% (3) of respondents reported to ice to be effective with chronic LBP patients. The majority of respondents 82.4% (42) believe that heat is effective with chronic LBP while 9.8% believe that it is not very effective.

Significant relationship was found between gender and belief/opinions of physiotherapists regarding the effectiveness of treatment modalities for chronic LBP patient in this study. Females physiotherapists were more likely to report that ice was effective modality compare to their males counterparts. ($p < 0.05$). On the other hand, males physiotherapists were more likely to report that ultrasound was more effective compare to their females counterparts. ($p < 0.05$).

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Variables	Effective	Not very effective	Not effective	Don't know
	%	%	%	%
Back education	94.1(48)	-	-	5.9(3)
Mobilisation	88.3(45)	9.8(5)	-	2(1)
Manipulation	88.3(45)	9.8(5)	-	2(1)
Exercises at clinic	86.3(44)	11.8(6)	-	2(1)
Heat	82.4(42)	9.8(5)	15.7(8)	7.8(4)
TENS	74.5(38)	13.7(7)	3.9(2)	7.8(4)
Mechanical traction	70.6(36)	5.9(3)	13.7(7)	9.8(5)
Ultrasound	47.0(24)	21.6(11)	-	15.7(8)
Bed rest	17.6(9)	82.3(42)	-	2(1)
Ice	5.9(3)	9.8(5)	51(26)	33.3(17)

Table 4.3.3.3 Physiotherapist's belief/ opinions on the effectiveness of treatment modalities (Chronic LBP)

4.4 FACTORS INFORMING TREATMENT CHOICES OF PHYSIOTHERAPISTS

Table 16 presents the factors informing treatments choices of physiotherapists. Most respondents 82.4% (42) reported to obtain information from what they were taught when trained. Of 51 respondents 33.3 % (17) reported to obtain information from journals and workshops while 80.4% (41) reported journals not available and continuing professional development course 88.2 % (45). Regarding course attendance, the majority 90.2% never attended courses while only 9.8% of respondents reported to attended courses once per year.

Variables	Yes %	No %
What they were taught when trained	82.4(42)	17.6(9)
Journals	33.3(17)	66.7(34)
Workshops	33.3(17)	66.7(34)
Peers	29.4(15)	70.6(36)
Courses	15.6(8)	84.3(43)
Others: internet 5.9%(3)		
Journals available	19.6(10)	80.4(41)
Evidence based course available	15.7(8)	84.3(43)
Attendance of courses	9.8(5)	90.2(46)

Table 4.4 Factors informing treatment choices of physiotherapists

4.5 SUMMARY

This chapter highlighted the findings of the study. The results showed that chronic low back patients were the most common type of low back pain treated by physiotherapists. Regarding modalities chosen by physiotherapists to assess three patients cases, back inspection or palpation, lumbar spinal range of motion, straight leg raising and muscle strength were the most techniques used by physiotherapists. However sensation examination was more frequently used to acute low back patient with sciatica. When physiotherapist were asked which treatment modalities to use for three case study patients, individual patient education and exercises were the common modalities used in all cases. However, massage was the common modality used for chronic and acute with

sciatica patient. A high proportion of physiotherapists recommended acute LBP with sciatica patient more than 4 days of bed rest while acute LBP without sciatica was recommended between 3 to 4 days of bed rest. Infrared radiation was the common modality used by physiotherapist for acute with sciatica LBP patient.

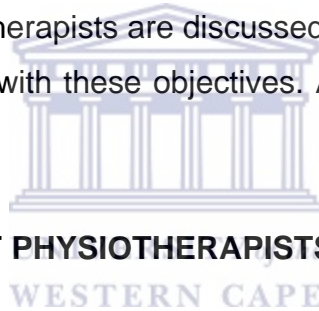


CHAPTER FIVE

DISCUSSION

5.1 INTRODUCTION

This chapter focuses on the main findings of the current research. The overall aim of the study was to determine which assessment and treatment modalities are used by physiotherapists to treat non-specific low back pain in Rwanda. A self-administered questionnaire was administered to determine the common type of low back pain treated by physiotherapists, assessment and treatment modalities that are used to treat LBP patients. Three case studies were used. In addition, physiotherapists' beliefs/opinions on the effectiveness of treatment modalities for patients with LBP were established. Finally, factors informing treatment choices of physiotherapists are discussed. The discussion presents the findings of this study in line with these objectives. A number of limitations of the study are also presented.



5.2 CHARACTERISTICS OF PHYSIOTHERAPISTS

The majority of physiotherapists in the study were males (54.9%). Similarly Higgs, Refschauge & Elisabeth (2001) in their study reported that in some countries such as Japan and Indonesia physiotherapy has a larger proportion of men (65% and 56% respectively). In contrast, the author stated that physiotherapy is still predominantly a female profession in most other countries, although the proportions of males and females are slowly equalizing (Higgs et al., 2001). In one study by Hamm et al. (2001) it was found that the gender of the physiotherapist is significant for choice of treatment. The authors further state that there seems to be a greater use of passive treatment forms such as ultrasound, short-wave diathermy and heat and cold treatment by female Danish physiotherapists than by their male counterparts who more frequently used joint manipulation. This study found that there was no difference between gender and

treatment choices of physiotherapists for patient with acute and chronic LBP. However, females physiotherapists were more likely to use mobilization for acute LBP with sciatica compare to their males counterparts. The high proportion of males physiotherapists in this study may be explained by the male-dominated education system In Rwanda. It is possible that males get a greater chance to study than females. For example, in Kigali, 8% of the women have no education, 54% have a primary level of education and 38% of women have a secondary or tertiary level of education (National Demographic & Health Survey, 2000).

Of the 51 (100%) physiotherapists who participated in the study, the majority were in the age group of 30 to 34 years (41.2%). The participants' ages ranged between 24 and 54 years. With regard to education, the results showed that most of the respondents 44 (86.3%) had as level of qualification an advanced diploma (A1) in physiotherapy. This is not surprising, because the number of qualified physiotherapists has increased since the Kigali Health Institute (KHI) was established. The KHI is an institute of higher education established in June 1996 by the Ministry of Health in collaboration with the Ministry of Education. The Institute was created to solve the problem of inadequate health personnel both, with regard to quality and quantity. Since 1996, the KHI has been training paramedical personnel such as physiotherapists, dentists and nurses. The training takes three years after secondary school has been completed. Before the KHI was established, there were only a few physiotherapists who had done their training in neighbouring countries such as Uganda and the Democratic Republic of Congo.

Only 2% of respondents had completed a bachelor's degree in physiotherapy. In general, the number of physiotherapists qualified at this level is still low and this may influence the services provided to patients. As in other professions, postgraduate education for physiotherapists is widespread in developed countries and less available in developing countries (Higgs et al., 2001). The majority of respondents 47% have been practising physiotherapy for between

three and five years and this may influence the choice of treatment, because more experience is gained according to the time of practice. However, physiotherapy is a relatively new profession in Rwanda despite some participants being over 35 years of age. Only 11.7% had been practising for more than nine years. Therefore, it is essential that physiotherapists in Rwanda continue to study and acquire more experience. The results from the study show that the majority of respondents 74.5% were working in government hospitals. This is not surprising, since most physiotherapists are allocated to government hospitals after completing their studies. Opening up their own clinic or private practice is not easy because physiotherapy equipment is expensive.

5.3 COMMON TYPES OF LOW BACK PAIN TREATED BY PHYSIOTHERAPISTS

While LBP rarely indicates a serious disorder, it is a major cause of pain, disability and social cost. Pain has traditionally been classified into acute and chronic. The most commonly used differentiating point between these two is temporal, with acute pain defined as being present for less than six weeks and chronic as being present for longer than six months (King , 2000).

According to the findings of this study, CLBP was the most common type of LBP reported to be treated by physiotherapists in government and private settings. On the contrary, in the Netherlands almost half the patients in the physiotherapy practice have acute complaints (Swinkels, Van den Ende, Van den Bosh, Dekker & Wimmers, 2005). Frank (1993) has found that acute LBP (acute pain < 6 weeks) is more common, and that individuals with CLBP account for nearly three times more workdays lost, restricted activity, and disability. The prognosis for chronic LBP is considerably less favourable (Aure et al., 2003). Studies have demonstrated that 80% of acute episodes of LBP resolve within six weeks, but are often recurrent, and most patients with a history of acute episodes eventually have more chronic symptoms (Biewen, 1999). In Rwanda certain factors such as

psychological and social may contribute to the development of CLBP, and further research is required to determine their influence on symptoms. People in lower socio-economic classes such as Rwanda experienced the level of disability due to war in 1994, the chronicity of LBP are complicated by socio-economic and psychological stress (Zekele, 2000). Rittweger et al. (2002) have indicated that somatic, psychological and social factors play an important role in chronification. Biewen (1999) has also indicated that persons who seek medical attention for LBP are thought to be at risk for chronic pain and disability. On the other hand, medications are more used during the acute phase of LBP for short relieve of pain and clients may attain physiotherapy services when the pain has become chronic.

Based on personal experience, it appears that physiotherapists in this study may contribute to the chronicity of LBP symptoms in patients because of the treatment they administer. It appears that passive modalities such as massage, electrotherapy or thermal modalities, criticized by recent studies for unclear effectiveness, were commonly used by physiotherapists (Li & Bombardier, 2001). Storheim & BØ (2000) have indicated that CLBP results in a variety of degenerative changes related to inactivity. Passive modalities have little, if any, effect upon the physical condition of the patient, and therefore no effect on many of the known risk factors. Therefore, these passive modalities may influence chronicity. Besides, there is insufficient data on factors contributing to chronicity of LBP in Rwanda. It is important for physiotherapists to put into consideration this problem because proper management and preventive strategies of the prevalence and chronicity can be controlled. According to Bekkering et al. (2003a) there is evidence in the literature that most patients with LBP in the acute stage will improve considerably within six to eight weeks. Ninety-five percent of all patients with acute LBP return to work within four weeks, regardless of treatment. If patients do not return to work within four weeks, treatment to prevent chronic disability is recommended (Kool, De Bie, Oesch, Knusel, Van den Brandt & Bachmann, 2004). When the problem of LBP is not

well managed, the individual may be unable to cope with the pain, thus allowing it to reach the chronic stage (Zeidner & Saklofske, 1996). Depression, anxiety, coping strategies, fear avoidance beliefs, and health locus of control have been linked to chronic disability from LBP (Dionne, Koepsell & Von Korff, 1997). Therefore, the symptoms are often increasingly associated with emotional distress, depression and chronic disability (Waddell, 1998).

5.4 FINDINGS RELATED TO ASSESSMENT AND TREATMENT MODALITIES USED BY PHYSIOTHERAPISTS FOR LBP PATIENTS

5.4.1 Assessment modalities

The results from assessment modalities that were used by physiotherapists for the case studies of acute and chronic low back patients have shown that the majority of physiotherapists used back inspection or palpation (98.0%) and lumbar range of motion (86.9%) for all case study patients. This was expected, because palpation is a central procedure in the education of both physicians and physiotherapists, and different techniques are used extensively in the assessment and treatment of patients. The hands of the physiotherapists must recognize normality and deviations when palpating skin, muscles and joints. These are skills that need time and practice (Kvale, Ljunggren & Johnsen, 2003). Point tenderness over the spine with palpation or percussion may indicate fracture or an infection involving the spine. Palpating the paraspinous region may help delineate tender areas or muscle spasm (Bratton, 1999). With regard to lumbar range testing of motion, physiotherapists assess forward flexion, extension, and lateral rotation. Pain with forward flexion is the most common response and usually reflects mechanical cause. If pain is induced by back extension, spinal stenosis should be considered (Bratton, 1999).

Compared to acute and chronic LBP, the straight leg raise test has been used for acute LBP patients with sciatica by the total number of physiotherapists in the study. For patients with symptoms of sciatica or a positive SLR test, a more detailed lower extremity motor, sensory and reflex examination is warranted (Atlas & Deyo, 2001). The straight leg raise is a fair screening test for nerve root irritation because it is modestly sensitive though not specific. The test can be done seated or supine by straightening the symptomatic limb with the ankle fully extended. A positive response reproduces radiating leg pain when the limb is raised to less than 60 degrees. Raising a leg and eliciting symptoms of buttock or leg pain on the contralateral side is very specific for nerve root irritation, but many patients do not report it (Atlas & Deyo, 2001). Most studies testing the reliability of the SLR and the slump test have shown acceptable degrees of intertester agreement of both tests in non-specific LBP patients (Petersen et al., 2003). There are very few randomized trials of diagnostic or screening tests used by physiotherapists. Until randomized controlled trials are conducted, many physiotherapists will continue to screen for a range of conditions in the absence of evidence of a beneficial effect (Herbert et al., 2005).

5.4.2 Treatment modalities and advice used by physiotherapists for LBP patients, and beliefs/opinions on their effectiveness.

5.4.2.1 Patient education on back care

Individual patients' education on back care was the intervention most used by physiotherapists as part of the treatment of acute LBP/with sciatica (90.2%) and chronic LBP (92.2%).

In the case of acute LBP, these findings corresponded with the results of another study done in the state of Washington in the United States, where 86% of physiotherapists used education for patients with acute LBP (Li & Bombardier, 2001). Bekkering et al. (2003b) state that the objective of patient education is to

enable the patient to regain control with respect to function and activities. The physiotherapist will provide information about the nature and the cause of the back pain, the relation between load and load bearing capacity and the importance of an active lifestyle. Patients should be told that LBP does not necessarily imply that structures have been damaged. The guidelines also recommend patients' education and reassurance as the way to limit LBP problems as experienced by the patients (Bigos, Bowyer & Brean, 1994). In contrast, reviews on education-based schools appear convincing that no meaningful success could be realized through patient education (Koes, Tulder, Van der Windt & Bouter, 1994). The back school aims to enable patients to play an active part in improving their working environment in order to reduce their back problem and to provide increased knowledge and enhanced understanding. It is hoped that patients will be encouraged to avoid the risk of inappropriate therapy, which will therefore reduce the demand for social, medical and economic resources that might result from avoidable back pain (Twomey & Taylor, 2000). Quidan (2002) states that findings relating to the efficacy of back school programmes in acute LBP are still conflicting. In chronic LBP there seems to be a more pronounced short-term effect with regard to pain reduction. Moffet (2002) indicates that a successful back school will give the person a sense of control over his back pain, by giving him/her appropriate information. He adds that physiotherapists could provide more effective patient education by applying a behavioral approach tailored to the individual and that more efforts may still be needed in undergraduate education to address these skills. The findings of the current study have shown that 62.7% of physiotherapists used back school for patients with chronic LBP despite a lack of evidence.

5.4.2.2 Advice to stay_active / Advice against bed rest

More than four days of bed rest have been suggested by physiotherapists (37.3%) in this study for acute LBP or with sciatica patients (case studies 1 & 2). Since the 1950s, bed rest has been one of the cornerstones of LBP treatment based largely on expert opinion and on physiological studies showing that disc

pressures are minimized in the spine position. By the early 1980s, bed rest recommendations were being questioned (Atlas & Deyo, 2001). Two or three days are usually adequate, but a longer period (up to seven days) may be necessary for patients with sciatica (Wheeler, 1995). According to the Australian Physiotherapy Association (2002), advice to remain active and encouraging normal activity are recommended for acute LBP. Dutch physiotherapy guidelines also state that bed rest is not useful in acute LBP. If bed rest is unavoidable, it should be for a short period (a maximum of two days) (Bekkering et al., 2003a). According to Twomey and Taylor (2000) this should be contemplated only in acute situations with severe back pain and sciatica. Bed rest for a maximum of two to three days can be an effective way of diminishing the pain of sciatica. The reason can be a reduced disc pressure, an increased size of the spinal canal with reduction of the irritation of the nerve roots, and increased blood flow after a reduction of the pressure on the roots. Continuation of normal activities was the only intervention with beneficial effects for acute LBP (Philadelphia Panel, 2001). A study by Hagen et al. (2004) aimed to assess the effects of advice to rest in bed for patients with acute LBP or sciatica, found that advice to rest in bed rest is less effective than advice to stay active. For patients with sciatica, there is little or no difference between resting in bed and staying active.

5.4.2.3 Exercise therapy

The results of this study showed that 82.4% of physiotherapists used exercises at the clinic for acute LBP and 92.2% for patients with acute LBP with sciatica (case studies 1 & 2 respectively).

Lack of exercise may play an important role in the development of LBP. Exercise prescription is one of the most popular approaches in the treatment of patients with non-specific LBP (Descarreaux et al., 2002). Exercise strengthens trunk muscles and increases flexibility to reduce injury risk, and reduces the impact of injury on trunk musculature (Lahad, Malter, Berg & Deyo, 1994). Furthermore, a

lack of sufficient levels of strength, flexibility and endurance in muscles of the lumbar spine, abdominal and pelvic muscles has been related to LBP (Steven & Richard, 2001).

In a study by Swinkels et al. (2005), for 81% of the patients exercise therapy was shown to be one of the main interventions by Dutch physiotherapists. Patients with acute LBP problems benefit from exercise programmes, if these programmes are started early and if the exercises cause minimal mechanical stress on the back (Bratton, 1999). Supervised exercise programmes are strongly recommended in the treatment of acute LBP. McKenzie therapy is recommended in the management of acute LBP (Rebbek, 2002). For symptoms of sciatica, one study comparing over 2 000 workers without sciatic pain to 327 workers with sciatic pain for one year found that exercise and most sports activities had no effect on pain (Rainville et al., 2004). In one systematic review by Van Tulder et al. (2000) that included 39 randomized controlled trials aiming to determine the effectiveness of exercise therapy for LBP, it was found that there was no indication that specific exercises are effective for the treatment of acute LBP.

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The majority of physiotherapists (92.2%) in the present study used exercises at the clinic for patients with chronic LBP (case study 3). Exercises may be helpful for chronic LBP patients to increase their return to normal daily activities and work (Van Tulder et al., 2000). Smith & McMurray (2002) states that exercise has been given much attention in the chronic pain literature and that it has been shown to be an effective treatment option with good results. However, this has rarely been shown to be the case with acute LBP. According to Herbert et al., (2001), exercise is prescribed with equal frequency for acute and chronic LBP, but systematic reviews indicate that there is strong evidence that exercise therapy is effective for chronic, but not acute, LBP.

Several studies have concluded that exercises are effective for patients with chronic low back pain. However, this has not been shown to be the case with acute LBP (Smith & McMurray, 2002; Rittweger et al., 2002). Most people appreciate that exercise can strengthen muscles, but they do not realize that exercise and movement also play a very important role in the healing of other structures such as ligaments and even bone (Moffet, 2002). Exercise can be a relatively inexpensive, easily administered treatment method, which may prove to be the most effective solution for patients whose pain appears to be resistant to many other treatment options (Mannion et al., 1999). On the basis of this growing body of knowledge, a recent focus in the physiotherapy management of chronic low back pain patients has been the identification of specific motor control deficits and the specific training of those muscles affecting the spine whose primary role is considered to be the provision of dynamic stability and segmental control to the spine, i.e. transverses abdominis and lumbar multifidus (Twomey & Taylor, 2000).

However, there is growing evidence that the deep abdominals and lumbar multifidus muscles are preferentially adversely affected in the presence of chronic low back pain and lumbar instability (O' Sullivan, Twomey & Allison, 1997; Twomey & Taylor, 2000). According to Danneels et al. (2001), many authors have highlighted the importance of the lumbar multifidus muscle in providing dynamic control. Petersen et al. (2003) have stated that several published studies report the effectiveness of specific stabilizing exercises in the treatment of LBP. The trunk muscles coordinate the movement of the spinal column and body postures and play a critically important role in supporting and stabilizing the lumbar spine (Takemasa et al., 1995).

5.4.2.4 Physiotherapists' belief in / opinion on the effectiveness of patients' education, bed rest and exercise

Questions about the effects of physiotherapy are crucial in everyday practice. Physiotherapists and patients alike seek information about whether one kind of intervention is effective or whether one kind of intervention is better than another (Herbert et al., 2005).

It was observed that the majority of physiotherapists (85%) in the current study stated that they believe in the effectiveness of bed rest in acute LBP with or without sciatica. Bed rest was once a mainstay in the treatment of acute LBP (Bekkering et al., 2003a). Physiotherapists in this study may possibly use bed rest as a routine as a result of what they were taught years ago, without consulting recent studies. According to Battie et al. (1994) early activities are now being promoted. In one systematic review by Smith & McMurray (2002), 10 randomized controlled trials of prescribed bed rest versus eight which gave advice to stay active indicated that bed rest was not an effective treatment option for acute LBP.

In one Cochrane systematic review which included nine trials with a total of 1 435 patients, it was concluded that bed rest is not effective and that it may have slightly harmful effects on acute LBP. In addition, evidence-based guidelines in the United Kingdom, as well as in the USA and other countries emphasize that patients with uncomplicated LBP should be discouraged from prescribed bed rest as a form of management. They need to be encouraged to return to normal activities as soon as possible (Agency for Health Care Policy & Research, 1994; Royal College of General Practitioners, 1996). The findings and conclusions of all reviews are consistent and show that bed rest (>4 days) is not a useful treatment for acute low back pain and that it may even cause a delay in recovery. Therefore, a maximum of two to three days could be an effective way of diminishing the pain in case of severe pain.

The findings of this study reported that the majority of physiotherapists (90%) believe in the effectiveness of patient education and exercise. The way in which patient education is given as well as how patient satisfaction is viewed is to be questioned. Sluijs, van der Zee & Kok (1993) found that physiotherapists concentrated their education efforts in the first few sessions of a course of treatment. In addition, these authors exposed physiotherapists as providing little education in the aspects of stress counseling and psychological support to patients. Encouraging such patients could include counseling, offering psychological support and appropriate explanation of their health problem as well as reasons for the persistence of problems despite the prescribed management. Feyer et al. (1992) found that psychological dysfunction, including depression, was common among those patients who were absent from work. However, it was not significant in sufferers who remained working despite the LBP. Twomey and Taylor (2000) emphasize that it is important to be aware of the key role of negative mood in chronic pain patients because it is likely to affect treatment motivation and compliance with treatment recommendations. For example, patients who are anxious may fear engaging in what they perceive as physically demanding activities; patients who are depressed and who feel helpless may have little initiative to comply; and patients who are angry with the health care system are not likely to be motivated to respond to recommendations from yet another health care professional. A high proportion of patients with any form of chronic pain develop secondary symptoms of depression (Twomey & Taylor, 2000). Since psychological and social factors may influence changes in a patient's condition, these factors should be considered when making conclusions regarding treatment effectiveness (Fitzgerald et al., 1994).

5.4.2.5 Physiotherapists' belief on the effectiveness of spinal manipulation and mobilization

Although spinal manipulation is one of the few interventions for LBP that are supported by evidence, it appears to be under-utilized by physiotherapists,

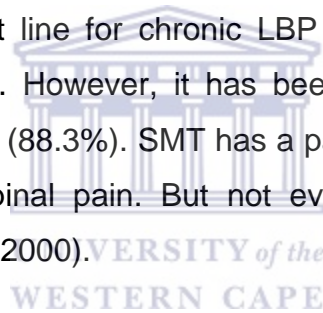
possibly owing to therapists' concerns that a patient may not benefit from the intervention (Fritz, Delitto & Erhard, 2003). Spinal manipulation is a specialized technique and this could mean that many physiotherapists are simply not trained in this field.

The findings of this study showed that 66.7 % of participants reported that spinal manipulation is effective in the treatment of acute LBP while 11.8% reported not to know its effectiveness. Manipulation therapy is defined as distinct from mobilization and is understood as small amplitude, high velocity thrust at the limit of a patient's joint range, while spinal mobilization involves low velocity, passive movements of a joint within or at the limit of its range of motion (ROM) (Avery & O' Driscoll, 2004). The efficacy of spinal mobilization has been demonstrated in the management of both acute and sub-acute low back pain, and both biomechanical and neurophysiologic mechanisms have been proposed to explain the beneficial effects. The rationale for the use of spinal mobilization is that it may assist in the recovery of movement in restricted spinal joints and that it may therefore facilitate the return of normal function. The evaluation of segmental hypomobility is based in part on tests of passive intervertebral movement which include the response to posteroanterior (PA) force, or 'springing', applied to the spinous process. Through this technique, the physiotherapist gains an impression of the movement response to load or stiffness (Allison, Edmonston, Kiviniemi, Lanigan, Simonsen & Walcher, 2001).

Posteroanterior mobilization of the lumbar spine has been advocated as a treatment technique to restore spinal mobility on the basis that it will decrease spinal stiffness. Repeated loading of the spine causes creep and relaxation of spinal connective tissues, changing the resistance to the applied load. In some cases, micro-failure of tight connective tissue structures may decrease the resistance to movement and increase the range of movement in a restricted spinal segment (Allison et al., 2001).

Andersson, Lucente, Davis, Kappler, Lipton & Leurgans (1999), found that within the first six weeks of onset of acute or recurrent LBP, manipulation provides better short-term improvement in pain and activity levels. However, there is no firm evidence that makes it possible to select which patients respond or what kind of manipulation is most effective (Howell, 1999). There is no evidence that spinal manipulative therapy is superior to other standard treatments for patients with acute or CLBP (Assendelt et al., 2003). Avery and O' Driscoll (2004) concluded that the efficacy of manipulation for patients with acute or chronic low back pain remains unconvincing. Despite conflicting evidence, spinal manipulative therapy is recommended in the management of acute and sub-acute LBP (Australian Physiotherapy Association, 2002).

In light of stronger evidence for exercise, spinal manipulative therapy (SMT) is not recommended as a first line for chronic LBP by Australian Physiotherapy Association (Rebbek, 2002). However, it has been chosen by the majority of physiotherapists in the study (88.3%). SMT has a particular and important part to play in the treatment of spinal pain. But not everyone will benefit from the procedure (Twomey, Taylor, 2000).



5.4.2.6 Massage

The results of the study showed that the majority of physiotherapists (88.2%) chose massage to treat patients with chronic LBP despite insufficiency of evidence on its effectiveness. According to the Philadelphia Guideline (2001) there was a lack of evidence regarding the efficacy of massage. In one Cochrane review by Furlan, Brosseau, Imamura & Irvin (2002) that assessed the effects of massage therapy for non-specific LBP, it was found that massage might be beneficial for patients with sub-acute and chronic non-specific LBP, especially when combined with exercises and education. The guidelines for low back pain do not recommend massage as treatment for patients with LBP. Roger, Darfour, Dham, Hickman, Shaubach & Shepard (2002) found in their study to determine

how physiotherapists use touch in in-patient acute rehabilitation settings (USA), that physiotherapists' use of touch was determined by the needs of their patients. Charles (2001) indicated that massage can help patients feel better sooner and that they therefore need to use less medication. Roger et al. (2002) indicate that didactic education, where physiotherapists instruct patients when teaching an exercise does not adequately explore the use of touch in physiotherapy.

5.4.2. 7 Physical agents

Electrophysical agents are used by physiotherapists to treat a wide variety of conditions. These agents include both electromagnetic and sound waves, in addition to muscle- and nerve-stimulating currents. In part these techniques are used to induce tissue heating (Kitchen, 2002).

More than 60% of respondents stated that they believe in the effectiveness of heat modalities (infrared radiations) and ice for acute and chronic low back patients. Gaudry (2003) found little evidence to support the use of ice in the treatment of LBP. Ice was the treatment recommended most often for the treatment of acute LBP associated with sciatica. Similarly, Smith and McMurray (2002) reported an over-use of passive treatment forms such as ultrasound, short-wave diathermy, and heat and cold treatment by Dutch physiotherapists. Despite the lack of supporting evidence of these modalities, guidelines for low back pain do not recommend these to be used alone. According to Hamm et al. (2003) it is recommended that ultrasound and short-wave diathermy are not used at all in the management of LBP, while heat and cold treatment are not recommended as stand-alone (independent) treatment. There is limited evidence of efficacy directly related to the use of IR; nevertheless, the use of other forms of superficial heating have been found to give rise to superficial thermal change in the tissues only (Kitchen, 2002).

However, the results showed that the majority of physiotherapists (70%) believe in the effectiveness of transcutaneous electrical nerve stimulation (TENS) for

both acute and chronic LBP patients. According to Kitchen (2002) TENS is a simple, non-invasive analgesic technique that is used extensively in health care settings by physiotherapists, nurses and midwives. Rushton (2002) reported that in a randomized survey of 500 chronic pain patients who had bought a TENS machine for pain management, he found that 74% were continuing long-term users, and that TENS use was associated with reduced pain interference, increased activity levels, and decreased use of drugs and other therapies. However, TENS is not recommended as a treatment for acute or chronic LBP because there are alternative effective treatment options (Rebbeck, 2002).

Certain modalities such as mechanical spinal traction, and a lumber corset have been used by physiotherapists with higher percentage for patient (case 3) with chronic LBP respectively (68.7%; 64.7 %) as treatment choices despite uncertain effectiveness in the research literature. The evidence based guidelines issued in the United States, New Zealand, Australia, Denmark, and Great Britain for the treatment of mechanical disorders recommend that active care replace passive care; that exercise, activity, and movement are the means by which we are most likely to improve the health of injured spinal structures. Methods of treatment that create dependency should be discouraged.

5.5 FACTORS INFORMING TREATMENT CHOICES OF PHYSIOTHERAPISTS

With regard to factors informing treatment choices of physiotherapists, most respondents (82.4%) reported obtaining information from what they were taught when trained. These results are in agreement with the results of a previous study, which examined physiotherapist's attitudes towards evidence-based practice change as a result of an evidence-based educational programme (O'Brien, 2001). The author indicated that many clinicians continue to make treatment decisions based upon experience alone, information learned years ago when training, or unsubstantiated information received during a short course

while giving the rationale that they alone know what is best for the client. Herbert et al. (2001) in their study also noted that in many clinical environments there is an attitude that physiotherapists learn what to do in clinical practice during their formal physiotherapy training. In another cross national survey study done in England and Australia by Turner and Whitfield (1999), it was found that physiotherapist's reasons for the selection of treatment techniques was via journal literature. Using research literature as a basis for selecting techniques was absent.

For almost all techniques, selection was based primarily upon what was taught during initial training. Herbert et al. (2005) indicate that most physiotherapists provide a good service for their patients. Where there are large variations in practice among physiotherapists, or gaps between current practice and high quality clinical research, there is generally a good reason. It may be that the patient or the physiotherapist has strong preferences for, or positive experiences of, a certain treatment, or it may simply be due to a lack of knowledge on the part of the physiotherapist. Sometimes, however, there are other reasons.

Published information on factors that influence the choices of treatment for patients in Rwanda is lacking. However, results of the current study show that there were not sufficient evidence-based courses (15.7%) and that the proportion of physiotherapists who attended courses was low (11.8%). In one study on factors influencing participation in continuing education and preferences for continuing education programmes among 644 Canadian physiotherapists, six factors were reported: timing, presentation quality, work-related cost, course-related cost, socialization and programme content. The researchers recommended that conferences and workshops should be the primary vehicles for the delivery of continuing education programmes (O'Brien, 2001). Stevenson, Lewis and Hay (2004) state that physiotherapists rated courses as the most important method of keeping up to date in clinical practice and that literature and Web-based information ranked as the least important. Some reasons regarding

the unavailability of courses among physiotherapists in Rwanda may be considered.

There is possibly a lack of documentation such as literature and journals, a shortage of financial assistance to organize those courses, and time constraints within the Rwandan situation. It seems that through administering treatment as they were taught many years ago, physiotherapists are proving to be less up to date in clinical practice. O'Brien (2001) indicated that failing to keep up to date may result in missed problems amenable to physiotherapy or ineffective treatments with a consequent waste of resources, both personal (client's time, clinician's time) and financial (health insurances out of pocket expense). Time spent in formal continuing education activities (staff seminars, for example) may be better spent by individuals or small groups of physiotherapists answering their own clinical questions (Herbert et al., 2001). This should be done in Rwanda also, and workshops, seminars and conferences are ways that can ensure that this happens. Although there is a considerable amount of literature about the value of diagnosis, treatment choices and treatment goals in physiotherapy, there are few studies of the information gathered by physiotherapists during their clinical examination and evaluation of patients with musculoskeletal problems such as LBP (Soukup & Vollestad, 2001).

In the present study, only 5.9% of physiotherapists indicated that they regarded Internet sites to be a source of information. For many physiotherapists, accessing information that is relevant to their practice is constrained by limited access to sources of evidence (Grimmer et al., 2003). Herbert et al. (2005) also indicated several studies that have tried to identify barriers to evidence-based practice among health professionals such as occupational therapists and physiotherapists. Such barriers are related to skills, understanding research methodology, and having access to research and time. The researcher is in agreement with this statement. In Rwanda, for the majority of physiotherapists, limited access to Internet sites for journals and library databases, as well as

limited time, could be barriers to all relevant information. The limited use of the Internet for evidence-based practice may be explained by financial constraints, because it is expensive to pay for access to the Internet (200 Rwandan Francs/30 min = 2 Rand). Another constraint is the level of education. In one study by Vernon (1999) it was found that in England and Australia, physiotherapists with recent experience of higher education, and in particular those who were enrolled for postgraduate degree courses, were more likely to report journal literature as a reason for technique choice.

5.5.1 SUMMARY

In this chapter, the major findings within the study have been discussed. Similarities with other studies were found with regard to modalities used for low back patients and factors informing treatment choices of physiotherapists. The next chapter will explain recommendations based on the findings, limitations and conclusion.



CHAPTER SIX

SUMMARY, CONCLUSIONS AND LIMITATIONS OF THE STUDY, AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter provides a summary of the study. It highlights the important findings of the study and concludes with recommendations based on the results.

6.2 SUMMARY

The purpose of the study was to determine assessment and treatment choices of physiotherapists treating non-specific low back pain (LBP) in Rwanda.

Fifty-eight (n=58) of the 70 physiotherapists registered with the Rwandan Association of Physiotherapists participated in the study. Government hospitals and private clinics were used as research settings for the study. The participants were physiotherapists who worked in those hospitals and private clinics. Questionnaires were used to determine the common type of LBP treated by physiotherapists, and the assessment and treatment modality choices that were used by physiotherapists to treat three case study patients with LBP. Beliefs in and opinions on the effectiveness of treatment modalities used for patients with LBP and factors informing treatment choices were also examined.

The study found that chronic low back pain was the most common LBP condition seen by physiotherapists in all government and private clinics. The most common techniques used by physiotherapists to assess patients with low back pain in all three case study patients (acute, acute with sciatica and chronic) were back inspection or palpation, lumbar spinal range of motion, straight leg raise and evaluating muscle strength. However, sensation testing was more frequently used for acute low back patients with sciatica. Overall, patient education and exercises were the modalities most frequently used by physiotherapists for all case studies. Physiotherapists were likely to use electrotherapeutic and thermal

modalities such as heat, ice, TENS, short-wave diathermy, the effectiveness of which was uncertain. Most physiotherapists used massage and heat for chronic and acute LBP. The majority of physiotherapists believed that bed_rest was effective for acute low back patients, while it is not recommended by the guidelines for LBP. It was found that most physiotherapists used what they had been taught during training as factors to inform their treatment choice rather than from journal literature and continuing education courses. The findings of the current study also showed that most physiotherapists reported that continuing professional development courses were not available.

Based on the findings of the study it was found that there is a possibility for Rwandan physiotherapists to progress toward evidence-based practice despite the limitations of factors that inform their treatment choices.

6.3 LIMITATIONS OF THE STUDY

It is important to note the limitations and weaknesses of this study. There are some limitations that future researchers should consider when applying the findings. One of the limitations of this study was the pre-existing data on epidemiology of LBP in Rwanda.

The possibility of bias could not be excluded, because some physiotherapists may report assessment or treatment that they may not perform under usual practice. It is possible that the physiotherapists who responded to the questionnaire have not completed the entire questionnaire.

Although the findings on treatment choices and their effectiveness for LBP were based only on physiotherapists' practices, they could possibly have been based on views of patients' satisfaction with the modalities used.

Despite the limitations, the author believes that the findings from this study are important. This is the first study documenting the assessment and treatment choices of physiotherapists treating LBP in Rwanda.

The use of questionnaires to collect data on factors informing treatment may not give the necessary details leading to treatment choices. Focus group discussions could be used for future research in order to obtain more information. The author could also have invited suggestions on how to improve treatment choices or to provide more knowledge.

6.4 RECOMMENDATIONS

Based on the findings of this study, the following recommendations are offered for future actions:

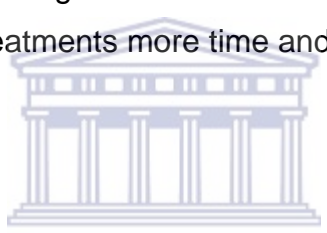
- 1) Future research should focus on identifying patient satisfaction on treatment modalities used by physiotherapists in Rwanda.
- 2) There was insufficient information on the prevalence of LBP in Rwanda from documentations. Thus, more research on epidemiology, impact and outcomes of treatments ought to be investigated. This will ease the control of severity of LBP.
- 3) Physiotherapists should keep their knowledge of clinical practice and treatments up to date. Clinical guidelines are widely used, and may increase physiotherapists' knowledge. The Rwandan Association of Physiotherapists, in collaboration with the Ministry of Health and the Ministry of Education, should play a significant role in accessing relevant information to physiotherapists by organizing courses, workshops, conferences, seminars, to provide knowledge and to motivate them to contribute to the development of the profession.

4) The introduction of journals in hospital physiotherapy departments could facilitate the use of research literature, which would lead to treatment being applied from evidence-based practice. The Rwandan Association of Physiotherapists should have a crucial role in encouraging physiotherapists to apply for membership of journals.

5) The aim of physiotherapy practice is to provide the right assessment or treatment for clients. Academic qualifications influence the choice of treatments. It is imperative that the government of Rwanda plan for the creation of post-graduate programmes for the development of the profession.

6) Before administering any treatment, physiotherapists should be aware of the most recent research concerning treatment modalities used for low back pain patients. This would make treatments more time and cost effective.

6.5 CONCLUSION



This study adds to the body of knowledge concerning clinical physical practice in the management of LBP by physiotherapists in Rwanda. Results from the study reflect treatment choices used by physiotherapists for LBP patients. Some treatment modalities correspond to recommendations of guidelines practice for LBP. Contrary to recommendations from guidelines, bed rest has been used frequently in the treatment of acute low back pain. Physical agents were also used slightly more for all case study patients despite a lack of supporting evidence. Similarly, this has also been found in some studies. A number of factors such a lack of information, insufficient of courses and workshops, were also found to be limiting factors to treatment choices of physiotherapists. Physiotherapists should not apply only what they were taught during training. They have to consider what recent research or guidelines have to say about effective treatment modalities for LBP. It is hoped that when these factors have been addressed, they will contribute to the advancement of the profession

towards evidence-based practice which will lead to improved LBP patient management satisfaction, reduced cost for treatment, and more meaningful sick leave provision. There is a need for evidence-based research to determine outcomes of LBP management.



REFERENCES

Agency for Health Care Policy & Research (1994). *Acute low back pain in adults*. Clinical Practice Guidelines. New York: AHCP, Rockville.

Allison, G., Edmonston, S., Kiviniemi, K., Lanigan, H., Simonsen, A. & Walcher, S. (2001). Influence of standardized mobilization on the postero-anterior stiffness of the lumbar spine in asymptomatic subjects. *Physiotherapy Research International*. **6** (3): 145-156.

American Physical Therapists Association (APTA). (2001). What is Physical Therapy? (A guide to Physical Therapists Practice). *Physical Therapy*. **81** (1): 21.

Andersson, G.B., Lucente, T., Davis, A.M., Kappler, R.E., Lipton, J.A. & Leurgans, S. (1999). A Comparison of Osteopathic Spinal Manipulation with Standard Care for Patients with LBP. *The New England Journal of Medicine*. **341**: 1426-1431.

Arbor, A. (2003). Smoking and back pain. Michigan Health System 1500 E- Retrieved June 3, 2004, from <http://www.med.umich.edu>.

Ari, B.Y. (2000). Medications for LBP and Neck Pain. *Spine*. **21**: 45-49.

Armitage, P. & Berry, G. (1996). *Statistical Method in Medical Research* (3rd edition), Great Britain, University Press Cambridge.

Assendelt, W.J.J., Sally, C.M., Emily, I.Y., Marika, J.S. & Paul, G.S. (2003). Spinal Manipulative Therapy for Low Back Pain. A Meta-Analysis of Effectiveness Relative to Other Therapies. *Annals of Internal Medicine*. **138**: 871-881.

Atlas, S.J. & Deyo, R.A. (2001). Evaluating and managing acute low back pain in the primary care setting. *Journal of General Internal Medicine*. **16**: 120-131.

Aure, O.F., Nilsen, J.H. & Vasseljen, O. (2003). Manual therapy and exercise therapy in patients with Chronic Low Back Pain. *SPINE*. **28** (6): 25-532.

Avery, S. & O' Driscoll, M.L. (2004). Randomised controlled trials on the efficacy of spinal manipulation therapy in the treatment of Low Back Pain. *Physical Therapy Reviews*. **9**: 146-152.

Battie, M.C., Cherkin, D.C., Dunn, D., Ciol, M.A. & Wheeler, K.J. (1994). Managing Low Back Pain: Attitudes and treatment preferences of physical therapist. *Physical Therapy*. **74**(3): 219-226.

Bekkering, G.E., Van Tulder, M.W., Hendriks, E.J.M., Koopmanschap, M.A., Knol, D.L., Bouter, L.M. & Oosterndorp, R.A.B. (2005). Implementation of clinical guidelines on physical therapy for patients with LBP: Randomized trial comparing patient outcomes after a standard and active implementation strategy. *Physical Therapy*. **85**: 544-555.

Bekkering, G.E., Enger, A.J., Wensing, M., Hendricks, H.J.M., Van Tulder, M.W., Oostendorp, R.A.B. & Bouter, L.M. (2003). Development of an implementation strategy for physiotherapy guidelines on Low Back Pain. *Australian Journal of Physiotherapy*. **49**: 208-214.

Bekkering, G.E., Hendriks, H.J.M., Koes, B.W., Oostendorp, R.A.B., Ostelo, R.W.J., Thomassen, V.T. & Van Tulder, M.W. (2003). Dutch Physiotherapy Guidelines for Low Back Pain. *Physiotherapy*. **89** (2): 82-96.

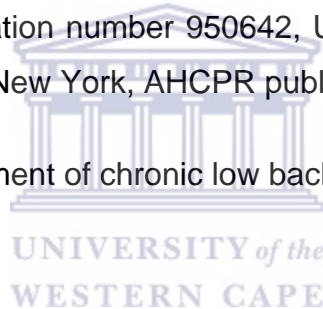
Bentsen, H., Lindgarde, F., Manthorpe, R. (1997). The effect of Dynamic Strength Back Exercise and/ or a Home Training Program in 57-year-old Women with Chronic LBP. *Spine*. **22** (13): 1494-1500.

Berkman, S. (1999). New technique helps get bad backs back to work. *Westchester County Business Journal*. **38**:11-19.

Biewen, P.C. (1999). A structured approach to Low Back Pain: Thorough evaluation is the key to effective treatment. *Postgraduate Medicine*. **106** (6): 102-106.

Bigos, S.J., Bowyer, O.R. & Brean, G.R. (1994). *Acute Low Back Problems in Adults*. Clinical Practice Guideline number 14. Rockville, Agency for Health Care Policy and Research publication number 950642, US Department of Health and Human Services, pp 1-160, New York, AHCPR publication.

Bogduk, N. (2004). Management of chronic low back pain. *Medical Journal of Australia*. **180** (2): 79-83.



Borenstein, M.W. (2000). Epidemiology, aetiology, diagnostic evaluation and treatment of low back pain. *Current Opinion, Rheumatology*. **12**: 143-149.

Bratton, R.L. (1999). Assessment and management of acute low back pain. *American Family Physician*. **60** (8): 2299-2308.

Buchbinder, R., Jolley & D., Wyatt, M. (2001). Breaking the back of back pain: Public policy initiatives directed towards managing the disability of back pain can highly be successful. *Medical Journal of Australia*. **175**: 456-457.

Charnock, D., Shepperd, S., Needham, G. & Gann, R. (1999). Discern: an instrument of judging the quality of written consumer health information on treatment choices. *Journal of Epidemiology and Community Health*. **53**: 105-111.

Charles, C. (2001). Does acupuncture or massage work in people with persistent back pain? *Journal of Family Practice*. **50** (9): 799

Cole, B., Finch, E., Gowland C. & Mayo, N. (1994). *Physical Rehabilitation. Outcome Measures Canadian Physiotherapy Association*. Toronto.

Danneels, L.A., Cools, A.M., Vanderstraeten, G.G., Cambier, D.C., Witvrouw, E.E., Bourgois J. & De Cuyper, H.J. (2001). The effects of three different training modalities on the cross-sectional area of the paravertebral muscles. *Scandinavian Journal of Medicine and Science in Sport*. **11**: 335-341.

De Vos, A.S. (Ed.) (2nd edition). (2002). *Research at grass roots: For social sciences and human service professionals*. Pretoria, South Africa: Van Schaik.

Descarreaux, M., Nomand, M.C., Laurencelle, L. & Dugas, C. (2002). Evaluation of a specific home exercise program for low back pain. *Journal of Manipulative and Physiological Therapeutics*. **25**:497-503.

Deyo, R.A., Weinstein, J.N. (2001). Low Back Pain. *The New England Journal of Medicine*. **344**: 363-370.

Dionne, C.E., Koepsell, T.D. & Von Korff, M. (1997). Predicting long-term functional limitations among back pain patients in primary care settings. *Journal of Clinical Epidemiology*. **50**: 31-43.

Edelman, C. L. & Mandle, C. L. (1998). *Health promotion throughout the lifespan, Environment-dependent factors*. USA: Mosby.

Feyer, AM., Williamson, A., Mandryk, J., De Silva, I. & Healy, S. (1992). Role of psychological risk factors in work-related low back pain. *Scandinavian Journal of Work, Environment and Health*. **18**: 368-375.

Fischbacher, C. (2002). Outpatient physiotherapy services for low back pain. *STEER*. **2** (3): 1-8.

Fitzgerald, G. K., McClure, P.W., Beattie, P. & Riddle, D.L. (1994). Issues in Determining Treatment Effectiveness of Manual Therapy. *Physical Therapy*. **74**(3): 227-232.

Frank, A. (1993). Low Back Pain, regular review on Education and Debate. *British Medical Journal*. **306**: 901-909.

Fritz, J.M. Delitto, A & Erhard, R.E. (2003). Comparison of Classification Based Physical Therapy with Therapy Based on Clinical Practice Guidelines for Patient with Acute Low Back Pain. *Spine*. **28** (13): 1363-1372.

Frost, H., Lamb, S.E., Moffet, J.K., Fairbank. J.C.T. & Moser, J.S. (1998). A fitness programme for patients with chronic low back pain: 2-year follow-up of a randomized controlled trial. *Pain*. **75**: 273-279.

Frost, H. & Moffet, J.K. (1992). Physiotherapy Management of Chronic Low Back Pain. *Physiotherapy*. **78** (10): 751-754.

Furlan, A.D. Brosseau, L., Imamura, M. & Irvin, E. (2002). Massage for low back pain (Cochrane Review). *Spine*. **27**(17): 1896-1910.

Gaudry, M. (2003). Treatment Methods for Lower Back Pain. *Asia Pacific Journal of Public Health*. **15**(2): 79-87.

Gay, L.R. & Airasan, P., (1999). *Educational Research: Competencies for Analysis and application*. (6th edition). Upper Saddle River, NJ: Merrill.

Gibson, B.E. & Martin, D.M. (2003). Qualitative Research and evidence-based physiotherapy practice. *Physiotherapy*. **89**(6): 350-358.

Goldby, L.J. (1997). Low back pain: the evidence for physiotherapy. *Physical Therapy Reviews*. **2**: 7-11

Grace, J.H., McDonough, S.M. & Baxter, G.D. (2002). Physiotherapy management of low back pain: a survey of current practice in Northern Ireland. *Spine*. **27**(4): 406-11.

Granger, C.V., Lackner, J.M., Kulas & M., Russell, C.F. (2003). Outpatients with low back pain: An analysis of the rate per day of pain improvement that may be expected and factors affecting improvement. *American Journal of Physical Medicine and Rehabilitation*. **82**:253-260.

Grimmer, K., Milanese, S. & Bialocerkowski, A. (2003). Clinical Guidelines for Low Back Pain: Physiotherapy perspective. *Physiotherapy Canada*. **55**:185-94.

Hagen, K.B., Hilde, G., Jamtvedt, G., Winnem, M.F. (2002). Bed rest for acute low back pain and sciatica (Cochrane Review). *Spine*. **27**(16): 1736-41.

Hahne, A. J., Keating, J.L. & Wilson, S.C. (2004). Do within-session changes in pain intensity and range of motion predict between-session changes in patients with LBP? *Australian Journal of Physiotherapy*. **50**:17-23.

Hamm, L., Mikkelsen B., Kuhr J., Stovring H., Munck A., & Kragstrup (2003). Danish physiotherapists' management of low back pain. *Advances in Physiotherapy*. **5**: 109-113.

Herbert R., Jamtvedt G., Mead J. & Hagen, KB. (2005). *Practical Evidence-Based Physiotherapy*. London:. Elsevier.

Herbert, R.D., Sherrington, C., Maher, C. & Moseley, A.M. (2001). Evidence-based practice – imperfect but necessary. *Physiotherapy Theory and Practice*. **17**: 201-211.

Higgs, J., Refshauge, K. & Elizabeth, E. (2001). Portrait of the physiotherapy profession. *Journal of interprofessional care*. **15** (1): 80-89.

Howell, J.D. (1999). The paradox of Osteopathy Manipulation. *New England Journal of Medicine*. **341**: 1465-1468.

Hunter, G. (1998). Specific soft tissue mobilization in the management of soft tissue dysfunction. *Manual Therapy*. 3(1): 2-11.

King, S. (2000). The classification and assessment of pain. *International Review of Psychiatry*. **12**: 86-90.

Kitchen, S. (2002). *Electrotherapy: Evidence-Based Practice*. (11th edition). London, UK: W.B. Saunders.

Kjersti, S. & Kari, B. (2000). The Effect of Intensive Group Exercise in Patients with Chronic Low Back Pain. *Advances in Physiotherapy*. **2**: 113-123.

Koes, B.W., Tulder, M.W., Van der Windt, A.W.M. & Bouter, L.M. (1994). The efficacy of back schools: A review of randomized clinical trials. *Journal of Clinical Epidemiology*. **47**: 851-862.

Konstantinou, K., Foster, N., Rushton, A. & Baxter, R.D. (2002). The use and reported effects of mobilisation with movement techniques in low back pain management; a cross-sectional descriptive survey of physiotherapists in Britain. *Manual Therapy*. **7**(4): 206-214.

Kool, K., De Bie, R., Oesch, P, Knusel, O., Van den Brandt, P. & Bachmann, S. (2004). Exercise reduces sick leave in patients with non acute non-specific LBP: A Meta-Analysis. *Journal of Rehabilitation Medicine*. **36**: 49-62.

Kvale, A., Ljunggren, A.E. & Johnsen, T.B. (2003). Palpation of muscle and skin. Is this a reliable and valid procedure in assessment of patients with long-lasting musculoskeletal pain? *Advances in Physiotherapy*. **5**: 122-136

Lahad, A., Malter, A.D., Berg, A.O. & Deyo, R.A. (1994). The effectiveness of four interventions for the prevention of LBP. *Journal of American Medical Association*. **272**: 1286-1291.

Lee, R.Y.W. & Evans, J.H. (2001). Loads in the lumbar spine during traction therapy. *Australian Journal of Physiotherapy*. 102-108.

Li, C.L. & Bombardier, C. (2001). Physical Therapy Management of Low Back Pain: an exploratory survey of therapist approaches. *Physical Therapy*. **81**(4): 1018-1027.

Linton, S.J., & Van Tulder, M.W. (2001). Preventive interventions for back and neck pain problems: What is the evidence? *Spine*. **26**: 778-787.

Loney, P. L. & Stratford, P.W. (1999). The prevalence of LBP in adults: A methodological review of the literature. *Physical Therapy*. **79** (4): 384-385.

Macfarlane, G.J., Thomas, E. & Croft, P.R. (1999). Predictors of early improvement in low back pain among consulters to general practice: the influence of pre-morbid and episode-related factors. *Pain*. **8**: 113-119.

Maniadakis, N. & Gray, A. (2000). The economic burden of back pain in the UK. *Pain*. **84**(1): 95-103.

Mannion, A.F. Muntener, M., Taimela, S. & Dvorak, J. (1999). 1999 Volvo Award Winner in Clinical Studies. *Spine*. **24**(23): 2435-2448.

McKibbin, K.A. (1998). Evidence-based practice. *Bulletin of the Medical Library Association*. **86** (3): 396-401.

Middleton, A. (2004). Chronic low back pain: Patients' compliance with physiotherapy advice and exercise, perceived barriers and motivation. *Physical Therapy Reviews*. **9**: 153-160.

Ministry of Finance and Economic Planning (2001). *Master Plan of Poverty Reduction Studies and Research in Rwanda 2001-2003*. Final Report, Kigali.

Moffett, J.K. (2002). Back pain: encouraging a self-management approach. *Physiotherapy Theory and Practice*. **18**: 205-212.

Mutimura, E., Murego, C., Murenzi, J. & Nyaruhirira, I. (2003). Predictors of low back pain, classification and patient satisfaction with management. Research project. Unpublished.

Neuman, W.L. (2000). *Social Research Method; Qualitative and Quantitative Approaches*. Boston: Ally & Bacon, A Pearson Education Company, USA.

Nygren, A. & Jensen, L. (1999). Low Back Pain – a problem in working life: Rehabilitation and treatment of musculoskeletal disorders. *Workshop Scientific Report, September 13-14. Brussels.*

O'Brien, M.A. (2001). Keeping up-to-date: Continuing education, practice improvement strategies, and evidence-based physiotherapy practice. *Physiotherapy Theory and Practice. 17*: 187-199.

Office Nationale de la Population. (2002). 3rd General census of Population and Housing of Rwanda. Unpublished census document.

Office of the Hospital Director (2001). Central Hospital of Kigali annual statistical records. Physiotherapy / Orthopaedic Workshop Department and Department of Surgery: pp. 336-375.

Oostendorp, R.A.B., Scholten-Peeters, G.G., Swinkels, R.A., Bekkering, G.E., Heijmans, M.W., Huijbregts, P.A. & Hendriks, E.J. (2004). Evidence-based practice in physical and manual therapy: Development and content of Dutch National Practice for patients with non-specific LBP. *The Journal of Manual & Manipulative Therapy. 12* (1): 21-31.

O'Sullivan, P.B., Twomey, L.T. & Allison, G.T. (1997). Evaluation of specific stabilizing exercise in the treatment of chronic low back pain with radiologic diagnosis of spondylolysis or spondylolisthesis. *Spine. 22*: 2959-2967.

Papageorgiou, A.C., Croft, P.R., Ferry, S., Jayson, M.I. & Silman, A.J. (1995). Estimating the prevalence of low back pain in the general population. Evidence from the South Manchester Back Survey. *Spine. 20*: 1889-1894.

Pengel, H.M., Maher, C.G. & Refshauge, K.M. (2002). Systematic review of conservative interventions for subacute low back pain. *Clinical Rehabilitation*. **16**: 811-820.

Petersen, T., Laslett, M., Thorsen, H., Manniche, C., Eddall, C. & Jacobsen, S. (2003). Diagnostic classification of non-specific low back pain. A new system integrating patho-anatomic and clinical categories. *Physiotherapy Theory and Practice*. **19**: 213-237.

Philadelphia Panel (2001). Philadelphia Panel Evidence-Based Clinical Practice Guidelines on Selected Rehabilitation Interventions for LBP. *Physical Therapy*. **81** (10): 1641-1674.

Phillips, K., Ch'ien, A., Norwood, B. & Smith, C. (2003). Chronic Low Back Pain Management in Primary Care. *The Nurse Practitioner*. **28**(8): 26-31.

Pinnington, M.A. (2001). Why are we finding it so hard to change our approach to low back pain? *Physiotherapy*. **87**: 58-67.

Professional Provident Society. (1998). Statistics for spinal pathology, courtesy of Dr James Goodwin, chief medical officer of the PPS.

Quittan, M. (2002). Management of back pain. *Disability and Rehabilitation*. **24** (8): 423-434.

Rainville, J., Ahern, D.K., Phalen, L., Childs, L.A. & Southerland, R. (1992). The association of pain with physical activities in chronic low back pain. *Spine*. **17** (9): 1060-1064.

Rainville, J., Hartigan, C., Jouve, C. & Martinez, E. (2004). The influence of intense exercise-based physical therapy program on back pain anticipated before and induced by physical activities. *Spine*. **4**: 176-183.

Rebbeck, T. (2002). Australian Physiotherapy Association: low back pain position statement. Retrieved September 2, 2005, from <http://www.physiotherapy.asn.au>

Rittweger, J., Just, K., Kautzsch, K., Reeg, P. & Felsenberg, D. (2002). Treatment of Chronic Lower Back Pain with Lumbar extension and whole-Body vibration exercise. *Spine*. **27**(17): 1829-1834.

Roger, J., Darfour, D., Dham, A., Hickman, O., Shaubach, L., & Shepard, K. (2002). Physiotherapists ' use of touch in inpatient settings. *Physiotherapy Research International*. **7** (3): 170-186.

Royal College of General Practitioners (1996). *Clinical Guidelines for the Management of Low Back Pain*. London: Royal College.

Rushton, D.N. (2002). Electrical stimulation in the treatment of pain. *Disability and Rehabilitation*. **24** (8): 407-415.

Rwanda Country Report, April (2004). Retrieved June 15,2004, from <http://www.ind.home office.gov.uk>.

Sentama, E. (2003).The role of local non-governmental organizations in poverty reduction in Rwanda. A case study of Butare Province. Unpublished Master's Mini-thesis. Bellville: University of the Western Cape.

Sluijs, E.M., van der Zee, J. & Kok, G.J. (1993). Differences between physical therapist in attention paid to patients education. *Physiotherapy Theory and Practice*. **9**: 103-117.

Sirard, J.R. & Russell, R.P. (2001). Physical activity assessment in children and adolescents. *Sports Medicine*. **31**:439-454

Smith, D., McMurray, N. & Disler, P. (2002). Early intervention for Acute Back Injury: can we finally develop an evidence-based approach? *Clinical Rehabilitation*. **16**: 1-11.

Soukup, M.P. & Vollestad, N.K. (2001). Classification of problems, clinical findings and treatment goals in patients with LBP using the ICDH-2 Beta-2. *Disability and Rehabilitation*. **23** (11): 462-473.

Stall, J.B., Tulder, W., Koke, J.A., Smid, T. & Mechelen, W. (2002). Return-to-Work Interventions for Low Back Pain. A Descriptive Review of contents and Concepts of Working Mechanisms. *Sports Medicine*. **32**(4): 251-261.

Steven, J.A. & Richard, A.D. (2001). Evaluation and management of acute LBP in the Primary Care Setting. *Journal of General Internal Medicine*. **16**: 120-131.

Stevenson, K., Lewis, M., Hay, E. (2004). Do physiotherapists' attitudes towards evidence-based practice change as a result of an evidence-based evaluation in clinical practice? *Journal of Evaluation in Clinical Practice*. **10**: (2) 207-217.

Storheim, K. & BØ, K. (2000). The effect of intensive group exercise in patients with chronic low back pain. *Advances in Physiotherapy*. **2**:113-123.

Struber, J.C. (2003). Physiotherapy in Australia – Where to now? *The Internet Journal of Allied Health Sciences and Practice*. **1**(2): 1-6

Sung, P.S. (2003). Multifidi Muscles Median Frequency Before and After Spinal Stabilisation Exercises. *Archive of Physical Medicine and Rehabilitation*. **84**: 1313-8.

Swinkels, I.C.S., Van den Ende, C.H.M., Van den Bosh, W., Dekker J. & Wimmers, R.H. (2005). Physiotherapy management of low back pain: Does practice match the Dutch guidelines? *Australian Journal of Physiotherapy*. **51**: 35-41.

Takemasa, R., Yamamoto, H. & Toshikazu, T.M. (1995). Trunk Muscle Strength in and effect of trunk muscle exercises for patients with chronic LBP. *Spine*. **20**(23): 2522-2530.

Tancred, B. & Tancred, G. (1996). Implementation of Exercise Programmes for Prevention and Treatment of Low Back Pain. *Physiotherapy*. **82**: 168-173.

Turner, P.A. & Whitfield T.W.A. (1999). Physiotherapists' reasons for selection of treatment techniques: A cross-national survey. *Physiotherapy Theory and Practice*. **15**: 235-246.

Twomey, L.T. & Taylor, J.R. (2000). Physical therapy of the low back pain, third edition, workplace factors influencing low back pain. New York: Churchill Livingstone. P299-308.

Van Tulder, M.W., Koes, B.M. & Bouter, L.M. (1997). Conservative treatment of acute and chronic nonspecific low back pain. *Spine*. **22**: 2128-56.

Van Tulder, M.W. (2002). Low Back Pain. *British Medical Journal*. **65**: 925-928.

Van Tulder, M.W., Malmivaara, A., Esmail, R. & Koes, B.W. (2000). Exercise therapy for LBP. *Spine*. **25** (21): 2784-96.

Vernon, H. (1999). Spinal manipulation for chronic pain: A review of the Evidence. *Spinal Manipulation and Low Back Pain*. **6**(2): 8-12.

Vines, V. (2001). Some jobs increase risk for musculoskeletal disorders: Intervention programs can be effective. *National Academy of Sciences*. **202**:334-2138.

Waddell, G. (1998). The back pain revolution. *Psychosocial Factors of Low Back Pain*. London: Churchill Livingstone.

Waddell, G. (1996). Keynote address for primary care forum. Low back pain: A twentieth-century health care enigma. *Spine*. **24**: 2820-2825.

Wheeler, A.H. (1995). Diagnosis and Management of LBP and Sciatica. *American Family Physician*. **52**: 5. 1333-1341.

Workmen's Compensation Association. (1995). Statistics for lower spine for 1994 courtesy of Ms Scholing, department of statistics, office of the Compensation Commission.

Zeidner, M. & Saklofske, D. (1996). *Adaptive and Maladaptive Coping*. In: Zeidner, M. & Endler, N. (Eds), *Handbook of Coping: Theory, Research, Applications*. New York: John Wiley and Sons.

Zelege, W. (2000). Prevalence of Low Back Pain in Lesotho Mothers. *Journal of Manipulative & Physiological Therapeutics*. **23**(3): 147-154.



UNIVERSITY *of the*
WESTERN CAPE

APPENDICE D
QUESTIONNAIRE

Dear respondent,

My name is JACQUES TWAGIRAYEZU, I am a Rwandan postgraduate student enrolled in the Physiotherapy (Masters) program at the University of the Western Cape-South Africa. I am conducting a research survey as part of requirements for a M.Sc. (Masters) Degree in Physiotherapy. The title of my study is "ASSESSMENT AND TREATMENT CHOICES OF PHYSIOTHERAPISTS TREATING NON SPECIFIC LOW BACK PAIN IN RWANDA".

I kindly request for participation by completing this questionnaire. Your participation is voluntarily and any information given will be kept confidential.

Section A. Demographic and background characteristics

Instruction: Please select one response by using a tick [v] in the box near your choice. Give a written response where spaces are provided. Do not write your name on this questionnaire.

1. What is your gender?

a. Male

b. Female

2. What is your age?.....years

3. What is your level of education?

a. Diploma (A2)

b. Advanced diploma (A1)

c. First Degree (A0)

d. Masters degree

e. PHD

4. How many years have you been practicing physiotherapy?.....Years

5. Which of the following best describes your department/place of work?

a. Government hospital

b. Private hospital

c. Private clinic

6. Approximately, how many of the following types of low back pain patients do you treat per day?

- a. Acute LBP
- b. Acute with sciatica
- c. Sub acute LBP
- d. Chronic LBP

Section B. Assessment and treatment modalities (case studies)

For each of the following case studies, select which assessment and treatment techniques you would use.

1. Case study 1

Acute low back pain (0-6 weeks)

A 28 year old woman has suffered from acute LBP after lifting a 10 kg box at work a week ago. She has been unable to do her job managing a cafeteria since then. While anxious to return to work, she feels immobilized by the pain. In terms of activities, she sits about 10 minutes and walk one block before she has to stop due to pain. She is able to sleep through the night; however, her back is stiff in the morning and the stiffness lasts about 10 minutes. There is no history of trauma. The pain is limited to the low back area, without radiation. She has not been seen by any medical professional and now refers herself to you outpatient clinic.

1.1 Physical Assessment modalities

- a. Back inspection/palpation Yes No
- b. Lumbar spine range of motion Yes No
- c. Straight leg raising test Yes No
- d. Prone knee bend Yes No
- e. Slump test Yes No
- f. Lower extremity muscle strength Yes No
- g. Reflex test Yes No
- h. Sensation Yes No
- i. Abdominal muscle strength Yes No
- j. Back extensor muscle strength Yes No
- k. Joint accessory movement Yes No
- l. Give other techniques (specify)...

2.2 Treatment modalities

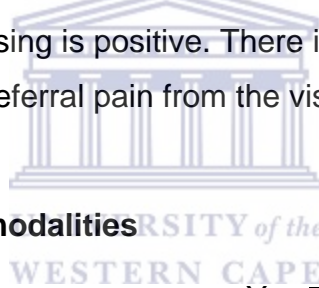
- a. Bed rest: 1-2 days Yes No
- 3-4 days Yes No
- > 4 days Yes No
- b. Individual patient education on back care Yes No
- c. Exercises at home Yes No

- | | | |
|--|------------------------------|-----------------------------|
| d. Exercises at clinic | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| e. Ultrasound | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| f. Infra red | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| g. Short wave diathermy | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| h. Ice | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| i. Transcutaneous electrical nerve stimulation | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| j. Back school | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| k. Mechanical spinal traction | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| l. Lumbar corset | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| m. Massage | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| n. Other treatments (specify)... | | |

2. Case study 2

Acute LBP and sciatica

A 55 years old man sees you the day after helping his friends move. Although he felt well initially, he was unable to sleep last night because of increasing pain in the lower back and sciatica on the left side. On examination, the ankle reflex is depressed and straight leg rising is positive. There is no serious spinal pathology, hip disorders, or suspected referral pain from the viscera.



2.1 Physical Assessment modalities

- | | | |
|---|------------------------------|-----------------------------|
| a. Back inspection/palpation | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| b. Lumber spine range of motion | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| c. Straight leg raising test | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| d. Prone knee bend | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| e. Slump test | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| f. Lower extremity muscle strength | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| g. Reflex test | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| h. Sensation | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| i. Abdominal muscle strength | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| j. Back extensor muscle strength | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| k. Joint accessory movement | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| l. Give other techniques (specify)..... | | |

2.2 Treatment modalities

- | | | |
|-----------------------|------------------------------|-----------------------------|
| a. Bed rest: 1-2 days | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3-4 days | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| > 4 days | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

- b. Individual patient education on back care Yes No
- c. Exercises at home Yes No
- d. Exercises at clinic Yes No
- e. Ultrasound Yes No
- f. Infra red Yes No
- g. Short wave diathermy Yes No
- h. Ice Yes No
- i. Transcutaneous electrical nerve stimulation Yes No
- j. Back school Yes No
- k. Mechanical spinal traction Yes No
- l. Lumbar corset Yes No
- m. Massage Yes No
- n. Other treatments (specify)...

3. Case study 3

Chronic low back pain (period > 3 months)

A 40 years old woman comes to see you for the first time, complaining of LBP and right buttock pain. The pain began 6 months ago when she was transferring a patient at her job as a nurse's aid. She has been unable to return to her work since the incident. Her neurological examination is normal, and she was given a diagnosis of lumbar strain by her physician.

3.1 Physical Assessment modalities

- a. Back inspection/palpation Yes No
- b. Lumbar spine range of motion Yes No
- c. Straight leg raising test Yes No
- d. Prone knee bend Yes No
- e. Slump test Yes No
- f. Lower extremity muscle strength Yes No
- g. Reflex test Yes No
- h. Sensation Yes No
- i. Abdominal muscle strength Yes No
- j. Back extensor muscle strength Yes No
- k. Joint accessory movement Yes No
- l. Give other techniques (specify).....

3.2 Treatment modalities

- a. Bed rest: 1-2 days Yes No
- 3-4 days Yes No
- > 4 days Yes No

- b. Individual patient education on back care Yes No
- c. Exercises at home Yes No
- d. Exercises at clinic Yes No
- e. Ultrasound Yes No
- f. Infra red Yes No
- g. Short wave diathermy Yes No
- h. Ice Yes No
- i. Transcutaneous electrical nerve stimulation Yes No
- j. Back school Yes No
- k. Mechanical spinal traction Yes No
- l. Lumbar corset Yes No
- m. Massage Yes No
- n. Other treatments (specify)...

Section C. Physiotherapist's belief on the effectiveness of treatment modalities for patients with low back pain.

1. The following treatment modalities are effective in the treatment of most patients with acute LBP.

	Effective	Not very effective	Not effective	Don't know
a. Ice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Mechanical traction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. TENS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Mobilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Manipulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Exercises at clinic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Bed rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Back education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. The following treatment modalities are effective in the treatment of most patients with acute LBP and sciatica.

	Effective	Not very effective	Not effective	Don't know
a. Ice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Mechanical traction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. TENS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Mobilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Manipulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Exercises at clinic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Bed rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Back education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



3. The following treatment modalities are effective in the treatment of most patients with chronic LBP.

	Effective	Not very effective	Not effective	Don't know
a. Ice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Mechanical traction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. TENS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| f. Mobilization | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Manipulation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Exercises at clinic | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Bed rest | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Back education | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Section D. Factors informing treatment choices of physiotherapists

1. Where do you obtain most of your information?

- | | |
|--|--------------------------|
| a. Journals | <input type="checkbox"/> |
| b. What you were taught when you trained | <input type="checkbox"/> |
| c. Courses | <input type="checkbox"/> |
| d. Workshops | <input type="checkbox"/> |
| e. Peers | <input type="checkbox"/> |
| f. Other (specify)... | <input type="checkbox"/> |



2. Are journals available to you? a. Yes b. No

3. Are evidence based course/continuing professional development course available?

- | | |
|---------------------------------|--------------------------------|
| a. Yes <input type="checkbox"/> | b. No <input type="checkbox"/> |
|---------------------------------|--------------------------------|

4. Do you attend these? a. Yes b. No

5. How often? a. Once/week b. Once/month

c. Once/year d. Never

e. Others (specify)

6. List the courses you have attended within the last five years?

a.

b.

C.



APPENDICE E

QUESTIONNAIRE

Cher participant,

Je m'appelle TWAGIRAYEZU JACQUES. Je suis étudiant Rwandais en troisième cycle de physiothérapie (maîtrise) à l'Université de Western Cape en Afrique du Sud. Je conduis une étude comme prévu dans mon programme de maîtrise en physiothérapie. Mon étude est intitulée << EVALUATION ET CHOIX DU TRAITEMENT DES KINESITHERAPEUTES TRAITANT LES LOMBALGIES D' ORIGINES NON SPECIFIQUES AU RWANDA >>. Je vous demande cordialement de participer en complétant ce questionnaire. Votre participation est volontaire et toute information fournie sera analysée confidentiellement et avec anonymat. N'écrivez pas votre nom sur ce questionnaire.

Section A. Historique démographique et caractéristiques

Instruction: Choisissez votre réponse en mettant [√] dans la case correspondante. Donnez une réponse écrite, là où il y a de l'espace.

1. Quel est votre sexe ?

a. Male

b. Femme

2. Quel est votre âge ?ans

3. Quel votre niveau d'éducation?

a. Humanités (A 2)

d. Maîtrise

b. Gradué (A 1)

e. Doctorat

c. Licence (A 0)

4. Pendant combien de temps pratiquez vous la physiothérapie.....ans.

5. Quel est votre lieu de travail ?

a. Hôpital public

b. Polyclinique privée

c. Cabinet privé

6. Approximativement, combien de types des lombalgies que vous traitez par jour ?

a. lombalgie aiguë

b. aiguë avec sciatique

- c. lombalgie subaiguë
- d. lombalgie chronique

Section B. Evaluation et modalités du traitement (études des cas)

Pour chaque étude des cas suivants, sélectionner les évaluations et techniques de traitement que vous utiliseriez.

1. Etude du cas 1

Lombalgie aiguë (0-6 semaines)

Une femme âgée de 28 ans souffrait d'une lombalgie aiguë après avoir soulevé une boîte de 10 kg à son travail, il y a une semaine. Elle a été incapable de faire son travail qui est de gérer une cafétéria. Bien qu'elle veuille retourner au travail, elle se sent immobilisée par la douleur. En ce qui concerne les activités, elle s'assoit pour 10 minutes et peut faire juste quelques pas avant de s'arrêter à cause de la douleur. Elle peut dormir la nuit. Néanmoins, son dos est raid (rigide), le matin mais ça ne dure approximativement que 10 minutes. Il n'y a aucune histoire de trauma. La douleur se localise à la région lombaire, sans irradiation. Elle n'a pas été vue par tout professionnel médical et maintenant elle vient à votre département pour se faire soigner.

1.1 Modalités d'évaluation physique

- | | | |
|---|------------------------------|------------------------------|
| a. Inspection du dos / palpation | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| b. Les amplitudes articulaires lombaires | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| c. Signe de Lasègue | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| d. Prone knee bend | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| e. Slump test | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| f. Testing musculaire des membres inférieurs | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| g. Test de réflexes | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| h. La sensibilité | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| i. Testing musculaire des abdominaux | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| j. Testing musculaire des extenseurs du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| k. Joint accessory movement | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| l. Donner d, autres techniques (spécifiez)... | | |

2.2 Modalités du traitement

- | | | |
|---------------------------------|------------------------------|------------------------------|
| a. Repos: 1-2 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| 3-4 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| > 4 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| b. Education ergonomique du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| c. Exercices à la maison | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |

- | | | |
|---|------------------------------|------------------------------|
| d. Exercices à l, hôpital | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| e. Les ultrasons | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| f. Les infra rouges | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| g. Des ondes courtes à diathermie | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| h. La glace | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| I. Stimulation nerveuse transcutanés (TENS) | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| j. Ecole du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| k. Traction mécanique du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| l. Corset lombaire | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| m. Massage | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| n. Autres traitements (spécifiez)... | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |

2. Etude du cas 2

Lombalgie aiguë avec sciatique

Un homme de 55 ans vient vous voir le lendemain après avoir aidé son ami à déménager. Bien qu, au début il se sentait bien, il n, a pas pu dormir la nuit passée à cause de la douleur lombaire et du nerf sciatique sur le coté gauche. Examen du réflexe du tendon d, Achille est déprimé et le signe de lasèque est positif.

2.1 Modalités d, évaluation physique

- | | | |
|---|------------------------------|------------------------------|
| a. Inspection du dos / palpation | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| b. Les amplitudes articulaires lombaires | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| c. Signe de lasèque | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| d. Prone knee bend | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| e. Slump test | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| f. Testing musculaire des membres inférieurs | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| g. Test de réflexes | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| h. La sensibilité | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| i. Testing musculaire des abdominaux | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| j. Testing musculaire des extenseurs du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| k. Joint accessory movement | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| l. Donner d, autres techniques (spécifiez)... | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |

2.2 Modalités du traitement

- | | | |
|---------------------------------|------------------------------|------------------------------|
| a. Repos: 1-2 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| 3-4 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| > 4 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| b. Education ergonomique du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |

- | | | |
|---|------------------------------|------------------------------|
| c. Exercices à la maison | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| d. Exercices à l, hôpital | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| e. Les ultrasons | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| f. Les infra rouges | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| g. Des ondes courtes à diathermie | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| h. La glace | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| i. Stimulation nerveuse transcutanés (TENS) | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| j. Ecole du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| k. Traction mécanique du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| l. Corset lombaire | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| m. Massage | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| n. Autres traitements (spécifiez)... | | |

3. Etude du cas 3

Lombalgie chronique (période > 3 mois)

Une femme âgée de 40 ans vient vous voir pour la première fois se plaignant des douleurs au niveau bas du dos et de la fesse droite. Les douleurs ont commencé il y a 6 mois quand elle transférait un malade à son lieu de travail, ou elle travail comme aide infirmière. Elle est devenue incapable de revenir à son travail depuis l, incident. Son examen neurologique est normal et le diagnostic donné par son médecin est celui de la tension lombaire.

3.1 Modalités d, évaluation physique

- | | | |
|---|------------------------------|------------------------------|
| a. Inspection du dos / palpation | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| b. Les amplitudes articulaires lombaires | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| c. Signe de lasèque | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| d. Prone knee bend | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| e. Slump test | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| f. Testing musculaire des membres inférieurs | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| g. Test de réflexes | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| h. La sensibilité | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| i. Testing musculaire des abdominaux | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| j. Testing musculaire des extenseurs du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| k. Joint accessory movement | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| l. Donner d, autres techniques (spécifiez)... | | |

3.2 Modalités du traitement

- | | | |
|---------------------|------------------------------|------------------------------|
| a. Repos: 1-2 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| 3-4 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| > 4 jours | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |

- | | | |
|---|------------------------------|------------------------------|
| b. Education ergonomique du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| c. Exercices à la maison | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| d. Exercices à l'hôpital | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| e. Les ultrasons | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| f. Les infra rouges | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| g. Des ondes courtes à diathermie | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| h. La glace | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| i. Stimulation nerveuse transcutanés (TENS) | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| j. Ecole du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| k. Traction mécanique du dos | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| l. Corset lombaire | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| m. Massage | Oui <input type="checkbox"/> | Non <input type="checkbox"/> |
| N. Autres traitements (spécifiez)... | | |

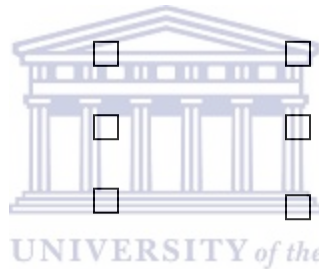
Section C. Les appréciations des kinésithérapeutes vis à vis de l'efficacité des modalités de traitement pour les patients souffrant des lombalgies.

1. Les modalités des traitements suivantes sont efficaces pour la plupart des patients souffrant des lombalgies aiguës

	Efficace	Pas très efficace	Pas efficace	Je ne sais pas
a. Le glace (froid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. La chaleur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Les ultrasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Traction mécanique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Stimulation nerveuse Transcutanés	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Mobilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Manipulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Exercices à l'hôpital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Repos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Education du dos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Les modalités des traitements suivantes sont efficaces pour la plupart des patients souffrant des lombalgies aiguës avec sciatique

	Efficace	Pas très efficace	Pas efficace	Je ne sais pas
a. Le glace (froid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. La chaleur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Les ultrasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Traction mécanique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Stimulation nerveuse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transcutanés				
f. Mobilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Manipulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Exercices à l'hôpital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Repos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Education du dos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



3. Les modalités des traitements suivantes sont efficaces pour la plupart des patients souffrant des lombalgies chroniques

	Efficace	Pas très efficace	Pas efficace	Je ne sais pas
a. Le glace (froid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. La chaleur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Les ultrasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Traction mécanique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Stimulation nerveuse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transcutanés				
f. Mobilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- g. Manipulation
- h. Exercices à l'hôpital
- i. Repos
- j. Education du dos

Section D. Les facteurs qui informent les choix des traitements des kinésithérapeutes

1. D'où obtenez-vous la plupart d'informations ?

- a. Les revues
- b. Ce que vous avez appris pendant la formation
- c. Formations continues
- d. Séminaires/ateliers
- e. Collègues
- f. Autres (spécifiez)...



2. Les revues sont-elles à votre portée a. Oui b. Non

3. Les cours/formations de développement professionnel sont-elles disponibles ?
a. Oui b. Non

4. Est-ce que vous participez à ceux ci ? a. Oui b. Non

5. Combien de fois ? a. 1/ semaine b. 1/mois
c. 1/ans d. jamais
e. autres (spécifiés)

6. Enumérez les formations que vous avez suivi les 5 dernières années.

a...
b...