

**THE IMPACT OF LOW BACK PAIN ON ADULT WOMEN ATTENDING
MOI TEACHING AND REFERRAL HOSPITAL, ELDORET, KENYA**

By

CHUMBA NAHOR KIPRUTO

STUDENT NUMBER

3517763

**A thesis submitted in partial fulfilment of the requirements for the degree of
Master of Science in Physiotherapy, Faculty of Community and Health Sciences,**

Department of Physiotherapy, University of the Western Cape

**UNIVERSITY OF THE
WESTERN CAPE**

May 2018

Supervisor: Dr Tania Steyl

(University of the Western Cape)

KEYWORDS

Activities of daily living

Bio psychosocial model

Functional disability

Low back pain

Moi Teaching and Referral Hospital

Musculoskeletal disorders

Quality of life



UNIVERSITY *of the*
WESTERN CAPE

ABSTRACT

Low back pain is one of the most frequent health problems and also one of the most prevalent musculoskeletal disorders. It's the leading reason for activity limitation and job absenteeism which leads to huge economic burden on persons, society, industry and governments. Women are more susceptible to low back pain due to hormonal effects, differences in reporting of somatic symptoms and greater sensitization of pain. The aim of this study was to determine the impact of low back pain on activities of daily living and quality of life of adult women attending Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya. The following objectives were addressed, namely to determine pain intensity, functional disability and quality of life of adult women as well as to explore the activities of daily living that may contribute to low back pain. A sequential explanatory mixed method approach, comprising of a cross-sectional descriptive and explorative design for the quantitative and qualitative phases respectively, was employed in the study. A self-administered questionnaire consisting of four sections (socio-demographic information, the Nordic Musculoskeletal Questionnaire, the Oswestry Disability Index Questionnaire and World Health Organization Quality of Life Tool) was completed by two hundred and thirty-four adult women with a mean age of 38.54 years (SD=9.40). Twenty-six women participated in the focus group discussions. Results of the study indicate that 94.6% of the women had experienced low back pain in the past year while 90.1% had low back pain in the past seven days. In addition, more than half of the women (52.3%) experienced moderate pain intensity. Almost three quarters (68.1%) of the participants who experienced pain in the past year reported that low back pain prevented them from carrying out their activities of daily living. Half of the participants (50.2%) had moderate disability. A significant positive correlation was found between pain and disability ($r = 0.426$; $p =$

0.000) while a non-significant negative correlation was found between low back pain and quality of life ($r = -0.058$; $p = 0.390$). The qualitative results showed that women have difficulty in performing certain activities of daily living i.e. personal hygiene, sitting, standing and housework due to low back pain. A significant correlation was found between pain intensity, disability and quality of life. Such correlations advocate towards the bio-psychosocial model in management of low back pain. There is a need to invest in primary-based health care to include low back pain and its related risk factors, in order to advise the affected population on appropriate and essential prevention strategies. Future interventions should focus on enhancing physical health and psychosocial stress in women with low back pain.



DECLARATION

I hereby declare that “**The impact of low back pain on adult women attending Moi Teaching and Referral Hospital, Eldoret, Kenya**” is my own work, which has not been submitted, or part of it, 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 means of complete references.

CHUMBA NAHOR KIPRUTO

Signature.....

May 2018



Witness:

.....

Dr Tania Steyl

DEDICATION

This thesis is dedicated to my late mother Pauline, Jemosbei Ngetich, who saw it necessary for me to further my education. May her soul rest in peace.



UNIVERSITY *of the*
WESTERN CAPE

ACKNOWLEDGEMENTS

First and foremost, I thank God for giving me the strength, determination and good health while undertaking this hard but rewarding task.

I would like to extend my sincere thanks to my supervisor, Dr Tania Steyl, for her guidance, encouragement, patience and support throughout this study.

I am also grateful to Isaih Too, Floridah Nyachiro, Sammy Samoei, Nitah Ludeya and Simatwo, physiotherapists at the outpatient department of MTRH for their support during my data collection period.



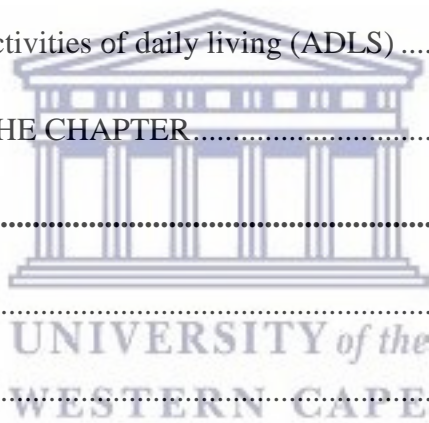
TABLE OF CONTENTS

KEYWORDS	ii
ABSTRACT	iii
DECLARATION	v
DEDICATION	vi
ACKNOWLEDGEMENTS	vii
TABLE OF CONTENTS	viii
LIST OF APPENDICES	xiii
LIST OF FIGURES	xiv
LIST OF TABLES	xv
CHAPTER ONE	1
INTRODUCTION	1
1.1 INTRODUCTION	1
1.2 BACKGROUND TO THE STUDY	1
1.3 PROBLEM STATEMENT	5
1.4 RESEARCH QUESTION.....	5
1.5 AIM OF THE STUDY.....	6
1.6 SPECIFIC OBJECTIVES OF THE STUDY.....	6
1.7 SIGNIFICANCE OF THE STUDY.....	6
1.8 DEFINITION OF KEY WORDS AND TERMS	7
1.9 ABBREVIATIONS	8

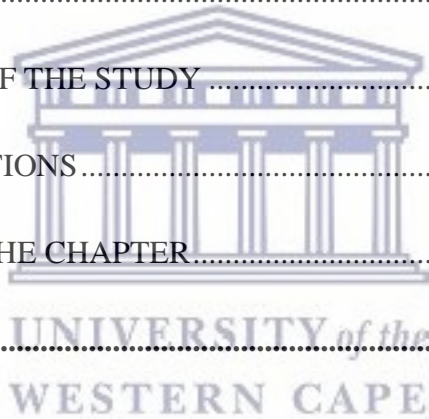
1.10 SUMMARY OF THE CHAPTERS	9
CHAPTER TWO	11
LITERATURE REVIEW	11
2.1 INTRODUCTION	11
2.2 THE GLOBAL PREVALENCE OF LOW BACK PAIN.....	11
2.3 PREVALENCE OF LOW BACK PAIN IN AFRICAN COUNTRIES.....	13
2.4 RISK FACTORS FOR THE DEVELOPMENT OF LOW BACK PAIN.....	14
2.4.1 Individual risk factors	15
2.4.2 Occupational risk factors	15
2.4.3 Psychosocial risk factors.....	17
2.5 THE EFFECT/IMPACT OF LOW BACK PAIN ON INDIVIDUALS.....	18
2.6 PREVENTION OF LOW BACK PAIN.....	20
2.7 THEORETICAL FRAMEWORK OF THE STUDY.....	21
2.8 SUMMARY OF THE CHAPTER.....	23
CHAPTER THREE	24
METHODOLOGY	24
3.1 INTRODUCTION	24
3.2 RESEARCH SETTING.....	24
3.3 RESEARCH APPROACH	25
3.4 RESEARCH DESIGN	25
3.5 STUDY POPULATION AND SAMPLING.....	26

3.5.1 Quantitative component.....	26
3.6 ELIGIBILITY CRITERIA.....	26
3.6.1 Inclusion criteria:	26
3.6.2 Exclusion criteria:	26
3.7 QUALITATIVE COMPONENT.....	26
3.8. DATA COLLECTION AND INSTRUMENTATION	27
3.8.1 Quantitative component.....	27
3.8.2 Qualitative component.....	29
3.9 DATA COLLECTION PROCEDURE.....	30
3.9.1 Quantitative component.....	30
3.9.2 Qualitative component.....	31
3.10. DATA ANALYSIS.....	31
3.10.1 Quantitative component.....	31
3.10.2 Qualitative component.....	32
3.11. ETHICS CONSIDERATIONS.....	32
CHAPTER FOUR.....	34
RESULTS	34
4.1 INTRODUCTION	34
4.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF ADULT WOMEN WITH LOWER BACK PAIN (LBP) (n=234).....	35
4.3 PHYSICAL MEASUREMENTS OF ADULT WOMEN WITH LOW BACK PAIN (LBP) (n=234)	36

4.4 PAIN INTENSITY, FREQUENCY OF PAIN AND FUNCTIONAL DISABILITY OF ADULT WOMEN WITH LOW BACK PAIN (n = 234)	37
4.5 FUNCTIONAL DISABILITY/ACTIVITY LIMITATIONS OF ADULT WOMEN WITH LOW BACK PAIN (n=234)	39
4.6 QUALITY OF LIFE (QOL) OF ADULT WOMEN WITH LOW BACK PAIN .	42
4.7 FOCUS GROUP DISCUSSIONS WITH ADULT WOMEN WITH LOW BACK PAIN (n=26)	43
4.7.1 Personal hygiene	45
4.7.2 Transport	46
4.7.3 Impact on activities of daily living (ADLS)	49
4.8 SUMMARY OF THE CHAPTER	54
CHAPTER FIVE	56
DISCUSSION	56
5.0 INTRODUCTION	56
5.1 PAIN INTENSITY	56
5.1.1 Low back pain and BMI	57
5.1.2 Low back pain and education	57
5.1.3 Low back pain and age	58
5.2 FUNCTIONAL DISABILITY.....	59
5.2.1 Functional disability and body mass index (BMI).....	60
5.2.2 Functional disability and age	60
5.3 QUALITY OF LIFE	61

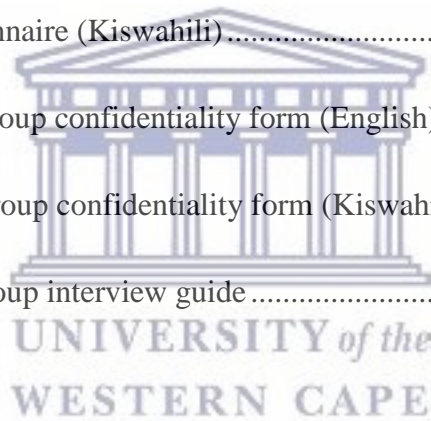


5.3.1 Quality of life, and body mass index and age	62
5.3.2 Quality of life and pain intensity	62
5.4 ACTIVITIES OF DAILY LIVING (ADLs).....	63
5.5 SUMMARY OF THE CHAPTER.....	65
CHAPTER SIX	66
SUMMARY, LIMITATIONS AND RECOMMENDATIONS.....	66
6.1 INTRODUCTION	66
6.2 SUMMARY OF THE STUDY.....	66
6.3 CONCLUSION.....	68
6.4 LIMITATIONS OF THE STUDY.....	69
6.5 RECOMMENDATIONS.....	69
6.6 SUMMARY OF THE CHAPTER.....	70
REFERENCES.....	71
APPENDICES	89



LIST OF APPENDICES

Appendix 1 Ethics approval letter from the University of the Western Cape	89
Appendix 2 Ethics approval from IREC	90
Appendix 3a Consent form (English)	91
Appendix 3b Consent forms (Kiswahili)	92
Appendix 4a Information sheet (English)	93
Appendix 4b Information sheet (Kiswahili)	97
Appendix 5a Questionnaire (English).....	101
Appendix 5b Questionnaire (Kiswahili)	100
Appendix 6a Focus group confidentiality form (English)	117
Appendix 6b Focus group confidentiality form (Kiswahili)	118
Appendix 7 Focus group interview guide	119



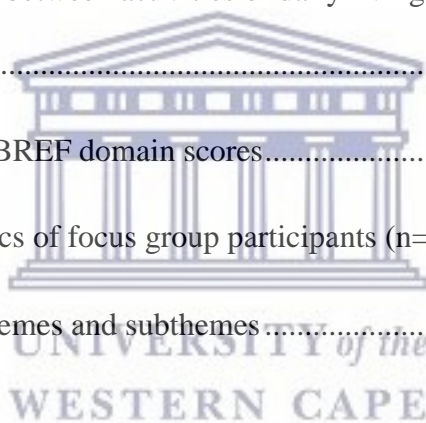
LIST OF FIGURES

Figure 2.1 Interactions between the components of ICF	22
--	----



LIST OF TABLES

Table 4.1 Socio-demographic characteristics of adult women with lower back pain (n=234).....	36
Table 4.2 Physical measurements of adult women with low back pain (n = 234).....	37
Table 4.3 Pain intensity and frequency of adult women with low back pain (n=234) ..	39
Table 4.4 Functional disability of adult women with low back pain (n=234)	40
Table 4.5 Mean scores of Oswestry Disability Index (ODI) components for adult....	41
Table 4.6 Association between activities of daily living (ADLs) and low back pain in adult women.....	41
Table 4.7 WHOQOL-BREF domain scores.....	42
Table 4.8 Demographics of focus group participants (n=26)	44
Table 4.9 Emerging themes and subthemes	45



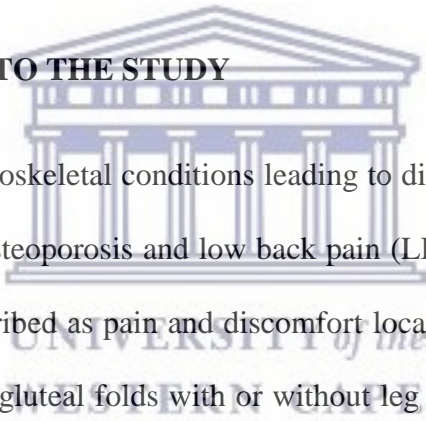
CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This chapter provides background information on the thesis. It explains the problem statement, research question, aim of the study as well as the specific objectives. Furthermore, the significance of the study is outlined and working definitions regarding key concepts used in this thesis are provided. The chapter ends with abbreviations used in the study as well as a summary of the forthcoming chapters.

1.2 BACKGROUND TO THE STUDY



The four major musculoskeletal conditions leading to disability include osteoarthritis, rheumatoid arthritis, osteoporosis and low back pain (LBP) (Woolf & Pfleger, 2003). Low back pain is described as pain and discomfort localized below the costal margin and above the inferior gluteal folds with or without leg pain (Galukande, Muwazi, & Mugisa, 2005). It is an enormous problem globally causing considerable financial burden to individuals and societies (Hoy et al., 2012). LBP is the most prevalent musculoskeletal condition and a major cause of disability in developing countries with reported lifetime prevalence between 28% and 74% (Louw, Morris, & Grimmer, 2007). The average lifetime prevalence for six studies conducted in Africa was 36% and 62% for adolescents and adults of both genders respectively (Louw et al., 2007).

A review on the global prevalence of low back pain reported a monthly prevalence of 23.2% and a point prevalence of 11.9% (Hoy et al., 2012). A review by Deyo, Mirza

and Martin (2006) in the USA reported that 26.4% of participants had back pain lasting a full day in the past three months.

Gender differences also exist with regards to the incidence of LBP. In China, 29.6% of the middle-aged women reported low back pain in the past year (Yip, Ho, & Chan, 2001). Rural housewives in India had a prevalence of 83% and also reported severe disability (Gupta & Nandini, 2015). In Brazil, females had the highest prevalence of LBP, 86.6% compared to 66.3% of males. In the same population, females aged 45 years and older had the highest prevalence of LBP (Candotti et al., 2015). In Iran, a prevalence of 56.5% was found among patients attending an essential health care clinic, with higher incidences among women (53.9%) compared to men (46.1%) (Bener, Dafeeah & Alnaqbi, 2014). Similarly an annual prevalence of 51% was reported among rural rice farmers in Thailand with higher incidences among female rice farmers (Taechasubamorn, Nopkesorn, & Pannarunothai, 2011).

A systematic review on the prevalence of low back pain in Africa reported a lifetime prevalence of 62% among adults (Louw et al., 2007). The review showed that incidences of low back pain in Africa are on the rise and there was minimal difference to those of developed countries. In South Africa, a prevalence of 47.46% was reported among hospital workers with increased incidence among females (Naude, Mudzi, Mamabolo, & Becker, 2009). In Nigeria, a study by Ogunbode, Adebusoye and Alonge (2013) reported a point prevalence of 46.8%. Similar studies conducted in Nigeria by Omokhodion, Umar and Ogunnowo (2000) and Omoke and Amaraegbulam (2016) reported a prevalence of 46% and 82.1% respectively. Highest incidences were observed among female nurses in a rural hospital. An Ethiopian study reported a 67.5% LBP prevalence of among female nurses while only 32.5% of male nurses reported LBP

(Sikiru & Shmaila, 2009). It is thus evident that the prevalence of LBP differs immensely in the studies. These variances can be attributed to the different methodologies applied in the studies as well as the diverse populations under investigation.

People with LBP experience huge social, mental, physical and occupational disruptions. The mental impact of LBP includes anxiety, depression and sleeplessness, whilst poor physical performance and deterioration in health status are recognized as physical impacts (Ogunbode et al., 2013). Risk factors for developing LBP can be non-modifiable (age, parity and previous history of LBP) or modifiable (sedentary lifestyle, obesity, tobacco smoking and drug dependency) (Ogunbode et al., 2013). In addition, modifiable factors can be occupation-related, including poor posture, prolonged sitting, twisting, bending, stooping and lifting of heavy loads (Vindigni, Walker, Jamison, DaCosta, Parkinson, & Blunden, 2005). Krismer and van Tulder (2007) categorized risk factors for low back pain as individual, psychosocial and occupational factors. Individual risk factors included age, smoking, obesity and less education. Low income, low levels of education and female gender were identified as risk factors for the development of low back pain (Deyo, Mirza, & Martin, 2006). Similarly, Biglarian et al. (2012) reported that increased age, female gender, obesity, low economic status, smoking and low education have significant associations with low back pain. Nicholas, Linton, Watson and Main (2011) reported psychological factors such as anxiety and concerns regarding pain as risk factors for chronic low back pain. Furthermore, Matsudaira, Konishi, Miyoshi, Isomura and Inuzuka (2014) and Naude, Mudzi, Mamabolo and Becker (2009) identified stress at work, job dissatisfaction and somatization of symptoms as psychosocial risk factors for chronic low back pain. Careers that involve heavy lifting and sitting for long periods also elicit back pain

(Ehrlich, 2003). These findings have been supported in work done by Bener et al. (2014) and Hoy, Brooks, Blyth and Buchbinder (2010). In addition, manual handling activities such as twisting, lifting and whole body vibration are risk factors associated with low back pain (Ogunbode et al., 2013).

LBP results in significant levels of disability causing restrictions on participation in activities of daily living (ADLs) and quality of life (QOL) (Bentsen, Hanestad, Rustøen, & Wahl, 2008; Veresciagina, Ambrozaitis, & Spakauskas, 2007). It is the major reason for activity limitation and work absenteeism in the world (Cambron & King, 2006). It is a source of economic burden to people, families, societies and organizations (Steenstra, 2005). There is evidence for lack of complete resolution of LBP in people and the pain gets worse with too much standing, walking and sitting, thus limiting mobility (Woolf & Pfleger, 2003). A longitudinal study conducted in Thailand reported that participants with chronic low back pain were more likely to be functionally disabled, struggling with activities of daily living such as dressing themselves, walking, going upstairs and stooping (Yiengprugsawan et al., 2017). Furthermore, LBP results in the inability to participate in social activities and it decreases the capability to perform occupation-related activities, especially when it affects adults of working age (Wadel & Burton, 2001).

The economic burden of LBP on society, especially in low-resourced continents like Africa, is enormous and continues to rise. Billions of dollars spent annually on managing LBP further constrains the fragile health care system in Africa, which is already ravaged by the HIV epidemic (Louw et al., 2007). Africa accounts for 14% of the world's population and is also the poorest continent, therefore bearing about 40% of the global burden of disease in general (Louw et al., 2007). Socio-economic

constraints in Africa therefore underpin the higher prevalence of many diseases and disabilities. Nearly 40% of households are managed solely by women (Kiriti & Tisdell, 2003).

Currently, women in Kenya do the vast majority of agricultural work and produce or market the most food. Only 29% of those earning a formal wage in Kenya are women, leaving a huge percentage of women to work in the informal sector, without any government support.

1.3 PROBLEM STATEMENT

Adult women in Kenya are vulnerable to LBP due to the nature of their daily routine, which is physically demanding. It includes common physical characteristics and risk factors that could be related to low back pain, such as smoking, central obesity, limb length discrepancy, sacroiliac joint dysfunction and limitations in muscle power (Padula, Carregaro, Melo, da Silva, & Oliveira, 2012). There is inadequate documented information regarding the effect of LBP on activities of daily living (ADLs) of adult women in Eldoret, Kenya. The researcher noticed a high number of adult women seeking physiotherapy services for LBP in Eldoret, hence the need to determine and explore the effect of LBP on ADLs in this population in order to develop prevention strategies and health promotion interventions to curb the emerging problem.

1.4 RESEARCH QUESTION

What is the impact of low back pain (LBP) on activities of daily living (ADLs) and quality of life (QOL) of adult women attending Moi Teaching and Referral Hospital (MTRH) in Eldoret, Kenya?

1.5 AIM OF THE STUDY

To determine the impact of low back pain (LBP) on activities of daily living (ADLs) and quality of life (QOL) of adult women attending Moi Teaching and Referral Hospital, Eldoret, Kenya.

1.6 SPECIFIC OBJECTIVES OF THE STUDY

- 1.6.1 To determine the pain intensity of adult women with low back pain attending Moi Teaching and Referral Hospital, Eldoret, Kenya.
- 1.6.2 To determine the functional disability/activity limitations of adult women with low back pain attending Moi Teaching and Referral Hospital, Eldoret, Kenya.
- 1.6.3 To determine the quality of life (QOL) of adult women with low back pain attending Moi Teaching and Referral Hospital, Eldoret, Kenya.
- 1.6.4 To explore the activities of daily living (ADLs) that may contribute to low back pain in adult women attending Moi Teaching and Referral Hospital, Eldoret, Kenya.

1.7 SIGNIFICANCE OF THE STUDY

The information obtained from this study could be used to make recommendations for the development of health promotion strategies to prevent LBP in adult women. These interventions could contribute to reductions in LBP and could reduce associated medical costs; thus, decreasing the seriousness of the problem. Furthermore, it is also proposed that the new information could assist policy makers with appropriate

suggestions to decrease the emerging problem of LBP and enhance the quality of life and productivity of women in Kenya.

1.8 DEFINITION OF KEY WORDS AND TERMS

Low back pain: Pain that is limited to the region between the lower margins of the last rib and the gluteal folds, regardless of the presence or absence of the leg pain (Manek & MacGregor, 2005; Louw, Morris, & Grimmer-Somers, 2007).

Acute low back pain: Back pain that last less than six (6) weeks (Woolf & Pfleger, 2003).

Sub-acute low back pain: Back pain that lasts between six (6) weeks and three (3) months (Woolf & Pfleger, 2003).

Chronic low back pain: Back pain that last more than three (3) months (Woolf & Pfleger, 2003).

Activities of daily living: Normal activities that people have a tendency of doing daily without help, including bathing, dressing, toileting, transfers, eating and continence (Foti & Koketsu, 2013).

Quality of life: Individual awareness of their life situation under the circumstances of their cultures and values to which they live and associate to their plans, assumptions, quality and worries (WHO, 1998).


Musculoskeletal disorders: Impairments that damage the human body structures i.e. tendons, ligaments, muscles and bones (Op de Beeck & Hermans, 2000).

Functional disability: Decrement in functions, which at the body level is known as impairment, at individual level as activity limitation and at community level as participation restriction (Uestuen & Kennedy, 2009).

Bio psychosocial model: A way of knowing how disease outcome is influenced by the integration of biological, psychological and social factors (Borrell-Carrió, Suchman, & Epstein, 2004).

Moi Teaching and Referral Hospital: The next biggest national referral hospital in Kenya following Kenyatta National Hospital. It's located in Uasing Gishu County in the North rift region of Western Kenya (<http://www.mtrh.go.ke/index.php/about>)

1.9 ABBREVIATIONS



ADLs	Activities of daily living
DALYs	Disability-adjusted life years
FGD	Focus group discussion
ICF	International Classification of Functioning, Disability and Health
LBP	Low back pain
MSDs	Musculoskeletal disorders
MTRH	Moi Teaching and Referral Hospital
NMQ	Nordic Musculoskeletal Questionnaire
ODI	Oswestry Disability Index
SPSS	Statistical Package for Social Science
QOL	Quality of life
VAS	Visual Analogue Scale

WHO World Health Organization

WHOQOL-BREF World Health Organization Quality of Life Instrument

1.10 SUMMARY OF THE CHAPTERS

Chapter One provides the background of the study and highlights the growing incidence of low back pain (LBP) globally. Specific statistics, especially those related to females are discussed. The problem statement, research question, aim, specific objectives and significance of the study are outlined. The chapter ends with the definitions of terms and abbreviations used in the study.

Chapter Two presents a review of existing literature on low back pain (LBP) prevalence globally, in developing countries as well as in Africa. Also reviewed are the risk factors for the development of LBP, and the impact of LBP on different aspects of an individual's life. Lastly, the theoretical framework of the study, the International Classification of Functioning, Disability and Health (ICF) is reviewed with specific reference to occupation-related LBP.

Chapter Three describes the methods used in the study. The study setting, research approach and research designs for the mixed methods chosen are given. Furthermore, the study population and sampling method, data collection instruments and the procedure for data collection for both the quantitative and qualitative phases are described. Lastly, the data analyses for both study phases as well as the ethics considerations for the study are outlined.

Chapter Four outlines the results of the quantitative phase of the study. Descriptive statistics are used to describe the results in terms of frequencies, means, ranges and

standard deviation. The results are presented using tables, graphs and pie charts. Chi square tests are used to indicate the association between variables.

Chapter Five presents the qualitative results of the interviews that attempted to explore the ADLs that may contribute to LBP. The pre-determined and emerging themes are illustrated with the use of verbatim quotes.

Chapter Six presents the discussion of the quantitative and qualitative results. It furthermore provides a summary of the study and draws conclusions based on the findings. Limitations to the study are also outlined. In addition, recommendations based on the main findings of the study are made.



CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides an overview of the existing literature pertaining to the prevalence of low back pain (LBP) globally, and in developing countries, specifically in Africa. In addition, the risk factors contributing to LBP, the effect of LBP on individuals as well as prevention of the debilitating condition are discussed. Lastly, the theoretical framework underpinning the study, the International Classification of Functioning, Disability and Health (ICF) as it relates to LBP, is outlined.

2.2 THE GLOBAL PREVALENCE OF LOW BACK PAIN

Low back pain is a very common health problem that leads to disability, which affects the performance of individuals at work and in general, especially in low- and middle-income countries (Dionne, Dunn, & Croft, 2006; Louw et al., 2007). LBP can be grouped into either “specific” (known pathological cause) or “non-specific” low back pain (unknown underlying cause) (Krismer & van Tulder, 2007). It is usually defined as acute if it lasts less than six weeks, sub-acute if it lasts between six weeks and three months and chronic when it lasts more than three months (Woolf & Pfleger, 2003).

Globally, LBP has a lifetime prevalence of over 80% with at least one episode of LBP in a lifetime (Dunn, Hestbaek, & Cassidy, 2013). A higher prevalence of LBP is seen in those aged between 25 and 64 years (Woolf & Pfleger, 2003). The 2010 Global Burden of Disease Study reported that LBP ranked among the top ten diseases with the highest number of disability-adjusted life years (DALYs) worldwide (Duthey, 2013).

Similarly, researchers also classified LBP as a major cause of disability and ranked it among the top five conditions contributing to DALYs (Froud et al., 2014; Hoy, Brooks, Blyth, & Buchbinder, 2010). LBP is a major health issue and socio-economic dilemma in developed countries. LBP is the leading reason for activity limitation and work absenteeism, thus causing high financial costs for families, individuals and governments (Bener et al., 2013). According to an America study, 26.4% of the sample population had reported LBP within the past three months while the prevalence of LBP was more common in adults aged 45 years and older (Deyo, Mirza, & Martin, 2006). In Europe, Krismer and van Tulder (2007) reported a 60-85% prevalence for LBP at any time, while the researchers stated that 15% of the adult population had LBP. A systematic review conducted in Australia on the prevalence of LBP found higher incidences of LBP in those aged 40-80 years and in females (Hoy et al., 2012). However, Woolf and Pfleger (2003) reported that LBP affects men more than women and that the working population aged 45-64 years had higher rates of LBP.

Globally LBP occurs among both males and females, but a higher prevalence is found among women aged 40 years and older (Bener et al., 2013). A cross-sectional study conducted among rice farm workers in Thailand showed that women were more likely to present with low back pain (61%) than their male counterparts (39%) (Taechasubamorn, Nopkesorn, & Pannarunothai, 2011). According to the researchers, the higher prevalence of LBP among female rice farmers was due to poor physical activity levels, and the burden of household activities, in addition to farm work. A Brazilian study by Candotti et al., (2015) reported a LBP prevalence of 84.9% for females, while the young and middle-aged population exhibited a higher incidence of the condition. Similarly, an Iranian study by Mohseni-Bandpei et al. (2009) reported a lifetime LBP prevalence of 84.1% among pregnant women. In addition, the researchers

stated a significant association with LBP and a previous history of LBP. A smaller gender discrepancy in LBP prevalence was reported by Bener, Dafeeah and Alnaqbi (2014), with figures of 53.9% and 46.1% for females and males respectively.

2.3 PREVALENCE OF LOW BACK PAIN IN AFRICAN COUNTRIES

While comparing the results of a systematic review regarding the prevalence of LBP in Africa to various studies in the Western countries, Louw et al., (2007) reported that the prevalence of LBP in Africa ranged between 14% and 72% annually. As for the Western societies, a prevalence of LBP that ranged between 20% and 62% was reported (Walker, 2000). The prevalence of LBP in Africa is therefore not lower than that of the Western world, as portrayed by Louw et al. (2007). In Nigeria, an annual prevalence for low back pain for nurses within an hospital setting was 73.53% with higher prevalence observed in female nurses (68%) than in male nurses (32%) (Sikiru & Hanifa, 2010). Occupational risk and lack of knowledge on back care ergonomics was related to the participants' low back pain. The researchers observed that the incidence rates found are comparable to incidence rates reported abroad. In South Africa a LBP point prevalence of 47.46% was reported among hospital workers and female workers had an increased risk for low back pain (Naude et al., 2009). The study advocated better education and promotion of kinetic handling and ergonomics. A comparative study done between Ethiopia and Nigeria among nurses reported a LBP prevalence of 70.9%. The nurses working in the obstetric and gynaecological unit had higher incidences of LBP and female nurses had higher a prevalence of 67.5% while the male nurses only had a prevalence of 32.5% (Sikiru & Shmaila, 2009).

The heterogeneity of LBP with change in populations in Nigeria was reported in a study by Ogunbode et al. (2013). With a sample of 485 patients attending an outpatient clinic in a hospital in Nigeria, Ogunbode et al. (2013) observed a 46.8% point prevalence of LBP. The researchers stated that the prevalence of LBP among adult patients is highly preventable and treatable. This was based on the fact that most cases of LBP were associated to modifiable risk factors such as tobacco smoking, ergonomics and poor posture. Public health efforts should be directed at educating people regarding ergonomics in occupational activities and life style habits. Moreover, a study by Biglarian et al. (2012) reported that obesity is related to LBP and that there is a need for programmes to mitigate obesity-related LBP in Iran where a LBP prevalence of 29.3% was reported for obese workers. The researchers further stated that LBP is influenced by age, gender, sexual activity, marital status, economic index, smoking, residence (rural vs. urban) and levels of educational attainment (Biglarian et al., 2012). A slightly lower prevalence (35.8%) was reported in South Africa (van Vuuren, Zinzen, van Heerden, Becker, & Meeusen, 2007). Omoke and Amaraegbulam (2016) and Naude, Mudzi, Mamabolo and Becker (2009) reported prevalence of 82.1% and 47.46% in Nigeria and South Africa respectively. The researchers reported increased prevalence for females while the impact of gynaecological conditions, domestic chores and higher somatization of symptoms are some of the reasons stated for the higher incidences among females (Naude et al., 2009).

2.4 RISK FACTORS FOR THE DEVELOPMENT OF LOW BACK PAIN

Risk factors for low back pain have been categorized in many ways. Some researchers have categorized LBP risk factors as physical, psychosocial, and personal risk factors

(Ehrlich, 2003; Bener et al., 2014; Op de Beek & Hermans, 2000). Krismer and van Tulder (2007) and Woolf & Pfleger (2003) categorized risk factors for LBP as individual factors, psychosocial factors and occupational factors. In this present study, risk factors will be categorized as the latter.

2.4.1 Individual risk factors

Obese and overweight subjects had the highest incidences of disability due to LBP (Candotti et al., 2015). Disability in obese and overweight individuals was attributed to poor posture, balance disorders and decreased range of motion. Similarly Ehrlich (2003) reported that obesity and the last stages of pregnancy distort the curvature of the spine, which leads to back pain. Obesity contributes to disc degeneration which in turn increases the prevalence of LBP, while smoking can be a risk factor due to the analgesic properties of nicotine (Bener et al., 2014). Apart from obesity, Bener et al. (2014) and Woolf & Pfleger (2003) identified older age, low education and smoking as risk factors to LBP. It was also noted that the prevalence of chronic pain and inability to perform ADLs due to LBP increase with age (Hoy, Brooks, Blyth, & Buchbinder, 2010). People aged between 30 and 60 years are more likely to have LBP (Browning, 2012), while those with a previous history of LBP are twice more likely to report a new incidence of LBP (Hoy et al., 2010). Higher education levels and higher socio-economic status may give people access to resources regarding the prevention and management of LBP, thus contributing to the decrease in LBP prevalence.

2.4.2 Occupational risk factors

Numerous literature attributes most of the musculoskeletal disorders (MSDs), including LBP, to occupational duties. MSDs are common across social class boundaries and are

therefore viewed as a major, most common and most expensive occupational health problem, both in developed and developing countries (Yue, Liu, & Li, 2012)). Non-neutral body postures, vibration, forceful exertions, rapid work pace and repetitive motion are the physical ergonomic features of work considered to be risk factors for MSDs (Op de Beek & Hermans, 2000; Punnett & Wegman, 2004; Punnett et al., 2005). According to Durmus and Ilhanli (2012), frequent heavy lifting, awkward back postures and repetitive activities are among the occupational predisposing factors to LBP.

Occupational activities that involve heavy lifting and sitting for long periods also provoke back pain (Ehrlich, 2003). Bener et al. (2014) found that the majority of patients who had back pain were doing clerical jobs, while half of them were housewives. Incidences of LBP among nurses were higher than in other health care workers. This may be due to the nature of their work, which involves lifting, transfer of patients and bending over patients (Naude et al., 2009). Similarly, Hoy et al. (2010) found a positive relationship between incidences of LBP and physical demands of work. The researchers reported that 80-90% of the population in low income countries engage in manual work, which may have a significant influence on the incidence of LBP in this population.

Social cultural factors also contribute to the high incidences of LBP in female farmers. Farming to generate food for their households is primarily a role for women in parts of Sub-Saharan Africa (Birabi, Dienne, & Ndukwa, 2012). Farming and the combination of household activities could contribute to the high incidence of LBP among women in Sub-Saharan Africa (Descarreux, Normand, Laurencelle, & Dugas, 2002). These activities include bending, stooping, poor posture, twisting and carrying of heavy loads (Ogunbode et al., 2013; Woolf & Pegler, 2003). Furthermore, hormonal changes in

women are responsible for laxity in muscles and ligaments, thus making women more vulnerable than men to the development of LBP.

2.4.3 Psychosocial risk factors

Psychological issues have long been noted by numerous practitioners for their contribution to the nature of LBP (Skelton, Murphy, Murphy, & O'Dowd, 1996). A biomedical framework was considered in the early 90s for LBP but recently the biopsychosocial model better fits the intriguing nature of this condition (Truchon, 2001). It is also reported that people with LBP are four times more likely to experience psychological distress compared to people without LBP (Queensland Department of Health, 2013). LBP can be related to a number of psychological conditions, including loss of self-esteem, loss of self-efficacy, anger and depression. Researchers reported that patients with LBP usually feel helpless, depressed or angry due to the inability of executing their tasks effectively (Strunin & Boden, 2004).

Nicholas, Linton, Watson and Main (2011) identified a number of psychological risk factors, which include worries about pain, or trauma, and awkward beliefs about recovery and anxiety. The study also reported a positive relationship between psychological factors and the change from acute to chronic pain. Similarly, Pincus, Burton, Vogel and Field (2002) noted a higher risk of chronicity in LBP due to mental distress. Poor results in the management and outcomes of LBP was associated with depression, mental distress, fear avoidance and passive coping strategies (Ramond et al., 2011).

Literature suggests four reasons for an association between psychosocial and musculoskeletal symptoms (Hoogendoorn, van Poppel, Bongers, Koes, & Bouter,

2000). Firstly, psychosocial work characteristics are known to influence the biomechanical load through changes in posture, movement and exerted forces. Increased muscle tension or increased hormonal excretion can also be triggered by psychosocial factors, which in the long term could lead to more intense musculoskeletal pain perception and symptoms. Thirdly, the coping mechanism of an individual may be changed by psychosocial factors, hence influencing the reporting of musculoskeletal symptoms. Lastly, the association may well be confounded by the effect of physical factors.

2.5 THE EFFECT/IMPACT OF LOW BACK PAIN ON INDIVIDUALS

The burden of musculoskeletal disorders on persons and communities is on the rise in developing countries, affecting mostly the elderly (Woolf & Pfleger, 2003). The economic encumbrance of LBP is of particular concern for poorer nations such as those in Africa, where already restricted health care funds are directed towards epidemics such as HIV and AIDS. Funding to deal with musculoskeletal problems is virtually absent (Walker, 2000). Most of the research on LBP has been conducted in the developed world that does not have the same social and economic conditions as those in Africa and other developing nations (Worku, 2000). The differences between social structure, genetic diversity and hierarchy, as well as economic differences between developed and developing countries, may underlie reported disparity in both prevalence and impact of low back pain in developing countries (Louw et al, 2007).

In 2004 the global burden of LBP was approximately 2.5 million DALYs with the highest prevalence in the adolescent to middle-age categories in both males and females (Hoy et al., 2010). LBP has an impact on the patient and community as a result of its

incidences and financial repercussions due to lost wages and increased health care costs (Hoy et al., 2010). Low income individuals have a greater burden due to LBP, compared to individuals from middle and high income countries (Woolf & Pfleger, 2003). LBP presents an economic burden to communities due to the substantial number of work days lost. In the US, LBP costs \$ 100 billion per year, with lost wages and diminished productivity accounting for two thirds of these costs (Katz, 2006).

Apart from the financial burden caused by LBP, it also impacts on individuals through activity limitation and participation restriction, thus hampering careers. The impact of LBP varies among populations depending on access to health care, occupation and the onset and prognosis of LBP (Hoy et al., 2010). A study conducted in Thailand by Yiengprugsawan et al. (2017) reported that LBP adversely affected ADLs like dressing, walking, bending and climbing stairs. Similarly, Woolf and Pfleger (2003) identified prolonged sitting, walking, and standing as some of the activities of daily living which increase pain and restrict the individual's mobility.

Low back pain has been associated with worsening physical health-related quality of life (Nolet, Kristman, Côté, Carroll, & Cassidy, 2014). Similar cross-sectional studies have also reported the abovementioned tendency (Matsudaira, Konishi, Miyoshi, Isomura, & Inuzuka, 2014; Pedisic, Pranic, & Jurakic, 2013). According to a study conducted by Froud, Patterson, Eldridge and Seale et al. (2014), those affected are mostly concerned with their engagement in activities such as house work and leisure time activities. Some patients struggle to meet social expectations and obligations; others withdraw due to fear of disapproval or their inability to accommodate social demands, while some adjust their expectations accordingly. Many patients do not recover completely and may end up with chronic pain (Woolf & Pfleger, 2003). An

Australian study on the impact of chronic LBP found the condition to be multidimensional due to its impact on ADLs, employment and family participation (Lin et al., 2012).

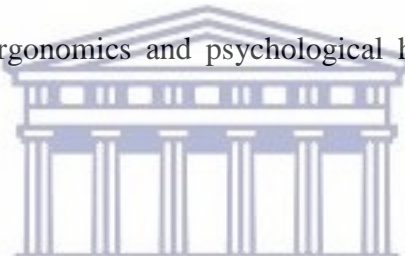
There is no literature available regarding the impact of LBP on ADLs and QOL of women living in Kenya, a country known to have constrained resources for health care. Hence the need to investigate the impact of LBP on the activities of daily living (ADLs) and the quality of life (QOL) of female adult patients attending Moi Teaching and Referral Hospital in Eldoret, Kenya. The results of the study could aid in the development of prevention strategies and the implementation of health promotion programmes to curb the impact of LBP on this population.

2.6 PREVENTION OF LOW BACK PAIN

A systematic review by Demoulin et al. (2012) on the effectiveness of educational intervention for low back pain showed that the interventions which focused on the biomechanical model for the prevention of LBP were ineffective. Similarly, Burton et al. (2005) reported in the European guidelines for prevention of low back pain that the usual biomechanical information in lifting techniques is not recommended for the prevention of low back pain. The studies recommended that longer education periods and higher quality studies are needed to make such interventions meaningful. A systematic review on effective manual handling concluded that manual handling training was mostly inefficient in the reduction of back pain (Clemes, Haslam, & Haslam, 2009). Possible reasons for this included that previous habits are hard to let go, stressful job conditions cannot eliminate risks and increased weight can strain the body. The study rather advocated exercise training to increase strength and flexibility and better research in the application of techniques in ergonomic design. Similarly, Maher

(2000) said that workplace exercises were more efficient, while braces and education were ineffective. The researchers attributed this result to the fact that people fail to comply with techniques taught, i.e. the correct way of lifting. Steffens et al. (2016) reported that exercises and education was effective in averting low back pain. However, the researchers were not sure as to whether or not the effects would be long lasting.

Occupational stress can be a risk factor for low back pain. Employees exposed to manual handling are more often on sick leave and depression due to the pain caused by LBP that can provoke symptoms and affect outcomes of low back pain (Meyer, Flenghi, & Deschamps, 1998). Similarly Yip (2001) found a relationship between work, stress, manual handling of patients, and the increased risk of low back pain. The study suggested that better ergonomics and psychological health in the workplace could prevent low back pain.



2.7 THEORETICAL FRAMEWORK OF THE STUDY

The approval of the International Classification of Functioning, Disability and Health (ICF) by the World Health Assembly in May 2001 marked a paradigm shift in the way health and disability is understood and measured (WHO, 2001). The ICF has brought the concepts of health and disability into a comprehensive whole of multiple dimensions of human functioning synthesizing biological, psychological, social and environmental aspects. It thus presents health and disability in a single spectrum.

Formulating human functioning in multiple dimensions under a bio-psychosocial view is not new to a number of medical fields, including rehabilitative medicine, mental health and physical therapy. The ICF provides a globally agreed-on conceptual framework and common language to document functional status information. It also

provides a conceptual framework for understanding disability. At the core of the ICF concept of health and disability is the notion that disability is a multidimensional and universal phenomenon placed on a continuum with health (Kostanjsek, 2011). The researcher further stated that according to the ICF model, disability and functioning are outcomes of interactions between health conditions (diseases, disorders and injuries such as low back pain) and contextual factors. The bio-psychosocial model embedded in the ICF broadens the perspective of disability and allows medical, individual, social, and environmental influences on functioning and disability to be examined.

Figure 2.1 portrays the components of the ICF in an interactive model. The health condition (e.g. LBP) may impact functioning of the individual at three (3) interacting levels, namely in relation to the body, at the level of activities, and at the level of participation in society. Environmental and personal factors should also be taken into account.

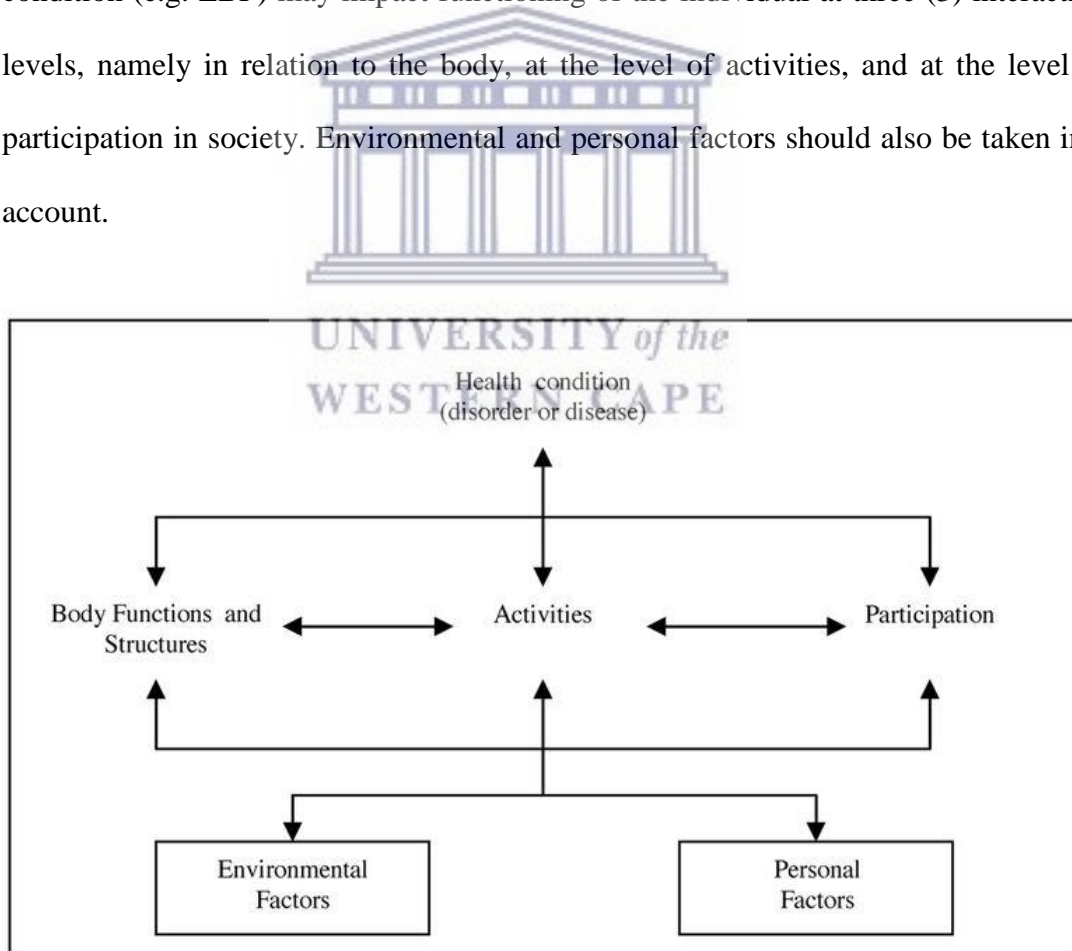


Figure 2.1 Interactions between the components of ICF

2.8 SUMMARY OF THE CHAPTER

Chapter Two presented a review of literature related to the global prevalence of LBP, risk factors for the development of LBP, the effect of LBP on the individual and the theoretical underpinning of the study. The next chapter presents the research methods that were used in the study.



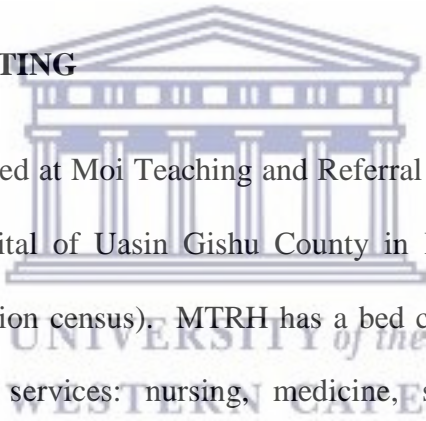
CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter provides an overview of the research approach and methods used in the study. Furthermore, the description of the research setting, research approach and design, study population and sampling method are outlined. In addition, the chapter describes the data collection and instrumentation, data collection procedure, statistical data analysis as well as ethical issues pertaining to this study.

3.2 RESEARCH SETTING



The study was conducted at Moi Teaching and Referral Hospital (MTRH) in Eldoret, the administrative capital of Uasin Gishu County in Kenya, with a population of 897,194 (2009 population census). MTRH has a bed capacity of eight hundred and offers the following services: nursing, medicine, surgery, mental health and rehabilitation. The physiotherapy department has forty (40) staff members (www.mtrh.or.ke). The hospital serves an immediate catchment area of Nyanza province, North Rift and Western province, with a total population of approximately 16.24 million. The area is a predominantly agricultural region with main economic activities at large scale including wheat, maize and dairy farming. Most of the patients come from peripheral areas and the town of Eldoret.

3.3 RESEARCH APPROACH

This study employed a sequential explanatory mixed methods approach to investigate the impact of LBP on ADLs and QOL of adult women with LBP seeking physiotherapy services at MTRH. Qualitative data collection builds directly on the quantitative results. The quantitative data was collected and analysed, followed by the qualitative data collection and analysis which assisted with elaborating on the quantitative results obtained earlier (Creswell & Clark, 2010). Triangulation of quantitative and qualitative data was integrated in the discussion chapter of the study.

A quantitative approach was used to address the first three objectives, namely to determine the pain intensity, functional disability and quality of life of adult women with LBP attending MTRH. This is an approach used to establish relationships among variables measured with surveys and analysed using statistical procedures (Creswell, 2003). A qualitative approach was employed to address the last objective, namely to explore ADLs that may contribute to LBP among adult women attending MTRH.

3.4 RESEARCH DESIGN

The study employed a cross-sectional design for the quantitative phase. Cross-sectional studies depict incidences of an impact and the unique features related with it at a certain point in time (Levin, 2006). An explanatory design with focus group discussions was used for the qualitative part of the study. It enabled the researcher to learn about the ADLs of the participants that could contribute to LBP (Carpenter, 2004).

3.5 STUDY POPULATION AND SAMPLING

3.5.1 Quantitative component

The population of the study consisted of adult women with LBP seeking physiotherapy services at MTRH. Approximately 500 adult women were treated for LBP at the outpatient physiotherapy clinic of MTRH for the time period June 2014 to June 2015.

The sample size was calculated according to the Yamane formula $n = \frac{N}{1+N(e)^2}$ where n stands for sample size, N for study population, e as constant value equal to 0.05. Thus, a minimum of 222 patients should participate in the study to make the results generalizable to the study population. Purposive sampling was used to recruit patients. Purposive sampling is the intentional choosing of a source because of the characteristics the source has (Tongco, 2007).

3.6 ELIGIBILITY CRITERIA

3.6.1 Inclusion criteria: Consenting adult women diagnosed with LBP by a medical doctor.

3.6.2 Exclusion criteria: Adult women with LBP caused by malignancy, infection, vertebral fracture, metabolic bone disease and congenital disorders.

3.7 QUALITATIVE COMPONENT

Purposive sampling was employed. The population for the qualitative component of the study consisted of all the participants who completed the survey in the quantitative phase. Five (5) focus group discussions were conducted. A total of 26 individuals participated in the FGDs.

3.8. DATA COLLECTION AND INSTRUMENTATION

3.8.1 Quantitative component

Each patient was asked to complete a survey consisting of the following sections: socio-demographic information, the Nordic Musculoskeletal Questionnaire (NMQ), the Oswestry Disability Index (ODI) and the WHOQOL-BREF tool. A brief description of the survey is outlined below.

a) Socio-demographic information

A self-constructed scale was used to document socio-demographic information of the participants, including age, level of education, marital status and current employment.

b) Nordic Musculoskeletal Questionnaire (NMQ)

The Nordic Musculoskeletal questionnaire is a tool aided by a body chart. Participants indicate symptom sites and intensity. Only the area of the lower back was used in the study. Pain is scored on a visual analogue scale (VAS) of 0-100mm in order to assess intensity of pain during the last twelve (12) months and the last seven (7) days. For purposes of interpretation of the VAS scale, 0 - 4mm = no pain; 5 - 44mm = mild pain; 45 - 74mm = moderate pain and 75 - 100mm = severe pain (Jensen, Chen, & Brugger, 2003). A higher score indicates higher pain intensity. The NMQ has reliability results of 0.88 to 1 Kappa values and is validated internationally (de Barros & Alexandre, 2003).

c) Oswestry Disability Index (ODI)

The Oswestry Disability Index (ODI) includes 10 sections that evaluate a person's ability to function in everyday life activities. The domains include pain intensity, personal care, lifting, walking, sitting, standing, sleeping, sex life, social life and travelling. Each section contains six (6) statements that are scored from 0 (minimum degree of difficulty) to 5 (maximum degree of difficulty). Scores are interpreted as 0 - 20% = minimum disability; 21 - 40% = moderate disability; 41 - 60% = severe disability; 61% - 80% = crippled and 81% - 100% = bed bound or symptom exaggeration. The ODI is reported to have an excellent validity correlation score and an acceptable internal consistency with a Cronbach's alpha of 0.71 (Fairbank & Pynsent, 2000).

d) WHOQOL-BREF

The WHOQOL-BREF was derived from the WHOQOL. It's a 26-item questionnaire used to assess health-related quality of life, including two (2) items for health status and general QOL and 24 items divided in four (4) domains (social, environmental, psychosocial and physical). Each item score ranges from 1 - 5 with higher scores indicating better QOL on the item. A total score for a domain thus range between 4 and 20. The WHOQOL-BREF was found to have good validity and reliability with a Cronbach's alpha of 0.84 (Berlim, Pavanello, Caldieraro, & Fleck, 2005).

RELIABILITY AND VALIDITY OF THE QUANTITATIVE INSTRUMENT

Validity refers to the idea that an instrument should measure what is required to measure (Polit & Beck, 2003). Reliability according to Polit & Beck (2003, p.35), is "the accuracy and consistency of information obtained from a study". The final survey consisted of validated reliable questionnaires, as explained in 3.5.1 above.

PILOT STUDY

A pilot study was done to establish the face validity of the survey, the time it took to be completed and the clarity of the questions to the participants. The questionnaire was translated from English to Kiswahili and translated back to English by two professional translators, fluent in both English and Kiswahili. Fifteen (15) adult women with LBP, who met the inclusion criteria of the study, were asked to complete the questionnaire after written informed consent was obtained from them. The completed questionnaires of these individuals were not included in the main study.

3.8.2 Qualitative component

A semi-structured interview guide was developed based on literature (Kaplan, 2005) and was employed in the FGDs to explore the last objective of the study, namely to explore the activities of daily living (ADLs) that may contribute to LBP in adult women attending Moi Teaching and Referral Hospital, Eldoret, Kenya.

UNIVERSITY of the
WESTERN CAPE

TRUSTWORTHINESS OF THE QUALITATIVE DATA

Trustworthiness refers to a series of techniques used to ensure rigor of qualitative designs (Polit & Beck, 2003). According to Shenton (2004), trustworthiness of qualitative data is measured through credibility, transferability, dependability and confirmability. To ensure trustworthiness in the study, the following steps were taken:

Credibility: Each patient was given the summary of the FGD to comment on whether or not they felt the data was interpreted according to what they said. The transcribed verbatim data was given to colleagues (peer debriefing) who were not involved in the study to view.

Dependability was increased by giving a profuse description of the study to enable the readers to relate the phenomenon described with their situations (Shenton, 2004).

Transferability was assured as the researcher gave a detailed process of the qualitative data collection method to ensure repeatability of the study. This was also achieved by giving a description of the text, participant's characteristics and excerpts.

To ensure **conformability**, a code-recode method was employed by the researcher during data analysis (Lincoln & Guba, 1985). The study supervisor went through the process notes (data collection procedures and design strategies), field notes and transcriptions and data synthesis products (thematic categories and interpretations).

3.9 DATA COLLECTION PROCEDURE

3.9.1 Quantitative component

After receiving written approval from relevant authorities, the researcher approached the participants at the physiotherapy outpatient department at MTRH. Every adult woman with LBP was invited to participate in the study. An information sheet, explaining the aims and objectives of the study as well as issues addressing anonymity, confidentiality and their right to withdraw, was available. Informed written consent was obtained from those willing to participate in the study. The questionnaire was completed in the presence of the researcher or the research assistant. The participants were assured of their right to withdraw from the study at any time without consequences.

3.9.2 Qualitative component

The researcher approached and invited participants who took part in the quantitative phase of the study to participate in the FGDs. The aim and objectives of the FGD were explained to the participants. A convenient time and place were organized for the FGD to take place. A signed confidentiality binding form was obtained from each participant before the discussion commenced. Participants were told that their participation is voluntary and of their right to withdraw anytime of the study. A semi-structured interview guide (Appendix 7) was used during the FGD that was conducted in Kiswahili. To ensure all information was captured, a probing technique was used (Britten, 1995). Audio-taping of the discussions was done, and the research assistant took field notes. Once saturation was reached in the discussion (no new information arises) the FGD was discontinued (Polit & Beck, 2003).

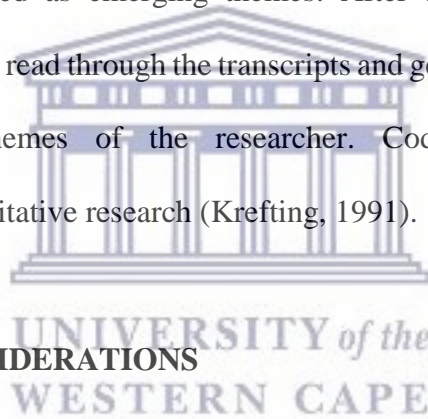
3.10. DATA ANALYSIS

3.10.1 Quantitative component

The Statistical Package for Social Sciences (SPSS), version 23 was used to capture and analyse quantitative data. Descriptive statistics were employed to summarize socio-demographic data of the patients. Continuous variables such as age and pain were expressed as mean, standard deviation and percentages. Categorical variables such as marital status and level of education were expressed in frequencies and percentages. Inferential statistics were employed to determine distribution and significant differences in various groups. Statistical significance was set at $p < 0.05$.

3.10.2 Qualitative component

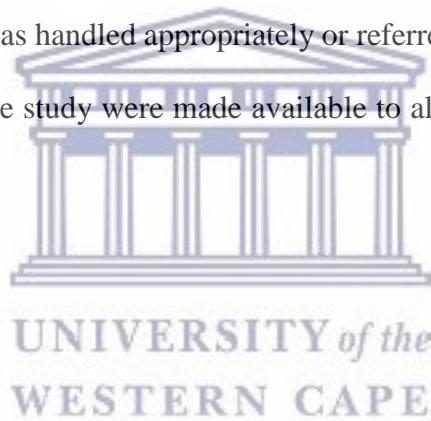
The qualitative data was analysed by transcription verbatim of the audiotapes. Hammell and Carpenter (2004) stated that exact transcription of the data preserves words of the participants. An independent person with knowledge on transcription transcribed the data. To ensure accuracy transcriptions were matched with field notes and audiotape recordings. Thereafter coding and thematic analysis were done on two levels; individual data and across all participants to compare themes and categories. Analysing of themes started when all the transcriptions of the discussion and processed notes were read out multiple times for the researcher to be enlightened with the content. Broad categories of the data were coded as emerging themes. After the derivation of themes, an independent researcher read through the transcripts and generated themes that were then compared to the themes of the researcher. Code-recode process increases trustworthiness in qualitative research (Krefting, 1991).



3.11. ETHICS CONSIDERATIONS

Ethics clearance was sought from the Humanities and Social Science Research Ethics (HSSREC) Committee of the University of the Western Cape (Appendix 1). Further permission was sought from the Institutional Research Ethics Committee (IREC) of Moi Teaching and Referral Hospital (Appendix 2). All participants were treated with respect and dignity. Before the study commenced, written consent was obtained for all the participants (Appendix 3a and 3b). All the participants received an information sheet that explained the aim and objectives of the study (Appendix 4a and 4b). Questionnaires (Appendix 5a and 5b), consent forms and information sheets were available in English and Kiswahili. Data forms were coded using numbers for

identification purposes and also to ensure anonymity. Participation was voluntary, and participants had the right to withdraw from the study at any time without any consequences. Information gathered from the study was handled with confidentiality and was only be available to the researcher. Pseudonyms were used to take care of participants' identities when results are published. All tapes were destroyed once they have been transcribed and documented according to themes. A focus group confidentiality binding form (Appendix 6a and 6b) was signed by all the participants of the FGDs to not disclose any information from the discussion. Information will be kept for a minimum five years after which it will be destroyed. Minimal risks are expected in the study. Sensitive questions or issues that may come up during the study and could affect the participant was handled appropriately or referred to an expert for appropriate attention. Results of the study were made available to all participants and the director of the hospital.



CHAPTER FOUR

RESULTS

4.1 INTRODUCTION

This chapter entails the research findings, data presentation and interpretation of the data set. It presents the quantitative results that attempted to answer the first three (3) objectives of the study, namely to determine the pain intensity, the functional disability/activity limitations and the quality of life (QOL) of adult women with low back pain attending the Moi Teaching and Referral Hospital, Eldoret, Kenya. The following will be presented in this chapter: an overview of the socio-demographic profile of the participants; the prevalence of LBP within the past seven (7) days and past year respectively; the prevalence and severity of LBP during different working positions, the prevalence and area of referred pain. The results are summarized in tables and figures where necessary.

In addition, the qualitative data that attempt to answer the last objective of the study, namely to explore activities of daily living (ADLs) that may contribute to low back pain in adult women attending the Moi Teaching and Referral Hospital, Eldoret, Kenya, will be presented. In the presentation of the qualitative findings, verbatim quotations were used to exemplify the themes and subthemes. Cryptograms are employed to ensure anonymity and confidentiality of the participants of the presented data.

4.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF ADULT WOMEN WITH LOWER BACK PAIN (LBP) (n=234)

Of the 311 adult women attending the Moi Teaching and Referral Hospital in Eldoret, who were approached to participate in the study, 276 met the inclusion criteria. Two hundred and thirty-four questionnaires were completed and returned after written informed consent was signed. A response rate of 75.2% was thus achieved.

As shown in Table 4.1 below, a total of 234 adult women with a mean age of 38.54 years (SD = ± 9.40) completed the questionnaire. The age of the participants ranged between 18 and 49 years. The majority of the participants were married (n=197; 84.0%). Just less than two thirds (n=147; 62.8%) of the participants attained university education while a quarter (n=59; 25.5%) were in the nursing profession.

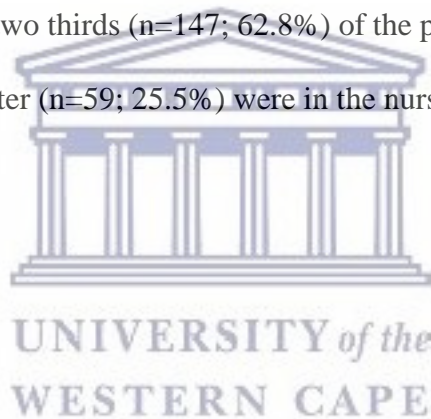


Table 4.1 Socio-demographic characteristics of adult women with lower back pain (n=234)

Variable	Frequency (n)	Percentage (%)
Age (Mean = 38.54 years, SD = 9.4)		
< 20 years	2	9.0
20 – 29 years	54	23.1
30 – 39 years	89	38.0
40 – 49 years	89	38.0
Marital Status		
Married	197	84.0
Single	28	12.0
Other	9	4.0
Level of Education		
Primary	15	6.4
Secondary	66	28.2
University	147	62.8
None	5	2.6
Occupation		
Nurse	59	25.5
Teacher	46	19.5
Medical workers	13	5.4
Other	116	49.5

4.3 PHYSICAL MEASUREMENTS OF ADULT WOMEN WITH LOW BACK PAIN (LBP) (n=234)

The physical measurements of the participants are presented in Table 4.2 below. The mean **weight** of the participants was 74.59 kg (SD=12.84 kg), ranging from 59 kg to 114 kg. The mean **BMI** of the study sample was 28.31(SD=5.15). The CDC (2011) standard weight status categories associated with BMI range for adults' guidelines were used to classify the participants into underweight, normal, overweight or obese. Among

the 234 participant, 25.2% (n = 59) were classified as having normal weight, 38.5% (n = 90) as overweight, 33.3% (n = 78) as obese and a mere 3.0% (n = 7) as underweight.

The Pearson test was performed to establish if there was a relationship between BMI and low back pain (VAS). The Pearson test yielded a value of 4.18 and a p-value of 0.90. Therefore, no significant relationship was found between BMI and low back pain (VAS) ($p > 0.05$).

Table 4.2 Physical measurements of adult women with low back pain (n = 234)

Variable	Frequency (n)	Percentage (%)
BMI Categories		
Underweight	7	3.0
Normal or healthy weight	59	25.2
Overweight	90	38.5
Obese	78	33.3
mean (SD)		
Mean Height (cm)	161.5 (9.52)	
Mean Weight (kg)	74.6 (12.84)	
Mean BMI	28.3 (5.15)	

4.4 PAIN INTENSITY, FREQUENCY OF PAIN AND FUNCTIONAL DISABILITY OF ADULT WOMEN WITH LOW BACK PAIN (n = 234)

The first objective of the study aimed to determine the pain intensity of adult women with low back pain attending Moi Teaching and Referral Hospital, Eldoret Kenya.

The Visual Analogue Scale (VAS) was employed to determine **pain intensity**. The scores ranged between 0 and 10, where 0 = no pain and 10 = extreme pain. The mean score for LBP intensity of the participants was 6.26 (SD=4.46). The moderate variability implies that patients with LBP are spread homogeneously below and above

the mean. The minimum value obtained was 0, while the maximum value was 10, implying that some patients experience no pain at all while others experienced extreme pain. Just more than a quarter of the participants (n=61; 26.2%) experienced severe pain while more than half of the participants (n=122; 52.3%) experienced moderate pain. Forty-nine (20.7%) participants reported that they experienced mild pain, as illustrated in Table 4.3. below.

The results revealed that the majority of the participants (n=210; 94.6%) experienced LBP in the past 12 months while 200 participants (90.1%) had LBP in the past 7 days. Of the participants that experienced pain in the past 12 months, almost sixty percent (n=123; 58.6%) experienced pain for more than 30 days, although not every day; while thirty-four participants (16.2%) experienced pain every day for the past year. Furthermore, more than two thirds (n=143; 68.1%) of the participants who experienced pain in the past 12 months reported that the LBP prevented them from carrying out normal duties while more than eighty percent (n=176; 83.8%) consulted a doctor for their LBP.

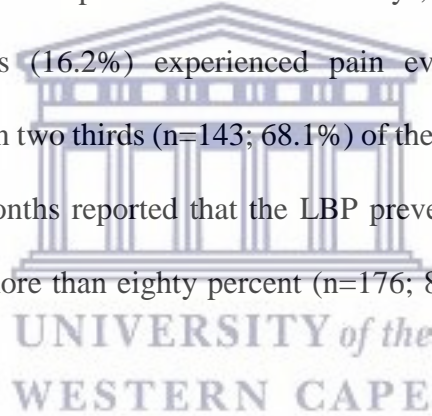


Table 4.3 Pain intensity and frequency of adult women with low back pain (n=234)

Variable	Frequency (n)	Percentage (%)
PAIN INTENSITY		
Range: Min=0; Max=10		
Mean=6.26 (SD=4.46)		
No pain	2	0.9
Mild pain	49	20.7
Moderate pain	122	52.3
Severe pain	61	26.2
FREQUENCY OF LBP		
Last 12 months	210	94.6
Last 7 days	200	90.1
LENGTH OF TIME EXPERIENCING LBP THE LAST 12 MONTHS (n=210)		
0 days	-	-
1-7 days	29	13.8
8-30 days	24	11.4
> 30 days, but not every day	123	58.6
Every day	34	16.2

4.5 FUNCTIONAL DISABILITY/ACTIVITY LIMITATIONS OF ADULT WOMEN WITH LOW BACK PAIN (n=234)

The second objective of the study aimed to determine the functional disability/activity limitation of adult women with LBP attending Moi Teaching and Referral Hospital, Eldoret, Kenya. Functional disability was measured for the following positions: sitting, standing, walking, lifting, sleeping, traveling, sex life, social life and personal washing

according to the Oswestry Disability Index (ODI). For each position, five options were given.

The study results showed that half of the women (n=117; 50.0%) had moderate disability, while less than a third of the participants (n=69; 29.7%) had minimal disability. Just more than twenty percent (n=48; 20.3%) of the patients are severely disabled and crippled, as illustrated in Table 4.4.

Table 4.4 Functional disability of adult women with low back pain (n=234)

FUNCTIONAL DISABILITY	Frequency (n)	Percentage (%)
Minimal Disability	69	29.7
Moderate Disability	117	50.0
Severe Disability	37	15.8
Crippled	11	4.5
Bed-bound	-	-
Total	234	100.0



The study sought to establish the correlation, if any, between functional disability (ODI scale) and pain intensity (VAS scale). The study results revealed a significant positive correlation, meaning more pain leads to increased disability ($r = 0.426$; $p = 0.000$). The mean score for each component of the Oswestry Disability Index evaluated is illustrated in Table 4.5 below.

Table 4.5 Mean scores of Oswestry Disability Index (ODI) components for adult women with low back pain (n=234)

ODI component	Mean (SD)
Pain intensity	2.24 (1.08)
Sitting	1.54 (1.10)
Standing	1.60 (1.18)
Walking	0.88 (0.94)
Sleeping	0.97 (0.77)
Lifting	2.56 (1.25)
Travelling	0.93 (0.57)
Personal washing	1.38 (1.17)
Sex life	0.91 (1.34)
Social life	1.65 (1.33)

The Pearson test was performed to test whether there was a statistically significant association between activities of daily living (ADLs) and LBP. Sitting, lifting an object and social life were significantly associated ($p < 0.05$) with LBP. See Table 4.6 below.

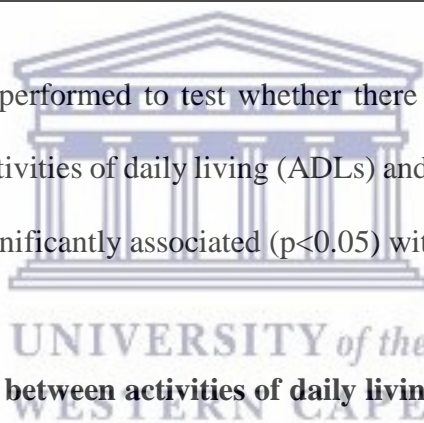


Table 4.6 Association between activities of daily living (ADLs) and low back pain in adult women

ACTIVITY	r value	df	p-value
Lifting*	20.894	12	.050
Personal Washing	14.121	9	.118
Walking	13.141	12	.359
Sitting*	33.668	12	.001
Sex life	8.950	12	.707
Standing	19.678	12	.073
Social Life*	25.221	12	.014
Sleeping	11.134	12	.517

*Significant level at $\alpha = 0.05$

4.6 QUALITY OF LIFE (QOL) OF ADULT WOMEN WITH LOW BACK

PAIN

The third objective of the study was to determine the quality of life (QOL) of adult women with low back pain attending Moi Teaching and Referral Hospital, Eldoret, Kenya. The WHOQOL-BREF, a 26-item questionnaire was used to assess health-related quality of life, including two (2) items for health status and general QOL and 24 items divided in four (4) domains (social, environmental, psychosocial and physical). Each item score ranges from 1 – 5. To make the results of the WHOQOL-BREF comparable to the WHOQOL -100, the scores obtained in the WHOQOL-BREF was multiplied by 4. A total score for a domain thus range between 4 and 20. Higher scores meant high quality of life in each of the domains.

The study results revealed that the mean of the social domain was higher ($\mu=14.59$) than other domains. The psychosocial and environmental domains were almost equal with mean scores of 13.51 and 13.41 respectively. The physical domain had the lowest mean score ($\mu=12.67$), as illustrated in Table 4.7 below.

Table 4.7 WHOQOL-BREF domain scores

DOMAIN	Minimum	Maximum	Mean (SD)
Physical	8.00	18.00	12.67 (1.68)
Psychosocial	8.00	16.00	13.51 (2.44)
Social	7.00	20.00	14.59 (3.04)
Environmental	6.00	20.00	13.41 (2.53)

The Pearson test was performed to test whether there was a statistically significant association between Quality of Life (QOL) and LBP intensity. Findings showed that

there was a non-significant negative correlation between LBP intensity and quality of life ($r = -0.058$; $p = 0.390$).

4.7 FOCUS GROUP DISCUSSIONS WITH ADULT WOMEN WITH LOW BACK PAIN (n=26)

This section presents the results of the responses from the focus group discussions (FGDs) that seek to address the last objective of the study, namely to explore the activities of daily living (ADLs) that may contribute to low back pain in adult women attending Moi Teaching and Referral Hospital, Eldoret, Kenya.

The researcher and research assistant facilitated five (5) focus group discussions. Twenty-six (26) participants with a mean age of 41.38 years ($SD = 8.03$), agreed to participate. See Table 4.7 below. The focus groups took place in a relaxed and convenient setting for all the group members. Each participant was encouraged to effusively participate in the discussions. For anonymity and confidentiality purposes, participants were given cryptograms (P1-P6). Italics were used to present quotations while three ellipses (...) points was used to omit or repetition of unnecessary information.

Table 4.8 Demographics of focus group participants (n=26)

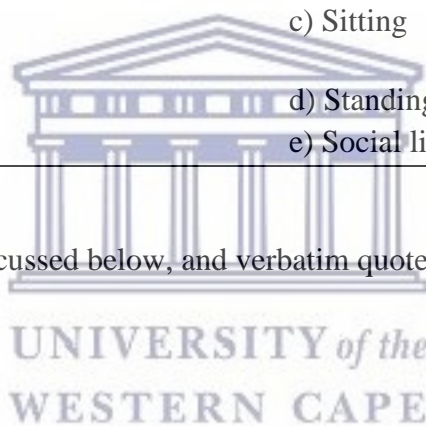
Focus group	Patient	Age (years)	Marital status	Level of education
FGD1	P1	53	Married	College (teacher)
	P2	55	Married	College (teacher)
	P3	54	Married	College (teacher)
	P4	38	Married	College (teacher)
	P5	49	Married	Housewife
FGD2	P1	34	Married	College (teacher)
	P2	51	Married	Housewife
	P3	39	Married	Housewife
	P4	36	Married	Police Officer (college)
	P5	30	Married	College (teacher)
FGD3	P1	31	Married	Nutritional (college)
	P2	36	Single	College (Nurse)
	P3	32	Married	Cleaner (secondary)
	P4	26	Single	Volunteer (university)
	P5	39	Married	Patient attendant (college)
FGD4	P1	40	Married	Nurse (college)
	P2	44	Married	Health records (college)
	P3	49	Married	Nurse (college)
	P4	54	Married	Physiotherapist (college)
	P5	39	Single	Accountant (University)
FGD5	P1	38	Married	House wife
	P2	48	Married	Receptionist (college)
	P3	36	Married	Catering (college)
	P4	44	Married	Businesswoman (college)
	P5	37	Married	Nurse (college)
	P6	44	Married	Accountant (University)

Three (3) themes and several subthemes emerged during the thematic analysis, as shown in Table 4.10 below.

Table 4.9 Emerging themes and subthemes

EMERGING THEMES	SUBTHEMES
PERSONAL HYGIENE (BATHING)	a) Bathing/Washing b) Use of shower
TRANSPORT	a) Travelling distance b) Sitting position while using public transport
IMPACT ON ADLS	a) Dressing b) Work and house chores c) Sitting d) Standing e) Social life

The themes will be discussed below, and verbatim quotes will be employed.



4.7.1 Personal hygiene

a) Bathing/washing

The majority of the participants said that due to their back pain, they struggle to wash themselves because they cannot bend without pain. It is more convenient to put a bucket of water on a stool so that they don't have to bend. See the excerpts below.

"...for bathing I can't bend, so I put a basin with some water on a stool and I also take a long time because I am struggling..." (FGD1, P1)

“For me to bath I have to put the bucket on a stool so that it’s at least raised up. Also, when bathing, I call my grandchildren to help with washing of my feet because I can’t bend.” (FGD1, P4)

“...I must raise my bucket on a stool because I can’t bend...” (FGD5, P3)

“I do also have problems when bathing, because I can’t bend. If I have to bend, then I first squat...” (FGD5, P5)

b) Use of shower

Some of the participants are fortunate enough to have the option of a shower. Below are some of their views:

“I have no problem with bathing, as long as there is no bending...I usually prefer a shower...” (FGD4, P3)

“...bathing is not a problem as long as I don’t bend...” (FGD5, P1)

“...at times I can’t bend because of pain, so I prefer using a shower...”
(FGD5, P6)

4.7.2 Transport

a) Travelling distance

Travelling long distances is a problem for the majority of the participants due to the prolonged sitting position. Short distances do not give the participants any hassles.

“I can’t travel long distance. if I have to, then I take strong painkillers because of pain...” (FGD1, P1)

“It is difficult for me to travel long distance. If I have to, then I stand after some time, even if it’s on the bus...” (FGD2, P4)

“Travelling for long is a problem, because it involves sitting so long (matatu)...” (FGD2, P5)

“Travelling for too long is an issue, especially in a motor vehicle and if it’s taking more than two hours.” (FGD4, P2)

“Travelling for more than an hour is an issue because it involves sitting so much...” (FGD4, P3)

“I avoid travelling long distances because later my back becomes painful...” (FGD5, P4)

Although travelling in a motor vehicle for a long distance may cause low back pain after a while, most of the participants indicated that they prefer using private rather than public transport as it is more comfortable. The excerpts below indicate:

“I avoid travelling long distance; neither can I use a boda boda (scooter). I prefer using a personal car, but now I don’t have resources to purchase one.” (FGD1, P2)

‘...also, when travelling, I prefer personal means to “matatu” (public means), because most of the time we squeeze each other so much...and I have no control.’ (FGD5, P5)

b) Sitting position while using public transport

The majority of the respondents said that they prefer sitting in certain seats while using public transport. Sitting at the back of a taxi is a huge problem. Their sentiments are echoed below:

“I can’t sit at the back because it throws me up and down, even when seated in the taxi. My legs become numb so when climbing out of the matatu (taxi) it is a problem.” (FGD1, P3)

“...during travelling I can’t sit at the back of the taxi (matatu), because of so much movement there...” (FGD1, P5)

“During travelling by bus, I prefer the seat behind the driver, because it has ample space where I can put my bag and raise my legs. If I don’t get this seat, I better not travel.” (FGD3, P1)

“When travelling in a matatu (taxi), I have to elevate my legs, because if I don’t my feet will be swollen by the end of the journey...they become numb and I will not be able to walk.” (FGD3, P4)

4.7.3 Impact on activities of daily living (ADLS)

a) Dressing

The majority of the respondents indicated that have difficulty when putting on certain clothes. They have to adopt certain positions to make the process easier. Some of their views are expressed below.

“I have no problem with loose fitting clothes, but it’s hard to dress tight fitting clothes.” (FGD1, P1)

“It (back pain) limits me, especially when dressing. I prefer to put on a trouser while sitting...like sit down, bend a little bit, then put it on rather than standing.” (FGD5, P4)

“If I lift up my right leg there is pain. So, I can’t put on a trouser...” (FGD5, P6)

“...for me I can’t bend, so I get help from my grandchildren to put on my socks.” (FGD1, P1)

With regards to dressing, bending appears to be a big culprit causing back pain and discomfort. The excerpts below explain.

“I do also have a problem with dressing if bending is involved. There is no issue if I am standing.” (FGD4, P2)

“I have no problem with dressing as long as there is no bending.” (FGD4, P3)

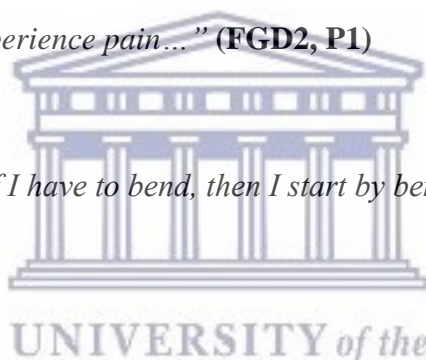
b) Work and house chores

Findings indicated that the majority of the respondents had difficulty with activities of daily living (ADLs) due to low back pain. Bending is a problem and they rather avoid doing it or modify their starting positions.

“I hire people to assist me in lifting in my ‘jua kali’ (workplace), because I can’t lift heavy stuff as I can’t bend...” (FGD1, P4)

“Yes, I do struggle with household activities like dusting, doing laundry and gardening. I can’t do these activities because it involves bending which afterwards I experience pain...” (FGD2, P1)

“I can’t bend. If I have to bend, then I start by bending my knees first...” (FGD3, P3)



“I prefer sitting while washing clothes and cleaning the utensils by the sink rather than standing, as I don’t need to bend my back.” (FGD5, P4)

Other participants expressed that:

“...bending is the worst activity I can try when I clean the house.” (FGD4, P3)

“...for bending if anything drops to the floor...I really strain my back when I have to pick it up” (FGD3, P1)

Lifting of objects, especially if they are heavy, also cause back pain and discomfort for a lot of the participants.

“...for me lifting heavy things is a problem. I can't lift even a bucket of water.”

(FGD2, P5)

“I just can't lift heavy things. If I have to bend, then I start by bending my knees first.” **(FGD1, P3)**

Other participants responded that:

“I can't lift heavy things like water. After fetching it from the borehole, I can't lift it up on the table.” **(FGD5, P1)**

“Lifting things is a problem, especially my handbag. If it's weighing almost two kilos, then it's an issue. So, I make sure it's light as much as possible.”

(FGD4, P2)

c) Sitting

Participants expressed that sitting for a long time is really an issue and brings about painful symptoms. Below are some of their views.

“I can't sit for a long time because of pain...my back becomes painful.”

(FGD1, P4)

“I can’t sit for long. If I have to then I take breaks to stand. This helps me to manage the pain.” (FGD2, P2)

“Sitting for long makes me tired.” (FGD2, P5)

Other respondents stated that:

“...like in sitting... I have a problem moving from sitting to standing and vice versa. I feel some pain in my back.” (FGD3, P1)

“My feet get swollen and I feel a lot of pain when I sit for long. So, if I have to sit for long, then I get up and walk around.” (FGD4, P1)

“I can sit, but not more than one hour...and I have to sit on a soft surface and in an upright position. If I sit on hard surfaces, one of my legs becomes numb.”

(FGD5, P1)

d) Standing

The majority of the respondents indicated that they cannot stand for long periods of time due to the pain in their backs. Participants expressed the following regarding this subtheme:

“I can do most of the activities, except maybe standing a long time.”

(FGD4, P4)

“I can’t stand for more than thirty minutes....my back will start to pain.”

(FGD5, P1)

Other participants expressed that:

“I have reduced the number of hours I stand...I can no longer do double lessons (teaching).” **(FGD2, P1)**

“I have a problem with standing for long. My back pain and my legs become numb. So, when doing this activity, I really have to check on the time.”

(FGD2, P2)

e) Social life

Findings indicated that social life of the respondents had really been affected due to pain and functional disability that comes along with it. Here are some of their views.

“I can’t go to church because it makes me to sit down for a long time which is uncomfortable for me. When I attend parties or ceremonies I can no longer dance as I used to because of pain, I just have to watch other people dance and enjoy...” **(FGD 1, P4)**

“I have avoided attending parties because I might be asked to give a hand on some jobs while my condition LBP won’t allow because I will strain, but people won’t understand...” **(FG3, P1)**

Other participants expressed that:

“My social life has been interfered with, I can no longer travel long distances to visit friends, I have also avoided parties because I can’t even help with cooking and people mistake you for a lazy person or disinterested. People who know me can understand but strangers can’t...” (FGD4, P3)

“Yes, because am always stressed so I have no happiness to join people when they are talking....am so sad because I keep thinking of this pain...” (FGD5, P6)

4.8 SUMMARY OF THE CHAPTER

The main findings of the chapter are documented below:

- Among the 234 participant, 25.2% (n = 59) were classified as having normal weight, 38.5% (n = 90) as overweight, 33.3% (n = 78) as obese.
- No significant relationship was found between BMI and low back pain (VAS) (p=0.90).
- Just more than a quarter of the participants (n=61; 26.2%) experienced severe pain while more than half of the participants (n=122; 52.3%) experienced moderate pain.
- The majority of the participants (n=210; 94.6%) experienced LBP in the past 12 months while 200 participants (90.1%) had LBP in the past 7 days.
- More than two thirds (n=143; 68.1%) of the participants who experienced pain in the past 12 months reported that the LBP prevented them from carrying out

normal duties while more than eighty percent (n=176; 83.8%) consulted a doctor for their LBP.

- Half of the participants (n=117; 50.0%) had moderate disability, while less than a third of the participants (n=69; 29.7%) had minimal disability.
- A significant positive correlation was found between pain and disability ($r = 0.426$; $p = 0.000$).
- Sitting, lifting an object and social life were significantly associated ($p < 0.05$) with LBP.
- A non-significant negative correlation was found between LBP intensity and quality of life ($r = -0.058$; $p = 0.390$).
- The participants struggled with personal hygiene (bathing), transport as well as ADLs such as dressing, work and house chores, sitting and standing due to LBP.

The findings will be discussed in Chapter 5.



UNIVERSITY *of the*
WESTERN CAPE

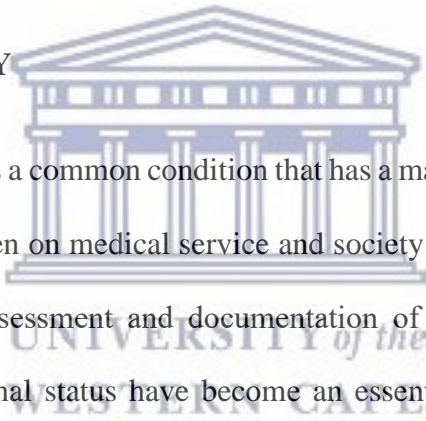
CHAPTER FIVE

DISCUSSION

5.0 INTRODUCTION

The aim of this study was to determine the impact of low back pain (LBP) on activities of daily living (ADLs) and quality of life (QOL) of adult women attending Moi Teaching and Referral Hospital, Eldoret, Kenya. This chapter will discuss the findings of both quantitative and qualitative results of the study with reference to the relevant literature.

5.1 PAIN INTENSITY



Low back pain (LBP) is a common condition that has a mammoth impact on individuals as well as a large burden on medical service and society (Ekman, Jonhagen, Hunsche, & Jonsson, 2005). Assessment and documentation of the patient's pain and other symptoms and functional status have become an essential part in understanding the effect of the LBP on the patient's life. The presence and intensity of pain is a poor health outcome on its own and it furthermore correlates poorly with measures of physical functioning (Björklund, Hamberg, Heiden, & Barnekow-Bergkvist, 2007).

The mean pain intensity for the present study was 6.26 (SD=4.46) with a range of 0 to 10. Although less, the finding corroborates with results from a Nigerian study conducted by Ogunlana, Odole, Adejumo, & Odunaiya (2015) which reported an average pain intensity of 7.4 (SD=1.9). Lee et al. (2011) and Kovacs, Seco, Royuela, Corcoll Reixach and Abreira (2012) also reported average pain intensity levels of 5.7 (SD= 2.8) and 6.7 (SD=2.1) respectively. In the present study, more than half of the

participants (52.3%) had moderate LBP and a university education (62.8%). These results are in stark contrast with findings from a South African study where the majority of the respondents who had severe back pain, were poor and illiterate (Worku, 2000).

5.1.1 Low back pain and BMI

There is a presumption that LBP are indirectly affected by BMI. Being overweight or obese has been identified as a risk factor for low back pain. Research also found that it is more common for women to be overweight than men (Ogunbode et al., 2013). A number of studies have linked the prevalence of LBP to obesity (Merriwether, Goodin, Overstreet, Sorge, & Trost, 2017; Mirmirani & Carpenter, 2014; Livshits et al., 2011). Although participants in the present study had a mean BMI of 28.31 (SD=5.15) and more than a third (38.5%) were overweight, no significant relationship was found between BMI and LBP ($r=4.18$; $p=0.90$); a finding that corroborates with Rottermund et al. (2015) and Birabi, Dienne and Ndukwu (2012). What is important to notice is that Rottermund et al. (2015) reported that obesity is a risk factor for more incidences of LBP. This hypothesis requires further investigation as many studies remain inconclusive (Mirtz & Greene, 2005); Shiri, Karppinen, Leino-Arjas, Solovieva, & Viikari-Juntura, 2010).

5.1.2 Low back pain and education

Kwon et al. (2006) reported that people with higher education levels are in a better position to know health hazards and change their behaviour appropriately. Dionne et al. (2001) found a strong relationship between higher incidences of LBP and low education. According to the authors, reasons for the aforementioned relationship

included disparities in environmental and behavioural uncertainties, like difference in job-related activities, opportunities to the use of health services as well as adjustment to stress. Other studies have found a positive association between low education status and low back pain (Hoy et al., 2010; Worku, 2000). The positive link between LBP and low education level is attributed to people's occupation, e.g. manual work as well as the lack of access to quality health services. In the present study, no significant association was found between LBP and low education status as most of the respondents had formal education ($r = 0.157$ $p < 0.05$). The difference in the findings could be due to the data in the present study being collected in an urban community.

5.1.3 Low back pain and age

Studies have suggested that the prevalence of musculoskeletal pain in older adults, ranges from 65 to 85% (Wong, Karppinen, & Samartzis, 2017; Podichetty, Mazanec, & Biscup, 2003) with 36 to 70% of them suffering from back pain (Podichetty et al., 2003; Edmond & Felson, 2000). In the present study a higher prevalence of LBP was observed in females aged 31- 40years. This finding is supported with results from a review by Meucci, Fassa and Faria (2015) that stated that participants aged 40-59 years had the highest prevalence of LBP in their study sample. The researchers also found that women, persons of low socio-economic status, low level of education, and smokers had higher incidences of LBP. The results corroborate with a study conducted by Hoy et al. (2010) which found that the prevalence of LBP increases from the third decade in life until 60 years after which it slowly decreases. Earlier research suggests that LBP prevalence progressively increases from teenage years (Balague & Pellise, 2016) to 60 years of age and then declines (Dijken, Fjellman-Wiklund, & Hildingsson, 2008; Thomas, Peat, Harris, Wilkie, & Croft, 2004) which may be ascribed to occupational

exposure among working-age adults (Docking et al., 2011). The results of the present study are of great concern, as they indicate that LBP affects the individual during their economic productive years; subsequently affecting the economic status of the person and society negatively. In the present study, age was not significantly associated with low back pain (VAS) ($r=11.687$; $p= 0.232$).

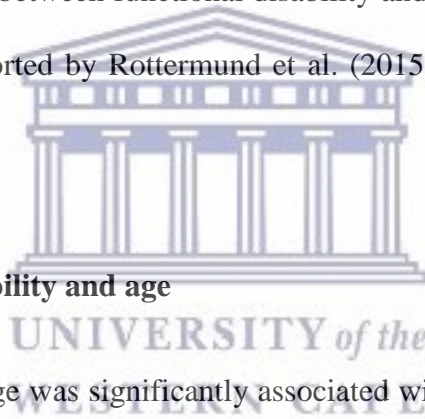
5.2 FUNCTIONAL DISABILITY

The most frequent cause of disability is musculoskeletal disorders (WHO, 2003). Pain and loss of function associated with musculoskeletal conditions primarily leads to disability (Woolf & Pfleger, 2003). The researchers furthermore reported that LBP is one of the four major musculoskeletal conditions leading to disability.

In the present study, functional disability was measured according to the Oswestry Disability Index (ODI) for the following positions: sitting, standing, walking, lifting, sleeping, traveling, sex life, social life and personal washing. Results showed that half of the study sample (50.0%) had moderate functional disability. Almost similar results were reported in a study conducted in Nigeria where 45.5% of the participants reported moderate functional disability (Ogunlana et al., 2015). In addition, a slightly higher prevalence of 58% was found in a Canadian study of pregnant women (Charpentier et al., 2012). The results of the latter study should, however, be interpreted with caution, as the physical and biomechanical changes in pregnant women could contribute to the higher prevalence in women of a younger age. In the present study, functional disability and low back pain were significantly associated ($r=0.43$; $p=0.000$). A positive association was also reported in a study conducted by Grandidge (2015).

5.2.1 Functional disability and body mass index (BMI)

Although many researchers have investigated the relationship between functional disability and BMI, the results remain indecisive. Being obese has been reported to be a predisposing factor for low back pain. Low back pain was found to have a negative effect on activities among women during sports, leisure time and at work (Rottermund et al., 2015). In addition, increased body mass (BMI) could negatively impact posture and the performance of ADLs as it limits participation and impairs body function (Candotti et al., 2015; Nordeman, Gunnarsson, & Mannerkorpi, 2014; Hoy et al., 2010). The results of the present study are in contrast with the above finding as no significant association was found between functional disability and BMI ($r= 6.195;p=0.720$); the same finding also reported by Rottermund et al. (2015) and Mohseni-Bandpei et al. (2009).



5.2.2 Functional disability and age

In the present study, age was significantly associated with functional disability (ODI) ($r^2=6.195; p=0.03$). Several studies found a positive relationship between age, gender and functional disability (Candotti et al., 2015; Ogunlana, Odunaiya, Dairo, & Ihekuna, 2012). Older age has been identified as a risk factor for low back pain as it can cause disc degeneration and spondylosis, which eventually cause LBP. The reason that women are more prone to LBP could be associated with greater pain sensitization and because women more often report having pain. In addition, older persons have more frequent musculoskeletal disorders, thus the negative impact on ADLs among this population can be tremendous. An increased prevalence of LBP was reported in middle-aged persons (below 45 years) compared to the elderly. This finding has specific

implications for the labour market (Candotti et al., 2015) as the economically viable population is negatively affected. The phenomena of a positive association between age and functional disability is not uncommon in research conducted globally, as seen in studies by Knauer, Freburger and Carey (2010) and McMahon, van Zijl and Gilad (2015).

5.3 QUALITY OF LIFE

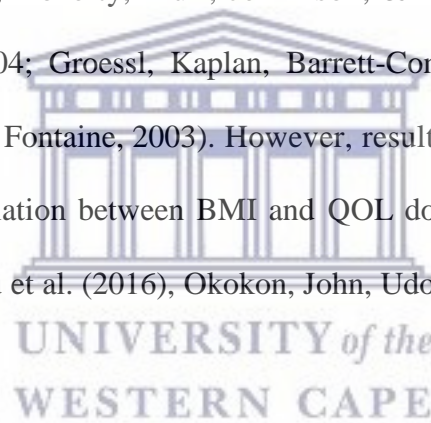
LBP was associated with the greatest loss of QOL (Burstrom, Johannesson, & Diderichsen, 2001). The finding of Burstrom et al. (2001) is echoed by results obtained in Finnish and U.S. populations (Saarni et al., 2006; Ko & Coons, 2006).

The third objective of the study was to determine the quality of life (QOL) of adult women with LBP. The results showed that low back pain greatly compromises the quality of life of patients. Current data indicates the huge impact LBP has on both physical health and psychological domains of the participants. The Oswestry Disability Index had significant strong negative correlations with all four domains of the WHOQOL-BREF. Physical health and psychosocial domains had the least negative correlations, namely ($r = -0.357$; $p = 0.000$) and ($r = -0.318$; $p = 0.002$) respectively. For the respective aforementioned domains, increases in disability among the participants lead to a decline in quality of life and vice versa. Similar results have been reported by Del Pozo-Cruz et al. (2013), Pedisic et al. (2013) and Ogunlana et al. (2012). The researchers also stated that workers suffering from low back pain had great anxiety/depression. Results from a study conducted in Japan showed that people with LBP reported more health problems than those without musculoskeletal pain in all dimensions (mobility, self-care, usual activities, pain/discomfort, and

anxiety/depression) (Suka & Yoshida, 2008). The researchers stated that significant differences were found in both physical and psychological dimensions, similar to results of the present study. Similar results were found in studies conducted by Oksuz (2006) in Turkey, and Burstrom, Johannesson and Diderichsen (2001) in Sweden. One reasonable explanation for the relatively poorer health of people with LBP is that LBP induces stress, distress, anxiety, and/or depression along with dysfunction.

5.3.1 Quality of life, and body mass index and age

There is increasing evidence that obesity is associated with a loss in quality of life (QOL) (Sach, Barton, Doherty, Muir, Jenkinson, & Avery, 2006; Jia & Lubetkin, 2005; Yan et al., 2004; Groessl, Kaplan, Barrett-Connor, & Ganiats, 2004; Heo, Allison, Faith, Zhu, & Fontaine, 2003). However, results of the present study showed a weak positive correlation between BMI and QOL domains. Similar findings have been reported by Chou et al. (2016), Okokon, John, Udonwa and Udonwa (2016), and Shiri et al. (2010).



The present study also reported a weak non-significant negative correlation between age and QOL domains. This corroborates with results from studies that showed that increasing age predisposes persons to low back pain and disability (Ogunlana et al., 2012; Webb et al., 2003; Picavet, Vlaeyen, & Schouten, 2002).

5.3.2 Quality of life and pain intensity

The present study reported a weak non-significant negative correlation between pain intensity, as measured by the Visual Analogue Scale (VAS), and all domains of QOL. In addition, the physical domain had the lowest mean score when compared to the rest

of the domains (psychosocial, social and environmental). The researcher therefore concluded that low back pain affects the physical function of patients less than the other domains. Bodily pain (subscale of physical domain) is reported to be the most responsive to change in patients with LBP (Suarez-Almazor, Kendall, Johnson, Skeith, & Vincent, 2000; Patrick et al., 1995). Similar relationships have been reported in studies done in European and Asian countries (Pedisic et al., 2013; Ogunlana et al., 2012; Horng et al., 2005).

5.4 ACTIVITIES OF DAILY LIVING (ADLs)

Findings from the present study suggest that sitting, lifting an object and social life are significantly associated with LBP. As for lifting, similar findings have been reported by Sá, Dias, Souza, Lessa and Baptista (2015), and Jonsdottir, Rainero, Racca, Glässel and Cieza (2010). Manual material handling which involves lowering, lifting or carrying loads has been identified as a risk factor for LBP (Okunribido, Magnusson, & Pope, 2008). Lack of proper kinetic handling skills or workplaces with poor ergonomic settings intensify the problem. Women whose occupations involved lifting, pushing/pulling objects more than 11.3 kg, or those with jobs involving walking or standing had greater risks for LBP (Macfarlane et al., 1997). Contrary to the results from the present study, a systematic review by Bakker, Verhagen, van Trijffel, Lucas and Koes (2009) did not find a relationship between manual material handling and LBP, while a similar review by Hoogendoorn et al. (1999) did find moderate evidence. The evidence appears conflicting and future studies should focus on quantifying measures of exposure and address outcome measures that show the risk in same levels of contrast in exposure.

Sá et al. (2015) reported that being seated in one position for a long time served as an aggravating factor for low back pain. The present study found that patients could not lift or feared lifting heavy things because of LBP, while sitting for long durations was a problem because their legs became numb or it provoked LBP. Being in a static seated position served as a risk factor for LBP, and sitting for an hour worsened pain (Aoki et al., 2012). Patients with chronic low back pain have reduced tolerance in sitting positions, thus leading to change of posture either in standing or sitting position (Lamoth, Daffertshofer, Meijer, & Beek, 2006). Mechanisms related to the inability to keep seated are not clear, but factors commonly mentioned include: increase in internal pressure of the intervertebral discs and inadequate nourishment are some of the factors associated with reasons for increased pain during sitting (Aoki et al., 2012). In addition, decreased flexibility in the lower back and diminished activity of the abdominal musculature are also factors associated with LBP (Alsaadi, McAuley, Hush, & Maher, 2011; Sacco et al., 2009). Being seated is a common activity among people and the related disability seems to be dependent on a number of factors in persons with LBP. Longitudinal studies are much better positioned to create more knowledge regarding the problem.

Social engagement involves individual interaction with the society. Any level of impairment can lead to social isolation and depression. Being with family and having friendly relationships are social determinant factors which at times cushion disability actions (Kemppi, Laimi, Salminen, & Tuominen, 2012). The social life of the participants had been restricted due to LBP, with arguments like not being able to go to church, being always stressed due to pain and lack/limited participation in hobbies.

5.5 SUMMARY OF THE CHAPTER

This chapter discusses the result of the study in relation to the research objectives and existing literature. The main aim of this chapter was to provide a broader understanding of the study findings with regard to the specific aims of the study and in the context of previous studies. The following chapter will present the summary of the study, the study limitations as well as relevant recommendations.



CHAPTER SIX

SUMMARY, LIMITATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter provides the summary, limitation and recommendation of the study. The summary describes briefly the aim, methodology and discussion of the study. Furthermore, major findings of the study are featured in the conclusion. Finally, recommendations that emanated from the study are advanced as well.

6.2 SUMMARY OF THE STUDY

The aim of this study was to determine the impact of LBP on activities of daily living (ADLs) and quality of life (QOL) of adult women attending the Moi Teaching and Referral Hospital, Eldoret, Kenya. Moreover, the study proposed to determine the pain intensity, functional disability and quality of life of adult women attending the Moi Teaching and Referral Hospital in Eldoret. The activities of daily living that may have contributed to their low back pain was also explored.

This study employed a sequential explanatory mixed methods approach to investigate the impact of LBP on ADLs and QOL of adult women with LBP seeking physiotherapy services at MTRH. Three standardized questionnaires were used to collect data that addressed the first three objectives of the study while focus group discussions was employed to explore the activities of daily living (ADLs) that might contribute to LBP in the study population.

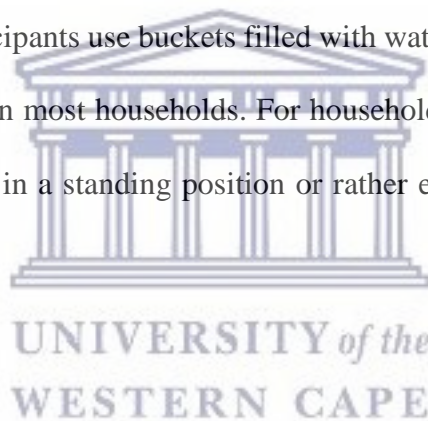
Of the 311 adult women attending MTRH who were approached to participate in the study, 276 met the inclusion criteria. Two hundred and thirty-four questionnaires were

completed and returned after written informed consent was signed. A response rate of 75.2% was thus achieved. A total of 234 adult women with a mean age of 38.54 years (SD = ±9.40) completed the questionnaire. The age of the participants ranged from 18 to 49 years. The majority of the participants were married (n=197; 84.0%). Just less than two thirds (n= 147; 62.8%) of the participants attained a university education while a quarter (n=59; 25.5%) are in the nursing profession.

The results of this present study indicate that more than half of the respondents (n=122; 52.3%) experienced moderate pain while those with severe and mild pain were (n=61; 26.2%) and (n=49; 20.7%) respectively. The study further found that 94.6% of the participants had experienced pain LBP in the past one year and 90.1% had LBP in the past one week. Two thirds of those who experienced LBP in the past one year reported that LBP inhibited them from carrying out their activities of daily living thus presenting a huge challenge in their day to day life. More than eighty percent (n=176; 83.8%) sought medical attention for their LBP. The study further reported that half of the women (n=117; 50%) had moderate disability with less than a third (n=69; 29.7%) having minimal disability. This shows that LBP has an impact on the disability status of women.

The study established a significant positive correlation ($r = 0.426$; $p=0.000$) between pain and disability. Participants became more disable with increase in pain. Activities like sitting, lifting and social life were significantly related ($p<0.05$) with pain. Prolonged sitting and lifting of heavy objects provoked LBP. Participants were unable to attend or were limited in attending certain social activities i.e. going to church, attending ceremonies/parties since their involvement brought about LBP.

A non-significant negative correlation was reported between LBP intensity and quality of life ($r = -0.058$; $p = -0.390$). The quality of life of the participants decreased with an increase in pain intensity. LBP affected the physical function of the participants, thus contributing to low satisfaction of life for the researched sample. The study further revealed that the participants struggled with activities of daily living such as bathing, transport, sitting, standing, dressing and domestic work. Prolonged sitting and standing were identified by participants as risk factors to LBP. This was also the same with travelling, as sitting for long periods during travel was uncomfortable to the participants. Personal hygiene and household chores were difficult to perform for the participants since it involved bending, an activity which provokes pain. This is true since most of the participants use buckets filled with water for bathing because there is a lack of piped water in most households. For household chores participants prefer to use and clean utensils in a standing position or rather employ a helper to assist with such activities.



6.3 CONCLUSION

The current study revealed that LBP is a prevalent non-communicable disease for adult women attending Moi Teaching and referral Hospital, Eldoret, Kenya. Results indicated a high LBP prevalence that negatively impacts on the participants' activities of daily living, thus presenting a huge challenge in their day to day life as well as their quality of life (QOL). There is a need for prevention strategies to be put in place, including health promotion and education regarding back care. These strategies can be implemented in schools, the community as well as health care facilities. It could curb the initial onset and recurrence of LBP by increasing the adult women's knowledge

regarding the application of kinetic handling principles while doing ADLs which could assist with a reduction in the prevalence of LBP.

6.4 LIMITATIONS OF THE STUDY

- a) The sampling population included adult women only. Therefore, it limits generalization to other patients with low back pain.
- b) Self-reporting of questionnaires may be subject to several errors since the women may intentionally or unintentionally distort answers.
- c) Analysis on the sex item in the questionnaire was not done due to the small number of replies.

6.5 RECOMMENDATIONS

Owing to the results of the study the following recommendations are made:

- a) The study found a significant correlation between pain intensity, disability and quality of life. Such correlations could be revealing and advocate towards the bio-psychosocial model in the management of low back pain.
- b) There is need to invest in primary-based health care to include low back pain and its related risk factors, in order to advise the affected population on appropriate and essential prevention strategies.
- c) There is need for women to engage in regular physical exercise.
- d) Longitudinal studies to investigate the impact of low back pain should be conducted.

6.6 SUMMARY OF THE CHAPTER

The final chapter summarized the findings of the study. In addition, limitations and recommendations of the study are also given.



REFERENCES

- Alsaadi, S. M., McAuley, J. H., Hush, J. M., & Maher, C. G. (2011). Prevalence of sleep disturbance in patients with low back pain. *European Spine Journal*, 20(5), 737–743.
- Aoki, Y., Sugiura, S., Nakagawa, K., Nakajima, A., Takahashi, H., Ohtori, S., ... Nishikawa, S. (2012). Evaluation of nonspecific low back pain using a new detailed visual analogue scale for patients in motion, standing, and sitting: Characterizing nonspecific low back pain in elderly patients. *Pain Research and Treatment*, 2012.
- Bakker, E. W. P., Verhagen, A. P., van Trijffel, E., Lucas, C., & Koes, B. W. (2009). Spinal mechanical load as a risk factor for low back pain: A systematic review of prospective cohort studies. *Spine*, 34(8), E281–E293.
- Balagué, F. & Pellisé, F. (2016). Adolescent idiopathic scoliosis and back pain. *Scoliosis Spinal Disorders*, 11(1), 27.
- Bener, A., Dafeeah, E. E., & Alnaqbi, K. (2014). Prevalence and correlates of low back pain in primary care: What are the contributing factors in a rapidly developing country. *Asian Spine Journal*, 8(3), 227–236.
- Bener, A., Dafeeah, E. E., Alnaqbi, K., Falah, O., Aljuhaisi, T., Sadeeq, A., ... Schlogl, J. (2013). An epidemiologic analysis of low back pain in primary care: A hot humid country and global comparison. *Journal of Primary Care & Community Health*, 4(3), 220–227.
- Bentsen, S. B., Hanestad, B. R., Rustøen, T., & Wahl, A. K. (2008). Quality of life in chronic low back pain patients treated with instrumented fusion. *Journal of Clinical Nursing*, 17(15), 2061–2069.
- Berlim, M. T., Pavanello, D. P., Caldieraro, M. A., & Fleck, M. P. (2005). Reliability

- and validity of the WHOQOL BREF in a sample of Brazilian outpatients with major depression. *Quality of Life Research*, 14(2), 561–564.
- Biglarian, A., Seifi, B., Bakhshi, E., Mohammad, K., Rahgozar, M., Karimlou, M., & Serahati, S. (2012). Low back pain prevalence and associated factors in Iranian population: Findings from the National Health Survey. *Pain Research and Treatment*, 2012,
- Birabi, B. N., Dienye, P. O., & Ndukwu, G. U. (2012). Prevalence of low back pain among peasant farmers in a rural community in South South Nigeria. *Rural and Remote Health*, 12(3), 1–10.
- Björklund, M., Hamberg, J., Heiden, M., & Barnekow-Bergkvist, M. (2007). The assessment of symptoms and functional limitations in low back pain patients: Validity and reliability of a new questionnaire. *European Spine Journal*, 16(11), 1799–1811.
- Britten, N. (1995). Qualitative research: Qualitative interviews in medical research. *Bmj*, 311(6999), 251.
- Borrell-Carrió, F., Suchman, A. L., & Epstein, R. M. (2004). The biopsychosocial model 25 years later: Principles, practice, and scientific inquiry. *The Annals of Family Medicine*, 2(6), 576-582.
- Browning, G. W. (2012). Mechanical low back pain: Prevalence and cost. Virtual Health Care Team.
- Retrieved from http://shp.missouri.edu/vhct/case1699/preval_costs.htm
- Burstrom, K., Johannesson, M., & Diderichsen, F. (2001). Swedish population health-related quality of life results using the EQ-5D. *Qual Life Res.*, 10(7), 621-635.
- Burton, A. K. (2005). How to prevent low back pain. *Best Practice & Research Clinical Rheumatology*, 19(4), 541-555.

- Cambron, J., & King, T. (2006). The bone and joint decade: 2000 to 2010. *Journal of Manipulative and Physiological Therapeutics*, 29(2), 91–92.
- Candotti, C. T., Noll, M., Marchetti, B. V., Rosa, B. N. D, Medeiros, M. D. G. S., Vieira, A., & Loss, J. F. (2015). Prevalence of back pain, functional disability, and spinal postural changes. *Fisioterapia Em Movimento*, 28(4), 711–722.
- Carpenter, C. (2004). The contribution of qualitative research to evidence-based practice. In K. W. Hammell, & C. Carpenter. (Eds.) *Qualitative Research in Evidence-Based Rehabilitation* (pp.1-13). Edinburgh, Scotland, UK: Churchill Livingstone
- Charpentier, K., Leboucher, J., Lawani, M., Toumi, H., Dumas, G., & Pinti, A. (2012). Back pain during pregnancy and living conditions – A comparison between Beninese and Canadian women. *Annals of Physical and Rehabilitation Medicine*, 55(3), 148–159.
- Chou, L., Brady, S. R. E., Urquhart, D. M., Teichtahl, A. J., Cicuttini, F. M., Pasco, J. A., ... Wluka, A. E. (2016). The association between obesity and low back pain and disability is affected by mood disorders: A population-based, cross-sectional study of men. *Medicine*, 95(15).
- Clemes, S. A., Haslam, C. O., & Haslam, R. A. (2009). What constitutes effective manual handling training? A systematic review. *Occupational Medicine*, 60(2), 101–107.
- Creswell, J. W. (2007). Designing and conducting mixed methods research. *Australian and New Zealand Journal of Public Health*, 31(4), 388–388.
- de Barros, E. N. C., & Alexandre, N. M. C. (2003). Cross-cultural adaptation of the Nordic musculoskeletal questionnaire. *International Nursing Review*, 50(2), 101–108.

- del Pozo-Cruz, B., Gusi, N., Adsuar, J. C., del Pozo-Cruz, J., Parraca, J. A., & Hernandez-Mocholí, M. (2013). Musculoskeletal fitness and health-related quality of life characteristics among sedentary office workers affected by sub-acute, non-specific low back pain: A cross-sectional study. *Physiotherapy (United Kingdom)*, 99(3), 194–200.
- Demoulin, C., Marty, M., Genevay, S., Vanderthommen, M., Mahieu, G., & Henrotin, Y. (2012). Effectiveness of preventive back educational interventions for low back pain: A critical review of randomized controlled clinical trials. *European Spine Journal*, 21(12), 2520–2530.
- Descarreux, M., Normand, 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(8), 497–503.
- Deyo, R. A., Mirza, S. K., & Martin, B. I. (2006). Back pain prevalence and visit rates: estimates from U.S. national surveys, 2002. *Spine*, 31(23), 2724–2727.
- Deyo, R. A., & Tsui-Wu, Y. J. (1987). Descriptive epidemiology of low-back pain and its related medical care in the United States. *Spine*, 12(3), 264–268.
- Dijken, C. B.V., Fjellman-Wiklund, A., & Hildingsson, C. (2008). Low back pain, lifestyle factors and physical activity: A population-based study. *J Rehabil Med.*, 40, 864-869.
- Dionne, C. E., Dunn, K. M., & Croft, P. R. (2006). Does back pain prevalence really decrease with increasing age? A systematic review. *Age and Ageing*, 35(3), 229–234.
- Dionne, C. E., von Korff, M., Koepsell, T. D., Deyo, R. A., Barlow, W. E., & Checkoway, H. (2001). Formal education and back pain: A review. *Journal of Epidemiology and Community Health*, 55, 455–468.

- Docking, R.E., Fleming, J., Brayne, C., Zhao, J., Macfarlane, G.J., & Jones, G.T. (2011). Epidemiology of back pain in older adults: Prevalence and risk factors for back pain onset. *Rheumatology*, 50(9), 1645-1653.
- Dunn, K. M., Hestbaek, L., & Cassidy, J. D. (2013). Low back pain across the life course. *Best Practice & Research. Clinical Rheumatology*, 27(5), 591–600.
- Durmus, D., & Ilhanli, I. (2012). Are there work-related musculoskeletal problems among teachers in Samsun, Turkey? *Journal of Back and Musculoskeletal Rehabilitation*, 25(1), 5–12.
- Duthey, B. (2013). Update on 2004 Background Paper, BP 6.24 Low back pain. *Priority Medicines for Europe and the World “A Public Health Approach to Innovation”*, 24, 1–20.
- Edmond, S.L., & Felson, D.T. (2000). Prevalence of back symptoms in elders. *J Rheumatol.*, 27(1), 220-225.
- Ehrlich, G. E. (2003). Low back pain. *Bulletin of the World Health Organization*, 81(9), 671–676.
- Ekman, M., Jönhagen, S., Hunsche, E., & Jönsson, L. (2005). Burden of illness of chronic low back pain in Sweden: A cross-sectional, retrospective study in primary care setting. *Spine*, 30(15), 1777–1785.
- Fairbank, J. C., & Pynsent, P. B. (2000). The Oswestry disability index. *Spine*, 25(22), 2940–2953.
- Foti, D., & Koketsu, J. S. (2013). Activities of daily living. *Pedretti’s Occupational Therapy: Practice Skills for Physical Dysfunction*, 157–232.
- Froud, R., Patterson, S., Eldridge, S., Seale, C., Pincus, T., Rajendran, D., ... Underwood, M. (2014). A systematic review and meta-synthesis of the impact of low back pain on people’s lives. *BMC Musculoskeletal Disorders*, 15, 50.

- Galukande, M., Muwazi, S., & Mugisa, D. B. (2005). Aetiology of low back pain in Mulago Hospital, Uganda. *African Health Sciences*, 5(2), 164–167.
- Grandidge, L., Athanassacopolous, M., Breakwell, L., Chiverton, N., Ivanov, M., Michael, R., ... Cole, A. (2015). Oswestry Disability Index (ODI) and Visual Analogue Score (VAS) in pre-operative patients with radicular leg pain. *The Spine Journal*, 15(3), S53–S54.
- Groessler, E.J., Kaplan, R.M., Barrett-Connor, E., & Ganiats, T.G. (2004). Body mass index and quality of well-being in a community of older adults. *Am J Prev Med*, 26, 126-129.
- Gupta, G., & Nandini, N. (2015). Prevalence of low back pain in non working rural housewives of Kanpur, India. *International Journal of Occupational Medicine and Environmental Health*, 28(2), 313–320.
- Hammell, K. W., & Carpenter, C. (Eds.) (2004). *Qualitative research in evidence-based rehabilitation*. Edinburgh, Scotland, UK: Churchill Livingstone.
- Heo, M., Allison, D.B., Faith, M.S., Zhu, S., Fontaine, K.R. (2003). Obesity and quality of life: Mediating effects of pain and comorbidities. *Obes Res*, 11, 209-216.
- Hoogendoorn, W. E., van Poppel, M. N., Bongers, P. M., Koes, B. W., & Bouter, L. M. (1999). Physical load during work and leisure time as risk factors for back pain. *Scandinavian Journal of Work, Environment & Health*, 25(5), 387–403.
- Hoogendoorn, W. E., van Poppel, M. N., Bongers, P. M., Koes, B. W., & Bouter, L. M. (2000). Systematic review of psychosocial factors at work and private life as risk factors for back pain. *Spine*, 25(16), 2114–2125.
- Horng, Y. S., Hwang, Y. H., Wu, H. C., Liang, H. W., Mhe, Y. J., Twu, F. C., & Wang, J. D. (2005). Predicting health-related quality of life in patients with low back pain. *Spine*, 30(5), 551–555.

- Hoy, D., Bain, C., Williams, G., March, L., Brooks, P., Blyth, F., ... Buchbinder, R. (2012). A systematic review of the global prevalence of low back pain. *Arthritis and Rheumatism*, 64(6), 2028–2037.
- Hoy, D., Brooks, P., Blyth, F., & Buchbinder, R. (2010). The Epidemiology of low back pain. *Best Practice and Research: Clinical Rheumatology*, 24(6), 769–781.
- Janke, E. A., Collins, A., & Kozak, A. T. (2007). Overview of the relationship between pain and obesity: What do we know? Where do we go next? *The Journal of Rehabilitation Research and Development*, 44(2), 245.
- Jensen, M. P., Chen, C., & Brugger, A. M. (2003). Interpretation of visual analog scale ratings and change scores: A reanalysis of two clinical trials of postoperative pain. *Journal of Pain*, 4(7), 407–414.
- Jia, H., & Lubetkin E.I. (2005). The impact of obesity on health-related quality-of-life in the general adult US population. *J Public Health (Oxford)*, 27, 156-164.
- Jonsdottir, J., Rainero, G., Racca, V., Glässel, A., & Cieza, A. (2010). Functioning and disability in persons with low back pain. *Disability and Rehabilitation*, 32 Suppl 1, S78–S84.
- Kaplan, R.J. (2005), *Physical Medicine and Rehabilitation Review* (2nd ed.) London: McGraw Hill Medical Publishing.
- Katz, J. N. (2006). Lumbar disc disorders and low-back pain: Socioeconomic factors and consequences. *The Journal of Bone and Joint Surgery. American Volume*, 88 Suppl 2(suppl 2), 21–24.
- Kemppi, C., Laimi, K., Salminen, J. J., & Tuominen, R. (2012). Perceived relative importance of pain-related functions among patients with low back pain. *Journal of Rehabilitation Medicine*, 44(2), 158–162.
- Kiriti, T., & Tisdell, C. (2003). Gender inequality, poverty and human development in

- Kenya: Main indicators, trends and limitations. *Canadian Journal of Economics and Political Science*, (35), 1–27.
- Knauer, S. R., Freburger, J. K., & Carey, T. S. (2010). Chronic low back pain among older adults: A population-based perspective. *Journal of Aging and Health*, 22(8), 1213–1234.
- Ko, Y., & Coons, S.J. (2006). Self-reported chronic conditions and EQ-5D index scores in the US adult population. *Curr Med Res Opin.*, 22, 2065-2071.
- Kostanjsek, N. (2011). Use of the International Classification of Functioning, Disability and Health (ICF) as a conceptual framework and common language for disability statistics and health information systems. *BMC Public Health*, 11(SUPPL. 4), S3.
- Kovacs, F. M., Seco, J., Royuela, A., Corcoll-Reixach, J., & Peña-Arrebola, A. (2012). The prognostic value of catastrophizing for predicting the clinical evolution of low back pain patients: A study in routine clinical practice within the Spanish National Health Service. *The Spine Journal*, 12(7), 545–555.
- Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy*, 45(3), 214-222.
- Krismer, M., & van Tulder, M. (2007). Low back pain (non-specific). *Best Practice and Research: Clinical Rheumatology*, 21(1), 77–91.
- Kwon, M. A., Shim, W. S., Kim, M. H., Gwak, M. S., Hahm, T. S., Kim, G. S., ... Kim, T. H. (2006). A correlation between low back pain and associated factors: A study involving 772 patients who had undergone general physical examination. *Journal of Korean Medical Science*, 21(6), 1086.
- Lamoth, C. J. C., Daffertshofer, A., Meijer, O. G., & Beek, P. J. (2006). How do persons with chronic low back pain speed up and slow down? Trunk-pelvis coordination and lumbar erector spinae activity during gait. *Gait and Posture*, 23(2), 230–239.

- Lee, C. S., Chung, S. S., Shin, S. K., Park, S. J., Lee, H. I., & Kang, K. C. (2011). Differences in post-operative functional disability and patient satisfaction between patients with long (three levels or more) and short (less than three) lumbar fusions. *Journal of Bone and Joint Surgery - British Volume*, 93-B, 1400–1404.
- Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-Based Dentistry*, 7(1), 24–25.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage.
- Lin, I. B., O’Sullivan, P. B., Coffin, J. A., Mak, D. B., Toussaint, S., & Straker, L. M. (2012). “I am absolutely shattered”: The impact of chronic low back pain on Australian Aboriginal people. *Eur J Pain*, 16(9), 1331–1341.
- Livshits, G., Popham, M., Malkin, I., Sambrook, P. N., Macgregor, A. J., Spector, T., & Williams, F. M. K. (2011). Lumbar disc degeneration and genetic factors are the main risk factors for low back pain in women: The UK twin spine study. *Annals of the Rheumatic Diseases*, 70(10), 1740–1745.
- Louw, Q. A., Morris, L. D., & Grimmer-Somers, K. (2007). The Prevalence of low back pain in Africa: A systematic review. *BMC Musculoskeletal Disorders*, 8(1), 105.
- Macfarlane, G. J., Thomas, E., Papageorgiou, A. C., Croft, P. R., Jayson, M. I., & Silman, A. J. (1997). Employment and physical work activities as predictors of future low back pain. *Spine*, 22(10), 1143–1149.
- Maher, C. G. (2000). A systematic review of workplace interventions to prevent low back pain. *Australian Journal of Physiotherapy*, 46(4), 259–269.
- Manek, N. J., & MacGregor, A. J. (2005). Epidemiology of back disorders: prevalence, risk factors, and prognosis. *Current Opinion in Rheumatology*, 17(2), 134–140.
- Matsudaira, K., Konishi, H., Miyoshi, K., Isomura, T., & Inuzuka, K. (2014). Potential

- risk factors of persistent low back pain developing from mild low back pain in urban Japanese workers. *PLoS ONE*, 9(4), 5–10.
- McMahon, T., van Zijl, P. C. M., & Gilad, A. A. (2015). NIH Public Access, 27(3), 320–331. <http://doi.org/10.1002/nbm.3066>. Non-invasive
- Merriwether, E., Goodin, B., Overstreet, D., Sorge, R., & Trost, Z. (2017). (435) Body mass index is differentially associated with physical and psychosocial outcomes among men and women with chronic low back pain. *The Journal of Pain*, 18(4), S83.
- Meucci, R. D., Fassa, A. G., & Xavier Faria, N. M. (2015). Prevalence of chronic low back pain: Systematic review. *Revista de Saude Publica*, 49, 1–10.
- Meyer, J. P., Flenghi, D., & Deschamps, J. P. (1998). Effects of manual handling, posture, and whole body vibrations on low-back pain. *International Journal of Occupational Safety and Ergonomics*, 4(4), 449–470.
- Mirmirani, P., & Carpenter, D. M. (2014). The impact of obesity on the folliculosebaceous unit. *Journal of the American Academy of Dermatology*, 71(3), 584–585.
- Mirtz, T. A., & Greene, L. (2005). Is obesity a risk factor for low back pain? An example of using the evidence to answer a clinical question. *Chiropractic & Osteopathy*, 13, 2.
- Mohseni-Bandpei, M. A., Fakhri, M., Ahmad-Shirvani, M., Bagheri-Nessami, M., Khalilian, A. R., Shayesteh-Azar, M., & Mohseni-Bandpei, H. (2009). Low back pain in 1,100 Iranian pregnant women: Prevalence and risk factors. *Spine Journal*, 9(10), 795–801.
- Naude, B., Mudzi, W., Mamabolo, M. V., & Becker, P. J. (2009). Low back pain among hospital employees in Gauteng, South Africa: Point prevalence and associated

- factors. *Occupational Health Southern Africa*, 15(3), 24–30.
- Nicholas, M. K., Linton, S. J., Watson, P. J., & Main, C. J. (2011). Early identification and management of psychological risk factors (“yellow flags”) in patients with low back pain: A reappraisal. *Physical Therapy*, 91(5), 737–753.
- Nolet, P. S., Kristman, V. L., Côté, P., Carroll, L. J., & Cassidy, J. D. (2014). Is low back pain associated with worse health-related quality of life 6 months later? *European Spine Journal*, 24(3), 458–466.
- Nordeman, L., Gunnarsson, R., & Mannerkorpi, K. (2014). Prognostic factors for work ability in women with chronic low back pain consulting primary health care: A 2-year prospective longitudinal cohort study. *The Clinical Journal of Pain*, 30(5), 391–398.
- Ogunbode, A. M., Adebuseye, L. A., & Alonge, T. O. (2013). Prevalence of low back pain and associated risk factors amongst adult patients presenting to a Nigerian family practice clinic, a hospital-based study. *African Journal of Primary Health Care & Family Medicine*, 5(1), 1–8.
- Ogunlana, M. O., Odole, A. C., Adejumo, A., & Odunaiya, N. (2015). Catastrophising, pain, and disability in patients with nonspecific low back pain. *Hong Kong Physiotherapy Journal*.
- Ogunlana, M., Odunaiya, N., Dairo, M., & Ihekuna, O. (2012). Predictors of health-related quality of life in patients with non-specific low back pain. *African Journal of Physiotherapy and Rehabilitation Sciences*, 4(1), 15–23.
- Okokon, I. B., John, E. E., Udonwa, N. E., & Udonwa, N. E., Oku, A. O., & Asibong, U.E. (2016). Correlates and predictors of low back pain disability and its impact on health-related quality of life in a family practice clinic in Calabar, South-South Nigeria. *Family Medicine & Medical Science Research*, 5(210), 1–9.

- Oksuz E. (2006). Prevalence, risk factors, and preference-based health states of low back pain in a Turkish population. *Spine*, *31*, E968-E972.
- Okunribido, O. O., Magnusson, M., & Pope, M. H. (2008). The role of whole body vibration, posture and manual materials handling as risk factors for low back pain in occupational drivers. *Ergonomics*, *51*(3), 308–329.
- Omoke, N. I., & Amaraegbulam, P. I. (2016). Low back pain as seen in orthopedic clinics of a Nigerian teaching hospital. *Nigerian Journal of Clinical Practice*, *19*(2), 212–217.
- Omokhodion, F. O., Umar, U. S., & Ogunnowo, B. E. (2000). Prevalence of low back pain among staff in a rural hospital in Nigeria, *50*(2), 107–110.
- Op de Beeck, R., & Hermans, V. (2000). *Research on work-related low back disorders*. European Agency for Safety and Health at Work, Luxembourg: Statistical Office of the European Communities.
- Padula, R. S., Carregaro, R. L., Melo, B., da Silva, C. R., & Oliveira, A. B. (2012). Low back pain disability and stay at work: Contradiction or necessity? *Work*, *41*(SUPPL.1), 2417–2419.
- Pedusic, Z., Pranic, S., & Jurakic, D. (2013). Relationship of back and neck pain with quality of life in the Croatian general population. *Journal of Manipulative and Physiological Therapeutics*, *36*(5), 267–275.
- Picavet, H. S. J., Vlaeyen, J. W. S., & Schouten, J. S. A. G. (2002). Pain catastrophizing and kinesiophobia: Predictors of chronic low back pain. *American Journal of Epidemiology*, *156*(11), 1028–1034.
- Pincus, T., Burton, A. K., Vogel, S., & Field, A. P. (2002). A systematic review of psychological factors as predictors of chronicity/disability in prospective cohorts of low back pain. *Spine (Phila Pa 1976)*, *27*(5), E109-E120.

- Podichetty, V.K., Mazanec, D.J., Biscup, R.S. Chronic non-malignant musculoskeletal pain in older adults: Clinical issues and opioid intervention. (2003). *Postgrad Med J.*, 79, 627-633.
- Polit, D. F., & Beck, C. T. (2003). Analyzing qualitative data. *Nursing research: Principles and methods*, 430-439.
- Punnett, L., Prüss-Utün, A., Nelson, D. I., Fingerhut, M. A., Leigh, J., Tak, S., & Phillips, S. (2005). Estimating the global burden of low back pain attributable to combined occupational exposures. *American Journal of Industrial Medicine*, 48(6), 459–469.
- Punnett, L., & Wegman, D. H. (2004). Work-related musculoskeletal disorders: The epidemiologic evidence and the debate. *Journal of Electromyography and Kinesiology: Official Journal of the International Society of Electrophysiological Kinesiology*, 14(1), 13–23.
- Queensland Department of Health. (2013). Burden of disease: A snapshot in 2013. *Queensland Department of Health*, 1–12. Retrieved from <http://www.health.qld.gov.au/epidemiology/documents/burden-disease-study.pdf>
- Ramond, A., Bouton, C., Richard, I., Roquelaure, Y., Baufreton, C., Legrand, E., & Huez, J. F. (2011). Psychosocial risk factors for chronic low back pain in primary care-A systematic review. *Family Practice*, 28(1), 12–21.
- Rottermund, J., Knapik, A., Saulicz, E., Myśliwiec, A., Saulicz, M., Rygiel, K. A., & Linek, P. (2015). Back and neck pain among school teachers in Poland and its correlations with physical activity. *Medycyna Pracy*, 66(6), 771–778.
- Saarni, S.I., Härkänen, T., Sintonen, H., Suvisaari, J., Koskinen, S., Aromaa, A., & Lönnqvist, J. (2006). The impact of 29 chronic conditions on health-related quality of life: A general population survey in Finland using 15D and EQ-5D. *Qual Life*

Res., 15(8),1403-1414.

- Sá, K. N., Dias, R. S., Souza, I., Lessa, I., & Baptista, A. F. (2015). Functional profile of population suffering from chronic lower back pain in Salvador-Bahia, Brazil: A population-based study. *Brazilian Journal of Medicine and Human Health*, 3(2), 44–54.
- Sacco, I. C. N., Aliberti, S., Queiroz, B. W. C., Pripas, D., Kieling, I., Kimura, A. A., ... Sera, M. T. (2009). The influence of occupation on overall flexibility and lower limb and lumbar range of motion TT - A influencia da ocupacao profissional na flexibilidade global e nas amplitudes angulares dos membros inferiores e da lombar. *Brazilian Journal of Kinanthropometry and Human Performance*, 11(1), 51–58.
- Sach, T.H., Barton, G.R., Doherty, M., Muir, K.R., Jenkinson, C., & Avery, A.J. (2006). The relationship between body mass index and health-related quality of life: Comparing the EQ-5D, EuroQol VAS and SF-6D. *International Journal of Obesity*, 31, 189-196.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75.
- Shiri, R., Karppinen, J., Leino-Arjas, P., Solovieva, S., & Viikari-Juntura, E. (2010). The association between obesity and low back pain: A meta-analysis. *American Journal of Epidemiology*, 171(2), 135–154.
- Sikiru, L. & Hanifa S. (2010). Prevalence and risk factors of low back pain among nurses in a typical Nigerian hospital. *African Health Sciences*, 10(101), 26–30.
- Sikiru, L., & Shmaila, H. (2009). Prevalence and risk factors of low back pain among nurses in Africa: Nigerian and Ethiopian specialized hospitals survey study. *East African Journal of Public Health*, 6(1), 22–25.

- Skelton, A. M., Murphy, E. A., Murphy, R. J., & O'Dowd, T. C. (1996). Patients' views of low back pain and its management in general practice. *The British Journal of General Practice: The Journal of the Royal College of General Practitioners*, 46(404), 153–156.
- Steenstra, I. A. (2005). Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: A systematic review of the literature. *Occupational and Environmental Medicine*, 62(12), 851–860.
- Steffens, D., Maher, C. G., Pereira, L. S. M., Stevens, M. L., Oliveira, V. C., Chapple, M., ... Hancock, M. J. (2016). Prevention of Low Back Pain. *JAMA Internal Medicine*, 176(2), 199.
- Strunin, L., & Boden, L. I. (2004). Family consequences of chronic back pain. *Social Science & Medicine* (1982), 58(7), 1385–1393.
- Suarez-Almazor, M. E., Kendall, C., Johnson, J. A., Skeith, K., & Vincent, D. (2000). Use of health status measures in patients with low back pain in clinical settings. Comparison of specific, generic and preference-based instruments. *Rheumatology*, 39(7), 783–790.
- Taechasubamorn, P., Nopkesorn, T., & Pannarunothai, S. (2011). Prevalence of low back pain among rice farmers in a rural community in Thailand. *Journal of the Medical Association of Thailand = Chotmaihet Thangphaet*, 94(5), 616–621.
- Thomas, E., Peat, G., Harris, L., Wilkie, R., & Croft, P.R. (2004). The prevalence of pain and pain interference in a general population of older adults: Cross-sectional findings from the North Staffordshire Osteoarthritis Project (NorStOP). *Pain*, 110(1-2), 361-368.
- Toledo-Pereyra, L. H. (2012). Research design. *Journal of Investigative Surgery*, 25(5), 279–280.

- Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and Applications*, 5, 147–158.
- Truchon, M. (2001). Determinants of chronic disability related to low back pain: Towards an integrative biopsychosocial model. *Disability and Rehabilitation*, 23(17), 758-767.
- Uestuen, B., & Kennedy, C. (2009). What is “functional impairment”? Disentangling disability from clinical significance. *World Psychiatry*, 8(2), 82-85.
- van Vuuren, B., Zinzen, E., van Heerden, H., Becker, P., & Meeusen, R. (2005). Psychosocial Factors related to lower back problems in a South African manganese industry. *Journal of Occupational Rehabilitation*, 15, 215-225.
- Veresciagina, K., Ambrozaitis, K. V., & Spakauskas, B. (2007). Health-related quality-of-life assessment in patients with low back pain using SF-36 questionnaire. *Medicina (Kaunas, Lithuania)*, 43(8), 607–613.
- Vindigni, D., Walker, B. F., Jamison, J. R., da Costa, C., Parkinson, L., & Blunden, S. (2005). Low back pain risk factors in a large rural Australian Aboriginal community. An opportunity for managing co-morbidities? *Chiropractic & Osteopathy*, 13, 21.
- Walker, B. (2000). The prevalence of low back pain: A systematic review of the literature from 1966 to 1998. *Journal of Spinal Disorders*, 13, 205-217.
- Webb, R., Brammah, T., Lunt, M., Urwin, M., Allison, T., & Symmons, D. (2003). Prevalence and predictors of intense, chronic, and disabling neck and back pain in the UK general population. *Spine*, 28(11), 1195–1202.
- WHO. (1998). WHOQOL: Measuring quality of life. *Psychol Med*, 28(3), 551–558.
- Williams, J. S., Ng, N., Peltzer, K., Yawson, A., Biritwum, R., Maximova, T., ... Chatterji, S. (2015). Risk factors and disability associated with low back pain in

- older adults in low- and middle-income countries. Results from the WHO study on global AGEing and adult health (SAGE). *PLoS ONE*, 10(6),
- Wong, A. Y., Karppinen, J., & Samartzis, D. (2017). Low back pain in older adults: Risk factors, management options and future directions. *Scoliosis and Spinal Disorders*, 12, 14.
- Woolf, A. D., & Pfleger, B. (2003). Burden of major musculoskeletal conditions. *Bulletin of the World Health Organization*, 81(9), 646–656.
- Worku, Z. (2000). Original articles. *Journal of Manipulative and Physiological Therapeutics*, 23(3), 147–154.
- World Health Organisation. (2001). *Overview of ICF Components. International Classification of Functioning, Disability and Health (ICF)*.
- WHO Scientific Group on the Burden of Musculoskeletal Conditions at the Start of the New Millennium, & World Health Organization. (2003). *The burden of musculoskeletal conditions at the start of the new millennium: Report of a WHO Scientific Group* (No. 919). World Health Organization.
- Yan, L.L., Daviglus, M.L., Liu, K., Pirzada, A., Garside, D.B., Schiffer, L., ... & Greenland, P. (2004). BMI and health-related quality of life in adults 65 years and older. *Obesity*, 12(1), 69-76.
- Yiengprugsawan, V., Hoy, D., Buchbinder, R., Bain, C., Seubsman, S., & Sleight, A. C. (2017). Low back pain and limitations of daily living in Asia: Longitudinal findings in the Thai cohort study. *BMC Musculoskeletal Disorders*, 18(1), 19.
- Yip, Y. (2001). A study of work stress, patient handling activities and the risk of low back pain among nurses in Hong Kong. *Journal of Advanced Nursing*, 36(6), 794–804.
- Yip, Y. B., Ho, S. C., & Chan, S. G. (2001). Tall stature, overweight and the prevalence

of low back pain in Chinese middle-aged women. *International Journal of Obesity and Related Metabolic Disorders: Journal of the International Association for the Study of Obesity*, 25(6), 887–92.

Yue, P., Liu, F., & Li, L. (2012). Neck/shoulder pain and low back pain among school teachers in China, prevalence and risk factors. *BMC Public Health*, 12, 789.



UNIVERSITY *of the*
WESTERN CAPE



**OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION**

Private Bag X17, Bellville 7535
South Africa
T: +27 21 959 2988/2948
F: +27 21 959 3170
E: research-ethics@uwc.ac.za
www.uwc.ac.za

10 August 2016

Mr NK Chumba
Physiotherapy
Faculty of Community and Health Sciences

Ethics Reference Number: HS/16/3/37

Project Title: The impact of low back pain on adult women attending
Moi Teaching and Referral Hospital, Eldoret, Kenya.

Approval Period: 10 May 2016 – 10 May 2017

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

A handwritten signature in black ink, appearing to read 'Patricia Josias'.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*

PROVISIONAL REC NUMBER - 130416-049



INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 334711/2/3

MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

Reference: IREC/2016/126
Approval Number: 0001729

13th September, 2016

Mr. Nahor Kipruto Chumba,
University of the Western Cape,
Faculty of Community and Health Sciences,
Private Bag X17, Bellville 7535,
SOUTH AFRICA.



Dear Mr. Kipruto,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"The Impact of Low Back Pain on Adult Women attending Moi Teaching and Referral Hospital (Physiotherapy Clinic) Eldoret Kenya".

Your proposal has been granted a Formal Approval Number: **FAN: IREC 1729** on 13th September, 2016. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 12th September, 2017. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

**PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE**

cc	CEO	-	MTRH	Dean	-	SOP	Dean	-	SOM
	Principal	-	CHS	Dean	-	SON	Dean	-	SOD

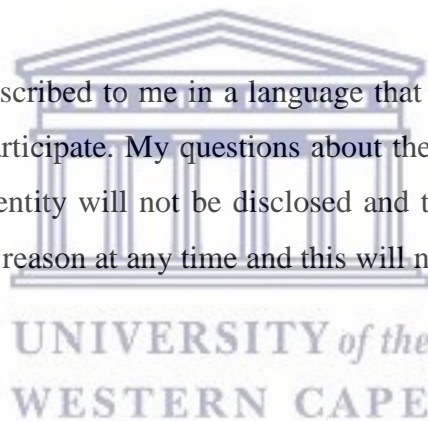


UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592542, Fax: 27 21-9591217
E-mail: tsteyl@uwc.ac.za

CONSENT FORM

Title of Research Project: Impact of low back pain on adult women attending Moi Teaching and Referral Hospital, Eldoret Kenya.

The study has been described to me in a language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.



Participant's name.....

Participant's signature.....

Date.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Dr. Tania Steyl
University of the Western Cape
Private Bag X17, Bellville 7535
Telephone: +27 21 959-2549



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592542, Fax: +27 21-9591217
Baruapepe: tsteyl@uwc.ac.za

FOMU IDHINI

Jina la Mradi wa Utafiti: Athari ya maumivu ya mgongo kwa wanawake watu wazima wanaohudhuria Moi Teaching and Referral Hospital, Eldoret Kenya.

Utafiti huu umeleezwa kwangu katika lugha ambayo mimi naelewa. Maswali yangu kuhusu utafiti huu yamejibiwa. Mimi naelewa kwamba ushiriki wangu itahusisha na nakubaliana kushiriki kwa uamuzi wangu mwenyewe na uhuru wa kuchagua. Naelewa kwamba utambulisho wangu halitafunuliwa kwa mtu yeyote. Naelewa kwamba naweza kuondoka kutoka utafiti wakati wowote bila kutoa sababu na bila hofu ya matokeo mabaya au kupoteza faida.

Jina mshiriki.....

Mshiriki saina.....

Tarehe.....

Je, unapaswa kuwa na maswali yoyote kuhusu utafiti huu au unataka kutoa ripoti yoyote ya matatizo uliyoyaona kuhusiana na utafiti, tafadhali wasiliana na mratibu wa utafiti:

Dr. Tania Steyl

University of the Western Cape

Private Bag X17, Bellville 7535

Telephone: +27 21 959-2549

Email: tsteyl@uwc.ac.za



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592542, Fax: 27 21-9591217
E-mail: tsteyl@uwc.ac.za

INFORMATION SHEET

Title: The impact of low back pain on adult women attending Moi Teaching and Referral Hospital, Eldoret Kenya.

What is this study about?

This is a research project being conducted by Nahor Kipruto pursuing a Masters degree in Physiotherapy (Msc Physiotherapy) at the University of the Western Cape South Africa. We are inviting you to participate in this research project because you are a potential subject (suffering from low back pain). The purpose of this research project is to make recommendations for the development of health promotion strategies to prevent low back pain on adult women. Furthermore the new information could assist policy makers with suggestions to decrease the emerging problem of low back pain and enhance quality of life women and productivity in Kenya.

What will I be asked to do if I agree to participate?

You will be asked to complete a survey consisting of the following sections: socio-demographic information, the Nordic Musculoskeletal Questionnaire, the Oswestry Disability Index and the WHOQOL-BREF tool on quality of life. You will then be asked to participate in focus group discussions at the physiotherapy department at a time convenient to you later on. The focus group discussions will be to explore the activities of daily living that may contribute to low back pain in adult women. The focus group discussions will be tape recorded after informed consent is obtained and should not take longer than 45-60 minutes.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, a code will be placed on the survey and other collected data, through the use of an identification key the researcher will be able to link your survey to your identity; and only the researcher will have access to the identification key. To ensure your confidentiality data forms will be coded using numbers for identification purposes. Information gathered from the study will be handled with confidentiality and will only be available to the researcher. If we write a report or article about this research project, your identity will be protected. In accordance with legal requirements and/or professional standards, we will disclose to the appropriate individuals and/or authorities information that comes to our attention concerning child abuse or neglect or potential harm to you or others. In this event, we will inform you that we have to break confidentiality to fulfil our legal responsibility to report to the designated authorities. This study will use focus groups therefore the extent to which your identity will remain confidential is dependent on participants' in the Focus Group maintaining confidentiality. A focus group confidentiality binding form will be signed by all the participants.

What are the risks of this research?

There may be some risks from participating in this research study.

There are minimal risks associated with participating in this study. In case of any issues arising from the questions asked in the interview, you will be referred for appropriate management of the problem. All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimize such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the impact of low back pain on adult women. We hope that, in the future, other people might benefit from this study through improved understanding of the emerging problem of low back pain among women, enhance the

quality of life and improve their productivity. Furthermore, information obtained from the study could be used to make recommendations for the development of health promotion strategies to prevent low back pain in adult women.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by Nahor Kipruto Chumba a Masters student in the Physiotherapy department at the University of the Western Cape. If you have any questions about the research study itself, please contact

Mr Nahor Kipruto Chumba

P O Box 377-30300

KAPSABET

Mobile no. +254 720 029 598

Email: kiprutonahor@ymail.com



Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Dr Nondwe Mlenzana

Head of Department: Physiotherapy

University of the Western Cape

Private Bag X17

Bellville 7535

nmlenzana@uwc.ac.za

Prof José Frantz

Dean of the Faculty of Community and Health Sciences

University of the Western Cape

Private Bag X17

Bellville 7535

chs-deansoffice@uwc.ac.za



UNIVERSITY *of the*
WESTERN CAPE



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592542, Fax: 27 21-9591217
E-mail: tsteyl@uwc.ac.za

KARATASI YA MAELEZO

Mradi ya Utafiti: Athari ya maumivu ya mgogongo kwa wanawake watu wazima wanaohudhuria Moi Teaching and Referral Hospital, Eldoret Kenya.

Utafiti huu unahusu nini?

Hii ni mradi wa utafiti unaofanywa na Nahor Kipruto kutafuta shahada ya uzamili katika Physiotherapy (Msc Physiotherapy) katika Chuo Kikuu cha Western Cape Afrika Kusini. Tunakukaribisha wewe kushiriki katika mradi huu utafiti kwa sababu wewe ni uwezo somo (wanaosumbuliwa na maumivu ya mgongo. Madhumuni ya mradi huu utafiti ni kutoa mapendekezo kwa ajili ya maendeleo ya mikakati ya kukuza afya ya kuzuia maumivu ya mgongo kwa wanawake watu wazima. Aidha habari mpya inaweza kusaidia watunga sera na mapendekezo ya kupunguza tatizo kujitokeza ya maumivu chini nyuma na kuongeza ubora wa maisha ya wanawake na tija katika Kenya.

Natarajiwa kufanya nini ikiwa nitakubali kushiriki?

Utaulizwa kukamilisha utafiti yenye sehemu zifuatazo: Kijamii na idadi ya watu habari, Nordic Musculoskeletal Dodoso, Oswestry Ulemavu Index na WHOQOL-BREF chombo juu ya ubora wa maisha. Baadaye utaulizwa kushiriki katika majadiliano ya vikundi katika idara ya physiotherapy kwa wakati unaofaa kwako. Majadiliano ya vikundi itakuwa ya kuchunguza shughuli za maisha ya kila siku ambayo inaweza kuchangia kwa maumivu ya mgongo katika wanawake watu wazima. Majadiliano ya vikundi itakuwa mkanda kumbukumbu baada ya ridhaa ni kupatikana na haipaswi kuchukua zaidi ya dakika 45-60.

Je, ushiriki wangu katika utafiti huu utawekwa siri?

Mtafiti mkuu ataweka maelezo yako binafsi kuwa ya siri. Kusaidia kulinda maelezo yako, hatua zifuatavyo zitachukuliwa; maswali na majibu yako ya siri hayatakuwa na majina yako, badala ya hiyo, alama ya siri itawekwa. Majibu yote yatakuwa chini ya ulinzi wa mtafiti mkuu; yeye pekee ataweka ufunguo ya mahali pa kuwekwa na nambari ya siri ya kufungua komputa.

Je hatari ya utafiti huu ni nini?

Ikiwa hatari yeyote itatokea, kwa mfano mshiriki kuwa mgonjwa, kuzidiwa na ujungu ya majeraha au kusumbuka kiakili wakati anajibu maswali, yeye atatumwa kuona mshauri, daktari au mtaalamu anayehusika ili apate usaidizi au matibabu maalum.

Je, faida ya utafiti huu ni nini?

Utafiti huu si imeundwa ili kukusaidia binafsi, lakini matokeo inaweza kusaidia mpelelezi kujifunza zaidi kuhusu athari ya maumivu ya mgongo kwa wanawake watu wazima. Ni matumaini yetu kwamba, katika siku zijazo, watu wengine waweze kufaidika na utafiti huu kwa kuboresha uelewa wa tatizo kujitokeza ya maumivu ya mgongo miongoni mwa wanawake, kuongeza ubora wa maisha na kuboresha tija. Aidha taarifa zilizopatikana kutoka utafiti inaweza kutumika kutoa mapendekezo kwa ajili ya maendeleo ya mikakati ya kukuza afya ili kuzuia maumivu ya mgongo katika wanawake watu wazima. Kuelezea faida kwa hamu ya sayansi au jamii inatarajiwa kutokana na utafiti, kama wapo.

Je, ni muhimu nishiriki katika utafiti huu? na je, nikitaka kuacha nitakubaliwa wakati wowote ?

Ushirika wako katika utafiti huu ni hiari kabisa. Unaweza kuchagua kushiriki tangu mwanzo mpaka mwisho au unaweza kuondoka wakati wowote. Kuacha kushiriki haitasababisha adabu yoyote au hasara ya faida ambayo una haki yake. Uamuzi ni wako. Pia, kushiriki katika utafiti huu haitaharibu uhusiano wako wa sasa au baadaye na Chuo Kikuu cha Western Cape.

Nini kama nina maswali?

Utafiti huu ni kuwa uliofanywa na Nahor Kipruto Chumba mwanafunzi wa Masters

katika idara Physiotherapy katika Chuo Kikuu cha Western Cape. Kama una maswali yoyote kuhusu utafiti yenyewe, tafadhali wasiliana

Nahor Kipruto

SLP 377-30300

KAPSABET

Baruapepe: kiprutonahor@gmail.com

Je, ukiwa na maswali yoyote kuhusu utafiti huu na haki zako kama mshiriki au kama unataka kujulisha matatizo yoyote, tafadhali wasiliana na:

Dr Nondwe Mlenzana

Head of Department: Physiotherapy

University of the Western Cape

Private Bag X17

Bellville 7535

nmlenzana@uwc.ac.za

Prof José Frantz

Dean of the Faculty of Community and Health Sciences

University of the Western Cape

Private Bag X17

Bellville 7535

chs-deansoffice@uwc.ac.za



QUESTIONNAIRE FOR PARTICIPANTS

- This questionnaire is about how low back pain affects you.
- This questionnaire is **completely voluntary**. You may choose not to participate or not to answer any specific question.
- This questionnaire is **completely anonymous**. Please make no marks of any kind on the survey which could identify you individually.



INSTRUCTIONS

- Select only one response, unless instructed otherwise.
- Please tick the appropriate answer e.g. ✓ or circle one correct answer where indicated

Thank you very much for your co-operation

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

Q1. Age (years)

Q2. Level of education

- Primary Secondary University None

Q3. Marital status

- Single Married Divorced Other

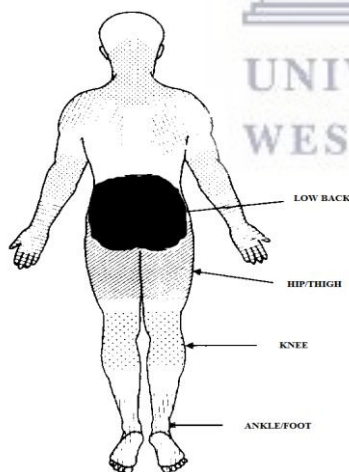
Q4. Occupation/current employment.....

Q5. Weight (kg).....

Q6. Height (cm).....

SECTION B: NORDIC BACK PAIN QUESTIONNAIRE

In this picture you can see the approximate position of the body part referred to in the questionnaire. Please answer by putting a cross in the appropriate box (only one cross for each section).



Q7. Have you at any time during the last 12 months had trouble (ache, pain, discomfort, numbness) in your low back?

- Yes No

IF YOU ANSWERED NO TO QUESTION 7, YOU DO NOT HAVE TO COMPLETE QUESTIONS 8 – 10.

Q8. During the last 12 months have you been prevented from carrying out normal activities (e.g. job, housework, hobbies) because of trouble in your low back?

- Yes No

Q9. During the last 12 months have you seen a doctor, chiropractor or physiotherapist because of trouble in your low back?

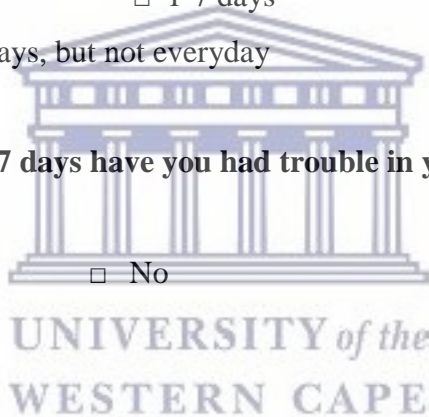
- Yes No

Q10. What is the total length of time that you had low back trouble during the last 12 months?

- 0 days 1-7 days 8-30 days
 more than 30 days, but not everyday everyday

Q11. During the last 7 days have you had trouble in your low back?

- Yes No



Q12. VISUAL ANALOGUE SCALE

What is the average pain intensity of the pain in your low back, where 0 = no pain and 10 = very bad pain?

0	1	2	3	4	5	6	7	8	9	10

SECTION C: OSWESTRY DISABILITY INDEX (ODI)

This questionnaire has been designed to give information how your back affecting your ability to manage in everyday life. Please answer by tick (✓) in each section for the statement, which best applies to you. We realize that you may consider that two or more statements in any one section apply but please just shade out the spot that indicates the statement, which most clearly describes your problem.

Q13. PAIN INTENSITY

I have no pain at the moment	0
The pain is very mild at the moment	1
The pain is moderate at the moment	2
The pain is fairly severe at the moment	3
The pain very severe at the moment	4
The pain is worst imaginable at the moment	5

Q14. LIFTING

I can lift weights without extra weight	0
I can lift heavy weights but it gives extra pain	1
Pain prevents me from lifting heavy weights off the floor	2
Pain prevents me from lifting heavy weights but can manage light weights	3
I can lift very light weights	4
I cannot lift or carry anything at all	5

Q15. PERSONAL WASHING

I can look after myself normally without causing extra pain	0
I can look after myself normally but it causes extra pain	1
It's painful to look after myself and I am slow and careful	2
I need some help but manage most of my personal care	3
I need help everyday in most aspects of self-care	4
I do not get dressed , i wash with difficulty and stay in bed	5

Q16. WALKING

Pain doesn't prevent me from walking any distance	0
Pain prevents me from walking more than 2 kilometers	1
Pain prevents me from walking more than 1 kilometers	2
Pain prevents me from walking more than 500 meters	3
I can only walk using a stick or crutches	4
I am in bed most of the time	5

Q17. SITTING

I can sit in any chair as long as I like	0
I can only sit in my favorite chair as long as I like	1
Pain prevents me from sitting for more than one hour	2
Pain prevents me from sitting for more than 30 minutes	3
Pain prevents me from sitting for more than 10 minutes	4
Pain prevents me from sitting at all	5

Q18. SEX (IF APPLICABLE)

My sex life is normal and causes no extra pain	0
My sex life is normal but causes extra pain	1
My sex life is normal but it's very painful	2
My sex life is severely restricted by pain	3
My sex life is nearly absent because of pain	4
Pain prevents me from any sex life at all	5

Q19. STANDING

I can stand as long as I want without extra pain	0
I can stand as long as I want but it gives me extra pain	1
Pain prevents me from standing for more than 1 hour	2
Pain prevents me from standing for more than 3 minutes	3
Pain prevents me from standing for more than 10 minutes	4
Pain prevents me from standing at all	5

Q20. SOCIAL LIFE

My social life is normal and gives me no extra pain	0
My social life is normal but increases the degree of pain	1
Pain has no significant effect on my social life apart from limiting my more energetic interests e.g. sport	2
Pain has restricted my social life and I do not go out as often	3
Pain has restricted my social life to my home	4
I have no social life because of pain	5

Q21. SLEEPING

My sleep is never disturbed by pain	0
My sleep is occasionally disturbed by pain	1
Because of pain I have less than 6 hours sleep	2
Because of pain I have less than 4 hours sleep	3
Because of pain I have less than 2 hours sleep	4
Pain prevents me from sleeping at all	5

Q22. TRAVELLING

I can travel anywhere without pain	0
I can travel anywhere but it give me extra pain	1
Pain is bad but I manage journeys over two hours	2
Pain restricts me to journeys of less than one hour	3
Pain restricts me to short necessary journeys under 30 minutes	4
Pain prevents me from travelling except to receive treatment	5

SECTION D: WORLD HEALTH ORGANIZATION QUALITY OF LIFE TOOL (WHOQOL-BREF)

This assessment asks how you feel about your quality of life, health, or other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response. We ask that you think about your life in the **LAST TWO WEEKS**. For example, thinking about the last two weeks, a question might ask:

		Very poor	Poor	Neither poor nor good	Good	Very good
Q27	How would you rate your quality of life?	1	2	3	4	5

		Very poor	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
Q28	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the **LAST TWO WEEKS**

		Not at all	A little	A moderate amount	Very much	An extreme amount
Q29	To what extent do you feel physical pain prevents from doing what you need?	5	4	3	2	1
Q30	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
Q31	How much do you enjoy life?	1	2	3	4	5
Q32	To what extent do you feel your life being meaning full?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
Q33	How well are you able to concentrate?	1	2	3	4	5
Q34	How safe do you feel in your daily life?	1	2	3	4	5
Q35	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the LAST TWO WEEKS.

		Not at all	A little	Moderately	Mostly	Completely
Q36	Do you have enough energy for your everyday life?	1	2	3	4	5
Q37	Are you able to accept your bodily appearance?	1	2	3	4	5
Q38	Have you enough money to meet your needs?	1	2	3	4	5
Q39	How available to you is the information that you need in your day to -day- life?	1	2	3	4	5
Q40	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor dissatisfied	Satisfied	Very satisfied
Q41	How are able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
Q42	How satisfied are you with your sleep?	1	2	3	4	5
Q43	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
Q44	How satisfied are you with your capacity for work?	1	2	3	4	5
Q45	How satisfied are you with yourself?	1	2	3	4	5
Q46	How satisfied are you with your personal relationship?	1	2	3	4	5
Q47	How satisfied are you with your sex life?	1	2	3	4	5
Q48	How satisfied are you with the support you get from your friends?	1	2	3	4	5
Q49	How satisfied are you with the conditions of your living place?	1	2	3	4	5
Q50	How satisfied are you with your access to health services?	1	2	3	4	5
Q51	How satisfied are you with your transport?	1	2	3	4	5

The following questions refer to how often you have felt or experienced certain things in the LAST FOUR WEEKS.

		Never	Seldom	Quite often	Very often	Always
Q52	How often do you have negative feelings such as blue, mood, despair, anxiety, and depression?	5	4	3	2	1

SEHEMU A – TAARIFA BINAFSI

Q1. Umri (miaka)

Q2. Kiwango cha elimu

- Elimu ya msingi Elimu kidato cha nne Elimu ya chuo kikuu Hakuna

Q3. Taarifa ya Ndoa

- Sijaolewa/Sijaoa Nimeoa Nimeachwa/Nimeacha Nyingine

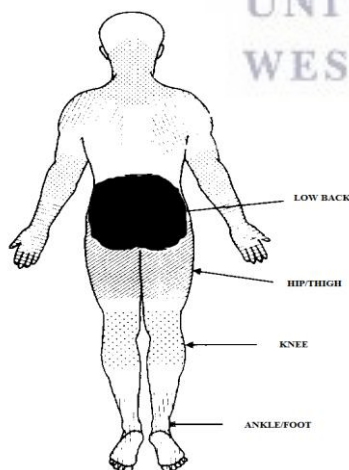
Q4. Unafanya kazi gani

Q5. Uzito wako (kg).....

Q6. Urefu wako (cm).....

SEHEMU B- DODOSO YA MAUMIVU YA MGONGO LA NORDIC
--

Picha iliyo hapo chini inaonesha alama ya kivuli nyumaya mgongo wa mwanadamu. Jibu maswali yafuatayo kwa kuweka alama ya vema [x] katika jibu sahihi.



Q7. Je umewahi kumia au kupata maumivu ya mgongo kwa mfululizo kwa kipindi cha mwaka mmoja?

- Ndio Hapana

IKIWA UMEJIBU SWALI LA 7, HAUNA HAJA YA KUFUTA MASWALI 8-10.

Q8. Je, kwa muuda wa mwaka mmoja uliopita kunawezekano kua maumivu ya mgongo yame kuzuia kufanya shuguli zako za kawaida kama kazi za nyumbani au matamaniao yako?

- Ndio Hapana

Q9. Je, kwa muda wa mwaka mmoja uliopita umeweza kupata kumwona daktari sababu ya maumivu ya mgongo?

- Ndio Hapana

Q10. Je, ni siku ngapi kwa mwaka mmoja uliopita ambayo umeugua maumivu ya mgongo?

- 0 siku 1-7 siku 8-30 siku
 Zaidi ya mwezi mmoja, lakini sio kila siku kila siku

Q11. Je, kwa muda wa wiki moja uliopita, umeweza kuugua maumivu ya mgongo?

- Ndio Hapana

Q12. CHAGUA JIBU SAHIHI NA KUWEKA ALAMA YA

Au weka alama ya mduara ili kuonyesha kiwango cha maumivu ya mgongo wako; ikiwa 0= hakuna uchungu na 10= uchungu sana

0	1	2	3	4	5	6	7	8	9	10

SEHEMU C. DODOSO LA MAUMIVU YA MGONGO LA OSWESTRY

Dodoso hil limetengenezwa madhubuti ili kuweza kutoa taarifa jinsi gani maumivu ya mgongo yanaweza kuathiri uwezo wako wa kisimamia maisha yako ya kila siku. Tafadhali weka alama hii ya vema [✓] katika kila moja ya taarifa ambayo unaona inalenga upande wako wewe. Tunatambua unaweza kufikiria kuwa taarifa mbili au zaidi ya mtu kati ya sehemu yoyote zilizoaninishwa hapa lakini tafadhali hisika na ambayo inayoeleza kwa uwazi zaidi tatizo lako.

Q13. UKUBWA WA MAUMIVU

Sina maumivu kwa sasa	0
Nina maumivu kwa muda huu	1
Nina maumivu wastani kwa wakati huu	2
Maumivu ninayopata ni makai kiasi	3
Maumivu ninayopata ni makali sana	4
Maumivu ninayopata ni makali ya kipundikia	5

Q14. KUINUA KITU

Naweza kuinua kitu kizito bila kupata maumivu	0
Naweza kuinua kitu kizito ila napata maumivu	1
Maumivu yananzuia kuinua kitu kizito kutoka sakafuni	2
Maumivu yananzuia kuinua kitu kizito ila naweza kuinua vitu vyepesi	3
Ninaweza kuinua vitu vyenye uzito mdogo	4
Siwezi kuinua kitu au kubeba kitu chochote kizito	5

Q15. KUOSHA BINAFSI

Naweza kujiosha bila maumivu yoyote	0
Naweza kujiosha ila napata maumivu kidogo	1
Naweza kujiosha mwenyewe ila kwa upole na makini	2
Nahitaji usaidizi kiasi wakati wa kuoga	3
Nahitaji usaidizi wakati wote ninapo jiosha	4
Siwezi kuvaa pia kuosha na kila wakati nimeshinda kwa kitanda	5

Q16. KUTEMBEA

Maumivu hainizui kutembea umbali wowote	0
Maumivu yananzuia kutembea umbali wa kilomita 2	1
Maumivu yananzuia kutembea umbali wa kilomita 1	2
Maumivu yananzuia kutembea umbali wa nusu kilomita	3
Naweza kutembea tu kwa kutumia fimbo ya kutembelea	4
Muda mwingi nakuwa kitandani	5

Q17. KUKAA

Ninaweza kukaa kwa kiti chochote nitakacho	0
Ninaweza kukaa kwenye kiti kile tu kisicho ni umiza	1
Maumivu yananzuia kukaa sana kupita saa moja	2
Maumivu yananzuia kukaa kwa muda wa nusu saa	3
Maumivu yananzuia kukaa kwa muda wa dakika kumi	4
Maumivu yananzuia kukaa kabisa	5

Q18. NGONO (IKIWA INAFAA)

Hali yangu ya ngono ni kawaida na hamna maumivu	0
Hali yangu ya ngono ni kawaida lakini kuna maumivu	1
Hali yangu ya ngono ni kawaida lakini kuna maumivu sana	2
Hali yangu ya ngono imekwazwa na maumivu	3
Hali yangu ya ngono karibu haipo sababu ya maumivu	4
Maumivu yamenizua kushiriki ngono kabisa	5

Q19. KUSIMAMA

Naweza kusimama kwa muda wote nitakao bila maumivu	0
Naweza kusimama kwa muda wote nitakao ila napata maumivu	1
Maumivu yananzuia kusimama zaidi ya saa moja	2
Maumivu yananzuia kusimama zaidi ya dakika tatu	3
Maumivu yananzuia kusimama zaidi ya dakika kumi	4
Maumivu yananzuia kusimama kabisa	5

Q20. MAISHA YA KIJAMII

Maisha yangu ya kijamii ni kawaida na haileti maumivu yoyote	0
Maisha yangu ya kijamii ni kawaida lakini kuna ongezo la maumivu	1
Maumivu haina athari muhimu kwa maisha yangu ya kijamii ila inanikomesha kwa mvuto kama michezo	2
Maumivu yananzuia maisha yangu ya kijamii ata siwezi kutembea mara nyingi	3
Maumivu imeniwekea vikwazo katiak maisha yangu ya kijamii	4
Sina maisha ya kijamii sababu ya maumivu	5

Q21. KULALA

Kamwe maumivi haivurugi usingizi wangu	0
Mara kwa mara usingizi wangu huvurugwa na maumivu	1
Sababu ya maumivu ninakuwa na usingizi chini ya masaa 6	2
Sababu ya maumivi ninkuwa na usingizi chini ya masaa 4	3
Sababu ya maumivi ninakuwa na usingizi chini ya masaa 2	4
Maumivu yanarifanya nisipate usingizi kabisa	5

Q22. KUSAFIRI

Naweza safari popote bila maumivu	0
Ninaweza safari popote ila napata maumivu	1
Maumivi ipo lakini naweza safari zaidi ya masaa 2	2
Maumivi yananzuia kwa safari chini ya saa 1	3
Maumivi yananzuia kwa safari fupi za muhimu chini ya dakika 30	4
Maumivu yananzuia kwa safari ila tu ninapoenda kupata matibabu	5

SECTION D: WORLD HEALTH ORGANIZATION QUALITY OF LIFE TOOL (WHOQOL-BREF)

Maswali yafuatayo yanajaribu kuchunguza jinsi wewe unavyohisi hali yako ya afya na maisha yako kwa jumla. Nitakusomea maswali na vile vile hiari za majibu ambazo unazo. Tafadhali chagua jibu ambayo inalingana na maoni yako au ni karibu na jibu lako. Ukijibu maswali tafadhali jaribu ukumbuke kanuni, ridhaa, na shaka zako. Vile vile tungeuliza ukijibu wasali ukumbuke vitu ambazo zimefanyika maishani mwako kuanzia sasa na kurudi nyuma WIKI MBILI ZILIZOPITA.

		Mbaya sana	Mbaya	Sio mbaya wala sio mzuri	Nzuri	Nzuri sana
Q27	Je, ukikaripia hali ya maisha yako, je waweza kusemaje?	1	2	3	4	5

		Hai ridhishi sana	Hai ridhishi	Hai ridhishi wala haipendezi	Inaridhi sha	Inaridhisha sana
Q28	Je, unaridhiswa na hali yako ya afya?	1	2	3	4	5

Maswali yafuatayo yana jaribu kupima maarifa zako kuhusu vitu mbali mbali katika wiki NNE ZILIZO PITA.

		Hakuna hata kidogo	Kidodgo	Kadiri	Sana	Kabisa
Q29	Ni kwa kiasi gani ambayo unaona kwamba maumivu ya mwili imekuziwa kufanya vitu ambazo ungependa kuyafanya?	5	4	3	2	1
Q30	Ni kwa kiasi gani ambayo unahitaji matibabu katika maisha yako ya kila siku?	5	4	3	2	1
Q31	Ni kwa kadiri/kiasi gani ambayo wewe unafurahia maisha?	1	2	3	4	5
Q32	Ni kwa kiasi gani ambayo wewe unaona kwamba maisha yako ina muhimu?	1	2	3	4	5

		Hakuna hata kidogo	Hakuna hata kidogo	Kadiri	Sana	Kabisa
Q33	Ni kwa kiasi gani ambayo wewe unaweza kukaza fikira ju ya jambo?	1	2	3	4	5
Q34	Ni kwa kiasi gani ambayo wewe unahisi usalama wako katika shughli zako za kila siku?	1	2	3	4	5
Q35	Je, sifa za mazingira yako unayaonaje?	1	2	3	4	5

Maswali yanayofuata yanauliza uwezo wako wakupima maarifa yako au kufanya vitu fulani kwa WIKI MBILI ZILIZOPITA.

		Hakuna hata kidogo	Kidodgo	Kadiri	Sana	Kabisa
Q36	Je, una nguvu ya kutosha kufanya shughli za kawaida za kila siku?	1	2	3	4	5
Q37	Je, una ridhika na umbo lako au hali yako ya kimwili?	1	2	3	4	5
Q38	Je, una pesa za kutosha kutimiza mahitaji yako?	1	2	3	4	5
Q39	Je, maelezo ambazo unazotaka katika maisha yako ya kila siku unayapata?	1	2	3	4	5
Q40	Je, ni kwa kiasi gani ambayo unapata nafasi ya kupumzika na kufaragha?	1	2	3	4	5

		Mbaya sana	Mbaya	Sio mbaya wala sio mzuri	Nzuri	Nzuri sana
Q41	Je, ni kwa kiasi gani ambayo unaweza kuwasiliana/kutembea?	1	2	3	4	5

		Hai ridhishi sana	Hai ridhishi	Hai ridhishi wala haipendezi	Inaridhisha	Inaridhisha sana
Q42	Je, ni kwa kiasi gani ambayo unaridhishwa na uwezo wako wa kulala?	1	2	3	4	5
Q43	Je, ni kwa kiasi gani ambayo wewe unaridhishwa na uwezo wako wa kjiendeleza katika maisha yako ya kila siku?	1	2	3	4	5
Q44	Je, ni kwa kiasi gani ambayo wewe unaridhishwa na uwezo wako wa kufanya kazi?	1	2	3	4	5
Q45	Je, ni kwa kiasi gani ambayo unaridhishwa na maisha yako?	1	2	3	4	5
Q46	Je, ni kwa kiasi gani ambayo unaridhishwa na uhusiano yako na watu wengine?	1	2	3	4	5
Q47	Je, ni kwa kiasi gani ambayo unaridhishwa na maisha yako ya kimapenzi?	1	2	3	4	5
Q48	Je, ni kwa kiasi gani ambayo unaridhishwa na usaidizi ambayo	1	2	3	4	5

	unpata kutoka marafiki zako?					
Q49	Je, ni kwa kiasi gani ambayo unridhishwa na hali ya makao ambayo unaishi?	1	2	3	4	5
Q50	Je, ni kwa kiasi gani ambayo unridhishwa na uwezo wa kupata huduma za matibabu?	1	2	3	4	5
Q51	Je, ni kwa kiasi gani ambayo unridhishwa na huduma za usafirishaji?	1	2	3	4	5

Swali linalofuata linahusu mara ngapi wewe umehisi au kuarifu vitu mbali mbali katika WIKI NNE ZILIZO PITA.

		Hakuna hata kidogo	Kidogo	Mara kwa mara	Sana	Kila mara
Q52	Je, kuhisi ya kuwa na hali ya moyo mzito, taruki au wasi wasi huja kwako mara ngapi?	5	4	3	2	1



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9592542, Fax: 27 21-9591217

E-mail: tsteyl@uwc.ac.za

FOCUS GROUP CONFIDENTIALITY BINDING FORM

Title: The impact of low back pain on adult women attending Moi Teaching and Referral Hospital, Eldoret Kenya.

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone by the researchers. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits. I understand that confidentiality is dependent on participants' in the focus group maintaining confidentiality. I hereby agree to uphold the confidentiality of the discussions in the focus group by not disclosing the identity of other participants or any aspects of their contributions to members outside of the group.

This research project involves making audiotapes of the focus group discussions. A code will be attached to all audio-taped data that will be linked to an identification key only known to the researcher. All tapes will be destroyed once they have been transcribed and documented according to themes. Transcribed data will be stored in a locked filing cabinet. No unauthorized party will be able to access the information.

I agree to be audio taped during my participation in this study. **YES..... NO.....**

Participants name.....

Participants signature.....

Date.....



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592542, Fax: +27 21-9591217
Baruapepe: tsteyl@uwc.ac.za

KIAPO CHA KUTUNZA SIRI

Jina la Mradi wa Utafiti: Athari ya maumivu ya mgongo kwa wanawake watu wazima wanaohudhuria Moi Teaching and Referral Hospital, Eldoret Kenya.

Utafiti huu umefafanuliwa kwangu katika lugha ninanayoelewa . Maswali yangu yamejibiwa ipasavyo na ninaeewa kile ambacho ushiriki wangu utahusisha na ninakubali kushiriki katika majadiliano kwa hiari yangu mwenyewe pasipo shuruti. Pia naelewa kwamba utambilisho wangu hautatolewa kwa mtu yoyote . Natambua pia kwamba naweza kujitoka katika kushiriki wakati wowote bila kutoa sababu ya uamuzi wangu na pia pasipokuwa na madhara au hasara yoyote kwangu. Natambua usiri utategemea namna ambavyo washiriki wote, kila mmoja katika kikundi atakavyotunza siri na hivyo ninaafiki kufanya yafuatayo:

Naafiki kutunza siri ya majadiliano haya kwa kutoa utambulisho wa washiriki wengine au aina yoyote ya michango yao kwa mtu yoyote asiyehusika.

Utafiti huu unahusisha kutengeneza tepi ya redio kwenye majadiliano. Alama ya siri itaambatanishwa kwenye tepi za rekodi ambayo imeunganishwa na alama ya utambulisho inayojulikana tu na mtafiti. Kanda zote zitaharibiwa baada ya kuandika kulingana na mandhari. Majibu yote yatakuwa chini ya ulinzi wa mtafiti mkuu; yeye pekee ataweka ufunguo ya mahali pa kuwekwa na nambari ya siri ya kufungua komputa.

Nakubali kushiriki katika majadilaino hayo **NDIO** **HAPANA**

Jina ya mshiriki.....

Sahihi ya mshiriki.....

Tarehe.....

INTERVIEW GUIDE FOR FOCUS GROUP DISCUSSION

Short introduction of researcher (e.g. name, purpose of study, purpose of FGD)
participants(e.g. name, residence, employment and hobbies)

1. How long have you suffered from low back pain?
(e.g. *2 weeks; 3 months; one year etc.*)
2. Does the pain in your lower back prevent you from doing things like household tasks?
3. Can you tell me about the household activities that you struggle with? Can you explain why you can't do it? Or how you have to do it differently?
(e.g. *cleaning the house; washing clothes; cooking; gardening*)
4. Does the low back pain limit your activities you do daily (functional ability)?
you explain why you can't do it? Or how you have to do it differently?
(e.g. *bathing; dressing; travelling; walking; sitting; bending; lifting objects*)
5. Does the low back pain interfere with your social life? Can you explain how?
(e.g. *social functions – no social life, pain restricts social life*)
6. How does low back pain affect your general well-being (quality of life)?
(e.g. *financial independence/freedom; depression/happy; dependent/independent activities of daily living; participate/not in hobbies, exercise, social activities*)
7. Is there anything else you would like to tell me regarding the influence of your low pain on your life?