

**KNOWLEDGE, ATTITUDES AND BELIEFS ON CONTRIBUTING
FACTORS AMONG LOW BACK PAIN PATIENTS ATTENDING
OUTPATIENT PHYSIOTHERAPY TREATMENT IN MALAWI**

NESTO SALIA TARIMO

**A thesis submitted in partial fulfilment of the requirements for the degree
of Master of Science in the Department of Physiotherapy, University of the**



November 2011

Supervisor: DR. INA DIENER

BSc (Phys) Stellenbosch University

PhD University of the Western Cape

KEY WORDS

Low back pain

Knowledge

Attitudes

Beliefs

Risk factors

Health education

Health promotion

Rehabilitation

Outcomes

Malawi



ABSTRACT

Low back pain (LBP) is a growing health and socio-economic problem worldwide, affecting humans from adolescent to adult age. In developed countries, more than 80% of adults are at risk of suffering a disabling episode of LBP at one point during their life time. In developing countries, particularly in Africa, the life time prevalence of LBP varies in population groups, but the disability due to LBP is increasing. The aetiology of LBP is multifactorial, and there is still no consensus on the exact cause and contributing factors to LBP. In addition, little is known about patients' knowledge and beliefs on the contributing factors to their LBP. The current study therefore, aimed to identify patients' knowledge, attitudes and beliefs on the contributing factors to LBP, among patients attending physiotherapy outpatient departments in Malawi.

A Delphi method was used to identify the most important contributing factors to LBP through ranking by the experts in the field of LBP. The nine most important contributing factors were identified and agreed on, and were included in the questionnaire. A quantitative research design, using a cross-sectional survey was used in the main study. Two hundred and five (205) participants who sought physiotherapy treatment for their LBP were recruited, using a convenience sampling method. The ethical issues pertaining to the study were sought and observed throughout. Privacy, confidentiality and anonymity of the participants were respected and a participant could withdraw from the study at any time.

Data was collected by means of a self-administered questionnaire. Descriptive and inferential statistical analysis was done using the Statistical Package for Social Sciences (version 19.0). The Chi-square test was used to determine any association between variables and the Alpha level of significance was set at 0.05. The mean age of the sample was 47.74 years, (SD=13.29). Females constituted 53.2% of the study sample. The results demonstrated that

the majority of the participants (91.2%) were partially knowledgeable about the course and causes of LBP in general. Participants reported that they obtained information regarding their LBP from various sources, doctors and physiotherapists being the predominant sources of information. The information obtained was mostly about self-care and the importance of exercise for the back. Furthermore, most participants (86.3%) agreed that the nine contributing factors identified through Delphi study, contribute to the development of LBP and may also worsen an existing LBP. However, participants had different opinions regarding their own LBP. Nearly 67% of the participants in the current study demonstrated negative attitudes and beliefs about LBP in general. The findings also showed a statistically significant relationship between knowledge, attitudes and beliefs ($p=0.04$).

The current study concluded that the study participants were partially knowledgeable about LBP in general, and that the majority of the group demonstrated negative attitudes and beliefs about their own LBP. This study therefore recommends a need to empower patients with knowledge regarding LBP and its contributing factors, and a strong need to change patients' negative attitudes and beliefs about LBP.

DECLARATION

I hereby declare that “**Knowledge, attitudes and beliefs on contributing factors among low back pain patients attending outpatient physiotherapy treatment in Malawi**” is my own work, that it has not been submitted for any degree or examination in any other university, and that all sources I have used or quoted have been indicated and acknowledged by means of complete references.

Nesto S. Tarimo



Signed

February 2012

Study leader: Dr Ina Diener



Signed

February 2012

DEDICATION

To Almighty God for guiding, granting me good health and strength throughout my study period. I did not deserve this more than others but is because of your will for all these things to happen.

To my wife **Theresia**, for your encouragement, understanding and your continued tolerance during my absence. Taking care of the children while I was away it was not an easy task. You mean a lot to me.

To my daughters **Joan** and **Jovious**, for staying such a long time without frequently seeing your dad. You are the source of my inspiration and I am proud of you all.

To my mother **Bernadeta**, for your encouragement, endless love and your continued care ever since when my father left me when I was still in my tender age.

To my father **Salia** (R.I.P), for your wisdom and your persistence insist of the importance of education. I take pleasure and solace in your wisdom.

ACKNOWLEDGEMENTS

I thank the Almighty God for his guidance and by giving me strength throughout the study period. It is not that I deserved much than others but is because of your will all these happened.

I am sincerely grateful to my supervisor Dr. Ina Diener for her diligent guidance throughout the study period. Thank you for your expedite responses related to the study, besides your busy schedules. God bless you.

To my study collaborator, Dr. Linda Kalilani Phiri, I appreciate your commitment, support, encouragement and advice during the entire period of my research project.

I am greatly indebted to Stig Ande Haug and Lise Edvardsen for their encouragement, advice and support both financially and morally. You were always by my side and I appreciate your patronage.

My sincere gratitude to Hans Welling and Menno Welling, for your support, advice and encouragement you played a big role to make my goal achievable.

To Mrs. Anne Soph Norlen, thank you very much for your commitment, guidance and your continued support and encouragement, you have been by my side throughout my career pursuit. God bless you.

I would like to thank my lecturers at department of physiotherapy; Prof J. Phillips, Prof J. Frantz, Prof A. Rhoda, Dr. Ina Diener, Ms T. Steyl, Mrs. N. Mlenzana, and Mr. H. Pharaoh, for grooming me up professionally.

My sincere thanks to my mother **Bernabeta** and my father **Salia** for their continued care and raising me to be who I am. Dad! You left early when I needed you the most (R.I.P). There is

nothing valuable and comparable to the care and love you offered to me. To all other family members for your support and taking care of me. I value you a lot.

To College of Medicine Research and Ethical Committee in Malawi and the directors of the Kamuzu and Queen Elizabeth Central Hospitals for approving and allowing me to conduct my study.

I am greatly indebted to the participants who took part in my research study. Thank you very much for your participation, without which, my research project would not have been accomplished. God bless you all.

I am indeed indebted to my dear wife **Theresia Massawe**: Thank you very much for your continued care, encouragement and love and for taking control of the children when I was away. I appreciate your perseverance

To my children **Joan** and **Jovious**: Your understanding of my absence at home cannot go unnoticed; continue being obedient and hard-working children because in you I take pleasure and solace.

To my fellow classmates, Haleluya Moshi, Azaria Simon, George Chimatiro, Samuel Lubega, Carol Singogo, Paul Ndahijimana and Pierre Barayagwiza. I appreciate your support and the commonality you portrayed during our career endeavour.

To Ms M. Kileo, for your continued encouragement, your contributions toward my study were enormous too much to mention them all. God bless you.

Last but not least, to all others who contributed in one way or another towards my study and I have failed to accord you a credit separately, I believe you will understand, however, if the contrary be the case your pardon is sought and apology is made. Thank you.

LIST OF ABBREVIATIONS

CSP	Chartered Society of Physiotherapists.
IASP	International Association for Study of Pain
ICU	Intensive Care Unit
KCH	Kamuzu Central Hospital
LBP	Low Back Pain
LKQ	Low back pain Knowledge Questionnaire
PRECED	Predisposing-Reinforcing- Enabling Causes Educational Diagnosis
QECH	Queen Elizabeth Central Hospital
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
UNICEF	United Nations Children’s Fund
USA	United States of America
USD	United States Dollar
UWC	University of the Western Cape
WHO	World Health Organization

DEFINITION OF TERMS

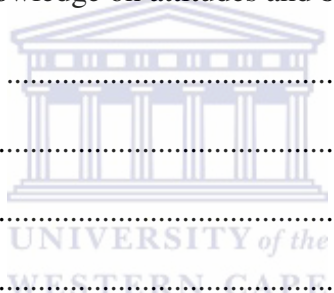
- Low back pain:** Low back pain is a symptom, not a specific disease. It is usually described as discomfort in the lumbosacral region of the back that may or may not radiate to the legs, hips, and buttocks (Yip, 2004).
- Knowledge:** Refers to the state or condition of understanding the fact or subject, and being able to apply it (United Nations Children’s Education Fund, 2010).
- Beliefs:** A belief is a thought we hold and deeply trust about something. Beliefs tend to be buried deep within the subconscious with the result that they trigger automatic reactions and behaviors (Lopper, 2006).
- Attitude:** It is a mental position relative to a way of thinking or being, and it can imply positive or negative feeling (Lopper, 2006).
- Risk factors:** A risk factor is something that increases your chances of getting a disease or injury (Myers, 2006).
- Health promotion:** It is the process aimed to enable people to gain greater control over the determinants of their own health and the environment they live in (World Health Organization (WHO), 2005).
- Health Education:** WHO defines Health Education as comprising of consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health (WHO, 1998).

TABLE OF CONTENTS

KEY WORDS.....	i
ABSTRACT.....	ii
DECLARATION	iv
DEDICATION.....	v
ACKNOWLEDGEMENTS.....	vi
LIST OF ABBREVIATIONS.....	viii
DEFINITION OF TERMS	ix
TABLE OF CONTENTS.....	x
LIST OF FIGURES	xv
LIST OF TABLES.....	xvi
LIST OF APPENDICES.....	xviii
CHAPTER ONE.....	1
INTRODUCTION	1
1.0 BACKGROUND.....	1
1.1 RESEARCH QUESTION	4
1.2 AIM AND OBJECTIVES OF THE STUDY	4
1.3 CHAPTER SUMMARY	5
1.4 OUTLINE OF THE OTHER CHAPTERS	5
CHAPTER TWO	6
LITERATURE REVIEW	6
2.0 INTRODUCTION.....	6
2.1 LITERATURE REVIEW METHOD AND SEARCH STRATEGY.....	6
2.2 PREVALENCE OF LOW BACK PAIN.....	7
2.3 THE IMPACT OF LBP IN THE SOCIETY	8
2.4 CONTRIBUTING RISK FACTORS TO LOW BACK PAIN	8
2.4.1 Physical risk factors	9



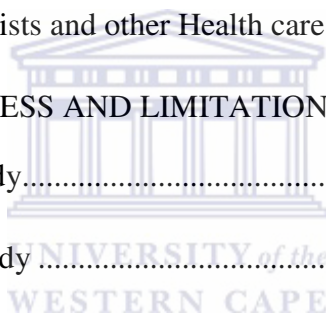
2.4.2	Psychosocial factors and low back pain.....	9
2.4.3	Socio-economic factors and low back pain	11
2.4.4	Gender and age as related to low back pain.....	11
2.4.5	Occupational/work related risk factors to low back pain.....	13
2.4.6	Anatomical/structural anomalies and low back pain	20
2.4.7	Individual/personal factors and low back pain	21
2.5	KNOWLEDGE AND HEALTH EDUCATION ON LBP	22
2.6	ATTITUDES AND BELIEFS ON LOW BACK PAIN.....	28
2.6.1	The relationship between knowledge, attitudes and beliefs.....	29
2.6.2	The influence of knowledge on attitudes and beliefs.....	30
2.7	CHAPTER SUMMARY	31
CHAPTER THREE		32
METHODOLOGY		32
3.0	INTRODUCTION.....	32
3.1	RESEARCH QUESTION	32
3.2	AIM AND OBJECTIVES OF THE STUDY	32
3.3	RESEARCH SETTING.....	33
3.4	STUDY DESIGN	33
3.5	STUDY POPULATION	33
3.6	INSTRUMENTATION AND DATA COLLECTION	34
3.6.1	First section (A-1).....	34
3.6.2	Second section (A-2).....	34
3.6.3	Third section (B-1).....	35
3.6.4	Fourth section (B-2).....	35
3.6.5	Fifth section (B-3).....	37



3.6.6	Sixth section (B-4)	46
3.6.7	Translations of the questionnaire	47
3.6.8	Pilot study	47
3.7	DATA COLLECTION	48
3.8	DATA ANALYSIS	48
3.9	ETHICAL CONSIDERATIONS.....	49
3.10	CHAPTER SUMMARY	50
CHAPTER FOUR.....		51
RESULTS		51
4.0	INTRODUCTION.....	51
4.1	RESULTS OF THE DELPHI STUDY.....	51
4.2	DESCRIPTION OF THE PARTICIPANTS (SECTION A-1)	56
4.2.1	Gender and age distribution.....	56
4.2.2	Marital status and residential area.....	56
4.2.3	Education level and employment status.....	57
4.3	CURRENT STATE OF THE PARTICIPANTS LBP (SECTION A-2).....	60
4.3.1	Duration and characteristics of LBP among participants	60
4.3.2	Duration of LBP among participants by gender	60
4.3.3	Duration of LBP among participants by age.....	61
4.3.4	Treatment and its effectiveness.....	61
4.4	PARTICIPANTS' OPINIONS ON THEIR LBP (SECTION B-1).....	63
4.4.1	Summarized opinions of the participants on their own LBP in general	65
4.4.2	Associations between attitudes and beliefs and other selected variables	67
4.5	GENERAL KNOWLEDGE OF PARTICIPANTS ABOUT THE COURSE AND CAUSES OF LBP (SECTION B-2).....	70

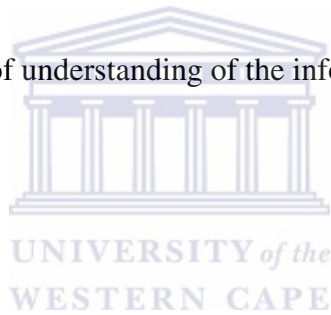
4.5.1	Reported knowledge of the participants on LBP	70
4.5.2	Summary of the participants' choices on the given statements	73
4.5.3	General and specific knowledge of the participants on LBP.....	75
4.6	RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES AND BELIEFS.....	76
4.6.1	Association between knowledge and general beliefs of participants on LBP ...	77
4.6.2	Association between knowledge and other selected variables	78
4.7	PARTICIPANTS' OPINIONS ON THE CONTRIBUTING FACTORS TO THEIR OWN LBP (SECTION B-3)	80
4.7.1	The summed responses from the participants.....	82
4.7.2	Type of information received.....	84
4.8	SOURCES OF PARTICIPANTS' KNOWLEDGE ON LBP (SECTION B-4)	86
4.8.1	The understanding and usefulness of the received information.....	86
4.8.2	The understanding of the information by gender.....	87
4.9	CHAPTER SUMMARY	87
CHAPTER FIVE		89
DISCUSSION.....		89
5.0	INTRODUCTION.....	89
5.1	SOCIO- DEMOGRAPHIC CHARACTERISTICS	89
5.2	PAIN CHRONIFICATION AMONG LOW BACK PAIN PATIENTS	91
5.3	KNOWLEDGE ON THE COURSE AND CAUSES OF LBP.....	92
5.4	SOURCE AND TYPE OF INFORMATION ON LBP.....	95
5.5	ATTITUDES AND BELIEFS AMONG THE PARTICIPANTS.....	98
5.5.1	Participants' attitudes and beliefs on LBP in general	98
5.5.2	Participants' opinions on contributing factors to LBP.....	101
5.6	SIGNIFICANCE OF THE STUDY	104

5.7	CHAPTER SUMMARY	104
	CHAPTER SIX.....	105
	SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	105
6.0	INTRODUCTION.....	105
6.1	SUMMARY.....	105
6.2	CONCLUSION.....	106
6.3	RECOMMENDATIONS.....	107
6.3.1	To the Government of Malawi.....	107
6.3.2	To the Ministry of Health	107
6.3.3	To the Hospital Administrators.....	108
6.3.4	To the Physiotherapists and other Health care providers.....	108
6.4	STRENGTHS, WEAKNESS AND LIMITATIONS OF THE STUDY.....	109
6.4.1	Strengths of the study.....	109
6.4.2	Weakness of the study	109
6.4.3	Limitations of the study	109
	REFERENCES	111



LIST OF FIGURES

Figure 3.1 Flowchart of the three rounds of the Delphi study	45
Figure 4.1 Relationship between duration of LBP and gender	60
Figure 4.2 Relationship between duration of LBP and age	61
Figure 4.5: Percentage distributions of the specific knowledge by gender	76
Figure 4.6: Participants' degree of understanding of the information according to gender ...	87



LIST OF TABLES

Table 3.1	Statements on knowledge, their level of evidence and supportive literature	36
Table 3.2	List of causing/contributing factors to LBP from a review of the literature	39
Table 3.3	List of causing /contributing factors to LBP after round 1 of the Delphi study	40
Table 3.4	List of causing /contributing factors to LBP after round 2 of the Delphi study	43
Table 3.5	Final list of causing /contributing factors to LBP after round 3 of the Delphi study	46
Table 4.1	Ranking of contributing factors by experts in second round of Delphi study (n=15).....	52
Table 4.2	Ranking of contributing factors by experts in third round of Delphi study	53
Table 4.3	Collapsed responses from the experts in the Delphi study.....	54
Table 4.4	Distribution of the highly ranked contributing factors to LBP in the Delphi study	55
Table 4.5	Socio- demographic characteristics of the study sample (n=205).....	58
Table 4.6	Employment status, occupation and source of income of the participants.....	59
Table 4.7	Area, duration, pain characteristics, treatment and its effect as reported by participants ...	62
Table 4.8	Participants' opinions on their own LBP in general	64
Table 4.9	Summary of responses of participants on attitudes and beliefs about their own LBP	66
Table 4.10	Summary of association between attitudes/ beliefs and selected variables.....	69
Table 4.11	Participants' agreement on individual statements about the course and causes of LBP	71
Table 4.12	Summary of the participants' knowledge on the course and causes of LBP.....	74
Table 4.13	Summary of general and specific knowledge of the participants.....	75
Table 4.14	Relationship between knowledge and beliefs among participants.....	77

Table 4.15 A summary of association between knowledge and selected variables 79

Table 4.16 Participants' opinions on the contributing factors to LBP 81

Table 4.17 Summary of opinions of the participants on the contributing factors to LBP (n =205)..... 83

Table 4.18 Indicates the participants' sources and type of information on LBP (n= 114)..... 85

Table 4.19 Summary of the information participants received on LBP (n=114)..... 86



LIST OF APPENDICES

Appendix A	Questionnaire: English version.....	139
Appendix B	Questionnaire: Chichewa version.....	148
Appendix C	List of simplified medical terms after pilot study.....	157
Appendix D	Information sheet: English version.....	158
Appendix E	Information sheet: Chichewa version.....	161
Appendix F	Consent form: English version.....	164
Appendix G	Consent form: Chichewa version.....	165
Appendix H	Permission letter from physiotherapy department	166
Appendix I	Ethical clearance letter from University of the Western Cape.....	167
Appendix J	Ethical clearance letter from Research Ethics Committee Malawi...	168
Appendix K	Permission letter from Kamuzu Central Hospital.....	169
Appendix L	Permission letter from Queen Elizabeth Central Hospital.....	170
Appendix M	Invitation letter to the experts for the Delphi study.....	171

CHAPTER ONE

INTRODUCTION

1.0 BACKGROUND

Low back pain (LBP) is a growing health and socio-economic problem worldwide, suggesting that the management of LBP should most likely include a variety of strategies. The prevalence of LBP is remarkably high, such that 8 out of 10 adults in western countries are at risk of suffering a debilitating attack of LBP at one point during their life time (Norris, 2000). The one year prevalence of LBP in developed countries ranges from 30% and 80% (Van Vuuren, Becker, Van Heerden, Zinzen, & Meunisen, 2005; Walker, 2000) while globally, a life time prevalence ranges from 50% to 84% (Volinn, 1997).

Most population-based studies on the prevalence of LBP were conducted in the developed countries and little information is available in developing countries, particularly in Africa (Ghaffari, Alipour, Jensen, Farshad & Vingard, 2006). Additionally, minimal difference of prevalence of LBP between developed and developing world has been demonstrated, with a life time prevalence of 28% to 74% among Africans, which is most likely to increase in the next ten years (Louw, Morris & Grimmer, 2007). South Africa alone has 63% of lifetime LBP prevalence in general (Van Vuuren, Zinzen, Heerden, Becker, & Meunisen, 2007). Thus, regardless of geographical location, LBP has been indicated as one of the leading causes of disability in the general population (Louw et al., 2007; Woolf & Pfleger, 2003). LBP can affect anyone, adults and adolescents, working and non-working populations, educated or non-educated groups (Vanti, Gasperini, Morsillo, & Pillastrini, 2010).

LBP presents socioeconomic challenges globally (Henrotin, Cedrasch, Duplan, Bazin & Duquesnoy, 2006). It has been regarded as a setback in the efforts of socio-economic

development in societies, as the degree of disability imposed to the society due to LBP is high, coupled by numerous lost work days among the working population (Van Vuuren et al., 2005). Epidemiological studies conducted in many countries confirm that LBP causes a significant socio- economic burden on society. For instance, in the United States of America (USA), LBP was the most compensated health problem in 2005 and contributed to high work absence among workers (Henrotin et al., 2006). Similarly, in Europe, LBP has been reported to be causing incapacity, productivity loss and increased cost of care among affected individuals (Van Tulder, Koes, & Bouter, 1995).

In the UK, despite improved diagnostic procedures and quality of care, LBP is regarded as a burden on the health care system (Royal College of General Practitioners, 1994). In Africa, LBP is a growing malady, accompanied by severe economic consequences in African countries (Van Vuuren et al., 2005). For instance, in the year 2000, South Africa alone, spent an estimated cost of about 20 million USD as compensation due to LBP cases (Van Vuuren et al., 2007). Consequently, Cilliers (2007) claims that about 80% of the South African work force suffers from various degrees of incapacity due to LBP at some point in their working life. In other African countries such as Rwanda and Uganda, LBP is also a nagging health problem, imposing a severe economic burden to the governments due to its high cost of management (Galukande, Muwazi, & Mugisa, 2006).

The causes and contributing risk factors to LBP have not been clearly understood, and the current literature is still inconclusive on its possibly diverse aetiology (Cole & Grimshaw, 2003). However, it has been proposed that occupational circumstances, physical characteristics, and social-cultural influences could all be possible risk factors to the development of LBP (Twomey & Taylor 2000). Due to its multi-factorial nature, and sometimes unknown origin, Adam (2009) and Nigel (1999) suggest that the prevention of LBP should be emphasized and its management should be in multidisciplinary approach

model (Van Vuuren et al., 2005). The exact causes of LBP are often difficult to identify, both clinicians and the patients are left with uncertainties, leading to varied broad practices in the choice of management of LBP (Adam, 2009).

Most patients with LBP lack knowledge on their LBP and its contributing factors (Ng'uurah & Frantz, 2006; Tavafian et al., 2004). This is despite various treatment guidelines for LBP proposing that, advice and education should be part of the treatment plan, besides physical treatment and exercises (Koes, Van Tulder & Thomas, 2006; Hayden, Van Tulder & Tomlinson, 2005; Walker, Muller & Grant, 2004b). It is therefore essential that, during management of LBP, patients should be educated regarding their pain and its contributing risk factors (Ng'uurah & Frantz, 2006; Tavafian et al., 2004).

Patient education increases the knowledge and patients' satisfaction and can reduce the consequences of pain, like anxiety, fear avoidance, catastrophisation and kinesiophobia (Henrotin et al., 2006). Additionally, it reduces risk of pain chronicity and promotes positive patient beliefs and related behaviour regarding their LBP (Henrotin et al., 2006). Furthermore, lack of explanation on the possible causes and contributing factors to LBP, causes patients to leave a series of treatments unsatisfied. This may lead into negative attitudes and beliefs among patients, which in turn impact on the desired clinical outcomes (Sarah, 2000). Already Linton, Helsing and Halden (1998) proposed that it is essential to identify patients' beliefs and attitudes about the cause of their pain and anticipated effects of treatment, because this could positively influence their choice of taking up a particular type of treatment. More recently, Naidoo and Wills (2000) emphasized that, while enhancing patients' knowledge on the causes and contributing risk factors of their illness, it is also important to pay particular attention to possible negative beliefs and attitudes of the patients regarding their pain.

These scholars recommend the Health Belief Model which suggests that, individuals must first perceive themselves to be at risk of health threat before they take action to reduce or avoid any risk health behaviours (Naidoo & Wills, 2000). This is in line with the Predisposing-Reinforcing-Enabling-Causes-Educational-Diagnosis (PRECED) model which proposes that knowledge, perception and beliefs are important factors necessary for changing patient's health risk behaviours (Guzman, 2001). According to World Health Organization (WHO, 2005), empowering patients with knowledge should have both political will and collaboration from all sectors, and it should seek to enable patients to take control over their own well-being and the environment they live in. With this in mind, it is prudent that both health care provider and the patient should play an active role in preventing and managing LBP. Although it is evident that patients' understanding of their illness and its causative factors may have a positive effect on the recovery and prevention of further injuries and chronicity, little is known about patient's knowledge, attitude and beliefs on LBP and its contributing risk factors. This study thus aimed to establish the knowledge or understanding, attitudes and beliefs regarding perceived contributing factors to LBP among the patients seeking physiotherapy services for their LBP in Malawi.

1.1 RESEARCH QUESTION

What are the knowledge, attitudes and beliefs regarding LBP and its contributing factors among patients seeking physiotherapy services for their LBP in Malawi?

1.2 AIM AND OBJECTIVES OF THE STUDY

The aim of the study was to establish the knowledge, attitudes and beliefs regarding perceived contributing factors of LBP among the patients seeking physiotherapy services for their LBP in Malawi.

The specific objectives were to:

- i. Develop a questionnaire that will determine the knowledge, attitudes and beliefs regarding LBP among LBP patients in Malawi.
- ii. Determine the knowledge, attitudes and beliefs on contributing factors to LBP among patients seeking physiotherapy services in Malawi.
- iii. Determine associations between the variables such as knowledge, attitudes and beliefs among the LBP patients.

1.3 CHAPTER SUMMARY

Chapter one presented the background of the topic under study. LBP is a health problem worldwide with unclear aetiology. Patients and the public in general, lack knowledge on LBP in general. This makes patients holding different attitudes and beliefs about their pain, this leads to maladaptive behaviours which negatively affect the treatment outcomes. Patient education about their illnesses has been attributed to the increase of patient's knowledge of their own illnesses and change of the negative attitudes and beliefs regarding their pain.

1.4 OUTLINE OF THE OTHER CHAPTERS

There are five more chapters in this research report. Chapter 2 presents the literature review motivating the study, and informing the discussion of the results of this study. The literature on LBP and its perceived contributing risk factors and the importance of health education is highlighted. Chapter 3 describes the methodology which was applied in this study; and explains the procedures that were followed during the research process. Chapter 4 focuses on the results of the study, presenting the statistical calculation and interpretation. In Chapter 5, the results of the study are discussed, while Chapter 6 details the conclusion, and limitations of the study, as well as recommendations for further studies. Finally, the references and appendices are included at the end of the document.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

The aim of the current study was to establish the knowledge (understanding), attitudes and beliefs regarding LBP in a group of LBP patients. This chapter, therefore, presents a narrative review of the literature on LBP and its contributing factors as found in research results of studies of patients' knowledge of the contributing factors to their LBP, as well as patients' attitudes and beliefs regarding LBP. Additionally, the literature was reviewed on aspects such as the need for health promotion and education to the patients regarding LBP.

2.1 LITERATURE REVIEW METHOD AND SEARCH STRATEGY

According to Hart (2001), a literature review involves the selection of available documents both published and unpublished, which are relevant to the topic which is being investigated. Jesson and Lacey (2006) adds that a literature review is narrative account of the available and accessible information. The search strategies included the use of the following key words: *“low back pain”, “back ache”, “risk factors”, “contributing factors”, “health education”, “health promotion” “knowledge”, “attitudes” and “beliefs”*. Sources of information included books, abstracts, journal articles and websites. EBSCOhost and Google scholar were used as search engines and the following data bases were included; Medical Literature on Line (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Master File Premier, Psychology Information (PsycINFO), Health Source-Consumer Edition, Health Source: Nursing/ Academic Edition, AltaVista, Academic Search Premier and Public Medline (PubMed).

2.2 PREVALENCE OF LOW BACK PAIN

Low back pain is a universal problem and particularly important in the largely sedentary western world where up to 80% of people could be at risk of at least one disabling episode of LBP during their life time (Norris, 2000). An international survey of LBP reports a point prevalence of 15% to 30% and a one month prevalence of 19% to 43% (Nachemson & Johnson, 2000). According to Walker (2000), the one-year prevalence of LBP in western countries is between 20% and 62% while the estimated worldwide life prevalence for LBP varies from 50% to 84% (Volinn, 1997). In Germany, one year prevalence for LBP in the general population has been calculated to be 58.9% (Schneider, Schmitt, Zoller, Schiltewolf, & 2005). Most epidemiological data concerning LBP are related to developed and industrialized countries and little information is available in the general working population in developing and low income countries (Ghaffari et al., 2006).

However, little difference exists between prevalence of LBP among Africans as compared to the prevalence in developed countries (Louw et al., 2007). Furthermore, Louw et al. (2007), in their review of the literature, reported a 14% to 72% one-year and a 28% to 74% lifetime prevalence of LBP in Africa. In developed countries the trend of LBP prevalence, more especially chronic LBP is increasing (Freburger et al., 2009). In developing countries, particularly in Africa, although it has been postulated that the prevalence of LBP will increase over the next decade (Louw et al., 2007), the paucity of the epidemiological data regarding LBP in most of developing countries makes it more difficult to identify the contributing factors to LBP and to determine the trend of LBP prevalence in developing countries (Ghaffari et al., 2006). According to the literature, there is big variability on the information pertaining prevalence of LBP worldwide. This variability and the scarcity of data hinder the motivation for implementation of measures to prevent the increase in health and economic burden brought by LBP (Ghaffari et al., 2006).

2.3 THE IMPACT OF LBP IN THE SOCIETY

LBP is one of the most common musculoskeletal disorders in society, consuming huge health care and social resources, and often causing physical disability (Woolf, Walsh, & Akesson, 2004). There is huge concern regarding the economic burden of the LBP epidemic. In the United Kingdom, research has demonstrated that approximately 40% of the general working population experience LBP, with an increased prevalence of about 50% in the health worker group (Naidoo & Coopoo, 2007). In the United State the reported impact of LBP is high, and LBP has been indicated as the most common reason for filing of worker's compensation claims (Cameron, Halperin, Tanaka, & Guo, 1999). Moreover, LBP accounts for about one quarter of all compensation claims in the USA and one third of the total compensation cost (Cameron et al., 1999). The financial effect of LBP in the USA's working industry is alarming, because about 40% of work absence is due to LBP and it is second after common cold as the most frequent reported cause for sick leave. In 1990, the USA spent \$50 to \$ 100 billion on back pain only (Cameron et al., 1999). In Africa, LBP is also a societal problem in many countries, for instance, countries like South Africa, Uganda and Rwanda have suffered a huge impact from LBP due to high costs of management and the burden imposed to the society due to LBP (Cilliers, 2007; Galukunde et al., 2006).

2.4 CONTRIBUTING RISK FACTORS TO LOW BACK PAIN

Low back pain is being linked to several factors which include physical, psycho social and socio-economic factors (Vindigni et al., 2005). Other which have been implicated as the contributing factors to the development of LBP include gender, age, occupational/work related factors, structural/anatomical anomalies and individual/personal factors (Mayer, Haldeman, Tricco & Dagenais, 2010; Jin et al., 2004).

2.4.1 Physical risk factors

Physical risk factors which are associated with LBP are termed as either modifiable or non-modifiable risk factors (Vindigni et al., 2005). Modifiable risk factors include poor health, obesity, lack of fitness, smoking and drug dependence, and some occupational risk factors including repetitive heavy lifting, twisting, bending, stooping, awkward posture and prolonged sitting at work, the use of jackhammers or machine tools, and the operation of motor vehicles (Vindigni et al., 2005). Non-modifiable risk factors for LBP that have been established, include two or more pregnancies in women, previous episodes of LBP, spine deformities like major scoliosis, increasing age and gender (Adam, 2009; Vindigni et al., 2005).

2.4.2 Psychosocial factors and low back pain

A wide variety of psychosocial factors are increasingly recognized as contributing risk factors to chronic LBP. Research has also shown that anxiety, depression, stressful responsibility, job dissatisfaction, mental stress at work, and substance abuse can place people at increased risk for developing LBP (George, Wittmer, Fillingim & Robinson, 2006; Soucy, Truchon & Cote, 2006). Negative beliefs and sexual abuse, together with fear-avoidance and somatisation symptoms (feeling sick without an actual disease) can also increase the risk of developing chronic LBP (George et al., 2006). Research has also shown that, single working mothers are at higher risk for LBP due to increased family care responsibilities which magnify the stress and psychosocial burden to the mothers (Gatchel, Mayer, Kidner, & McGeary, 2005). Furthermore, Gatchel et al. (2005) adds that feeling insignificant in life or lack of self-esteem, may also predispose an individual to chronic back pain (Gatchel et al., 2005).

Yip and Ho (2001) points out that psychological stress related to work has been attributed as common source of stress, which is being considered to be a cause of lowered pain tolerance, resulting in somatic pain. On the same note, Foppar & Novack (1996) in their study found that, poor job satisfaction, boredom at work and psychological stress at work are related to the occurrence of LBP. In addition to this, depression as one of the psychological factors has been associated with the increasing risk to LBP. Depression is commonly being experienced in the general population, but research has indicated that, it becomes more prominent and very commonly experienced in conjunction with people with LBP, and even more to those patients with chronic LBP (George et al., 2006). A study which was done in Canadian population indicated that, about 5.9% of pain-free individuals and 19.8% of those suffering from chronic LBP in the general population suffered major depression (George et al., 2006).

Low back pain can also be as a result of psychosocial stress, work dissatisfaction and even stressful events in life such as prolonged chronic illness, caring of the sick or facing death or death of relative (Yip & Ho, 2001). With regard to psychosocial factors as the contributing factor to LBP, anyone could be affected; however, women appear to be more affected (Yip & Ho, 2001). It is believed that, women are more prone to these psychosocial factors due to increasing social psychological stress which is aggravated by transitional change during menopause and their family roles such as caring of the sick (Yip & Ho, 2001). Studies have revealed that individual factors such as marital status may have a significant relationship with LBP (Mukaruzima, 2010; Bejia et al., 2005; Bassols, Bosch, Campillo, Canellas, & Banos, 1999). Bejia et al. (2005) alludes that married people with an extensive family with number of young children are at high risk of developing LBP. According to Roupa et al. (2008), this could probably be due to increased stress as a result of house work activities among the married people as well as increased demand for child care.

2.4.3 Socio-economic factors and low back pain

Socio-economic factors have been demonstrated to play a role in development of LBP, and LBP tends to be reported more frequently by people in lower socioeconomic classes than by those in upper socioeconomic classes (Schneider, Hauf, & Schiltewolf, 2005). Other previous studies have also confirmed that individuals with low socio-economic status, low levels of education and low income are at high risk of developing LBP (Hagen, Zwart, Svebak, Bovin, & Jacob, 2005; Worku, 2000; Toroptsova, Benevolenskaya, Karyakin, Sergev, & Erdesz, 1995; Reisbord & Greenland, 1985).

More recently, Deyo, Mirza and Martin (2006) in their review of prevalence of back pain, found that there was a remarkable decrease in prevalence among population with greater levels of education and increased income. For example, women, blue collar workers, lower socioeconomic groups, including those individuals with inactive life style and unhealthy behaviours such as smoking and eating poorly balanced diet, are much more likely to develop LBP (Schneider et al., 2005). Socio-economic factors thus greatly contribute to the increase in prevalence of LBP, and the level of disability experienced by individual and the chronicity of LBP, are adversely being affected by these factors (Worku, 2000). Epidemiological studies on LBP conducted in various countries indicate that LBP is very common condition worldwide and it has some significant socio-economic burden on the society (Worku, 2000).

2.4.4 Gender and age as related to low back pain

Regarding contributing factors to LBP, it is evident that the causes of LBP are multi-factorial, and that no one is immune to LBP, as it affects men and women, youngsters and adults. Mayer et al. (2010) indicates that everyone is at risk of suffering from LBP regardless of age, occupation, income, sex, education or location. However, previous studies have indicated that females are more likely to develop LBP (Medical Disability Guideline, 2010; Sikiru &

Hanifa, 2010). In developed countries for instance, LBP has been indicated to be more common among women than men, with population-based prevalence ranging from 19% to 30% (Macarthur, Macarthur, & Weeks, 1997). However, women happen to report and seek care for LBP more often than men (Bruce, Walker, Reinhold, & William, 2004). In addition to this, the gender difference could be explained by the fact that women tend to have a lower pain threshold than men (Chiu & Lam, 2007; Jin, Sorock, & Courtney, 2004). The increase in prevalence of LBP among women could also be associated with the growing contributions that women make in the society, the expectations and responsibilities that fall on women both inside and outside the home (Yip & Ho, 2001).

LBP has been indicated as the number one cause of disability in people less than 45 years of age, and the third most important cause of disability among those people older than 45 years (MedicineNet.Com, 2010; Gatchel, Polatin, & Mayer, 1995). Furthermore, LBP is a rising health problem among adolescents (Burton, Clarke, McClune, & Tillotson, 1996), with prevalence rate of 24% and 57% (Harringe, Nordgren, Arvidsson, & Werner, 2007). LBP becomes more prominent to the adolescents from the age of 12 and older (Geraci, Brown, & Velasquez, 2005), and other studies have found that in all age groups above the age of 11 years, more than 50% had experienced LBP at sometimes in their life (Olsen, Anderson, Dearwater, Kriska, & Cauley, 1994; Kujala, Salminen, Taimela, Oksanen, & Jaakkola, 1992). This is confirmed by a literature review of epidemiological studies on adolescent LBP by Jeffries, Milanese and Grimmer-Somers (2007), which reported an increasing prevalence rate that approach adult levels by the age of 18 years. Some activities associated with prolonged sitting such as watching television for more than one hour in a day have been indicated to contribute to the occurrence of LBP in the adolescent age group (Geraci et al., 2005).

In this regard, it could be concluded that, the truly new episode of LBP in adults is probably very rare, as many children and adolescents have experienced episodes of LBP. In fact, research has shown that suffering LBP during childhood could be a predictive factor for developing LBP during adulthood (Brattberg, 2004; Harreby, Neergaard, Hesselsce, & Kjer, 1995). LBP has also being reported as an increasing health problem among schoolchildren (Murphy, Buckle & Stubbs, 2007; Whittfield, Legg, & Hedderley, 2005; Brattberg, 2004; Watson et al., 2002). For instance, studies done in western countries revealed a LBP prevalence ranging from 22%-51% among schoolchildren aged 11-16 years (Murphy et al., 2007; Watson et al., 2002).

In African settings schoolchildren have also been implicated as being affected by LBP. For example, Prista, Balague, Nordin and Skovron (2004) conducted a study in Maputo district in Mozambique, which revealed a 28% lifetime prevalence of LBP among schoolchildren. Several contributing factors such as unsuitable school furniture, carrying heavy back packs weighing more than 6% of the body weight, and prolonged sitting in class, have been proposed for causing LBP among schoolchildren (Trevelyan & Legg, 2006; Mackie, Stevenson, Reid, & Legg, 2005; Mackie, Legg, & Beadle, 2004; Grimmer & Williams, 2000). However, Whittfield et al. (2005) did not find any relationship between carrying of back packs and the occurrence of LBP among schoolchildren.

2.4.5 Occupational/work related risk factors to low back pain

Low back pain is one of the most prevalent work-related musculoskeletal conditions affecting employed populations in developed countries (Jin et al., 2004). The nature of work and the environment in which the work is being carried out has been indicated to be among the determinants to developing LBP among the workers (Jin et al., 2004; Tavafian et al., 2004). For example, tasks that require specific manual handling, heavy lifting which is associated

with bending and twisting the back generates high spinal stress and poses as contributing factors to develop LBP (Smedley, Egger, Cooper, & Coggon, 1995). Confirming this, Burdorf, Naaktgeboren and de Groot (1993) in their study found that the prevalence of LBP was about 50% in those workers who were involved in tasks like crane operations, 44% in the straddle-carrier drivers, and 34% in those who were involved in administrative works. It is thus evident that the more the task is physically demanding the higher the risk of developing LBP (Morris, 2006).

A second risk factor that has been researched is prolonged sitting or sustained positioning. Poor and prolonged sitting posture for more than half a day has been indicated as important contributing factor to LBP (Lee & Chiou, 1994). In addition to this, Tavafian et al. (2004) alluded that other jobs/activities that require long periods of sitting, pulling heavy objects, heavy physical exertion, and repetitive motions on the spine or exposure to constant body vibration are the important risk factors for LBP. However, in the current literature there are mixed views regarding prolonged sitting at work as a contributing factor to LBP. Hartvigsen, Leboueuf-Yde, Lings, and Corder (2000) in their systematic literature review found that sitting alone does not have significant association to development of LBP. But the researchers pointed out that, it could be possible that the occurrence of LBP at working places depends on the specific activities performed while in sitting position rather than sitting by itself (Hartvigsen et al., 2000). Failure of keeping proper body mechanics and failure to comply with ergonomic principles at work are other factors that could lead to LBP (Tavafian et al., 2004). Moreover, in a study done by Latza et al. (2000) in a construction company found that workers who were involved in tasks such as scaffolding, erecting roof structures, sawing woods and lying large sandstones were at high risk of developing LBP.

A third risk factor that has been proposed is occupation that exposes the worker to vibration. Occupational truck drivers have been pointed out as a risk occupational group with an

increased risk of developing LBP (Okunribido, Magnusson, & Pope, 2008). These drivers are exposed to the vibration which involves the whole body, including manual material handling and prolonged seated postures especially when driving in long safaris in rough road terrain, all these activities pose a high risk to develop LBP among the occupational drivers (Okunribido et al., 2008).

According to Lyons (2002), the whole body vibration occurs when the surface that the person is standing or sitting on oscillates at the high frequency which leads to mechanical stimuli being transmitted through body tissues, which in turn, creates vibration of bony structures as well as soft tissues. Furthermore, if the vibrations occur at the frequency identical to the natural frequency period of the body, tissue resonance can occur. At this point of resonance, the body structures could suffer the mechanical stresses and strains (Wilder, Pope, & Magnusson, 1996). Therefore, if these mechanical forces are maintained for prolonged period of time in the spine leads to failure in the protection mechanism of the spine, as a result the structural damage and functional failure could occur (Wilder et al., 1996). The whole body vibration could also be confounded with other factors such as shocks and jolts, awkward postures, lifting and carrying, all these have been indicated as posing danger to develop low LBP among occupational drivers (Martin, 2008; Lyons, 2002).

Specific occupational groups also report a higher incidence of LBP. Professionals such as physiotherapists and nurses have specifically been researched. According to Campoo (2008) and Bork et al. (1996) work-related musculoskeletal disorders are very common among physiotherapists, with one year prevalence rate of about 45%. Consequently, LBP was noted by Holder et al. (1999) to be common not only to physiotherapists but also to physiotherapist assistants with prevalence rate of 62% and 56% respectively. In Australia, for instance, Cromie, Robertson and Best (2000) found that musculoskeletal complaints which were work-related, were very common among physiotherapists. Also, Rugelj (2003) reported a lifetime

prevalence of severe LBP of as high as 73.7% among physiotherapists in Slovenia. In the UK, 44% of the members of Chartered Society of Physiotherapy (CSP) identified LBP as their most significant work-related injury (Glover, McGregor, Sullivan, & Hague, 2005).

Some of the tasks that have been believed by physiotherapists to have contributed to their work-related musculoskeletal injuries include; lifting heavy equipment or transferring of the patients, awkward positions, performing manual therapy and orthopaedic techniques, attempting to catch or prevent a patient from falling, responding to unanticipated or sudden movements by the patients, bending or twisting the back and assisting patients during gait training activities (Glover et al., 2005; Cromie et al., 2000; Holder et al., 1999; Bork et al., 1996). Additionally, West and Gardener (2001) interviewed physiotherapists who had LBP as a result of work-related injuries. These physiotherapists were given a list of 17 job risk factors and were asked to indicate how much of each item on the list contributed to their LBP. Six factors on the list were chosen by 50% of the physiotherapists. These factors include; working in the same position for long period, working in static postures with flexion and/or rotation of the spine, continuing to work while injured, performing manual therapy techniques, treating an excessive number of patients at one time and performing the same task over and over (West & Gardener, 2001).

In nursing profession, musculoskeletal disorders which are work-related have been reported frequently (Huo & Shiao, 2006). Nursing is recognized as physically demanding profession, with nurses and nurses' aides reported as the group with highest risk of back pain in various countries (Trinkoff, Lipscomb, Geiger-Brown, & Brady, 2002; Diaz, 2001). For instance, in USA, nursing profession has been indicated as the riskiest occupation for back injuries (Hedge, 2009). In a report released by USA Bureau of Labor Statistics in 1998, indicated that nursing was the number one (61.5%) leading occupation for musculoskeletal injuries followed by truck drivers (43.9%).

In Switzerland, for instance, a longitudinal study which was conducted by Maul, Laubli, Klipstein and Krueger (2003) found a high rate of LBP complaints among nurses, varying from 73% and 76% prevalence, with previous back injury being a significant predictor for subsequent low back injury among the nurses (Abenhaim, Suissa, & Rossignol, 1988). In contrast, Astrand and Isacson (1988) in their study did not find any association between previous back injury and subsequent LBP.

The settings at which the nurses deliver services might have an association with their LBP, for example, the study which was conducted to community nurses whose job included frequent lifting, and transferring of patients, indicated high prevalence of LBP as compared to those nurses in other health sectors (Knibbe & Friele, 1996). Similar findings were reported in Australia, where nurses who were working in a larger teaching and referral medical centre, about 40.1% of them complained of injuries related to their work of which back pain was the most injury (75.9%) which is believed to be associated with their manual handling activities (Retsas, & Pinikanana, 2000). Besides, Vieira (2006) indicates that nurses working at Orthopaedic and Intensive Care Unit (ICU) have highest rates of LBP. The researcher further alluded that 65% of orthopaedic nurses and 58% of ICU nurses develop a debilitating LBP at some point in their career pursuit. Yip (2001) also proposes that LBP remains the common and costly problem among the nursing profession. The researcher conducted a study to a group of nurses in Hong Kong, and the findings revealed that 40.6% of all nurses participated in the study reported having LBP within the last 12 months.

Work stress and specific manual lifting and handling tasks were found to have significant association with increased occurrence of LBP among the nurses (Smedley et al., 1995). Consequently, the study highlighted that LBP is an escalating problem among nurses which is associated with high level of sickness absence, and has been one of the reasons for most nurses to quit their profession (Fochsen, Josephson, Hagberg, Toomingas & Lagerstom,

2006). In South Africa per se, work-related LBP is alarmingly high by 59.7% and equally troublesome among hospital nurses (Nelson, Fragala & Menzel, 2003). Surprisingly, LBP is also a nagging problem among nursing students (Smith, Sato, Miyajima, Mizutani, & Yamagata, 2003). For instance, in a study done in Australia by Mitchell, O'Sullivan, Burnett, Straker and Ruud (2008) among nursing students revealed a considerable high prevalence of LBP among nursing students, ranging from 71% lifetime prevalence, a 12 months and one week prevalence of 71% and 31% respectively. However, comparably, LBP prevalence was found to be higher among working nurses than to the nursing students (Smith et al., 2003; Mitchell et al., 2008). In another study which was conducted among South African emergency services personnel showed a high prevalence (76%) of LBP among the personnel, of which the majority about 86% believed that their LBP was associated with their occupation (Vlok, 2005) even those who previously had episode of LBP believed that it had occurred as result of their occupation. Lately, Mukaruzima (2010) in the study done in Rwanda among hospital nurses found a 78% one year prevalence of LBP among nurses. This is in support with the study of Omokhodion, Umar and Ogunnowo (2000) which found that among the group of hospital staff in Nigeria, nurses had a highest prevalence of LBP by 69% followed by secretaries and administrative staff with 55%, cleaners and aides had a prevalence of 47%. Musculoskeletal problems are also prevalent in school teachers, and LBP has been indicated as one of the most common musculoskeletal disorders among school teachers, which is believed to be a work-related injury (Samad, Abdullah, Moin, Tamrin, & Hashim, 2010). Samad et al. (2010) in their study done in Malaysia found that, school teachers both from rural and urban areas had a high prevalence of LBP with 46.3% and 47.8% respectively, and about 40.4% of the teachers in their study, reported having developed LBP during their teaching years. The main activities which were reported as contributing to development of LBP among school teachers were lifting loads, such as books,

exam papers, and heavy sports equipment which were carried by physical education teachers (Samad et al., 2010). Other factors include prolonged sitting particularly during marking of examination, assignments and working on the computer. In addition, sports activities during physical education were attributed to development of LBP, particularly to those school teachers involved in instructing sports activities during sport sessions. These activities demand high energy which subjects them into greater risk of acute or chronic injuries leading to reduced work performance and early retirement (Samad et al., 2010; Lemoyne, Laurencelle, Lirette & Trudeau, 2007; Sandmark, 2000). In Greece, LBP prevalence among male physical education teachers was found to be as high as 63% (Stergioulus, Fillippou, Triga, Grigoriadis, & Shipkov, 2004). Work activities such as lifting gym instruments, helping students into flexion posture and spending more than 35 hours per week in teaching physical education were found to have an association with developing of LBP among physical education teachers (Stergioulus et al., 2004). Recently, Korkmaz, Carlak and Telci (2011) concluded that, musculoskeletal pain is a growing problem among teachers in Turkey and LBP was found to be higher by 43.8% as opposed to 42.5% and 36.9% for neck and thoracic region respectively. Consequently, factors such as gender, age, depression and improper working postures were found to be significant risk factors among the teachers (Korkmaz et al., 2011). Also, the pain experienced by teachers was frequently causing interference with their work performance and the activities of daily living, which in turn resulted to increased work absence (Korkmaz et al., 2011). Their findings are in concurrence with the findings of earlier study done in Ireland which revealed that musculoskeletal disorders including LBP contributed to about 10% of the early retirement among school teachers (Maguire & O'Connell, 2007). It is therefore evident that LBP affects many occupation groups which also pose a challenge in socio-economic development endeavours and high expenditure for its management.

2.4.6 Anatomical/structural anomalies and low back pain

Structural anatomical abnormalities have been indicated to contribute to increased incidence of LBP complaints. This varies from 40% to 90% of all adults having scoliosis (Bradford, 1995). Among those individuals with structural anomaly such as scoliosis, pain at the lower lumbar tends to be more common complaints than other areas of the spine (Bradford, 1995). This pain, however, comes as a result of muscle fatigue, degenerative disease of the lumbar facet joints and the amount of strain directed on the lumbar spine which occurs as a result of structural imbalance (Bradford, 1995). Furthermore, Bradford (1995) adds that many adults with scoliosis have been reporting back pain which is related to their scoliosis.

Another anatomical abnormality which has been indicated as risk factor to the development of LBP is leg length discrepancy with a magnitude of 2cm and more (Knutson, 2005). The author further alludes that activities such as standing, walking, running and gait may be affected by the leg length discrepancy, and LBP has been considered to be the most prevalent condition associated with leg length discrepancy (Knutson, 2005). This claim is being supported by Kovacs et al. (2003) who in their study established that the presence of scoliosis and leg length discrepancy among school children and their parents, was significantly associated with their LBP complaints. On the contrary, Gurney (2002) is not in support of the notion that leg length discrepancy is associated to the development of LBP, because the exact role and mechanism by which leg length discrepancy contributes to biomechanical impediment which in turn results to LBP cannot be clearly explained.

Recently, Fowler and Dabco (2004) found that loss of muscle strength has a significant association with an increased risk of developing LBP and likelihood of pain recurrence in an individual who have suffered a disabling back injury. In addition, muscle flexibility and extensibility could also pose risk for developing LBP. For instance, reduced hamstring

flexibility and shortness has been found to have an association with development of LBP (Grenier, Russell, & McGill, 2003; Feldman, Shrier, Rossignol, & Abenhaim, 2001). It is therefore evident that, some anatomical/structural abnormalities could impose a major risk on the spine, thus contributing to the occurrence of LBP.

2.4.7 Individual/personal factors and low back pain

Individual factors such as menopause in women, obesity and /or overweight and height have been indicated to have an association with LBP (Ahh, & Song, 2009). For instance, recently research has revealed that there is a significant relationship between occurrence of LBP and being a postmenopausal in women (Ahh, & Song, 2009). Also, musculoskeletal complaints have frequently being reported by postmenopausal women (Sievert & Goode-Null, 2005; Gold et al., 2000). Preisinger et al. (1996) explained that the occurrence of LBP among postmenopausal women could also be due to increased sedentary lifestyle which promotes more bone loss and muscular weakness. Other studies have also concluded that, advancing in age, increased inactivity during leisure time and low bone mineral density are widely associated with occurrence of LBP among postmenopausal women (Roux et al., 2007; Sievert, & Goode-Null, 2005; Suh, & Kim, 1995).

Furthermore, obesity has been reported to have a correlation with occurrence of LBP, because increased mechanical demands resulting from obesity has been attributed as causing LBP, due to excessive wear and tear imposed on the lumbar spine (Yildirima et al., 2007). Additionally, Trevelyan and Legg (2006) reported a significant association between body mass index and LBP. Their study also revealed that boys who were taller than 4 cm by average reported back pain more often compared to the other boys. However, Grimmer and Williams (2000) in their study in adolescents did not find a relationship between body mass index and LBP. They found that sport activities have a positive correlation with occurrence of

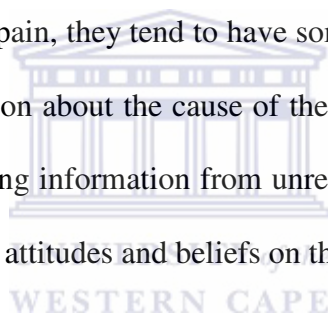
LBP (Grimmer, & Williams, 2000). This is in support of the findings of Balague et al. (1994) who concluded that children involved in competitive sports are at higher risk to development of LBP than those in non-competitive sports. Although Harreby et al. (1999) indicated that the degree of sport activity does not have any association with LBP, Balague, Troussier and Salminen (1999) in a later study, again concluded that competitive sports activities are associated with an increased risk of LBP, and that the level of risk of developing LBP depends on the type of competition, intensity of physical training and acute spinal trauma (Balague et al., 1999).

Smoking is another risk factor that has been demonstrated in musculoskeletal healing after injury (Vindigni et al., 2005). It is thus clear from the literature a wide range of risk factors for LBP have been speculated or reported on. These include physical versus psychosocial attributions; and modifiable versus non-modifiable factors.

2.5 KNOWLEDGE AND HEALTH EDUCATION ON LBP

Health education is increasingly recognized as an important aspect in managing patients and health education booklets with instructions about management of LBP has been associated with a reduction in consultations for the symptoms described in the booklet (Roland & Dixon, 1989). The results of their randomised control trial on the effectiveness of education booklet on back pain, established that those patients who were given the educational booklet about back pain were significantly more knowledgeable than those who were in the control group. More recently, Burton, Waddell, Tillotson, Malcolm and Summerton (1999) indicated that, giving information and advice to the patient about back pain can positively influence patient's knowledge, beliefs and attitudes on LBP, and promote better clinical outcomes. It is therefore strongly proposed that knowledge and health education programmes among patients with LBP are essential during management of LBP because it promotes

patient's satisfaction and enhance treatment compliance. This is confirmed by the results of a study by Allock, Elkan and Williams (2007) which indicated that the majority of the patients do not understand the cause of their pain, and the main reason for them to visit the health care providers lies in the premise of wanting to be educated and establishing the cause of their pain, reassurance of the diagnosis and the importance of pain killers in the management of their problem. On the same note, the need of empowering patients with the knowledge about their pain has widely been emphasized (Poland, Green & Rootman, 2000; Burton et al, 1999; Roland & Dixon, 1989). It is therefore clear that patients seek medical attention to their problem with a belief that they could know better about the problem and the appropriate management. Henrotin et al. (2006) points out that, when patients are not properly given a satisfactory explanation for their pain, they tend to have some pre-occupied ideas, which may lead them to source the information about the cause of their pain elsewhere. This may result in patients ending up getting wrong information from unreliable sources which could lead to maladaptive behaviours, negative attitudes and beliefs on their LBP (Henrotin et al., 2006).



Identifying the cause of pain is essential and an important step towards management of LBP, but it is inappropriate for the health care providers to assume that patients know the cause of their pain. For instance, in a focused group interview which was conducted by Allock et al. (2007), patients were quoted saying that:

“If they could find a reason for the pain, then you hope that they could cure it. Once they have found a reason there is hope for a cure” (Allock et al., 2007, p. 251).

When the patients were asked what if there is no reason identified as the cause of pain? They replied:

“When you say there is no reason, I am sorry I don't understand. For there to be pain there must be a malfunction to cause pain and this malfunction that is what we need to know” (Allock et al., 2007, p. 251).

This implies that patients already have some beliefs that something is wrong with their body, and it is important to reassure them that their pain is real and not imaginary, as doing this could clear the uncertainty among the patients that their pain cannot be treated (Allock et al., 2007).

Patient education services also include a number of activities designed to inform patients about their illness and the effects of the illness on their daily lives (Poland et al., 2000). It further prepares the patients for diagnostic and treatment procedures and assisting patients in managing their diseases after discharge, and modifies their behaviour to promote optimal health and prevent further illnesses (Poland et al., 2000). Furthermore, the education should focus on shifting the patients' perception from being helpless and hopeless to a positive sense of ability, in order to cope with and manage their symptoms in a way that facilitates functioning and improves quality of life (Burckhardt, 2005). It is worth to note that, patients become relieved when they are given education regarding their pain and it enhances their willingness to educate themselves, cooperate in managing their symptoms and later become self-managers of their own illnesses and lives (Burckhardt, 2005).

According to Burckhardt (2005), it is important for clinicians to advocate self-management on patients, because it gives the patients the broader understanding of their problems and generating skills to solve it and makes them aware of the risk factors to their illnesses. When risk factors are modifiable, it makes sense to propose that education on these will make a difference in LBP. These factors have been indicated in the literature, but the LBP population know little about their effects. For instance, a lot is being talked about on smoking and its association with lung cancer, but there is silence on smoking and its association to LBP (Vindigni et al., 2005). This discrepancy in disseminating health information serves as evidence why most patients lack knowledge on contributing risk factors to their health. Therefore, it is essential to address health risk factors holistically.

Knowledge of the body structures and their functioning has also been proposed as an important empowering strategy in health. Weinman, Yusuf, Berks, Rayner, and Petrie (2009) elucidates that, many patients including the general public do not have knowledge of the location of their body organs. Therefore, due to lack of this anatomical knowledge among patients, it is not surprising that patients might not even be aware of those factors which could put their body organs/ structures at risk. This is why Weinman et al. (2009) put an emphasis that health professionals should focus not only on providing the information to the patients about their pain but also should offer specific information on their affected body structures. The provision of education to empower the patients with knowledge regarding their body and its functioning is important. Unfortunately, it has been common practice by the doctors and other health professionals to assume that patients have knowledge on their body and its functioning (Weinman et al., 2009). This is not always the case, a number of studies have shown that patients do not understand the medical terminologies used by the health practitioners, making it a double impact of already large percentage of these patients who are lacking understanding of their own body structures (Ng'uurah, & Frantz, 2006; Lerner, Jehle, Janickle, & Moscati, 2000).

Similarly, Ng'uurah and Frantz (2006) in their study argued that it is important for health professionals to use language which is suitable and understandable to the patients in order to enhance their understanding on their health problem. This implies that, the medical jargons which are commonly used by health practitioners are not user friendly to the patients and they may be a hindrance to effective treatment because patients may lack interest and may consequently withdraw their cooperation in the treatment programme. Therefore, during physiotherapy interventions in patients with LBP, their understanding and perception of the cause, or contributing factors to their pain should be identified, and then education and advice

should be offered appropriately to the patients. This approach could be more effective than doing routine physiotherapy (Frost, Lamb, Doll, Carver, & Brown, 2004).

This education could be offered as part of inpatient care, outpatient care or outreach care, and it should not be just to transfer information to the patients, but it should seek to change human behaviour to optimise health outcomes as well as fostering partnership between patients, family members and health care providers (Poland et al., 2000). In regard to this, it could be concluded that health education and sharing of skills play a big role in achieving better clinical outcomes, plus empowering patients and their families to act on their own behalves and to take a more active role in decision making about their well-being (Henrotin et al., 2006). Truchon and Fillion (2000) indicates that lack of knowledge, information and failure of patients to understand the underlying causative factors for their pain results in patients being unsatisfied and stressful. On the same note, it leads to patients accessing information from variety of other unreliable sources, which may lead to maladaptive beliefs and attitudes about LBP (Henrotin et al., 2006). It is further indicated by these researchers that, providing of information to the patients, increase their knowledge, understanding and satisfaction. Additionally, it reduces anxiety, pain, and the consequences of pain like fear avoidance, catastrophism and kinesiophobia. Furthermore, information reduces the risk of pain chronicity by addressing patient's beliefs and related behaviour and patient empowerment is enhanced (Henrotin et al., 2006). Based on this background, one could conclude that when patients lack accurate information about their pain, it might cause more pain than the actual dysfunction could do, and it may affect the patient both psychologically, socially and physically. Consequently, Fowler and Dabco (2004) emphasized that, in order to prevent the transition from acute back pain to chronic back pain, it is important to impart knowledge to patients about their back pain. With regard to preventing this transition from acute to chronic pain, particularly when the initial acute inflammation phase has passed, these

researchers have suggested three things. Firstly, patient should be given education on how to identify and limit the external factors which could cause more damage to the spine. Secondly, early identification of psychosocial factors or abnormal behaviours which could cause more risk to the patients and thirdly, identification and rehabilitation of functional pathology of motor system and rehabilitation of normal movement patterns (Fowler & Dabco, 2004).

Lately, pain neuroscience education has demonstrated good results in management of LBP populations (Clarke, Ryan, & Martin, 2011; Ryan, Gray, Newton & Granat, 2010; Moseley, Nicholas, & Hodges, 2004). Education about neurophysiology changes pain cognitions and it improves activity performance among patients (Moseley et al., 2004). This implies that neurophysiology education should be included as part of treatment during management of LBP. Meeus, Nijs, Van Oosterwijck, Van Alsenoy and Truijen (2010) also confirmed that providing patients with education on pain physiology is important as it assists in reconceptualising the concept of pain and enhance the patient understanding on their chronic pain. The understanding of their chronic pain is essential as it limits the development of inappropriate pain cognitions and negative beliefs (Meeus et al., 2010). In addition, Ryan et al. (2010) claims that offering pain biology education to patients with LBP plays a significant role in changing patients' negative beliefs and it attempts to decrease the fear of harm among patients, thus enhancing their physical performances. Other authors such as Butler and Moseley (2003) indicates that pain biology education, as one of the cognitive behavioural interventions, plays a major role in reducing pain and activity limitation among patients. In addition to this, Moseley (2004) alludes that, the application of a cognitive approach to rehabilitation has gained popularity into multidisciplinary pain management programmes as it facilitates patients' physical improvement through changing their cognitive responses to their pain. Furthermore, pain biology education as a cognitive therapeutic approach targets

patients' misconception about their pain, including fear-avoidance beliefs, catastrophic thoughts and belief that pain is only a result of tissue damage (Moseley, 2004).

Consequently, when education is given to patients with LBP, even if the patients are not involved in any physical activity, provision of this education plays significant role in changing the pain-related attitudes, beliefs and promotes physical performance (Moseley, 2004). With regard to provision of education, Moseley (2002) had earlier suggested that, this education intervention should seek to equip patients with knowledge of physiological mechanism underlying their pain, whilst at same time striving to change their negative attitudes.

2.6 ATTITUDES AND BELIEFS ON LOW BACK PAIN

Patient's attitudes and beliefs on their pain play a major role in the recovery process and may influence the patient in returning to functional activity and participation (Symonds, Burton, Tillotson, & Main, 1996). Furthermore, a patient's positive attitude towards recovery has been considered important towards achieving the goal of rehabilitation (Symonds et al., 1996). In addition, patients' beliefs and attitudes may largely affect their behaviour when in pain, and may negatively influence their recovery. According to Vlaeyen and Ostelo (2002), individuals who suffer from LBP and believe that doing a pain-aggravating activity causes more injury to their back, are likely to adopt abstinence behaviour from activities. The tendency of abstinence could magnify the problem, and as result those individuals with such negative beliefs about the activity in relation to their LBP are at greater risk of developing a disability and long term pain chronicity (Fritz, George, & Delitto, 2001).

Prevention of chronicity and active patient participation in the management of LBP has been widely advocated. This is the responsibility of both therapist and patient and a common goal for intervention should be negotiated between them (May, 2007).

Beliefs and attitudes can be changed with education. According to May (2007), it is therefore important for the therapist to first explore the patient's attitudes and beliefs regarding the back problem, followed by changing the negative attitudes and beliefs by providing the patients with health education about their LBP. Adversely, failure to explore and to take into consideration patients' attitudes and beliefs towards their LBP could lead to high degree of dissatisfaction with medical management of their problem (May, 2007). Furthermore, May (2007) urges that provision of education to the patient could increase patient's satisfaction and promote patient's continued self-care.

2.6.1 The relationship between knowledge, attitudes and beliefs

The knowledge, attitude and beliefs of the patient about the illness are interrelated and inextricable. According to Bradley (1995), it is difficult to separate or to make a distinction between knowledge and beliefs of the patient. This means that the knowledge of the patient about his/her illness could influence the attitudes and beliefs of the patient towards the pain. For instance, Marteau and Johnston (1990, p. 50) defines knowledge as "a shared set of tested and verified beliefs". On one hand, it implies that patient's knowledge on the illness could be on the basis of what the patient believes to be right or wrong, and on the other hand, if the patient beliefs are justifiable, then these beliefs could serve as basis for the patient understanding of his /her illness (Marteau & Johnston, 1990). In regard to this, some researchers have considered beliefs to be part of knowledge, others have highlighted that beliefs could also be part of attitudes (Furinghetti, & Pehkonen, 2002; Pajares, 1992). In addition to this, Furinghetti and Pehkonen (2002) alludes that a belief is a prerequisite for knowledge and that there is a very slim line between beliefs and knowledge. Furthermore, beliefs are being considered as a subjective knowledge of an individual because a belief is based on the personal experiences and understanding (Furinghetti & Pehkonen, 2002).

In this view, it could be urged that knowledge, attitudes and beliefs are interrelated and they could influence each other in one way or another.

In the current study, the statistical test revealed a statistically significant relationship between the knowledge of the participants and their attitudes and beliefs on LBP ($p=0.04$). Bradley (1995) pointed out that there is a correlation between knowledge and beliefs of the patient about their illness.

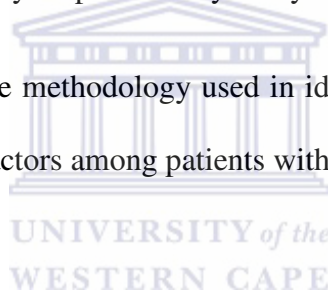
2.6.2 The influence of knowledge on attitudes and beliefs

Knowledge about pain and its source is an important factor for changing patients' behaviour, negative attitudes and beliefs regarding their illness. As early as in 1984, Eraker, Kirscht, Becker and Arbor alluded that patient's knowledge about the disease and the treatment influences patient's attitudes, beliefs and behaviour about the illness and enables the patient to make an informed decision during management of their pain. Symonds, Burton, Tillotson, and Main (1995) also concluded that patient's knowledge is very important in managing LBP. More recently, Tavafian, Jamshidi, Mohammad and Montazeri (2007) concluded that patients' understanding (knowledge) on their LBP is vital, as this knowledge does not only promote compliance to the treatment, but also it alters bad attitudes and beliefs, improving the quality of life of the patient. Knowledge of the patients about their LBP has numerous positive effects in the management of their LBP, because it enables the patients to understand their LBP, changing their negative attitudes, beliefs and related behaviour regarding their LBP (Ihlebaeck & Ericksen, 2003; Burton et al., 1999). Improvement in knowledge through provision of information about their LBP reduce the avoidance behaviours among patients and it fostered positive attitudes and beliefs about their LBP, promoting the early return to work among participants (Godges, Anger, Zimmerman, & Delitto, 2008). This implies that, identification of patients' understanding and the beliefs regarding their LBP is important during management of LBP.

2.7 CHAPTER SUMMARY

This chapter has described the method and strategies employed in searching the literature. It has explained some of the contributing risk factors to LBP as obtained from the current literature. Furthermore, knowledge and the need for health education including attitudes and beliefs regarding LBP have also been explored. The review of the literature demonstrated that various factors could play a role in the occurrence of LBP among individuals. Thus, according to the current literature, it is evident that the conclusion on what explicitly contributes to the occurrence of LBP is far from being reached. However, the need to empower patients with knowledge about real contributing risk factors to LBP and changing their negative attitudes and beliefs on LBP has been widely emphasized by many studies.

The next chapter will describe the methodology used in identifying the knowledge, attitudes and beliefs on contributing risk factors among patients with LBP in Malawi.



CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

This chapter describes the research methods which were used in this study. The research question, aim and objectives, including the information on the research setting, the study design, the study population and sampling methods are firstly described, followed by the method of data collection, data capturing and analysis. Finally ethical considerations relating to the study are discussed.

3.1 RESEARCH QUESTION

What are the knowledge (understanding), attitudes and beliefs regarding LBP and its contributing factors among patients seeking physiotherapy services for their LBP in Malawi?

3.2 AIM AND OBJECTIVES OF THE STUDY

The aim of the study was to establish the knowledge (understanding), attitudes and beliefs regarding perceived contributing factors of LBP among the patients seeking physiotherapy services for their LBP in Malawi.

The specific objectives were to:

- i. Develop a questionnaire that will determine the knowledge, attitudes and beliefs regarding LBP among LBP patients in Malawi.
- ii. Determine the knowledge, attitudes and beliefs on contributing factors to LBP among patients seeking physiotherapy services in Malawi.
- iii. Determine associations between the variables such as knowledge, attitudes and beliefs among the LBP patients.

3.3 RESEARCH SETTING

The main study was conducted in the physiotherapy outpatient departments of two selected central government hospitals in Malawi. Kamuzu Central Hospital (KCH) in Lilongwe is based in the central region of Malawi, and Queen Elizabeth Central Hospital (QECH) in Blantyre which serves the southern region. These hospitals were selected because their locations were geographically convenient to the researcher, and they are the only central hospitals where the physiotherapy departments are headed by physiotherapists. The physiotherapy departments of the other central hospitals are headed by rehabilitation technicians. KCH has a bed capacity of about 1000 beds (Global Health Council, 2010). QECH is the largest referral hospital in the country, and also serves as a district and teaching hospital. It has a bed capacity of about 1100 beds (Direct Relief International Malawi, 2010).

3.4 STUDY DESIGN

The study was a quantitative cross-sectional survey. This study design was considered appropriate because the data collection had to be carried out in one particular point in time (Polit, Beck & Hungler, 2001). Although the study design limits cause-effect conclusions beyond the group of people being studied (Law et al., 1998), it is still the best design in describing the relationship of a phenomenon at one point in time, which is easy to manage within a limited timeframe (Polit et al., 2001).

3.5 STUDY POPULATION

The study population comprised of all patients attending treatment for LBP, at the physiotherapy outpatient departments in the two selected hospitals. A convenience time-constraint sampling method was used to draw participants from the population. Every patient with LBP receiving treatment at the outpatient departments of the hospitals within the time scope of data collection, and meeting the inclusion criteria for the study, was recruited. Based

on the monthly statistics of physiotherapy departments from these hospitals it was estimated that approximately 300 participants will be recruited within the 6 months of data collection. Instead, however, a total number of 205 participants were obtained, which is equivalent to 68.33% of the estimated number of participants who were expected during the whole study period. However, this shortfall did not affect the outcome of the study as the expected results have been reached.

Inclusion criteria: All patients with LBP and low back related pain, who were receiving physiotherapy treatment as outpatients, were included in the study.

Exclusion criteria: All patients who were suffering from LBP, but were diagnosed with serious spinal pathologies for example, infections like TB spine, tumours, were excluded from the study.

3.6 INSTRUMENTATION AND DATA COLLECTION

No standardized questionnaire on the knowledge, attitudes and beliefs of the patients with LBP about contributing factors was found in the literature. A self-completed questionnaire with the following sections was thus developed by the researcher (**Appendix A**).

3.6.1 First section (A-1)

The first part (A-1) of the questionnaire enquired about the demographic and social information of participants.

3.6.2 Second section (A-2)

The second part (A-2) gathered information on the current state of participants' back pain.

3.6.3 Third section (B-1)

The third part (B-1) consisted of closed-ended questions, to which the participants had to respond with answers ranging from “*strongly disagree*” to “*strongly agree*”. This part of the questionnaire intended to capture participants’ attitudes and beliefs about their back pain. It consisted of 12 statements, which were based on the Back Beliefs Questionnaire (BBQ) and the Survey of Pain Attitudes (SOPA). Four statements (2, 3, 7 and 10) were adapted from SOPA; and the other eight statements were based on BBQ. The BBQ measures the attitudes and beliefs of patients regarding the inevitability of their back pain (Symonds et al., 1996), whereas, SOPA measures the beliefs of chronic pain patients that influence the person’s adjustment to the pain (Jensen, Turner, Romano & Lawler, 1994).

3.6.4 Fourth section (B-2)

The fourth part of the questionnaire (B-2) identified participants’ knowledge on the course and causes of back pain in general. Therefore, participants were given a series of statements to indicate their agreement with the statement. These statements were obtained from the literature which was reviewed by the researcher. Statements on question 1, 2, 4 and 5 were adapted from low back pain knowledge questionnaire (LKQ), (Maciel, Jennings, Jones, & Natour, 2009). The supportive level of evidence on the statements is listed in Table 3.1. Participants were given an opportunity to indicate their agreement on more than one statement based on their opinion. The correctness of participants on the selected statements, was therefore, judged based on the supportive evidence as identified from the literature. According to Oxford Centre for Evidence Based Medicine, level I indicates the highest level of evidence, while level V denotes lowest level of evidence (Howick, 2009).

Table 3.1 Statements on knowledge, their level of evidence and supportive literature

Statements	Study designs	Levels of Evidence	Reference
The majority of patients recover in three weeks after acute episode of LBP	Systematic review	I	Pengel, Herbert, Maher, & Refshauge, 2003
Chances for recurrence of LBP within 6 to 12 months very common after acute episode	Systematic review	I	Pengel et al., 2003
Individuals with LBP should do regular exercises (remain active) and continue with routine activity	Systematic review	I	Waddell, Feder, & Lewis, 1997
Previous history of LBP and physically demanding works could lead to development of LBP	Case control	III	Kerr et al., 2001
Postural and joint problems, and slipped disc could lead to LBP	Cross section	IV	Adams, 2004
Trauma and injury to the back could lead to LBP	Case-control	IV	Vindigni et al., 2005
Physical factors, Social factors , psychological, Work related factors all these could lead to occurrence of LBP	Cohort and Case control studies	II & III	Yip & Ho, 2001; Soucy et al., 2006).
Too much heavy lifting, twisting and bending of the spine could lead to development of LBP	Cross section	IV	Onkuribido et al., 2008
Wearing high heel shoes should be avoided as it could cause LBP	Randomized control trial (RCT)	II	Lee, Jeong, & Freivalds, 2001
Poor and prolonged sitting, bending and twisting the spine, poor working place, socio environments, poor lifting of heavy objects and physical inactivity, could all lead to LBP	Cohort and Case control studies	II & III	Lonberg, Pedersen, & Siersma, 2010; Samad et al., 2010;

3.6.5 Fifth section (B-3)

The fifth part (B-3) consisted of closed ended questions, based on nine contributing factors which were developed through Delphi study (Figure 3.1), and these required participants to indicate their responses ranging from “strongly disagree” to “strongly agree”.

3.6.5.1 Delphi study to develop the section on contributing factors to LBP

The contributing factors used in Section B-3 were established during a Delphi study. Content validity of this part of the questionnaire was ensured through rating of the list of contributing factors by experts in the field (Skulmoski, Hartman & Krahn, 2007). Face validity (user-friendliness and clarity of the questions) of the whole questionnaire was tested in a pilot study as described below (De Vos, 2002).

Firstly, a literature review was done to select and evaluate the available and accessible literature on previous research done on the field (Hart, 2001; Jesson, & Lacey, 2006). The literature was reviewed using the following key words: “*low back pain*”, or “*back ache*”, “*contributing factors*” and “*risk factors*”. EBSCOhost and Google scholar were used as search engines. Databases such as MEDLINE, PsycINFO, MasterFile, PubMed, CINAHL, AltaVista and Academic Search Premier were used to broaden the search.

Further information on contributing factors was obtained from books, research abstracts and journal articles. A list of fifteen (15) causing and contributing factors to LBP, was established from the literature, (Lonberg et al., 2010; Samad et al., 2010; Adam, 2009; Jensen, Albertsen, Borg, & Nielsen, 2009; Martin, 2008; George et al., 2006; Soucy et al., 2006; Vindigni et al., 2005; Lyons, 2002; Kerr et al., 2001; Yip & Ho, 2001; Reid & McNairy, 2000) (Table 3.2).

The Delphi method was used to establish the most important contributing factors to LBP. The Delphi method is a group decision making technique which was used to achieve consensus among a group of members on the factors, by using a series of anonymous questionnaires with lists of these factors. The method is well suited as a research instrument, particularly where there is unclear understanding about the problem or a phenomenon (Skulmoski et al., 2007; Hsu & Sandford, 2007).

The Delphi method was thus used to establish the most important contributing factors to LBP, by seeking to achieve a convergence of opinions on the causing and contributing factors to LBP from a panel of selected experts. According to Hsu and Standford (2007), 10 to 15 participants are sufficient in Delphi study, provided that the participants have the same backgrounds.

According to Baker, Lovell and Harris (2006) there is a limited consensus in the current literature about the definition of an expert. In this study, the inclusion criterion for participants was that, the physiotherapist had to have more than 2 years working experience in the field of LBP. Twenty (20) physiotherapists were identified. These experts were drawn from various African countries which included South Africa, Malawi and Tanzania, and their names were not disclosed to each other. The list of fifteen (15) causing and contributing factors was sent to them through email for their comments (Table 3.2).

Table 3.2 List of causing/contributing factors to LBP from a review of the literature

1.	Analgesic dependency
2.	Anxiety
3.	Depression
4.	Fear avoidance beliefs [Fear that movement may injure structures in the back]
5.	Flexion combined with compressive force to the lumbar spine, e.g. in lifting heavy objects.
6.	Frequency of twisting and bending of the spine during work of sport activities
7.	Obesity
8.	Physically demanding work – (as perceived by the patient)
9.	Poor/Unhappy social environment at work
10.	Prolonged sitting (more than 30 minutes).
11.	Repetitive heavy lifting
12.	Smoking
13.	Social psychological stress and events in life
14.	Stressful life events (e.g. caring for the sick or facing death)
15.	Whole body vibration (WBV) [e.g. in truck driving and other work activities]

From the 20 participants who were invited to the panel, 15 responded to the questionnaires throughout the three rounds, yielding a response rate of 75%. In this Delphi study, three rounds were conducted (Custer, Scarcella & Stewart, 1999). In the first round, the list of fifteen (15) contributing factors was sent to the experts and they were requested to add factors to the original list from their knowledge and experience. After the return of the first list, a new list of 38 items including the factors added by the experts in the first round was developed and sent out again for the second and third rounds (see Table 3.3).

Table 3.3 List of causing /contributing factors to LBP after round 1 of the Delphi study

	Contributing Factors
1.	Age
2.	Analgesic dependency
3.	Anxiety
4.	Catastrophizing
5.	Co-morbid diseases (e.g. diabetes, hypertension, cardiac pathology etc.
6.	Compensation situations, e.g. work injuries, third part
7.	Congenital malformations e.g. loss of lumbar curvature
8.	Degenerative joint disease from old age.
9.	Depression
10.	Fear avoidance beliefs [Fear that movement may injure structures in the back]
11.	Flexion combined with compressive force to the lumbar spine, e.g. in lifting heavy objects.
12.	Frequency of twisting and bending of the spine during work of sport activities
13.	Gender
14.	Leg length discrepancy
15.	Obesity
16.	Passive coping
17.	Patient's lack of understanding of pathology
18.	Perceived future problems
19.	Perception on workload

20.	Physically demanding work- perceived by the patient
21.	Poor mattress quality
22.	Poor/Unhappy social environment at work
23.	Posture
24.	Pregnancy
25.	Previous Epidural
26.	Previous history of back pain
27.	Prolonged sitting (more than 30 minutes).
28.	Repetitive heavy lifting
29.	Self-efficacy beliefs
30.	Smoking
31.	Social psychological stress and events in life
32.	Some sport activities (e.g. skiing)
33.	Spouse relations- a solicitous spouse may increase pain behaviour
34.	Stressful life events (e.g. caring for the sick or facing death)
35.	Trauma/injury
36.	Trigger points in gluteus muscles
37.	Types of the Chair used at home/work
38.	Whole body vibration (WBV) [e.g. in truck driving and other work activities]

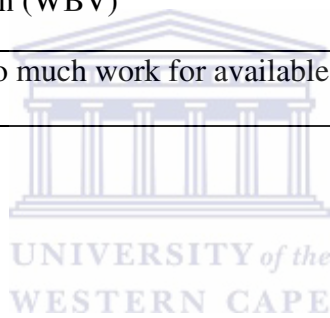
In the second and third rounds, experts were asked to rate each factor on the resulted list according to their own likely order of importance. The rating was based on the four point Likert scale, ranging from 1= “*not important*”, 2= “*less important*”, 3= “*important*” and 4= “*very important*”. Seventy percent or higher agreement on an element was interpreted as an acceptable level of consensus. Previous studies suggest that consensus could be considered achieved, if at least 70 percent of the Delphi participants have rated three or higher in a four point Likert scale (Green, 1982 cited in Hsu & Standford, 2007). Elements with 30% or less agreement were eliminated after the second round. Therefore, on the return of the second round, three factors were eliminated (smoking, gender and comorbid diseases e.g. hypertension and diabetes).

The remaining list of 35 contributing factors (Table 3.4) was sent to the participants in a third round for ranking again. The ranking process was thus repeated two times in total. The list from the third round was returned and collated, and then descriptive analysis was employed to identify the factors which were highly ranked. Seventy per cent (70%) level of agreement and above was considered as level of consensus.

Table 3.4 List of causing /contributing factors to LBP after round 2 of the Delphi study

	Contributing Factors
1.	Age
2.	Analgesic dependency
3.	Anxiety
4.	Catastrophizing
5.	Compensation situations, e.g. work injuries, third party
6.	Congenital malformations e.g. loss of lumbar curvature
7.	Degenerative joint disease from old age.
8.	Depression
9.	Fear avoidance beliefs [Fear that movement may injure structures in the back]
10.	Flexion combined with compressive force to the lumbar spine.
11.	Frequency of twisting and bending of the spine
12.	Leg length discrepancy
13.	Obesity
14.	Passive coping
15.	Patient's lack of understanding of pathology
16.	Perceived future problems with back
17.	Physically demanding work- perceived by the patient
18.	Poor mattress quality
19.	Poor/Unhappy social environment at work
20.	Posture
21.	Pregnancy
22.	Previous Epidural
23.	Previous history of back pain

24.	Prolonged sitting (more than 30 minutes).
25.	Repetitive heavy lifting
26.	Self-efficacy beliefs
27.	Social psychological stress and events in life
28.	Some sport activities (e.g. skiing)
29.	Spouse relations
30.	Stressful life events (e.g. caring for the sick or facing death)
31.	Trauma/injury
32.	Trigger points in gluteus muscles
33.	Type of the chair used at home/work
34.	Whole body vibration (WBV)
35.	Workload [hours, too much work for available time] = Perception of worker



The flowchart below outlines the process on how the three rounds of Delphi study were conducted.

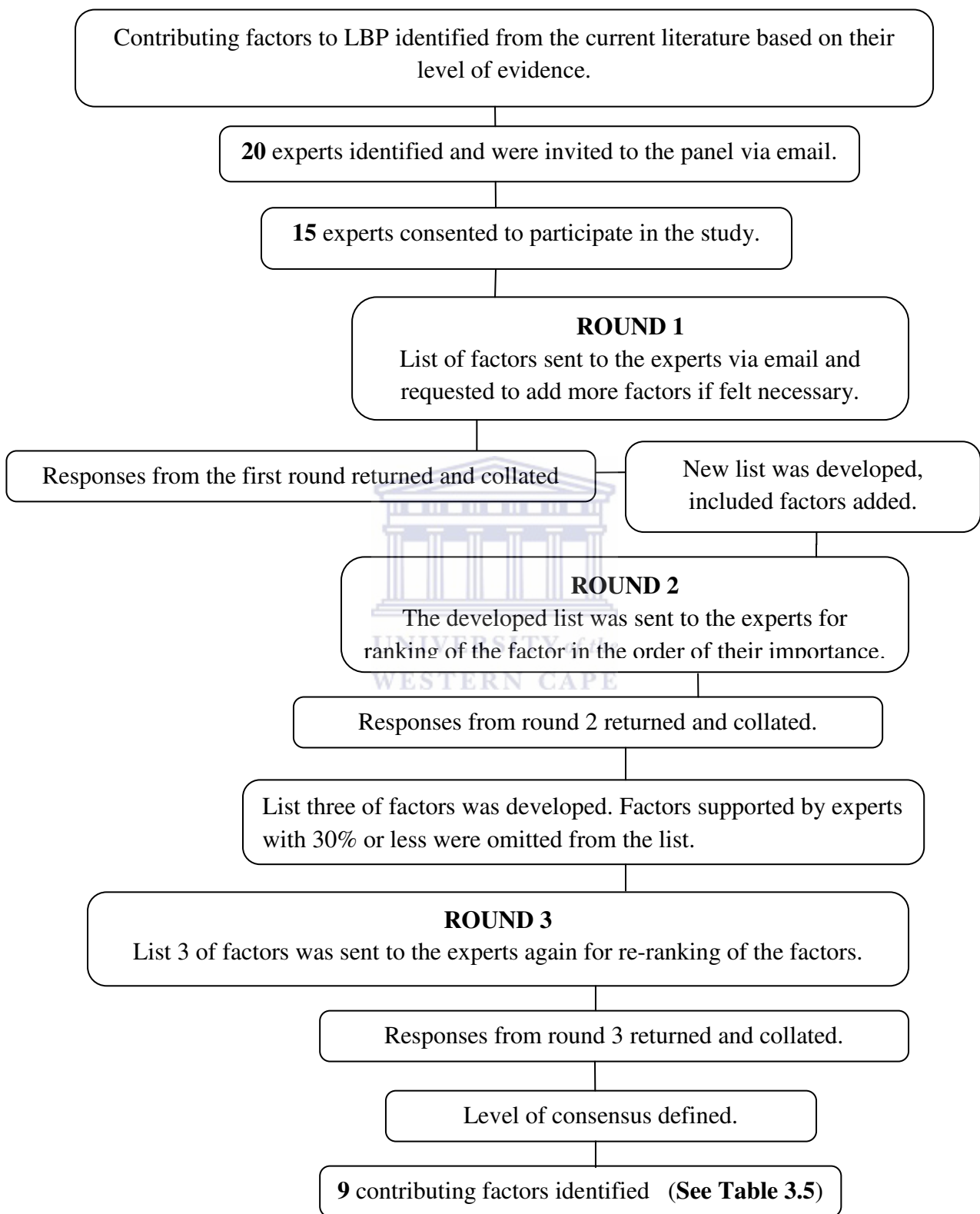


Figure 3.1 Flowchart of the three rounds of the Delphi study

As it appears in Figure 3.1 above, after the return of the list of 35 factors from the third round of the Delphi study, further analysis was carried out. The responses “not important” and “less important” were collapsed to “*Not important*” and the responses “Important” and “Very important” were collapsed into “*Important*”. Therefore all factors which were ranked 70% and above were identified. Nine factors were identified as the most highly ranked by experts. Table 3.5 illustrates the list of those nine factors.

Table 3.5 Final list of causing /contributing factors to LBP after round 3 of the Delphi study

1.	Compensations situations e.g. .injuries at work places	73.3%
2.	Fear avoidance beliefs	86.7%
3.	Flexion combined with compressive forces	93.3%
4.	Physically demanding works	80%
5.	Previous history of back pain	86.7%
6.	Repetitive heavy lifting	93.3%
7.	Trauma/injury at the back	80%
8.	Twisting and bending the spine	86.7%
9.	Whole body vibrations	80%

3.6.6 Sixth section (B-4)

The last part (B-4) of the questionnaire intended to identify the sources of their knowledge and views on LBP.

3.6.7 Translations of the questionnaire

The developed questionnaire was in English; the official language in Malawi, (**Appendix A**) and was translated to Chichewa; the major local national language in Malawi, (**Appendix B**) and then back-translated to English by different translators, to ascertain that the meaning of the statements have not changed or lost with the translation. Therefore, participants had an opportunity to answer the questionnaire on their language of choice, (either in English or in Chichewa).

3.6.8 Pilot study

The developed questionnaire (**Appendix A**) was then tested in a pilot study for face validity, where 10 patients suffering from LBP and were receiving treatment at the selected hospitals during the time of data collection, were asked to complete the questionnaire. The pilot study gave the researcher an opportunity to determine the user-friendliness and the clarity of the instrument (De Vos, 2002). The participants for the pilot study were recruited as they were coming for physiotherapy treatment. The explanation regarding the study was given to the participants, both verbally and by issuing them the study information sheet.

Upon agreeing to take part in the pilot study, the participants were requested to sign an informed consent form. Immediately, after filling of the questionnaire each participant was requested to give feedback regarding the clarity of the questionnaire and to indicate the areas which he/she felt was not clear or difficult to understand. After this the researcher evaluated the feedback given by the participants.

The pilot study revealed that a few questions were slightly unclear to the participants, due to the use of medical terminologies. The questions were revised and the modifications to those medical terms were made by replacing them with simple terms (see **Appendix C**).

Furthermore, the average time consumed for one participant to complete a questionnaire was determined as approximately 25-30 minutes. The participants in pilot study were not included in the study sample.

3.7 DATA COLLECTION

After finalization of the questionnaire, two research assistants were recruited and trained by the researcher to familiarize them with the questionnaire and the objectives of the main study. The researcher, together with assistance from the heads of physiotherapy departments of the selected hospitals identified those patients suffering from LBP on the physiotherapy register as they arrived to receive treatment. The recruited participants were familiarized with the aim of the study both verbally and by issuing the study information sheet which was available in both English and Chichewa language (**see Appendices D & E**).

Before the participants started completing the questionnaires, a consent form (also available in both languages, (**Appendices F & G**)) was presented and signed by each participant. The questionnaires were kept in the office of the secretary and they were issued to those patients who met the inclusion criteria. A quiet and comfortable place was allocated to the participant for him/her to fill in the questionnaire. Those participants who were not able to read and write were assisted by the principal researcher or a research assistant. All questionnaires were collected immediately after completion.

3.8 DATA ANALYSIS

The Statistical Package for Social Sciences (SPSS) version 19 was used for data capturing and analysis. Hasson, Keeney and McKenna (2000) indicated that, in order to present the information concerning the collective judgements of the participants, measures of central tendency (median and mode) are most often used in Delphi studies. Therefore, the responses of the second and third rounds of the Delphi study were analysed using descriptive statistics,

and ordered by the median rank. Where the median was equal between two priorities, the mode score was used to determine the higher rank. The data from the main study was summarized by using descriptive statistics and is expressed in frequencies, percentages, mean and standard deviations. Inferential statistics was also used to determine the association between the variables such as knowledge, beliefs and socio demographic variables. Therefore, the bivariate analysis employing Chi-Square tests was used to test for any significant association, and the Alpha level of significance was set at 0.05. The results are presented in form of tables and graphs.

3.9 ETHICAL CONSIDERATIONS

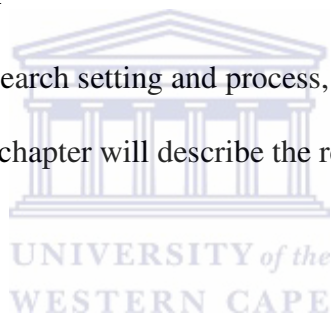
Before the commencement of the study, the permission letter was obtained from the department of physiotherapy (**Appendix H**) and ethical clearance was obtained from the University of the Western Cape Research Grants and Study Leave Committee (**Appendix I**) and from the Ethical Research Committee of College of Medicine in Malawi (**Appendix J**). The permission letters to conduct the study in the two hospitals were obtained from the directors of the two hospitals (**Appendices K & L**). The request letter was sent to the experts for their participation in Delphi study (**Appendix M**) and they were informed about the purposes of the study by giving them the study information sheet. Their participation to the study was voluntary and they had the right to withdraw from the study at any time.

No names were used, and their anonymity was ensured by allocating numbers to the responses. The responses from Delphi experts were kept confidential and there was no communication between experts. The final results for the Delphi study and the designed questionnaire was made available to experts via email. The information obtained from the participants in the selected population of LBP sufferers, was kept confidential and their anonymity and privacy was observed and maintained throughout. To ensure anonymity and

to obtain participants' confidence no names were used; instead numbers only were used on the questionnaires. The participants were informed about the aim and objectives of the study by providing them with study information sheet, and upon agreeing to participate; an informed consent form was issued and signed by the participant. In addition to this, participants were also given an opportunity to ask questions should they need clarification or more explanation regarding the study. Furthermore, the experts from the Delphi study and all participants in the main study were informed that, should they decide not to continue participating in the study, they had a right to withdraw from the study at any time without any litigation.

3.10 CHAPTER SUMMARY

This chapter has described the research setting and process, as well as the data collection procedure and analysis. The next chapter will describe the results of the study.



CHAPTER FOUR

RESULTS

4.0 INTRODUCTION

This chapter presents the results of the current study, which aimed to establish the knowledge (understanding), attitudes and beliefs regarding contributing factors to LBP among patients who sought physiotherapy services for their LBP in Malawi. The questionnaire sought information in the following order:-

Section A-1: Demographic and social information

Section A-2: Information on the current state of participant's back pain

Section B-1: Participants' attitudes and beliefs about their back pain

Section B-2: Participants' knowledge about the course and causes of back pain in general

Section B-3: Participants' beliefs on contributing factors to LBP in general

Section B-4: Questions on sources of participants' knowledge and views on LBP

Firstly, the results of the Delphi study (to develop the part of the questionnaire on contributing factors to LBP) are described. This is followed by descriptive statistical analysis of the study sample, then participants' general knowledge on the course and causes of LBP and the sources of their knowledge regarding their LBP. Furthermore, participants' attitudes and beliefs on LBP and its contributing factors are described. Finally, the inferential statistics which aimed to determine any significant associations between variables are presented. The results are presented in the form of tables and graphs.

4.1 RESULTS OF THE DELPHI STUDY

Table 4.1 shows the ranking of the proposed individual contributing factors according to the experts participated in the Delphi study.

Table 4.1 Ranking of contributing factors by experts in second round of Delphi study (n=15)

Factors	4*	3*	2*	1*
	n (%)	n (%)	n (%)	n (%)
1. Age	1(6.7)	5(33.3)	5(33.3)	4(26.7)
2. Analgesic dependency	1(6.7)	8(53.3)	3(20)	3(20)
3. Anxiety	0(0)	7(46.7)	7(46.7)	1(6.7)
4. Catastrophizing	2(13.3)	5(33.3)	7(46.7)	1(6.7)
5. Comorbid diseases	2(13.3)	1(6.7)	12(80)	0(0)**
6. Compensation situations	3(20)	4(26.7)	8(53.3)	0(0)
7. Congenital malformations	5(33.3)	2(13.3)	5(33.3)	3(20)
8. Degenerative joint disease	5(33.3)	2(13.3)	6(40)	2(13.3)
9. Depression	2(13.3)	8(53.3)	5(33.3)	0(0)
10. Fear avoidance beliefs	2(13.3)	7(46.7)	5(33.3)	1(6.7)
11. Flexion combined with compressive forces	9(60)	5(33.3)	1(6.7)	0(0)
12. Twisting and bending the spine	8(53.3)	6(40)	1(6.7)	0(0)
13. Gender	0(0)	2(13.3)	9(60)	4(26.7)**
14. Leg length discrepancy	5(33.3)	4(26.7)	5(33.3)	1(6.7)
15. Obesity	3(20)	5(33.3)	5(33.3)	2(13.3)
16. Passive coping	1(6.7)	5(33.3)	9(60)	0(0)
17. Patient's lack of understanding of pathology	2(13.3)	6(40)	7(46.7)	0(0)
18. Perceived future problems with back	0(0)	7(46.7)	7(46.7)	1(6.7)
19. Physically demanding work	3(20)	9(60)	2(13.3)	1(6.7)
20. Poor mattress quality	4(26.7)	5(33.3)	4(26.7)	2(13.3)
21. Poor work environment	1(6.7)	8(53.3)	0(0)	6(40)
22. Posture	0(0)	5(33.3)	7(46.7)	3(20)
23. Pregnancy	2(13.3)	7(46.7)	3(20)	3(20)
24. Previous Epidural	1(6.7)	7(46.7)	4(26.7)	3(20)
25. Previous history of back pain	3(20)	8(53.3)	3(20)	1(6.7)
26. Prolonged sitting (more than 30 minutes).	1(6.7)	10(66.7)	4(26.7)	0(0)
27. Repetitive heavy lifting	3(20)	10(66.7)	2(13.3)	0(0)
28. Self-efficacy beliefs	4(26.7)	3(20)	7(46.7)	1(6.7)
29. Smoking	0(0)	1(6.7)	11(73.3)	3(20)**
30. Social psychological stress and events in life	1(6.7)	6(40)	6(40)	2(13.3)
31. Some sport activities (e.g. skiing)	1(6.7)	6(40)	7(46.7)	1(6.7)
32. Spouse relations	1(6.7)	7(46.7)	7(46.7)	0(0)
33. Stressful life events	1(6.7)	5(33.3)	8(53.3)	1(6.7)
34. Trauma/injury	4(26.7)	6(40)	4(26.7)	1(6.7)
35. Trigger points in gluteus muscles	4(26.7)	5(33.3)	2(13.3)	4(26.7)
36. Type of the chair used at home/work	1(6.7)	5(33.3)	6(40)	3(20)
37. Whole body vibration	6(40)	7(46.7)	2(13.3)	0(0)
38. Workload	4(26.7)	10(66.7)	1(6.7)	0(0)

1*= not important 2*= less important 3*= important 4*= very important
****= factors ranked 30% and less (Omitted from the list)**

Table 4.2 displays the final ranking of the proposed individual contributing factors according to the experts participated in the Delphi study.

Table 4.2 Ranking of contributing factors by experts in third round of Delphi study

Factors	4* n (%)	3* n (%)	2* n (%)	1* n (%)
1. Age	4(26.7)	3(20)	6(40)	2(13.3)
2. Analgesic dependency	0(0)	3(20)	8(53.3)	4(26.7)
3. Anxiety	1(6.7)	4(26.7)	9(60)	1(6.7)
4. Catastrophizing	3(20)	4(26.7)	5(33.3)	3(20)
5. Compensation situations	0(0)	11(73.3)	3(20)	1(6.7)
6. Congenital malformations	4(26.7)	4(26.7)	7(46.7)	0(0)
7. Degenerative joint disease	6(40)	3(20)	6(40)	0(0)
8. Depression	2(13.3)	5(33.3)	7(46.7)	1(6.7)
9. Fear avoidance beliefs	5(33.3)	8(53.3)	1(6.7)	1(6.7)
10. Flexion combined with compressive forces	6(40)	8(53.3)	1(6.7)	0(0)
11. Twisting and bending the spine	8(53.3)	5(33.3)	2(13.3)	0(0)
12. Leg length discrepancy	5(33.3)	4(26.7)	3(20)	3(20)
13. Obesity	3(20)	3(20)	9(60)	0(0)
14. Passive coping	0(0)	5(33.3)	8(53.3)	2(13.3)
15. Patient's lack of understanding of pathology	1(6.7)	5(33.3)	7(46.7)	2(13.3)
16. Perceived future problems with back	0(0)	9(60)	5(33.3)	1(6.7)
17. Physically demanding work	1(6.7)	11(73.3)	3(20)	0(0)
18. Poor mattress quality	2(13.3)	6(40)	4(26.7)	3(20)
19. Poor work environment	0(0)	3(20)	0(0)	12(80)
20. Posture	3(20)	5(33.3)	7(46.7)	0(0)
21. Pregnancy	3(20)	3(20)	7(46.7)	2(13.3)
22. Previous Epidural	0(0)	4(26.7)	4(26.7)	7(46.7)
23. Previous history of back pain	2(13.3)	11(73.3)	2(13.3)	0(0)
24. Prolonged sitting (more than 30 minutes).	1(6.7)	8(53.3)	6(40)	0(0)
25. Repetitive heavy lifting	7(46.7)	7(46.7)	1(6.7)	0(0)
26. Self-efficacy beliefs	0(0)	6(40)	7(46.7)	2(13.3)
27. Social psychological stress and events in life	0(0)	7(46.7)	8(53.3)	0(0)
28. Some sport activities (e.g. skiing)	0(0)	7(46.7)	7(46.7)	1(6.7)
29. Spouse relations	0(0)	3(20)	9(60)	3(20)
30. Stressful life events	0(0)	7(46.7)	7(46.7)	1(6.7)
31. Trauma/injury	4(26.7)	8(53.3)	3(20)	0(0)
32. Trigger points in gluteus muscles	0(0)	3(20)	8(53.3)	4(26.7)
33. Type of the chair used at home/work	3(20)	5(33.3)	4(26.7)	3(20)
34. Whole body vibration	5(33.3)	7(46.7)	2(13.3)	1(6.7)
35. Workload	2(13.3)	8(53.3)	4(26.7)	1(6.7)

1*= not important 2*= less important 3*= important 4*= very important

After this calculation, the responses from the experts were collapsed into two categories. The responses “very important” and “important” were collapsed into “*important*”, and “less important” and “not important” were collapsed into “*not important*”. Table 4.3 presents the collapsed responses of the experts according to the contributing factors.

Table 4.3 Collapsed responses from the experts in the Delphi study

Factors	Important		Not important	
	n	(%)	n	(%)
1. Age	7	(46.7)	8	(53.3)
2. Analgesic dependency	3	(20)	12	(80.0)
3. Anxiety	5	(33.3)	10	(66.7)
4. Catastrophizing	7	(46.7)	8	(53.3)
5. Compensation situations	11	(73.3)	4	(26.7)
6. Congenital malformations	8	(53.3)	7	(46.7)
7. Degenerative joint disease	9	(60)	6	(40.0)
8. Depression	7	(46.7)	8	(53.3)
9. Fear avoidance beliefs	13	(86.7)	2	(13.3)
10. Flexion combined with compressive forces	14	(93.3)	1	(6.7)
11. Twisting and bending the spine	13	(86.3)	2	(13.3)
12. Leg length discrepancy	9	(60)	6	(40.0)
13. Obesity	6	(40)	9	(60.0)
14. Passive coping	5	(33.3)	10	(66.7)
*15. Patient’s lack of understanding of pathology	6	(40)	9	(60.0)
16. Perceived future problems with back	9	(60)	6	(40.0)
17. Physically demanding work	12	(80)	3	(20.0)
18. Poor mattress quality	8	(53.3)	7	(46.7)
19. Poor work environment	3	(20)	12	(80.0)
20. Posture	8	(53.3)	7	(46.7)
21. Pregnancy	6	(40)	9	(60.0)
22. Previous Epidural	4	(26.7)	11	(73.3)
23. Previous history of back pain	13	(86.7)	2	(13.3)
24. Prolonged sitting (more than 30 minutes).	9	(60)	6	(40.0)
25. Repetitive heavy lifting	14	(93.3)	1	(6.7)
26. Self-efficacy beliefs	6	(40)	9	(60.0)
27. Social psychological stress and events in life	7	(46.7)	8	(53.3)
28. Some sport activities (e.g. skiing)	7	(46.7)	8	(53.3)
29. Spouse relations	3	(20)	12	(80.0)
30. Stressful life events	7	(46.7)	8	(53.3)
31. Trauma/injury	12	(80)	3	(20.0)
32. Trigger points in gluteus muscles	3	(20)	12	(80.0)
33. Type of the chair used at home/work	8	(53.3)	7	(46.7)
34. Whole body vibration	12	(80)	2	(20.0)
35. Workload	10	(66.7)	5	(33.3)

As it appears in the Table 4.3 above, there were nine highly ranked contributing factors (above 70%) which were rated by experts as important contributing factors to LBP. Table 4.4 presents those factors which were highly rated as important contributing factors to LBP. These factors were included in the questionnaire for the participants to indicate their opinions (see Appendix A section B-3).

Table 4.4 Distribution of the highly ranked contributing factors to LBP in the Delphi study

Contributing factor	Frequency (n)	(%)
1. Compensations situations e.g. injuries at work places	11	73.3
2. Physically demanding works	12	80.0
3. Trauma/ injury at the back	12	80.0
4. Whole body vibrations	12	80.0
5. Fear avoidance beliefs	13	86.7
6. Previous history of back pain	13	86.7
7. Twisting and bending the spine	13	86.7
8. Flexion combined with compressive forces	14	93.3
9. Repetitive heavy lifting	14	93.3

4.2 DESCRIPTION OF THE PARTICIPANTS (SECTION A-1)

The study population consisted of all patients which attended physiotherapy treatment at the outpatient departments of the two selected hospitals with complaint of LBP, during the period of data collection.

4.2.1 Gender and age distribution

In this study 205 participants were recruited, of whom, 53.2% (109) were females and 46.8% (96) were males. The participants ages ranged from 17 to 82 years with a mean age of 47.74 years (Standard deviation (SD) = 13.29). When the ages were categorized into six classes with a range of ten years, ranging from 15 to 84 years, the majority 30.2% (62) of the participants with LBP were between the age group of 45-54 years. LBP was least between the age group of 15-24 years 3.9% (8). Furthermore the results showed that LBP tends to increase from the age of 24 to 64 and decline from the age of 65 years and above (Table 4.5).

4.2.2 Marital status and residential area

With regard to marital status, the majority 50.7% (104) of the participants in this study were married, followed by 23.4% (48) who were single. In respect to residential area of the participants, the majority 77.1% (158) lived in urban areas, while 22.9% (47) were living in rural areas. Table 4.5 illustrates in details the marital status and residential area of the participants.

4.2.3 Education level and employment status

Regarding the level of education among participants, it was noted that the majority of the participants (47.8%) had only primary level of education; and a considerable proportion (32.2%) of the participants never attended school at all.

Regarding the employment status of the participants, the majority of the participants (51.2%) were not employed, (47.8%) were employed, and two participants did not indicate their employment status.

Most of the participants were teachers (11.7%), followed by drivers, technicians; construction workers and security staff (10.6% in each group). Of the unemployed participants, the majority (57.1%) indicated small-business as their income generating activity, followed by (28.6%) who were involved in domestic work. Table 4.5 presents the demographic information of the participants. Table 4.6 presents the employment status, occupation and income generating activities of participants.

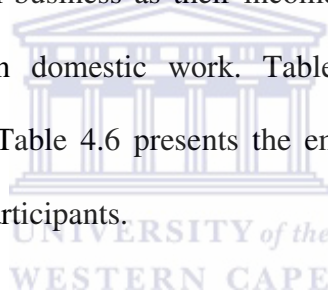


Table 4.5 Socio- demographic characteristics of the study sample (n=205)

Variable	Frequency	(n)	(%)
Gender			
Males		96	46.8
Females		109	53.2
Age group			
15- 24 years		8	3.9
25- 34 years		27	13.2
35- 44 years		44	21.5
45- 54 years		62	30.2
55- 64 years		43	21.0
≥ 65 years		21	10.2
Level of education			
Never went to school		66	32.0
Primary level		98	47.8
Secondary level		34	16.6
Tertiary level		7	3.4
Marital status			
Single		48	23.4
Married		104	50.7
Divorced		19	9.3
Separated		3	1.5
Widow		25	12.2
Widower		6	2.9
Residential area			
Rural		47	22.9
Urban		158	77.1

Mean age 47.74 years (SD=13.29).

Table 4.6 Employment status, occupation and source of income of the participants

Variable	Frequency (n)	(%)
Employment status		
Employed	98	47.8
Not employed	105	51.2
Missing value**	2	1.0
Occupation if employed		
Accountants	5	5.3
Administrative workers	7	7.4
Bureau officer	8	8.4
Security staff	10	10.6
Hospital attendants	6	6.4
Medical staff	9	9.6
Construction workers	10	10.6
Technicians	10	10.6
Teachers	11	11.7
Drivers	10	10.6
Others*	8	6.8
Missing values **	4	2.0
Source of income if not employed		
Business	56	57.1
Farming	14	14.3
Domestic work	37	28.6

*Include: A research assistant, a cook, and a footballer

** Participants who did not indicate their occupation and employment status

4.3 CURRENT STATE OF THE PARTICIPANTS LBP (SECTION A-2)

4.3.1 Duration and characteristics of LBP among participants

The characteristics and duration of LBP among participants varied considerably. Participants were asked to indicate whether their LBP was episodic (i.e. comes and goes), continuous (i.e. never without pain) or if it was their first episode. The majority of the participants 48.3% (99) reported that their pain was continuous, while 39.5% (81) indicated that their LBP was episodic. Seventy-eight percent of all participants reported LBP for more than six months, followed by a small proportion (7.8%) who reported LBP for three months (Table 4.7).

4.3.2 Duration of LBP among participants by gender

As illustrated in the Figure 4.1 below, females reported longer duration of LBP than males. Results show that 42% of females suffered LBP for more than six months, as opposed to males 36.1%. There was however, no significant difference between gender and duration of pain ($\chi^2 = 2.93$, $df = 5$, $p\text{-value} = 0.71 > 0.05$).

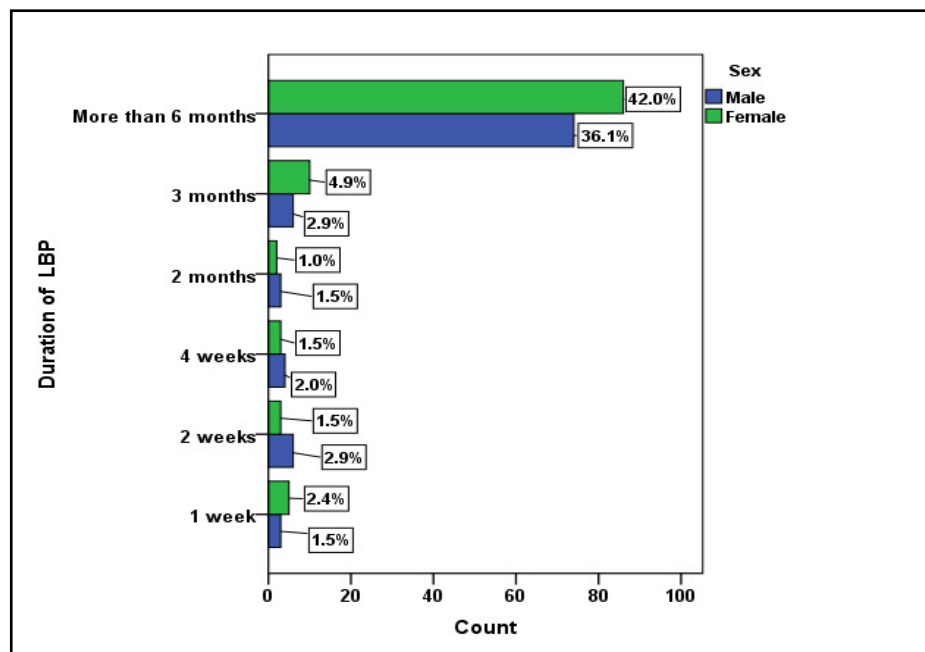


Figure 4.1 Relationship between duration of LBP and gender

4.3.3 Duration of LBP among participants by age

Among those participants who reported LBP for more than six months (nearly 27%) were in the age group between 45-54 years (Figure 4.2). In addition to this, the Pearson Chi-square test revealed a significant association between the duration of LBP and the age group of the participants ($\chi^2 = 38.86$, $df = 25$, $p = 0.05$).

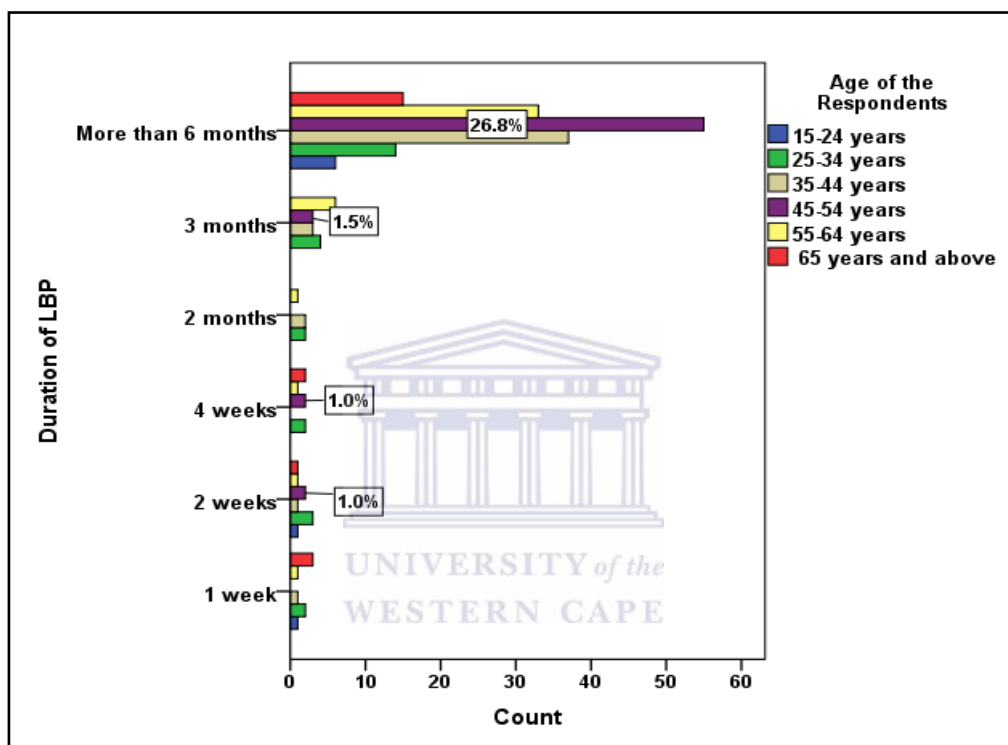


Figure 4.2 Relationship between duration of LBP and age

4.3.4 Treatment and its effectiveness

Of the 205 participants, 80% (164) reported having received treatment for their LBP. For those who received treatment, there were varied opinions regarding the perceived effectiveness of the treatment received for their LBP. More than half (50.6%), indicated that the treatment offered temporary relief of their pain, whilst 28.7% reported that the treatment had no effect on their LBP.

Table 4.7 summarizes the percentage distribution pertaining to the area/location of pain, duration and behaviour/characteristics of the pain, and the effect of the treatment to their LBP.

Table 4.7 Area, duration, pain characteristics, treatment and its effect as reported by participants

Variable	Frequency	(n)	(%)
Area of pain			
Lumbar region only		159	77.6
Lumbar, buttocks and lower limbs		10	4.9
Lumbar and buttocks only		9	4.4
Lumbar, groin and lateral sides of pelvis		27	13.2
Duration of LBP			
One week		8	3.9
Two weeks		9	4.4
Four weeks		7	3.4
Two months		5	2.4
Three months		16	7.8
More than six months		160	78
Pain characteristics			
Episodic		81	39.5
Continuous		99	48.3
First time episode		25	12.2
Treatment received			
Yes		164	80
No		41	20
Effect of the treatment on pain			
Relived pain until this episode		34	20.7
Temporarily relieved pain		83	50.6
Did not change pain		47	28.7



4.4 PARTICIPANTS' OPINIONS ON THEIR LBP (SECTION B-1)

Participants' attitudes and beliefs regarding their LBP and its contributing factors were tested with their opinions on a series of twelve statements (Obtained from Back Beliefs Questionnaire and Survey of Pain Attitudes questionnaire). Table 4.8 below presents the participants' responses as per statement. Most participants indicated strongly agree to statements 1, 3, and 11. With regard to statements one, more than half of the participants 56.1% strongly agreed that, having LBP, one should avoid movements that involve the back for fear that, these movements could cause more injury to their back.

On statement three (Table 4.8), 53.2% of the participants reported that they strongly believe that their LBP could only be cured by health care provider, while on the statement eleven, nearly 63% of the participants, reported that they strongly believe that visiting health care facility is the best way to know more about their pain.

The majority of the participants reported the agreement on the statements 2, 5, 8 and 12. On statement two, 27.8% agreed that pain acceptance facilitates recovery from LBP, and 41% of the participants agreed on the statement five that LBP could never stop them from working. However, nearly 45% of the participants agreed that because of their LBP, they should abstain from their regular duties and physical activity (statement 8).

Although 39% agreed that their LBP gets progressively worse as they grow older, about 41% of the participants remained neutral, on whether they will experience LBP for the rest of their lives (statement 6). On statement 10, the majority 32.2% reported that they do not know whether their LBP could be controlled by changing their thoughts on pain or not.

Table 4.8 Participants' opinions on their own LBP in general

Statements	Responses				
	SA *	A*	DN*	D*	SD*
1. People with LBP should avoid movement as may cause more injury	115(56.1%)	75(36.6%)	5(2.4%)	7(3.4%)	3(1.5%)
2. Pain acceptance facilitates recovery from LBP	54(26.3%)	57(27.8%)	36(17.6%)	51(24.9%)	7(3.4%)
3. Only health personnel can cure LBP	109(53.2%)	66(32.2%)	9(4.4%)	15(7.3%)	6(2.9%)
4. Self -management on your LBP has no effect on recovery	29(14.1%)	53(25.9%)	49(23.9%)	63(30.7%)	11(5.4%)
5. LBP will eventually stop you from working	63(30.7%)	84(41%)	22(10.7%)	29(14.1%)	7(3.4%)
6. Your LBP will last with you for the rest of your life	9(4.4%)	17(8.3%)	83(40.5%)	67(32.7%)	29(14.1%)
7. LBP will never stop you doing what you really want to do	21(10.2%)	64(31.2%)	28(13.7%)	78(38%)	14(6.8%)
8. Because of your LBP, abstain your duties and avoid physical activity	48(23.4%)	92(44.9%)	14(6.8%)	33(16.1%)	18(8.8%)
9. Having LBP, may mean you will end up with disability	17(8.3%)	38(18.5%)	53(25.9%)	60(29.3%)	37(18.0%)
10. You can control the amount of pain you feel by changing your thoughts	21(10.2%)	43(21.0%)	66(32.2%)	64(31.2%)	11(5.4%)
11. To know your pain, the best way is to go to the health care facility	129(62.9%)	62(30.2%)	6(2.9%)	7(3.4%)	1 (0.5%)
12. LBP gets progressively worse later in life	63(30.7%)	80(39.0%)	39(19.0%)	21(10.2%)	2(1.0%)

*SA= Strongly agree

*A = Agree

*DN= Do not know

*D= Disagree *SD= Strongly disagree

4.4.1 Summarized opinions of the participants on their own LBP in general

Further analysis was carried out in order to summarize the participants' responses. Therefore, for easy analysis their responses were further categorized into three categories, namely agree, do not know and disagree. The responses strongly agree and agree were collapsed into "agree" and strongly disagree and disagree were collapsed into "disagree" and those participants who neither agreed nor disagreed on any of the statements were categorized as "Do not know" (Table 4.9 below). Calculating the responses in only three categories, the results show that the majority of participants believe that:

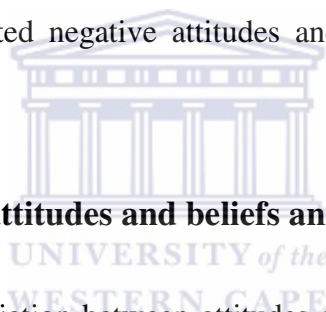
- People with LBP should avoid movements that involves the spine as they may cause more injury to the back (92.7%)
- People with LBP should avoid physical activities and abstain from their regular duties for fear of causing more injury to their back (68.3%)
- Their LBP will eventually stop them from working (71.7%)
- With their LBP, they might not be able to do what they really want to do (44.8%)
- Visiting a health care facility is the best way for one suffering from LBP to know more about his/her pain and its source (93.2%)
- Their LBP could only be cured by health care providers (85.4%)
- Their LBP will get progressively worse later in life (69.8%)

Table 4.9 Summary of responses of participants on attitudes and beliefs about their own LBP

Statements	Agree	Do not know	Disagree
1. People with LBP should avoid movement as may cause more injury	190 (92.7%)	5 (2.4%)	10 (4.9%)
2. Pain acceptance facilitates recovery from LBP	111 (54.1%)	36 (17.6%)	58 (28.3%)
3. Only health personnel can cure LBP	175 (85.4%)	9 (4.4%)	21 (10.2%)
4. Self -management on your LBP has no effect on recovery	82 (40.0%)	49 (23.9%)	74 (36.1%)
5. LBP will eventually stop you from working	147 (71.7%)	22 (10.7%)	36 (17.6%)
6. Your LBP will last with you for the rest of your life	26 (12.7%)	83 (40.5%)	96 (46.8%)
7. LBP will never stop you doing what you really want to do	85 (41.5%)	28 (13.7%)	92 (44.8%)
8. Because of your LBP, abstain your duties and avoid physical activity	140 (68.3%)	14 (6.8%)	51 (24.9%)
9. Having LBP, may mean you will end up with disability	55 (26.8%)	53 (25.9%)	97 (47.3%)
10. You can control the amount of pain you feel by changing your thoughts	64 (31.2%)	66 (32.2%)	75 (36.6%)
11. To know more about your pain, the best way is to go to the health care facility	191(93.2%)	6 (2.9%)	8 (3.9%)
12. LBP gets progressively worse later in life	143(69.8%)	39 (19.0%)	23 (11.2%)

For the clarity of the table, the responses “strongly agree” and “agree” were collapsed into “agree” and the responses “strongly disagree” and “disagree” were collapsed into “disagree”

Based on the Table 4.9, further analysis was carried out, intending to identify the proportion of the participants who had positive attitudes/beliefs and for those with negative attitudes and beliefs based on the twelve given statements. Statements, 2, 7, 10 and 11 were positively directed statements, thus the positive opinion included the response “agree” and “strongly agree”, while “disagree” and “strongly disagree” responses indicate negative opinion on these statements. Statements 1, 3, 4, 5, 6, 8, 9 and 12 were negatively directed statements, therefore the positive opinion on these statements was represented by response “disagree” and “strongly disagree”, while the negative opinions included the responses “agree” and “strongly agree”. Statistical calculation demonstrated that the total number of participants who demonstrated positive attitudes and beliefs in all given 12 statements were only (33.2%) and the majority (66.8%) demonstrated negative attitudes and beliefs about their LBP (mean score 31.89; SD= 4.87).



4.4.2 Associations between attitudes and beliefs and other selected variables

This section reports on the association between attitudes and beliefs of the participants and variables such as age, gender, level of education and marital status. Males appeared to have more positive beliefs (36.5%) as compared to females (30.3%). This implies that, 69.7% of females had more negative attitudes and beliefs toward LBP as opposed to males 63.5% who had negative attitude and beliefs on LBP. However, no significant relationship was found between participants’ attitudes and beliefs and gender ($p= 0.35$). Although the age group between 45-54 years appeared to have more positive beliefs (32.3%) as opposed to 67.7% of the same age group with negative attitudes and beliefs, Pearson Chi-square test did not reveal any association between the age of the participants and their attitudes and beliefs ($p=0.39$). With regard to marital status, (65.4%) of married participants showed negative attitude and beliefs on LBP as opposed to (34.6%) who had positive attitudes and beliefs, but there was no

any significant relationship between marital status and their beliefs ($p=0.09$). Furthermore, with regard to level of education and attitudes and beliefs, it was found that the majority (37.8%) of the participants with positive beliefs had primary level of education, followed by (33.3%) of the participants who never went to school. In comparison with these proportions, overall, it implies that still the majority had negative beliefs despite their levels of education. However, this difference in proportions does not imply that there is a statistically significant association between the level of education and beliefs ($p=0.17$). Furthermore, although the majority of the participants, 36.1% (57) who demonstrated positive attitudes and beliefs appeared to be from urban areas, as opposed to 63.9% (101) with negative attitudes and beliefs, the findings did not reveal any association between participants' attitudes and beliefs and their area of residence ($p=0.11$).



Table 4.10 Summary of association between attitudes/ beliefs and selected variables

Characteristic	Positive attitudes and beliefs (%)	Negative attitudes and beliefs (%)	Chi-square statistic (p-value)
Gender			
Male	36.5	63.5	$\chi^2 = 0.88 (1^*)=, p=0.35$
Female	30.3	69.7	
Age (years)			
15-24	50	50	$\chi^2 =5.23 (5^*)=, p=0.39$
25-34	37	63	
35-44	36.4	63.6	
45-54	32.3	67.7	
55-64	20.9	79.1	
65 and above	42.9	57.1	
Level of education			
Never went to school	33.3	66.7	$\chi^2 =5.09 (3^*)=, p=0.17$
Primary level	37.8	62.2	
Secondary level	26.5	73.5	
Tertiary level	0	100	
Marital status			
Single	45.8	54.2	$\chi^2 =9.33 (5^*)=, p=0.09$
Married	34.6	65.4	
Divorced	15.8	84.2	
Separated	0	100	
Widow	24	76	
Widower	16.7	83.3	
Employment status			
Employed	37.8	62.2	$\chi^2 = 1.93 (1^*)=, p=0.16$
Not employed	28.6	71.4	
Residential area			
Urban	36.1	63.9	$\chi^2 = 2.62 (1^*)=, p=0.11$
Rural	23.4	76.6	

p = p-value, at 5% level of significance

*degrees of freedom,

4.5 GENERAL KNOWLEDGE OF PARTICIPANTS ABOUT THE COURSE AND CAUSES OF LBP (SECTION B-2)

4.5.1 Reported knowledge of the participants on LBP

Participants' knowledge on courses and causes of LBP in general was assessed. Six multiple choice questions were given to the participants to indicate their choice on the most correct statement(s) as was required by the question. Except for question 5 which had only one correct statement, the rest required the participants to choose more than one statement.

On questions 1, the finding shows that the majority (88.8%) agreed that exercises for spine protection and energy conservation should be a routine activity in patients with LBP as relapse is very common. Only 2.9% agreed on the statements that majority of the patient with acute LBP recover within three weeks. On question two, 78.5% agreed that trauma and injuries of the back could be the causes of LBP, whilst only 24.9% concurred with statement that previous history of LBP and physically demanding works could be possible cause of LBP. More than half (54%) of the participants agreed on the statements that work related factors and physical factors could contribute to the occurrence of LBP. This was followed by agreement on social factors (14.6%) and psychological factors (7.8%). Furthermore, on question 4, nearly 43% of the participants agreed that for spine protection, one should sit down when putting up socks and shoes, and only 12.7% agreed on the statement that while washing dishes one should lean with the stomach on the sink in order to avoid damaging of the spine. Again in relation to spine protection (question 5) more than eighty nine per cent (89.3%) of the participants agreed that wearing of high heel shoes is bad for the spine. For question 6, the majority (91.2%) indicated poor lifting of heavy loads to be one of the reasons for developing LBP, followed by bending and twisting of the trunk (59.5%). Table 4.11 presents the agreements of the participants on each statement.

Table 4.11 Participants' agreement on individual statements about the course and causes of LBP

Statement	Agreed		Opinion and results from the literature
	(n)	(%)	
Q 1. With regard to acute LBP, mark the two most correct statements			
a. The great majority of patients recover in three weeks	6	2.9 *	Yes {Pengel et al., 2003}
b. After recovery and improvement of pain the patient is cured and no risk of further crisis	29	14.1	No {Pengel et al., 2003; Cassidy et al., 2005}
c. Instructions on protection of spine are only important during crisis	17	84.4	No {Waddell et al., 1997}
d. The actions and exercises for spine protection and energy conservation be a routine in a patient with history of LBP because relapses are frequent	182	88.8*	Yes {Samanta & Beardsley, 1999; Maciel et al., 2009}
e. I don't know	10	4.9	
Q 2. These could cause LBP: Mark the two most correct statements			
a. Previous history of LBP and physically demanding work	51	24.9*	Yes {Kerr et al., 2001}
b. Postural problems, joint problems and slipped disc	172	83.9	
c. Trauma and injuries to the back	161	78.5*	Yes {Vindigni et al., 2005; Louma et al., 2000} {Supported by 87% of Delphi experts}
d. Diabetes	5	2.4	No {No indication in the literature}
e. I don't know	10	4.9	
Q 3. These factors could contribute to development of LBP (You can indicate more than one)			
a. Physical factors	111	54.1*	Yes {Soucy et al., 2006}
b. Social factors	30	14.6*	Yes {Yip & Ho, 2001}
c. Psychological factors	16	7.8 *	Yes {Heymans et al., 2010}
d. Work related factors	112	54.6*	Yes {Heymans et al., 2010}
e. None of the above	14	6.8	
f. I don't know	46	22.4	

Q 4. To protect your spine: Mark **two** most correct statements [i.e. which two are most like to protect your spine?]

a. The best way to sleep is on your stomach	68	33.2	No {Pithwa, 2011}
b. Sit down to put on your socks and shoes	88	42.9*	Yes {Maciel et al., 2009}
c. Pick up objects from the floor without bending the knees	51	24.9	No {Pithwa, 2011}
d. Wash the dishes with stomach leaned against the sink	26	12.7*	Yes {Maciel et al., 2009}
e. I don't know	87	42.4	

Q 5. Again in relation to spinal protection; Mark **one** statement which is **wrong** [i.e. which one **cannot** protect your spine?]

a. Get out of the bed carefully, turning sideways with the help of your hands	6	2.9	Yes {Adams, 2004}
b. Avoid carrying too much weight on one side of your body (divide the load between both arms)	6	2.9	Yes {Smedley et al., 1995}
c. Avoid twisting your spine	6	2.9	Yes {Onkuribido et al., 2008}
d. Wear high heel shoes everyday	183	89.3*	No {Lee, Jeong, & Freivalds, 2001}
e. I don't know	4	2.0	

Q 6. The following could be reasons for LBP (**You can indicate more than one**)

a. Poor sitting	116	56.6*	Yes {Samad et al., 2010}
b. Bending and twisting the trunk	122	59.5*	Yes {Onkuribido et al., 2008}
c. Poor lifting of heavy loads	187	91.2*	Yes {Foppar & Novack, 1996}
d. Poor working environment	113	55.1*	Yes {Kerr et al., 2001; Vindigni et al., 2005}
e. Physical inactivity	27	13.2*	
f. I don't know	2	1.0	
g. Others**	13	6.3	

* The correct statement (s) based on the literature.

** Include: Mismanagement during child birth, mountain climbing, prolonged standing and poor mattress.

4.5.2 Summary of the participants' choices on the given statements

Further analysis was carried out to calculate the number of participants who managed to choose all correct statements in all six questions. The statements were grouped into three categories, namely “*All chosen statements wrong*”, “*Only one correct statement chosen*” and “*All statements correct*”. Furthermore, the statements “*I don't know*” and “*None of the above*” was grouped under the category “*All chosen statements wrong*”.

As it appears in Table 4.12 in question one, of all the two correct statements required, the majority of the participants (86.8%) managed to choose only one statement correct, only 2.4% managed to choose the two statements correctly. Similarly to question two, the majority (83.4%) managed to choose only one statement correctly as compared to only 9.8% who chose the two correct statements, whilst on question three, among the four required correct statements, the majority (40.5%) managed to choose only two correct statements.

On question 4, (nearly 41%) of the participants managed to choose only one correct statement and less than 10% managed to choose the two required correct statements. With regard to question 5, it required the participants to choose only one correct statement, (89.3%) of the participants managed to choose the correct statement.

On question 6, participants were required to indicate their choices on more than one statement which they thought were correct. The majority of the participants (41.5%) managed to choose only two correct statements and only 3.4% managed to choose all five required correct statements. Generally, the results show that, most participants managed to answer only few statements correctly (see Table 4.12).

Table 4.12 Summary of the participants' knowledge on the course and causes of LBP

Variable	Frequency	(n)	(%)
Portrayed knowledge per individual question			
Q 1. Choices of the participants with regards to acute LBP			
All chosen statements are wrong		22	10.7
Only one correct statement chosen		178	86.8
All two statements correct chosen		5	2.4
Q 2. Choices of the participants with regard to causes of LBP			
All chosen statements are wrong		14	6.8
Only one correct statement chosen		171	83.4
All two correct statements chosen		20	9.8
Q 3. Choices of the participants with regard to factors contributing to LBP			
All chosen statements wrong		60	29.3
Only one correct statement chosen		45	22.0
Only two correct statements chosen		83	40.5
Only three correct statements chosen		12	5.9
All four statements correct chosen		5	2.4
Q 4. Choices of the participants with regard to spine protection			
All chosen statements wrong		106	51.7
Only one correct statement chosen		83	40.5
All two statements correct chosen		16	7.8
Q 5. Choices of the participants in relation to spine protection again			
Wrong statements		22	10.7
Correct statement.		183	89.3
Q 6. Choices of the participants on the possible reasons for LBP			
All chosen statements wrong		2	1.0
Only one correct statement chosen		4	2.0
Only two correct statements chosen		85	41.5
Only three correct statements chosen		60	29.3
Only four correct statements chosen		47	22.9
All five correct statements chosen		7	3.4

4.5.3 General and specific knowledge of the participants on LBP

Following further analysis of the results in Table 4.12 above, the participants were categorized into two groups, those who managed to answer at least one question correctly (99.5%) and were considered to be “generally knowledgeable”, and those who did not get any of the questions correctly (0.5%), referred to as “unknowledgeable”. Those who were generally knowledgeable were further classified into two; the ones who answered only few questions correctly, referred to as “Partially knowledgeable” and the ones who answered all questions correctly, referred to as “Completely knowledgeable” (Table 4.13).

Table 4.13 Summary of general and specific knowledge of the participants

Variable	Frequency	(n)	(%)
Portrayed knowledge on all questions (n=205)			
▪ Generally knowledgeable in at least one of the questions		204	99.5
▪ Not knowledgeable completely of all questions		1	0.5
Specific knowledge (n=204)			
▪ Partially knowledgeable on all questions		186	91.2
▪ Completely knowledgeable on all questions		18	8.8

As Figure 4.5 illustrates, females were more knowledgeable as compared to males, however, Pearson Chi- Square test did not reveal any significant relationship between knowledge and gender ($\chi^2 = 1.44$, $df=1$, $p=0.23 > 0.05$).

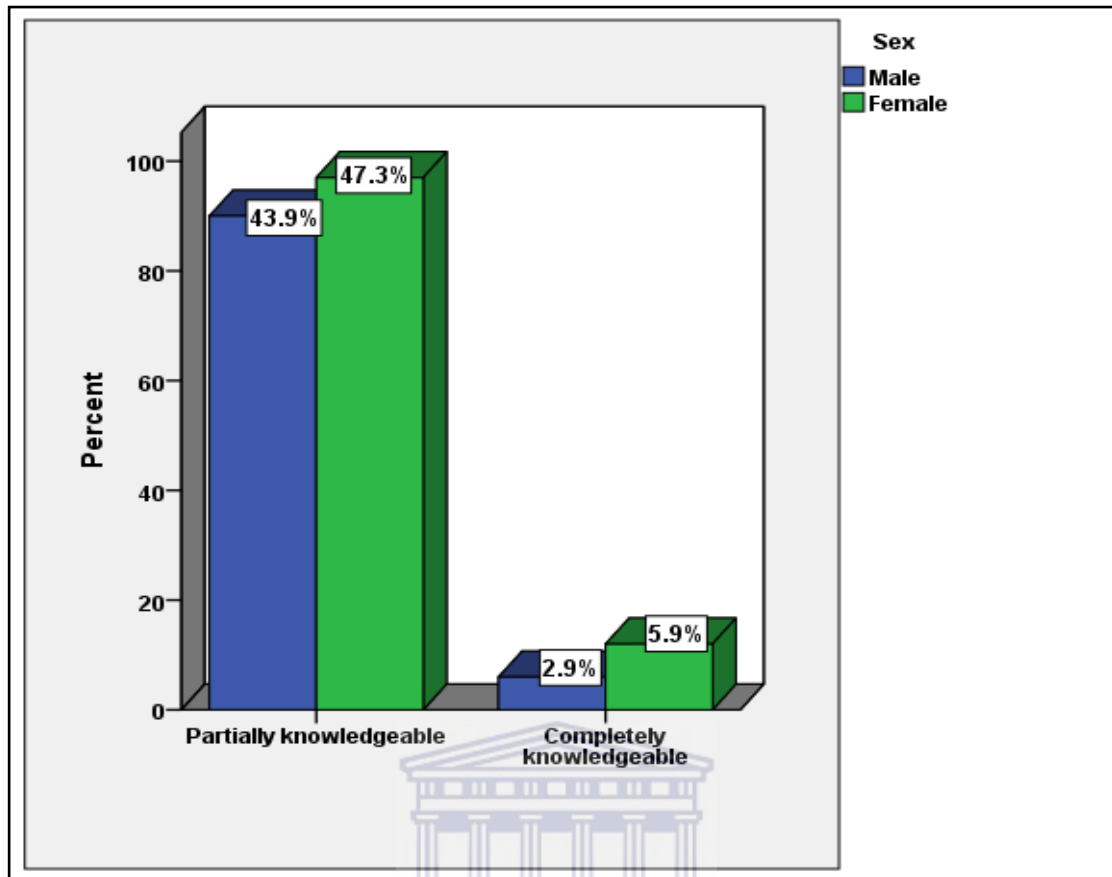


Figure 4.3: Percentage distributions of the specific knowledge by gender

WESTERN CAPE

4.6 RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES AND BELIEFS

In this study, knowledge was the dependent variable. Therefore, the association between knowledge and beliefs of the participants on their LBP, and also other selected variables were calculated to determine whether there was any significant relationship with knowledge. In addition, further analysis was carried out to determine if there was any association between the attitudes and beliefs and other selected demographic variables such as age, gender, marital status and level of education. Therefore, bivariate analysis, employing Chi-Square tests was performed to determine any association between variables.

4.6.1 Association between knowledge and general beliefs of participants on LBP

As it is stated earlier, the study found that 204 participants had knowledge in at least one of the six questions which was aiming to identify the general knowledge of the participants on the course and causes of LBP in general. Therefore, the attempt was made to explore if the knowledge of the participants had any association with their attitudes and beliefs on their LBP. The Chi-square test showed a significant relationship between knowledge of the participants and their attitudes and beliefs on LBP ($p= 0.04$).

Table 4.14 Relationship between knowledge and beliefs among participants

Variable	Knowledge		Chi-square test (p =value)
	PK** (%)	CK*** (%)	
Attitudes /Beliefs			
• Positive beliefs	97.1	91.2	$\chi^2=4.33$, df (1), $p= \mathbf{0.04}<0.05$ *)
• Negative beliefs	2.9	8.8	
Totals	100	100	

*Significant at level of 5%

**Partially Knowledgeable

***Completely Knowledgeable

df = Degree of freedom.

4.6.2 Association between knowledge and other selected variables

The cross tabulation was performed to find out if there was any associations between the knowledge of the participants and the selected variables. The variables included gender, age, and education levels of the participants. In addition, variables such as marital status, employment residential area and the source of information for the participants were also included.

No significant associations were found between the knowledge of the participants and the selected variables. Chi- square tests did not reveal any significant association between source of the information and the knowledge ($p= 0.07$). There was also no significant associations between knowledge of the participants and other variables such as gender ($p=0.23$), age ($p=0.83$), level of education ($p=0.74$), marital status ($p=0.20$), employment ($p=0.88$) and residential area ($p=0.21$) for the participants (see Table 4.15 below).

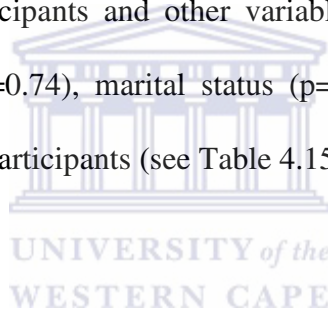


Table 4.15 A summary of association between knowledge and selected variables

Characteristic	Completely knowledgeable	Partially knowledgeable	Chi-square statistic (p-value)
Gender (n=204)	(%)	(%)	
Male	6.2	93.8	$\chi^2(1^*)=1.44, p=0.23$
Female	11	89	
Age (n=205)			
15-24	0	100	$\chi^2(5^*)=2.16, p=0.83$
25-34	3.7	96.3	
35-44	9.1	90.9	
45-54	9.7	90.3	
55-64	11.6	88.4	
65 and above	9.5	90.5	
Level of education			
Never went to school	6.1	93.9	$\chi^2(3^*)=1.27, p=0.74$
Primary level	9.2	90.8	
Secondary level	11.8	88.2	
Tertiary level	14.3	85.7	
Marital status			
Single	2.1	97.9	$\chi^2(5^*)=7.81, p=0.20$
Married	9.6	90.4	
Divorced	10.5	89.5	
Separated	33.3	66.7	
Widow	16	84	
Widower	0	100	
Employment status			
Employed	9.2	90.8	$\chi^2(1^*)=0.24, p=0.88$
Not employed	8.6	91.4	
Residential area			
Urban	10.1	89.9	$\chi^2(1^*)=1.56, p=0.21$
Rural	4.3	95.7	
Source of information			
School	0	100	$\chi^2(7^*)=14.73, p=0.08$
Doctor (Dr)	2.6	97.4	
Physiotherapist (PT)	8.6	91.4	
Doctor & physiotherapist	20	80	
Doctor, PT, books and media	16.7	83.3	
Internet only	0	100	
School, Dr, & books	0	100	
PT & internet.	100	0	

p = *p*-value, at 5% level of significance

*degrees of freedom

4.7 PARTICIPANTS' OPINIONS ON THE CONTRIBUTING FACTORS TO THEIR OWN LBP (SECTION B-3)

As it appears in the Table 4.16 below, participants were asked to indicate their opinions on the given statements regarding contributing factors to LBP. The responses ranged from strongly agree to strongly disagree. Statements on the nine highest ranked contributing factors in the Delphi study were given for them to indicate their responses. The contributing factors included, *repetitive heavy lifting, compensation situations, twisting and bending of the spine, previous back injuries, mechanical vibrations to whole body, physically demanding jobs, trauma or injury of the back, flexion combined with compressive forces and fear avoidance beliefs*. Table 4.16 illustrates the responses from the participants according to each given statement. As it appears in the statements number 1 (repetitive heavy lifting), 6 (physically demanding jobs) and 8 (flexion combined with compressive forces) the majority of the participants 65.9%, 50.2% and 53.2% respectively, strongly believed that factors such as repetitive heavy lifting, physically demanding jobs and flexion movements combined with compressive forces to the spine could contribute to development of LBP. Moreover, in the statements 2, 3, 5 and 7 most participants agreed that, work injuries, twisting and bending the spine frequently, the whole body mechanical vibrations and trauma or injury on the back could pose as contributing factors to LBP. With regard to statement 4, it was a reversed statement, (i.e. negatively directed statement) therefore, the responses from the participants were also reversed starting with strongly disagree to strongly agree, indicating that disagree were the correct/positive responses of which majority 38% were against the opinion that previous injury to the back does not lead to LBP. On the last statement number 9, participants had a divided opinion as majority of them 32.7% did not agree nor disagree that fear avoidance on the movements could cause more injury on the back as well as worsening LBP.

Table 4.16 Participants' opinions on the contributing factors to LBP

Statements	Responses				
	SA *	A*	DN*	D*	SD*
1. Repetitive heavy lifting causes/worsens low back pain	135(65.9%)	62(30.2%)	4(2.0%)	3(1.5%)	1(0.4%)
2. Compensation situations, e.g. work injuries could contribute to chronic low back pain	62(30.2%)	104(50.7%)	24(11.7%)	13(6.3%)	2(1.0%)
3. A high frequency of twisting and bending of the spine worsens low back pain	93(45.4%)	95(46.3%)	8(3.9%)	6(2.9%)	2(1.0%)
4. Previous back injuries do not lead to chronic low back pain	37(18%)	39(19%)	37(18%)	78(38%)	14(6.8%)
5. Mechanical vibration of the whole body e.g. driving of trucks puts us in danger of developing low back pain.	55(26.8%)	78(38%)	61(29.8%)	8(3.9%)	3(1.5%)
6. Physically demanding jobs could contribute and worsen low back pain.	103(50.2%)	88(42.9%)	9(4.4%)	5(2.4%)	0(0%)
7. Low back pain may be as result of trauma or injury of the back	78(38.0%)	101(49.3%)	19(9.3%)	7(3.4%)	0(0%)
8. Flexion combined with compressive force to the lumbar spine, e.g. in lifting heavy objects poses the risk of developing low back pain.	109 (53.2%)	87(42.4%)	4(2.0%)	4(2.0%)	1(0.5%)
9. Fear that movement may injure structures in the back, may actually worsen back pain	34(16.6%)	38(18.5%)	67(32.7%)	57(27.8%)	9(4.4%)

*SA= Strongly agree

*A = Agree

*DN= Do not know

*D= Disagree

* SD= Strongly disagree

4.7.1 The summed responses from the participants

The responses from the Table 4.16 were further collapsed into three categories as it appears in Table 4.17 below. The responses “strongly agree” and “agree” were combined together into “*agree*” those who neither agreed nor disagree were categorized as “*Don’t know*” while the “strongly disagree” and “disagree” were collapsed into “*disagree*”.

After collapsing the responses, the results show that the majority of the participants, 96.1% believed that repetitive heavy lifting causes and worsen LBP, followed by 95.6% of the participants who believed flexion movements combined with compressive forces on the spine is one of the risk factors to development of LBP. Again, other contributing factors such as physically demanding jobs, (93.1%), high frequency of twisting and bending of the spine (92.2%) and trauma/injuries to the back (87.3%) participants believed that these factors contribute to the development of LBP and may worsen the already existing LBP (Table 4.17).

4.7.1.1 Participants’ agreement on all nine contributing factors

Further analysis was carried out to identify the number of participants who completely believed to all nine given contributing factors as the reason for developing LBP. The results revealed that, the majority, 86.3% (177) of the participants agreed on all nine contributing factors that the factors contribute to the development LBP and worsening the existing LBP. Only 13.7% (28) of the participants did not completely agreed in all nine contributing factors (mean score 36.47; SD= 7.72).

Table 4.17 Summary of opinions of the participants on the contributing factors to LBP (n =205)

Statements	Agree	Don't know	Disagree
1. Repetitive heavy lifting causes/worsens low back pain	197(96.1%)	4(2%)	4(1.9%)
2. Compensation situations, e.g. work injuries could contribute chronic low back pain	166(81%)	24(11.7%)	15(7.3%)
3. A high frequency of twisting and bending of the spine worsens low back pain	188(92.2%)	8(3.9%)	8(3.9%)
4. Previous back injuries do not lead to chronic low back pain	76(37%)	37(18.1%)	92(44.9%)
5. Mechanical vibration of the whole body e.g. driving of trucks puts us in danger of developing low back pain.	133(64.9%)	61(29.8%)	11(5.3%)
6. Physically demanding jobs could contribute and worsen low back pain.	191(93.2%)	9(4.4%)	5(2.4%)
7. Low back pain may be as result of trauma or injury of the back	179(87.3%)	19(9.3%)	7(3.4%)
8. Flexion combined with compressive force to the lumbar spine, e.g. in lifting heavy objects poses the risk of developing low back pain.	196(95.6%)	4(2.0%)	5(2.4%)
9. Fear, that movement may injure structures in the back, may actually worsen back pain	72(35.1%)	67(32.7%)	66(32.2%)

For the clarity of the table, the responses “strongly agree” and “agree” were collapsed into “*agree*” and the responses “strongly disagree” and “disagree” were collapsed into “*disagree*”

4.7.2 Type of information received

The results show that majority of the participants (nearly 25%) received information , on self-care of their backs and the importance of exercises for LBP, followed by (14.9%) of the participants who received a package of information on both contributing factors, self-care for the back, exercise and importance of using medication. Less than one per cent received information purely on contributing factors. Table 4.18 summarizes the percentage distribution of the participants' sources of information, and the type of information the participants received regarding their LBP.



Table 4.18 Indicates the participants' sources and type of information on LBP (n= 114)

Variable	Frequency (n)	(%)
Source of the information		
From the doctor only	38	33.3
From physiotherapist only	35	30.7
From both the doctor and physiotherapist	30	26.3
From the doctor, physiotherapist, books and media	6	5.3
From school, doctor and books	2	1.8
From school only	1	0.9
From the internet only	1	0.9
From physiotherapist and internet	1	0.9
Type of information received		
For contributing factors only	1	0.9
For self-care only	3	2.6
For exercise only	15	13.2
For importance of medication only	2	1.8
For contributing factors and exercise only	6	5.3
For contributing factors, self-care and exercise only	10	8.8
For self-care, exercise and medication only	8	7.0
For exercise and medication only	14	12.3
For contributing factors, self-care, exercises and medication	17	14.9
For self-care and exercise only	28	24.6
For self-care and medication only	2	1.8
For contributing factors, self-care and medication only	8	7.0



4.8 SOURCES OF PARTICIPANTS' KNOWLEDGE ON LBP (SECTION B-4)

The findings revealed that the majority 55.6% (114) of the participants had received information regarding their LBP and 44.4% (91) did not receive any information or instruction about their LBP. Most of the participants about (33.3 %) obtained the information regarding their LBP from the doctors only, followed by (30.7%) who obtained the information only from physiotherapists. About (26.3%) of the participants received the information both from the doctors and physiotherapists.

4.8.1 The understanding and usefulness of the received information

Overall, 57.9% of the participants indicated that the information they received was completely understood, while 39.5% indicated the information was partially understood. Moreover, 73.7% admitted that the information was useful to their LBP, as opposed to 21.9% of the participants who indicated that the information was not useful to them. Only 4.4% did not know whether the information they received was useful or not (see Table 4.19).

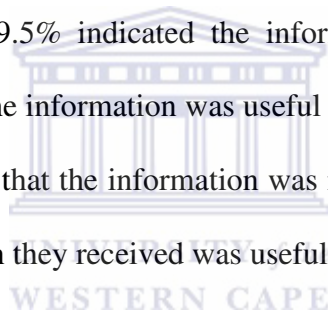


Table 4.19 Summary of the information participants received on LBP (n=114)

Variable	Frequency	(n)	(%)
Did you receive the information?			
▪ Yes	114		55.6
▪ No	91		44.4
Was the information understood?			
▪ Completely understood	66		57.9
▪ Partially understood	45		39.5
▪ Not understood	3		2.6
Was the information useful?			
▪ Yes	84		73.7
▪ No	25		21.9
▪ Do not know	5		4.4

4.8.2 The understanding of the information by gender

Among the participants who received the information regarding their LBP, the degree of understanding of the given information varied considerably. As it is shown in the Figure 4.6, females (31.6%) appear to understand the given information more than males (26.3%).

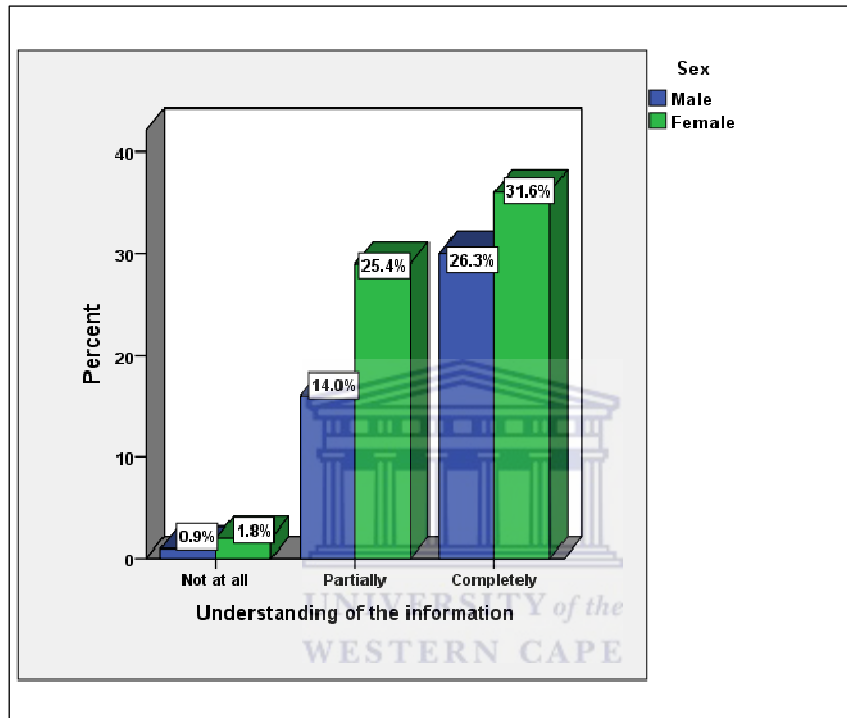


Figure 4.4: Participants' degree of understanding of the information according to gender

4.9 CHAPTER SUMMARY

The results show that a convenient sample of LBP sufferers in Malawi contains more females than males, with a mean age of 47.74 years. Generally, the results revealed that the majority of the participants in the current study were partially knowledgeable on the course and causes of LBP and the sources of the information regarding their LBP were from various sources, the majority being obtained from the doctors and physiotherapists.

Additionally, most participants agreed on all nine contributing factors that they see as a risk for one to develop LBP.

Furthermore, most participants in the current study demonstrated negative attitudes and beliefs on their LBP and the statistical test showed a significant relationship between the knowledge of the participants and their attitudes and beliefs on the LBP in general.

The next chapter presents the discussion of the results of the current study in relation to the literature and in comparison to other research studies done in this field.



CHAPTER FIVE

DISCUSSION

5.0 INTRODUCTION

The primary aim of the current study was to establish the knowledge (understanding), attitudes and beliefs regarding perceived contributing factors of LBP among the patients seeking physiotherapy services for their LBP in Malawi. The results indicate that participants have different beliefs and attitudes regarding LBP and the contributing factors to LBP. Following, is a discussion of the participants' responses in relation to the aim and objectives of the study as well as relevant literature from different studies done in the same field.

5.1 SOCIO- DEMOGRAPHIC CHARACTERISTICS

The majority of patients attending hospital physiotherapy outpatient departments in Malawi for LBP are females between the ages of 45 to 54 years, married, live in an urban area, and only have a primary level of education. Several population-based studies conducted in both Western and African countries revealed that, women are more affected by LBP than men (Sikiru & Hanifa, 2010; Vindigni et al., 2005; Omokhodion et al., 2000; Macarthur et al., 1997). However, the female dominance in reported LBP could be due to the fact that women are more likely to seek healthcare for a pain problem than men, and that women may have lower pain thresholds than men (Chiu & Lam, 2007; Bruce et al., 2004; Jin et al., 2004). Furthermore, a report by the World Health Organization (WHO, 2003) pointed out that, women particularly from developing countries are at higher risk of experiencing LBP due to the fact that they are frequently involved in activities of daily living. One can thus conclude that the mixture of domestic chores and job-related activities may, to some extent, escalate the risk of LBP among the married women.

Participants in the current study ranged from the age of 17 to 82 years, with the majority of the participants in the age group 45 to 54 years. Similarly, Yip and Ho (2001) found that more than half of the participants in their study were between the ages of 48 and 52 years. The current study also shows a trend of LBP increasing from the age of 24 to 64 years and declining from the age of 65 years and above. These findings support the claim made by Valat, Goupille and Vedere (1997) that the rate of occurrence of LBP declines with increase in age after 52 years of age. The majority (77.1%) of the participants in the current study lived in the urban areas, most likely because the study was conducted in two hospitals located in urban areas. No significant relationships was found between residential area and either knowledge or attitudes and beliefs of the participants.

The majority of the participants in the current study had a low level of education. Most of the participants had only primary level of education, followed by the group with no school education. Results of studies by Djavid et al. (2007) and Tavafian et al. (2004) both noted that the majority (more than 80%) of the participants in their studies had a low level of education and lived on low income. Although the majority of the population from which the participants were recruited for this study may have been in a low level education and income group, a low level of education has been associated with greater chances for an individual to develop LBP (Hagen et al., 2005; Ihlebaeck & Ericksen, 2005; Goldberg, Scott, & Mayo, 2000; Lake, Power, & Cole, 2000). Several studies support this assertion that lower socio-economic classes demonstrate increased frequency of LBP and a higher degree of disability and chronicity resulting from LBP as compared to those in higher socio economic classes (Aittomaki, Lahelma, Rahkonen, Leino-Arjas, & Martikainen, 2007; Katz, 2006; Worku, 2000; Reisbord & Greenland, 1985).

5.2 PAIN CHRONIFICATION AMONG LOW BACK PAIN PATIENTS

Based on the duration, LBP is being categorized into acute, sub-acute and chronic LBP. Acute LBP pain is that pain which lasts for less than six weeks, while sub-acute pain, is that pain which lasts longer than six weeks but less than three months, whereas chronic pain is the pain which persist for longer than three months or beyond the expected period of recovery (Merskey & Bogduk, 1994). The majority of the participants (78%) in the current study reported having experienced LBP for more than six months before the interview, with the majority being with pain of a continuous nature. In regard to the classification of pain by International Association for Study of Pain (IASP), it implies that the majority of the participants in the current study were in a chronic stage of pain. Okunribido et al. (2008) found that 55.7% of their participants suffered LBP for more than six months, and Urquhart et al. (2008) established a 70% rate of chronic LBP in their community-based study. Several factors have been indicated as contributing to the development of chronic LBP. For example, lack of knowledge on pain and pain mechanisms among LBP patients, and holding a belief by patients that painful activities could cause more harm, delays recovery and contributes to development of chronic pain and increased functional limitation (Rainville et al., 2011; Jensen, Karpatschof, Labriola, & Albertsen, 2010).

The earlier the patient understands the source and nature of the pain, the easier it could be in mitigating the development of a chronic pain state, promoting recovery and enhancing activity levels. Providing correct information in the acute stage of LBP reduces the development of chronic pain, fear avoidance beliefs, and the risk of disability (Jensen et al., 2010). Recently, Rainville et al. (2011) urged that, addressing fear of pain and catastrophizing in the early stages during management of LBP will reduce chronification of pain, improve treatment outcomes and promote patient self-care management. Against this background, it is therefore meaningful to propose the provision of pain education during management of acute

LBP. This will also reduce the number of hospital visits, as previous studies have postulated that people with chronic LBP are more likely to seek health care and consume more health care services, than other chronic conditions (Von Korff, Lin, Fenton, & Saunders, 2007; Ijzelenberg, & Burdorf, 2004; Mortimer, & Ahlberg, 2003).

Gourmelen et al. (2007) found that more males suffered from chronic LBP than females, with the highest number of chronic LBP sufferers in the group 55 to 64 years. Although the results of the current study showed no significant relationship between gender and duration of pain, the majority of those who experienced chronic LBP were females in the age group ranging from 45 to 54 years, with a significant association between age and duration of LBP. Waddell (2004) alludes that distinguishing pain on the basis of duration it is important, because the biological basis of pain, natural history, and response of pain to treatment is different for each category. Moreover, persistent pain has been associated strongly with higher levels of chronicity and disability, psychosocial distress and enormous cost to the society (Waddell, 2004). More recently, Hanney, Kolber and Beekhuizein (2008) also proposed that effective management of LBP should be planned differently, as there is an association between the duration of the symptoms and the likelihood of long term disability.

5.3 KNOWLEDGE ON THE COURSE AND CAUSES OF LBP

In the management of LBP, patients' knowledge about the source and mechanism of the pain is very important in achieving better treatment outcomes. Knowledge of the participants on the course and causes of LBP in general was explored in the present study. Participants' replies to a range of questions revealed that, about (99.5%) of the participants were knowledgeable in at least one of the questions asked, only (0.5%) who had completely no knowledge on any of the questions. However, of all the participants who managed to answer at least one question correctly, only (8.8%) managed to answer all questions correctly.

Therefore, in general terms it could be interpreted that majority of the participants (91.2%) in the current study were partially knowledgeable on the course and causes of LBP.

Lack of knowledge of LBP in general and its causes and contributing factors among LBP patients has been reported in previous studies (Ng'uurah & Frantz, 2006; Tavafian et al., 2004). For instance, Ng'uurah and Frantz (2006) interviewed a group of people complaining of LBP in Nairobi Kenya, intending to explore the understanding of the participants of LBP in general. Their study concluded that the majority of the participants lacked knowledge on LBP and its causes. Furthermore their study revealed that, most participants not only expected treatment for their pain, but also wanted to be educated on the causes of their LBP, so that they could overcome it in future (Ng'uurah & Frantz, 2006).

For example, one of the participants in their study expressed the following:

“I actually was not clear on what really causes low back pain, the information I think I am lacking is the cause. What exactly is causing my lower backache? You know, once I know the cause...the effect will not be that bad. Once I know this is what is causing my problem then I can avoid it...that is a missing link as far as I am concerned” (Ng'uurah & Frantz, 2006, p. 24).

Similarly, Allock et al. (2007) in their study also concluded that the majority of their patients did not understand the cause of their pain, and the reason for them to visit the health care providers included the need to be educated on their pain, to establish the cause of their pain, and to be reassured of the diagnosis and the effect of the selected treatment of their problem. In another study in an African population, Mwilila (2008) tested the knowledge of a group of nurses with LBP in Tanzania by asking them some questions regarding knowledge and effectiveness of back care techniques. The study found that more than half (50.3%) of the participants were not knowledgeable, not only to the causes and contributing factors to their LBP but also they demonstrated poor knowledge and lack of awareness of any back care

techniques. Lack of information and education was mentioned by the participants to be some of the reasons for their lack of knowledge on the back care techniques and about the causes of LBP (Mwilila, 2008). Interestingly, this was a group of health professionals (nurses) who would have been expected to be knowledgeable in health conditions such as LBP and its risk factors. This indicates that, the lack of knowledge on the LBP could also be a problem of the health care providers and not only the patients. Weinman et al. (2009) found that many patients, including the general public, were lacking knowledge on the body structures and their location in the body, including those structures which their pain was located. In another study which was done in Iran by Tavafian et al. (2004) it was confirmed that, the majority (79.1%) of participants were not aware of the recommended back care techniques and the body mechanics, including the use of proper posture while doing daily activities. The study further revealed that, none of the participants had information or had been educated about the structures and their functions of the vertebral column (Tavafian et al., 2004). In addition, most participants (74%) in their study had partial knowledge about LBP and its contributing factors in general. The percentage of the participants who were partially knowledgeable in the study of Tavafian and her colleagues, seems to be slightly lower (74%) than the present study (91.2%), the possible explanation to this difference could possibly be due to small sample size (n=24) which was used in their study as opposed to the sample size (n=205) of the present study. Also, the method of data gathering which was used, in depth interviews, (involving face to face interviews), could have created a situation whereby some participants might not feel comfortable to share some information which could otherwise be important to the study. Even individuals who are well-educated are also lacking knowledge of LBP and its consequences in the society. For instance, Cunningham, Doody and Blake (2008) in their study among hospital line managers, revealed that, although the managers were aware that LBP is common, they demonstrated poor knowledge on their role in assisting workers with

LBP at the work place, and that, if they could get better information on LBP, improved staff resources, and easier access to health and ergonomic services, it could facilitate them in managing workers with LBP. Lack of information on LBP is thus a general problem, indicating that provision of education about LBP to the general public could probably reduce its prevalence and consequences (Weinman et al., 2009). Tugwell, Santesso, O'Connor and Wilson (2007) highlight that, although patients are the experts of their own illnesses, they still need to be equipped with knowledge about their illness and its possible causes, so that they should be able to make their own decision about their health. Furthermore, patients need to be leaders in implementing those decisions that affect their lives. Therefore patients should be able to translate this knowledge into action in order to bring about the desired effects (Tugwell et al., 2007). In other words, patients should be able to apply the knowledge, in order to effectively participate and lead their own health care.

5.4 SOURCE AND TYPE OF INFORMATION ON LBP

Patients with LBP tend to seek information regarding their pain from numerous sources. Other sources are not reliable; as a result patients end up getting wrong information about their pain, leading to poor pain perception which may cause more harm to the patients. Just more than half of the participants in the present study received information regarding their LBP, and this information came mostly from physiotherapists and doctors. Other sources included, school, internet, books and media which accounted for less than 2% each. Similar findings were noted by Ng'uurah and Frantz (2006) in their study which showed that participants obtained the information regarding their health from various sources which included doctors, physiotherapists, internet, books, nurses, friends, herbalists, parents and from other fellow patients. The type of information which the current study's participants reported to have received was on self-care on their back and the importance of exercises for their LBP, and less than one percent of the participants received information on the

contributing factors to LBP. Similar findings were also reported by McIntosh and Shaw (2003) where most patients in their study were given information regarding self- management and emphasis to stay active. According to Van Tulder and Koes (2002), staying active especially in acute LBP, increases the speed of recovery, reduced long term disability and promotes early return to functional activities. In another study by Tavafian et al. (2004), participants reported that the benefit of exercises was part of the information which was given to patients with LBP. This is in contrast with what patients actually want to know. For instance, Ng'uurah and Frantz (2006) noted that the explanation on the cause of LBP was indicated by the participants as the most important need and perhaps the reason for them to seek health care.

It is well known that patients rely on the health care providers to understand the causes of their health problem, to educate and advise them on possible management for their problem (Foster et al., 2003). This means that health care providers have the responsibility to thoroughly inform patients about their health problem, so that the patients could make an informed decision on the management of their health. Furthermore, the information should be given in a format that is understood by the patients as, although the majority of participants in the current study acknowledged that the information was useful to their LBP, 40% of them reported that they did not completely understand the given information. Some of the reasons which have been highlighted by Ng'uurah and Frantz (2006), as hindrance for the patients to understand the information are the use of medical jargons by health care providers and the tendency of giving the information verbally which can be forgotten easily. It is therefore essential for health care providers and all other individuals who are involved in managing patients with LBP, to identify the needs and the reasons for the patient to seek health service. The health care providers should be good listeners to the patients and communicate with patients in a manner considered appropriate to enhance their understanding about their health

problem. Although knowledge of pain neurophysiology was not tested in the current study, pain education according to this approach (Ryan et al. 2010; Moseley et al., 2004) has demonstrated good results, and should possibly be incorporated in a pain education programs for LBP patients. Moreover, Moseley (2004) demonstrated that, although many therapists initially believe that patients are unable to take on information about pain neurophysiology, professionals usually underestimate the ability of patients to understand. Woby, Roach, Urmston and Watson (2007) urges that, the education targeted on the neurophysiology and cognitive processes facilitates the reduction in fear avoidance of movement, pain catastrophizing and increases functional self-efficacy, which in turn, reduces the degree of disability brought by LBP.

This lack of understanding of the exact causes of LBP has left both patients and clinicians with uncertainties regarding its management and accurate preventative strategies. The present study, however, has revealed that, about 93.2% of the participants believed that the best way of knowing about their LBP and its cause and contributing factors is to visit the health care facility. Similarly, Ng'uurah and Frantz (2006) in their study of the needs of health education among individuals with LBP revealed that, besides medical care, participants expressed the greatest desire to understand the causes of their back problem, its treatment and the prognosis. In fact, the identification of the patients' problem, its cause and contributing factors, followed by provision of education about the problem, has been emphasized in the current literature (Henrotin et al., 2006). This is essential and an important step towards diagnosing and managing LBP, because by so doing, it increases patient's confidence in the treatment, changing negative attitudes and beliefs and promoting treatment compliance (Henrotin et al., 2006; Poland et al., 2000). Additionally, it prepares the patients to manage their disease after discharge and modifies their behaviour to promote optimal health and prevent further illness (Poland et al., 2000). It is therefore important for the health care

providers to realize that, when patients visit a health care facility they need to be thoroughly informed about their problem. This approach supports the bio-psychosocial medical model which does not only focus on the problem and the likely treatment, but strives to identify the roots of the problem itself (Carson, 2009). Failure to provide clear explanations to patients about their health problem may lead to maladaptive behaviour and loss of trust in the medical profession (Ng'uurah & Frantz, 2006).

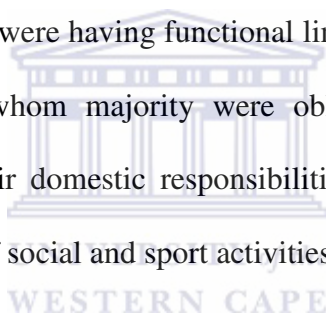
5.5 ATTITUDES AND BELIEFS AMONG THE PARTICIPANTS

5.5.1 Participants' attitudes and beliefs on LBP in general

Identifying patients' attitudes and beliefs regarding their LBP may facilitate the management of their pain. Negative attitudes and beliefs of the patients may pose as a barrier on achieving the desired treatment outcomes (Symonds et al., 1996). Therefore, changing patients' negative attitudes and beliefs could enhance the recovery process and may facilitate the earliest return of the patients to their functional activities and participation (Symonds et al., 1996). In the present study, most of the participants had a wide range of opinions regarding their LBP. For instance, (nearly 93%) of the participants believed movement performance could be harmful to their LBP, thus movements involving the spine should be avoided as it may worsen the already existing pain. The tendency of LBP patients to develop fear on certain movements and avoiding some activities is very common.

As pointed by Linton, Vlaeyen and Ostelo (2002), fear-avoidance among LBP patients, is usually linked with the beliefs that activity or movement is harmful and may aggravate the degree of pain. The present study also revealed that, participants held negative attitudes and beliefs on the activity performance, about 68.3% believed that when suffering LBP, one should avoid physical activities and abandon their regular duties for fear of causing more damage to their back. These findings are congruent with the findings of Keen et al. (1999)

which found that, the majority of the participants with LBP in their study tended to avoid movements and physical activity; although some believed that keeping active could be the best way to ease LBP. In line with this, it is apparent that, participating in a regular program of exercise and physical activity has a positive effect on many aspects common to patients with LBP. In addition to this, educating patients on the possible negative impact of inactivity and positive influences of exercise may improve the likelihood of participating in a regular exercise program (Hanney et al., 2008). With the increase of negative attitudes and beliefs among individuals with LBP, the impact occurring as result of these beliefs is quite substantial such that, the functional limitations imposed to an individual is more debilitating than the pain itself (May, 2007). For instance, May (2007) in his study found that a large number of participants with LBP were having functional limitations due to their LBP, as they could not work normally, of whom majority were obliged to rest. In addition, some participants could not fulfill their domestic responsibilities, and some were even missing work days, including giving up of social and sport activities (May, 2007).



Nearly 72% of the participants in the present study, held the beliefs that their LBP would eventually stop them from working, while almost half of the participants believed that because of their LBP, they might not be able to do what they really want to do. The anticipation of functional limitations among patients with LBP has also been found in other studies (May, 2007; Linton et al., 2002), and according to May (2007), as pain persists, many patients with LBP tend to accept this functional limitation as part of life. Keeping in mind that the majority (78%) of subjects in this study reported chronic LBP (more than 6 months and continuous pain), the results of the study by Linton et al. (2002) is important to note. They concluded that the continuous holding of the negative beliefs among the patients about their pain will restrict them from working, and the belief that pain has come to stay, may lead to pain chronicity and acceleration of the degree of disability, which may be more harmful

than the pain itself. It has been widely mentioned in the literature, that LBP has multi-factorial origin and that it is difficult to identify a driving factor of pain, especially in chronic LBP (Werner, 2008; Waddell, 2004).

Moreover, approximately 70% of the participants in the present study demonstrated a negative attitude on the recovery of their LBP as they believed that their LBP would progressively get worse later in life, suggesting that participants were not expecting an improvement in their LBP. This implies that patients with LBP may tend to lose hope of recovery. Similarly, May (2007) found that, most participants with LBP believed that their pain was irrecoverable, as a result many had resorted to learn to live with their pain as they were not expecting a complete cure. The findings of the present study are also in conformity with the study of Urquhart et al. (2008) which was done among the community based women. The researchers found that about 50% of the participants believed that LBP is always accompanied with weakness and 30% of them held a belief that back trouble means progressive worsening periods of pain for the rest of their lives.

Although previous studies have pointed out that, if patients hold such beliefs, their pain will not subside and it will linger for the rest of their life, it may result to development of chronic pain patterns (Picavet, Vlaeyen, & Schouten, 2002), however, the study done by May (2007) confirms that beliefs by the patients that the LBP will not be cured completely and it has necessitated patients to devise strategies to live with the problem and majority wanted to be given an intervention which they could do by themselves. In fact, accepting the problem was perceived as necessary step for the patients to prepare themselves for the self-management of their problem. Consequently, gaining self-management helps the patients to gain some independence from medical involvement and enhance control over their problem for which the recurrence is common and the complete cure is not expected (May, 2007). However,

patients with LBP have different beliefs on their LBP and they do not hold similar opinions on their pain.

It is therefore, not surprising for the patients to demonstrate different beliefs about the acceptance of their pain and cure of their problem (Skelton, Murphy, Murphy, & O'Dowd, 1996). This has also been evidenced in the present study that, although more than half (54.1%) of the participants believed that accepting their pain could facilitate the recovery, a high proportion (85.4%) still strongly believed that their LBP could only be cured by health care providers.

5.5.2 Participants' opinions on contributing factors to LBP

Low back pain could occur as a result of many contributing factors and up until now the debate in the literature about the exact causes or contributing factors to the occurrence of LBP is still inconclusive. Several studies indicate that physical factors play an important role (Heymans et al., 2010; Soucy et al., 2006), and others indicate that psychosocial factors contribute to the epidemiology of LBP (George et al., 2006; Vindigni et al., 2005; Yip & Ho, 2001). In this current study, participants were required to indicate their opinions on the nine contributing factors to LBP, which were identified in a literature search and then prioritized in a Delphi study. The majority (86.3%) of participants in the current study, mean score 36.47 (SD=7.77) agreed on all nine contributing factors that they play role in development of LBP. Physiotherapists in the Delphi study indicated that repetitive lifting and transferring of the patients is one of the reasons to develop LBP.

In this current study, nearly 66% of the participants strongly believed that repetitive heavy lifting could contribute to the occurrence of LBP, and just more than a half believed that compensation situations due to injuries at work places could contribute to the development of chronic LBP and may worsen the already existing pain. Similarly, Knibbe and Friele (1996)

in their study among nurses found that repetitive heavy lifting was perceived by the nurses to be one of the contributing factors to their LBP. Equally, Samad et al. (2010) in their study among Malaysian teachers confirmed that, repetitive heavy lifting of loads such as books and sports equipment was perceived by many teachers to be one of the contributing factors to their LBP. Moreover, previous studies have frequently concluded that repetitive heavy lifting have a significant association with occurrence of LBP (West & Gardner, 2001; Yip & Ho, 2001; Smedley et al., 1995). Furthermore, about 53.2% of the participants in the current study strongly believed that flexion movements which are combined with compressive forces to the spine could contribute to the occurrence of LBP. These findings are in agreement with Reid and McNairy (2000) who in their study concluded that flexion movements combined with compressive forces in the spine pose a risk for developing LBP. More than half (50.2%) of the participants in the current study indicated physically demanding jobs as risk factor for developing LBP. This has also been confirmed in other studies and the more the task is physically demanding the higher the risk of developing LBP (Okunribido et al., 2008; Lemoyne et al., 2007; Morris, 2006). In addition, the findings of the current study show that, 46.3% of the participants believed that frequent twisting and bending of the spine could contribute and may worsen the LBP. Similar findings were concluded in the previous studies (Glover, et al., 2005; Cromie et al., 2000). For instance, Vindigni et al. (2005) indicated that about 48.1% of the participants in their study believed that, frequent bending and twisting of the spine to be a reason for their LBP. Other movements such as flexion, twisting and/or rotation of the spine have also been implicated to be a risk factor to develop LBP (West & Gardener, 2001; Smedley et al., 1995). Exposing the body to the constant and continuous vibrating forces such as driving trucks, operating cranes during constructions could cause trauma to the spine due to mechanical stress and strain, thus leading to the development of LBP (Tavafian et al., 2004; Wilder et al., 1996; Burdorf et al., 1993). In the current study,

more than a quarter of the participants believed that the whole body vibrations could lead to development of LBP. Trauma or injuries to the back could be a risk factor to development of LBP. For instance, events like sport injuries, motor vehicle accident and work related trauma have been described as contributing factors to the occurrence of LBP (Vindigni et al., 2005), however, the authors did not find any significant association between physical trauma and development of LBP. The findings of the current study also noted that (49.3%) of the participants believed that, trauma or injury to the back could be an important contributing factor to LBP.

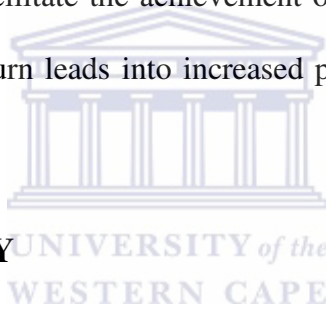
Another contributing factor identified by the Delphi group was that a previous history of low back injuries could contribute to development of LBP. In the current study, previous back injuries was indicated by 38% of the participants as an important contributing factors to LBP, similarly 34% of the study done by Vindigni et al. (2005) reported the same. Moreover, previous back injuries have been reported to be a significant predictor for development of LBP in the future (Maul et al., 2003). Consequently, Abenhaim et al. (1988) found that about 67% of the participants in their study suffered LBP was associated with their previously injured spine. In contrast, Astrand and Isacsson (1988) in their study did not find any association between previous history of back injury and the subsequent episode of LBP.

It was reported by participants in the current study that fear avoidance belief was one of the contributing factors to LBP (35.1%). Picavet et al. (2002) in their population based study concluded that fear avoidance beliefs is a risk factor for LBP, and George et al. (2006) confirms that fear avoidance beliefs and somatization (feeling sick without an actual disease) increases the risk of developing chronic LBP and may be a significant indicator for development of disability and abstinence of physical activities (Fritz et al., 2001).

One can thus conclude that LBP has no one single cause or contributing factor and it is therefore prudent for the health care provider to identify what patients think about the source of their LBP and their understanding and expectations in terms of managing their LBP.

5.6 SIGNIFICANCE OF THE STUDY

This study has identified the possible knowledge gaps and wrongful attitudes and beliefs about LBP among patients attending treatment at physiotherapy outpatient departments in Malawi. The results could therefore be used as basis to advocate for the establishment/ improvement of health promotion programs, in order to enhance patients' knowledge about LBP. Furthermore, the findings of this study could also contribute to improve the physiotherapy services and to facilitate the achievement of the desired clinical outcomes in management of LBP, which in turn leads into increased patient's satisfaction (Sarah, 2000; Burton et al., 1999).



5.7 CHAPTER SUMMARY

This chapter discussed the main findings of the current study, considering the study objectives. The discussion took into account, compared and contrasted the findings of this study with other relevant studies in the same field. The findings of the current study were mostly in conformity with findings of other studies. Among the main findings of the current study is that patients with LBP are lacking knowledge in several aspects of their LBP and majority tend to develop negative attitudes and beliefs about their LBP. This may affect the management of LBP and it could hinder the achievement of the desired treatment outcomes, and thus need to be addressed accordingly.

The next chapter presents the summary and conclusion of the current study as well as the recommendations based on the findings of this study.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

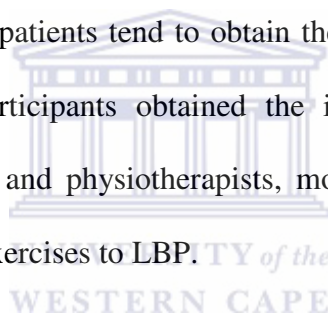
6.0 INTRODUCTION

This last chapter provides a summary and conclusion of the current study. The details of the main findings of the study are highlighted, and the recommendations based on the findings of the current study are made. Finally, the strengths, weakness and limitations of the study are outlined.

6.1 SUMMARY

Low back pain is a predominant health problem worldwide. In Africa alone, the prevalence of LBP in the general population is quite high and it is predicted to increase in the near future. The LBP patients are affected in all aspects of their life, both physically, emotionally, socially, psychologically and economically. Notwithstanding this, the majority of LBP patients lack knowledge of LBP and its contributing risk factors. Furthermore, in the literature it has been frequently stated that individuals with LBP tend to have different opinions regarding the causes, treatment and the recovery of LBP. Even though there is still an argument about the exact cause of LBP, research results demonstrate that LBP is multifactorial by origin and that no single factor could be implicated as the source of LBP. Because of this uncertainty many patients with LBP tend to seek information regarding their LBP from uninformed sources, which may result in patients tending to develop negative attitudes and beliefs about their LBP. In this study the general knowledge (understanding) including the attitudes and beliefs of LBP patients on the contributing risk factors to LBP were assessed, the primary aim being to establish the knowledge (understanding), attitudes and beliefs on contributing factors to LBP among LBP patients attending physiotherapy

outpatient treatment in Malawi. The study was done at physiotherapy outpatient departments in two selected hospitals in Malawi, Kamuzu and Queen Elizabeth Central Hospitals. This study was a descriptive quantitative cross-sectional study, using a self-administered questionnaire. Two hundred and five (205) participants who suffered from LBP were conveniently recruited and voluntarily consented to participate in the study. All ethical procedures were met and observed throughout the study period. The current study revealed that participants had varied opinions regarding their LBP. The majority demonstrated negative attitudes and beliefs on several aspects of their LBP and agreed that the nine established contributing factors in the Delphi study pose a risk for one to develop LBP. They also demonstrated partial knowledge on the course and causes of LBP in general. It is also evident in the current study that patients tend to obtain the information regarding their pain from diverse sources. Most participants obtained the information regarding their LBP predominantly from the doctors and physiotherapists, mostly being information about the self-care and the importance of exercises to LBP.



6.2 CONCLUSION

The overall aim of this study was to establish the knowledge (understanding), attitudes and beliefs on contributing factors to LBP among LBP patients attending physiotherapy outpatient departments in Malawi. The aim and objectives of this study were achieved. The partial knowledge demonstrated by the majority of participants in the current study on the course and causes of LBP, together with the negative attitudes and beliefs portrayed by the participants on their LBP, and the positive correlation between attitudes, beliefs and knowledge, highlights the need of health education to the patients and the general public. This may enhance their knowledge on LBP and its contributing factors and possibly change their negative attitudes and beliefs about LBP and contribute towards combating development of chronic pain situations.

6.3 RECOMMENDATIONS

Empowering LBP patients with knowledge about their illness is essential as patients will have power to make an informed decision about their illness and to take the necessary action about their own well-being. The current study concluded that most participants were partially knowledgeable on the course and causes of LBP in general and the majority demonstrated negative attitudes and beliefs regarding their LBP. Therefore, based on the findings of the current study, some recommendations have been proposed.

6.3.1 To the Government of Malawi

Low back pain should be viewed by Malawi government as a public health problem. Therefore, the government should provide education about LBP to the general public. This could enrich the public with the knowledge of LBP and its contributing factors and it could probably reduce the prevalence and the impact of LBP to the general population. Public media and other channels of information could be used to disseminate this information in order to reach to the general public. Revision of the curricula of health profession students should also be updated with the current knowledge on patient education.

6.3.2 To the Ministry of Health

The Ministry of Health as designated government agent to oversee the public health related issues should ensure that in all levels of health care delivery system from referral hospitals to health centers the information about LBP and its preventive measures is available and accessible to the health service consumers. The provision of this information makes the patients well informed about their pain and it could improve patients' knowledge on LBP and limits the development of negative attitudes and beliefs on LBP among patients. In addition,

it will enable the patients to make an informed decision about the management of their health problem once they understand their health problem.

6.3.3 To the Hospital Administrators

It is important for the Hospital administrators to be vigilant with the impact brought by LBP in the health care system. Seeing that both patients and healthcare professionals are greatly at risk to LBP, instituting preventive measures at hospital level and also empowering patients with knowledge at hospital level should be given a priority. Therefore, hospital administrators should make sure that the programs aiming to prevent and reduce the occurrence of LBP are established and implemented within the hospital level. The hospital administrators should therefore create a comfortable working environment to those individuals providing health services to patients with LBP. The resources including LBP information booklet for the patients should be made available.

6.3.4 To the Physiotherapists and other Health care providers

It is indisputable that patients' attitudes and beliefs about their pain have an impact on the recovery. Positive attitudes and beliefs on pain facilitate the achieving of the desired treatment outcomes. Therefore, physiotherapists and other health care providers dealing with patients with LBP should first strive to identify the patients' perception and beliefs vested on their LBP. The health care providers need to understand the pain from patient's perspective by realizing that patients are the experts of their own pain. Therefore patient-centered approach should be emphasized.

6.4 STRENGTHS, WEAKNESS AND LIMITATIONS OF THE STUDY

6.4.1 Strengths of the study

Firstly, this study is believed to be the first to be done in Malawi regarding knowledge (understanding), attitudes and beliefs on contributing factors to LBP among patients with LBP attending physiotherapy outpatient treatment in Malawi. This implies that, the study could be used as the initial reference and it could serve as baseline for future studies related to the same field. Secondly, the use of Delphi study with 75% response rate of the experts during validation of the contributing factors to LBP, as well as 68% participation rate of the participants suffering from LBP, strengthens the importance of the study. The results of this study could serve as a base for encouraging patient education on LBP to be included in curricula of healthcare students, to be included in healthcare programs and to be used as a preventive strategy against the development of chronic LBP.

6.4.2 Weakness of the study

The use of self-administered questionnaire needed participants to remember and indicate the sources and the types of the information they received regarding their LBP. Therefore, the accuracy of the recalled information cannot be guaranteed.

6.4.3 Limitations of the study

The current study sought the opinions of the experts in the field of LBP in order to validate the most important contributing factors to LBP. However, the study did not categorize those factors which contribute to acute LBP and those contributing to chronic LBP. It would be of importance if this will be addressed in further studies because patients with acute LBP and those with chronic LBP may not hold similar beliefs regarding their LBP and its contributing factors.

A quantitative cross section survey employing a convenience sampling method was used in the current study. Although the study sample was obtained from two large referral hospitals, the sample might not be representative enough to generalize the findings of the study to the entire population in Malawi. Thus, further research is warranted which will incorporate larger variety of subjects in order to gain the greater insight about patient's knowledge, attitudes and beliefs on contributing factors to LBP in Malawi.




REFERENCES

- Abenhaim, L., Suissa, S., & Rossignol, M. (1988). Risk of recurrence of occupational back pain over three year follows up. *British Journal of Industrial Medicine*, 45, 829-833.
- Adams, M.A. (2004). Biomechanics of back pain. *Acupuncture in Medicine*, 22(4), 178-188.
- Adam, S.R. (2009). Back pain and sciatica. *Anaesthesia Analogy*, 85, 1066-1070.
- Ahh, S., & Song, R. (2009). Bone mineral density and perceived menopausal symptoms: Factors influencing low back pain in postmenopausal women. *Journal of Advanced Nursing*, 65(6), 1228-1236.
- Aittomaki, A., Lahelma, E., Rahkonen, O., Leino-Arjas, P. & Martikainen, P. (2007). The contribution of musculoskeletal disorders and physical workload to socioeconomic inequalities in health. *The European Journal of Public Health*, 17(2), 145-150.
- Allock, N., Elkan, R., & Williams, J. (2007). Patients referred to pain management clinic: Beliefs, expectations and priorities. *Journal of Advanced Nursing*, 60(3), 248-256.
- Astrand, N.E., & Isacson, S.O. (1988). Back pain, back abnormalities, and competing medical, psychological, and social factors as predictors of sick leave, early retirement, unemployment, labour turnover and mortality: A 22 year follow-up of male employees in a Swedish pulp and paper company. *British Journal of Industrial Medicine*, 45, 387-395.
- Baker, J., Lovell, K., & Harris, N. (2006). How expert are the experts? An exploration of the concept of 'expert' within Delphi panel techniques. *Nurse Researcher*, 14, 59-70.

- Balague, F., Nordin, M., Skovron, M.L., Dutoit, G., Yee, A., & Waldburger, M. (1994). Non-specific low back pain among schoolchildren: A field survey with analysis of some associated factors. *Journal of Spinal Disorders*, 5, 374-379.
- Balague, F., Troussier, B., & Salminen, J.J. (1999). Non-specific low back pain in children and adolescents: Risk factors. *European Spine Journal*, 8, 429-438.
- Bassols, A., Bosch, F., Campillo, M., Canellas, M., & Banos, J.E. (1999). An epidemiological comparison of pain complaints in the general population of Catalonia (Spain). *Pain*, 83, 9-16.
- Bejia, I., Younes, M., Jamila, H.B., Khalfallah, T., Ben, Salem, K., Touzi, M., Akrouit, M., & Bergaoui, N. (2005). Prevalence and factors associated to low back pain among hospital staff. *Joint Bone Spine*, 72, 254-259.
- Bork, B.E., Cook, T.M., Rosecrance, J.C., Engelhardt, K.A., Thomason, M.J., Wauford, I.J., & Worley, R.K. (1996). Work-related musculoskeletal disorders among physical therapists. *Physical Therapy*, 76(8), 827-835.
- Bradford, D.S. (1995). *Adult Scoliosis*. Chapter 17. In J.E., Lonstein, D.S., Bradford, R.B., Winter and J.W. Ogilvie (Eds.). *Moe's Textbook of Scoliosis and Other Spinal Deformities* (3rded). Philadelphia: W.B. Saunders Company.
- Bradley, C. (1995). Health beliefs and knowledge of patients and doctors in clinical practice and research. *Patient Education and Counselling*, 26, 99-106.
- Brattberg, G. (2004). Do pain problems in young school children persist into early adulthood? A 13-year follow-up. *European Journal of Pain*, 8, 187-199.

- Bruce, F., Walker, D.C., Reinhold, M., & William, D.G. (2004). Low back pain in Australian adults' health provider utilization and care seeking. *Journal of Manipulative and Physiological Therapeutics*, 27(5), 327-335.
- Burckhardt, C.S. (2005). Educating patients: Self-management approaches. *Disability and Rehabilitation*, 27(12), 703-709.
- Burdorf, A., Naaktgeboren, B., & de Groot, H.C. (1993). Occupational risk factors for low back pain among sedentary workers. *Occupational Medicine*, 35(12), 1213-1220.
- Burton, A.K., Clarke, R.D., McClune, T.D., & Tillotson, K.M. (1996). The natural history of low back pain in adolescents. *Spine*, 21(20), 2323-2328.
- Burton, A.K., Waddell, G., Tillotson, K., Malcolm, C., & Summerton, N. (1999). Information and advice to patients with back pain can have a positive effect. A randomized controlled trial of a novel educational booklet in primary care. *Spine*, 24(23), 2484-2491.
- Butler, D.S., & Moseley, G.L. (2003). *Explain Pain*. Adelaide: Neuro Orthopaedic Institute (NOI) Group Publications.
- Cameron, L.L., Halperin, W.E., Tanaka, S., & Guo, H.R. (1999). Back pain prevalence in US industry and estimates of lost work days. *American Journal of Public Health*, 89(7), 1029-1035.
- Campoo, M. (2008). Work-related musculoskeletal disorders in physical therapists. *Physical Therapy*, 88(5), 608-620.

- Carson, G. (2009). *Social Model of disability: Scottish Accessible Information Forum*. Retrieved August 13, 2011, from <http://www.slideshare.net/srains/the-social-model-of-disability-scottish-accessible-information-forum-july-2009>
- Cassidy, J.D.C., Cote, P.D.C., Carroll, L.J., & Kristman, V. (2005). Incidence and course of low back pain episodes in the general population. *Spine*, 24, 2817-2823.
- Chiu, T.W.T., & Lam, K.W.P. (2007). The prevalence of and risk factors for neck pain and upper limb pain among secondary school teachers in Hong Kong. *Journal of Occupational Rehabilitation*, 17, 19-32.
- Clarke, C.L., Ryan, C.G., & Martin, D.J. (2011). Pain neurophysiology education for the management of individuals with chronic low back pain: A systematic review and meta-analysis. *Manual Therapy*, 1-6 doi: 10.1016/j.math.2011.05.003
- Cilliers, L. (2007). *Evaluating the knowledge, attitudes and beliefs about the prevention and self-treatment principles for low back pain among nursing staff in Cecilia Makiwane Hospital East London Hospital Complex*. Unpublished Master's thesis. School of Public Health: University of the Western Cape.
- Cole, M.H., & Grimshaw, P.N. (2003). Low back pain and lifting: A review of epidemiology and aetiology. *Journal of Prevention, Assessment and Rehabilitation*, 21, 173-184.
- Cromie, J.E., Robertson, V.J., & Best, M.O. (2000). Work-related musculoskeletal disorders in physical therapists: Prevalence, severity, risks and responses. *Physical Therapy*, 80(4), 336-351.
- Cunningham, C., Doody, C., & Blake, C. (2008). Managing low back pain: Knowledge and attitudes of hospital managers. *Occupational Medicine*, 58, 282-288.

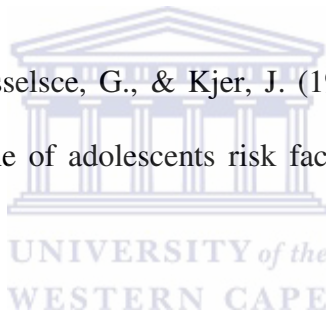
- Custer, R.L., Scarcella, J.A., & Stewart, B.R. (1999). The modified Delphi technique: A rotational modification. *Journal of Vocational and Technical Training*, 15(2), 1-10.
- De Vos., A. (2002). *Research at Grass Roots for the Social Sciences and Human Service Professions*. Pretoria, South Africa: Van Schaik Publishers.
- Deyo, R.A., Mirza, S.K., & Martin, B.I. (2006). Back pain prevalence and visit rates: estimates from US. National surveys 2002. *Spine*, 31(23), 2724-2727.
- Diaz, J.H. (2001). Carpal tunnel syndrome in female nurse anaesthetists versus operating room nurses: Prevalence, laterality, and impact of handedness. *Anaesthesia and Analgesia*, 93(4), 975-980.
- Direct Relief International Malawi. (2010). *Queen Elizabeth Central Hospital*. Retrieved April 12, 2010, from  <http://www.directrelief.org/whereWeWork/Countries/Malawi/QueenElizabeth.asp>
- Djavid, G.E., Mehrdad, R., Ghasemi, M., Zadeh, H.H., Manesh, A.S., & Pouryaghoub, G. (2007). In chronic low back pain, low level laser therapy combined with exercise is more beneficial than exercise alone in the long term: A randomized trial. *Australian Journal of Physiotherapy*, 53, 155-160.
- Eraker, S.A., Kirscht, J.P., Becker, M.H., & Arbor, A. (1984). Understanding and improving patient compliance. *Annals of Internal Medicine*, 100(2), 258-268.
- Feldman, D.E., Shrier, I., Rossignol, M., & Abenhaim, L. (2001). Risk factors for the development of low back pain in adolescence. *American Journal of Epidemiology*, 154(1), 30-36.

- Fochsen, G., Josephson, M., Hagberg, M., Toomingas, A., & Lagerstrom, M. (2006). Predictors of leaving nursing care: A longitudinal study among Swedish nursing personnel. *Occupational and Environmental Medicine*, 63, 198-201.
- Foppar, I., & Novack, R.H. (1996). The relation of self-reported back pain to psychosocial, behavioral, and health related factors in a working population in Switzerland. *Social Science and Medicine*, 43(7), 1119 -1126.
- Foster, N.E., Pincus, T., Underwood, M., Vogel, S., Breen, A., & Harding, G. (2003). Treatment and the process of care in musculoskeletal conditions: A multidisciplinary perspective and integration. *Orthopedic Clinics of North America*, 34, 239-244.
- Fowler, R.P., & Dabco, D.C. (2004). Recommendations for management of uncomplicated back pain in the workers compensation system. A focus on functional restoration. *Journal of Chiropractic Medicine*, 3(4), 129-137.
- Freburger, J.K., Holmes, G.M., Agans, R.P., Jackmans, A.M., Darter, J.D., Wallace, A.S., Castel, L.D., Kalsbeek, W.D., & Carey, T.S. (2009). The rising prevalence of chronic low back pain. *Archieve of Internal Medicine*, 169 (3), 251-258.
- Fritz, J.M., George, S.Z., & Delitto, A. (2001). The role of fear-avoidance beliefs in acute low back pain: Relationships with current and future disability and work status. *Pain*, 94, 7-15
- Frost, H., Lamb, S.E., Doll, H.A., Carver, P.T., & Brown, S.S. (2004). Randomized controlled trial of physiotherapy compared with advice for low back pain. *British Medical Journal*, 329, 708 doi:10.1136/bmj.38216.868808.7C.

- Furinghetti, F., & Pehkonen, E. (2002). *Rethinking characterization of belief*. In *Beliefs: A hidden variable in mathematics education*. In G. Leder, E., Pehkonen & G. Torner (Eds.). Dordrecht: Kluwer.
- Galukande, M., Muwazi, S., & Mugisa, B.D. (2006). Disability associated with low back pain Mulago Hospital Uganda. *African Health Science*, 6, 173-176.
- Gatchel, R.J., Mayer, T.G., Kidner, C.L., & McGeary, D.D. (2005). Are gender, marital status or parenthood risk factors for outcome of treatment for chronic disabling spinal disorders? *Journal of Occupational Rehabilitation*, 15(2), 191-201.
- Gatchel, R.J., Polatin, P.B., & Mayer, T.G. (1995). The dominant role of the psychological risk factor in development of chronic low back pain disability. *Spine*, 20, 2702-2709.
- George, S.Z., Wittmer, V.T., Fillingim, R.B., & Robinson, M.E. (2006). Fear-avoidance beliefs and temporal summation of evoked thermal pain influence self-report of disability in patients with chronic low back pain. *Journal of Occupational Rehabilitation*, 16(1), 95-108.
- Geraci, M.C., Brown, W., & Velasquez, J.R. (2005). Low back pain in adolescent athletes: Diagnosis, rehabilitation and prevention. *Human Kinetics*, 10(5), 6-16.
- Ghaffari, M., Alipour, A., Jensen, I., Farshad, A.A., & Vingard, E. (2006). Low back pain among Iranian industrial workers. *Occupational Medicine*, 56, 455-460.
- Global Health Council .(2010). *Investigating the health care force to combat HIV/AIDS in Malawi*. Retrieved April 14, 2010, from <http://www.globalhealth.org/reports/report.php3?id=200>.

- Glover, W., McGregor, A., Sullivan, C., & Hague, J. (2005). Work-related musculoskeletal disorders affecting members of the Chartered Society of Physiotherapy. *Physiotherapy*, 91(3), 138-147.
- Godges, J.J., Anger, M.A., Zimmerman, G., & Delitto, A. (2008). Effect of education on return to work status for people with fear avoidance beliefs and low back pain. *Physiotherapy*, 88(2), 231-239.
- Gold, B., Sternfeld, B., Kelsey, L., Brown, C., Mouton, C., Reame, N., Salamone, L., & Stellato, R. (2000). Relation of demographic and lifestyle factors to symptoms in a multi-racial/ethnic population of women 40-55 years of age. *American Journal of Epidemiology*, 152(5), 463-473.
- Goldberg, M.S, Scott, S.C., & Mayo, N.E. (2000). A review of the association between cigarette smoking and the development of nonspecific back pain and related outcomes. *Spine*, 25, 995-1014.
- Gourmelen, J., Chastang, J.F., Ozguler, A., Lanoe, J.L., Ravaud, J.F., & Leclerc, A. (2007). Frequency of low back pain among women and men aged 30 to 64 years in France. Results of two national surveys. *Annals of Readaptation and Physical Medicine*, 50, 640-644.
- Grenier, S.G., Russell, C., & McGill, S.M. (2003). Relationships between lumbar flexibility, sit-and-reach test, and a previous history of low back discomfort in industrial workers. *Canadian Journal of Applied Physiology*, 28(2), 165-177.
- Grimmer, K., & Williams, M. (2000). Gender-age environmental associates of adolescent low back pain. *Applied Ergonomics*, 31, 343-360.

- Gurney, B. (2002). Leg length discrepancy. *Gait and Posture*, 15(2), 195-206.
- Guzman, J. (2001). Multidisciplinary rehabilitation for chronic low back pain: A systematic review. *British Medical Journal*, 322, 1511-1516.
- Hagen, K., Zwart, J.A., Svebak, S., Bovim, G., & Jacob, S.L. (2005). Low socioeconomic status is associated with chronic musculoskeletal complaints among 46, 901 adults in Norway. *Scandinavian Journal of Public Health*, 33(4), 268-375.
- Hanney, W.J., Kolber, M.J., & Beekhuizein, K.S. (2008). Implications for physical activity in the population with low back pain. *American Journal of Lifestyle Medicine*, 3(1), 63-70.
- Harreby, M., Neergaard, K., Hesselsce, G., & Kjer, J. (1995). Are radiological changes in thoracic and lumbar spine of adolescents risk factors for low back pain in adults? *Spine*, 20, 2298-2302.
- Harreby, M., Nygaard, B., Jessen, T., Larsen, E., Storr-Paulsen, A., Lindahl, A., Fisker, I., & Laegaard, E. (1999). Risk factors for low back pain in cohort of 1389 Danish school children: An epidemiologic study. *European Spine Journal*, 8, 444-450.
- Harringe, M.L., Nordgren, J.S., Arvidsson, I., & Werner, S. (2007). Low back pain in young female gymnasts and the effect of specific segmental muscle control exercises of the lumbar spine. A prospective controlled intervention study. *Knee Surgery Sports Traumatology Arthroscopy*, 15, 1264-1271.
- Hart, C. (2001). *Doing a literature search*. London: Sage Publication.



- Hartvigsen, J., Leboueuf-Yde, C., Lings, S., & Corder, E. (2000). Is sitting-while at work associated with low back pain? A systematic critical literature review. *Scandinavian Journal of Public Health, 28*, 230-239.
- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing, 32*(4), 1008-1015.
- Hayden, J.A., Van Tulder, M.W., & Tomlinson, G. (2005). Systematic review: Strategies for using exercise therapy to improve outcomes in chronic low back pain. *Annals International Medicine, 142*, 776-785.
- Hedge, A. (2009). *Back care for Nurses*. Retrieved May 7, 2011, from <http://www.spineuniverse.com/wellness/ergonomics/back-care-nurses>
- Henrotin, Y.E., Cedrasch, C., Duplan, B., Bazil, T., & Duquesnoy, B. (2006). Information and low back pain management: A systematic review. *Spine, 31*(11), E326- E334.
- Heymans, M.W., Van Buuren, S., Knol, D.L., Anema, J.R., Van Mechelen, W., & de Vet, H.C.W. (2010). The prognosis of chronic low back pain is determined by changes in pain and disability in the initial period. *Spine, 10*(10), 847-856.
- Holder, N.L., Clark, H.A., Di Blasio, J.M., Hughes, C.L., Scherpf, J.W., Harding, L., & Shepard, K.F. (1999). Cause, prevalence and response to occupational musculoskeletal injuries reported by physical therapists and physical therapist assistants. *Physical Therapy, 79*(7), 642-652.
- Howick, J. (2009). *Oxford Centre for evidence Based Medicine: Levels of Evidence*. Retrieved April 20, 2010, <http://www.cebm.net/index.aspx?o=1025>

- Hsu, C.C., & Sandford, B.A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research and Evaluation*, 12(10), 1-7.
- Huo, J.Y., & Shiao, J.S.C. (2006). Risk factors for musculoskeletal discomfort in nurses. *Journal of Nursing Research*, 14(3), 228-236.
- Ihlebaeck, C., & Ericksen, H.R. (2003). Are the “myths” of low back pain alive in general Norwegian population? *Scandinavian Journal of Public Health*, 31, 395-398.
- Ihlebaeck, C., & Ericksen, H.R. (2005). Myths and perceptions of back pain in the Norwegian population, before and after the introduction of guidelines for acute back pain. *Scandinavian Journal of Public Health*, 33, 401-406.
- Ijzelenberg, W., & Burdorf, A. (2004). Patterns of care for low back pain in a working population. *Spine*, 29(12), 1362-1368.
- Jeffries, L.J., Milanese, S.F., & Grimmer-Somers, K.A. (2007). Epidemiology of adolescent spinal pain: A systematic review of the research literature. *Spine*, 32, 2630-2637.
- Jensen, M.P., Turner, J.A., Romano, J.M., & Lawler, B.K. (1994). Relationship of pain-specific beliefs to chronic pain adjustment. *Pain*, 57, 301-309.
- Jensen, J.N., Albertsen, K., Borg, V., & Nielsen, K.N. (2009). The predictive effect of fear-avoidance beliefs on low back pain among newly qualified health care workers with and without previous low back pain: A prospective cohort study. *BMC Musculoskeletal Disorders*, 10: 117 doi: 10.1186/1471-2474-10-117.

- Jensen, J.N., Karpatschof, B., Labriola, M., & Albertsen, K. (2010). Do fear avoidance beliefs play a role on the association between low back pain and sickness absence? A prospective cohort study among female health care workers. *Journal of Occupational Environmental Medicine*, 52, 85-90.
- Jesson, J., & Lacey, F. (2006). How to do (or not to do) a critical literature review. *Pharmacy Education*, 6(2), 139-148.
- Jin, K., Sorock, G.S., & Courtney, T.K. (2004). Prevalence of low back pain in three occupational groups in Shanghai, People's Republic of China. *Journal of Safety Research*, 35, 23-28.
- Katz, J.N. (2006). Lumbar disc disorders and low back pain: Socioeconomic factors and consequences. *Journal of Bone and Joint Surgery*, 88(2), 21-24.
- Keen, S., Dowell, D.C., Hurst, K., Klaber-Moffett, J.A., Tovey, P., & Williams, R. (1999). Individual with low back pain: How do they view physical activity? *Family Practice*, 16, 39-45.
- Kerr, M.S., Frank, J.W., Shannon, H.S., Norman, W.K., Wells, R.P., Neumann, W.P., & Bombardier, C. (2001). Biomechanical and psychosocial risk factors for low back pain at work. *American Journal of Public Health*, 19(7), 1069-1075.
- Knibbe, J.J., & Friele, R.D. (1996). Prevalence of back pain and characteristics of the physical workload of community nurses. *Ergonomics*, 39(2), 186-198.

- Knutson, G.A. (2005). Anatomic and functional leg-length inequality: A review and recommendation for clinical decision-making. Part 1, anatomic leg-length inequality: Prevalence, magnitude, effects and clinical significance. *Chiropractic and Osteopathy*, 13:11 doi: 10.1186/1746-1340-13-11
- Koes, B.W., Van Tulder, M.W., & Thomas, S. (2006). Diagnosis and treatment of low back pain. *British Medical Journal*, 332, 1430-1434.
- Korkmaz, N.C., Carlak, U., & Telci, E.A. (2011). Musculoskeletal pain, associated risk factors and coping strategies on school teachers. *Scientific Research and Essays*, 6(3), 649-657.
- Kovacs, F.M., Gestoso, M., Gil del Real, M.T., Lopez, J., Mufraggi, N., & Mendez, J.I. (2003). Risk factors for non-specific low back pain in schoolchildren and their parents: a population based study. *Pain*, 103(3), 259-268.
- Kujala, U.M., Salminen, J.J., Taimela, S., Oksanen, A., & Jaakkola, L. (1992). Subject characteristics and low back pain in young athletes and non-athletes. *Medical Science Sports Exercise*, 24(6), 627-632.
- Lake, J.K., Power, C., & Cole, T.J. (2000). Back pain and obesity in the 1958 British birth cohort: Cause or effect? *Journal of Clinical Epidemiology*, 53, 245-250.
- Latza, U., Karmans, W., Strurmer, T., Steiner, M., Neth, A., & Rehder, U. (2000). Cohort of occupational risk factors of low back pain in construction workers. *Journal of Occupational Environmental Medicine*, 57(1), 28-34.
- Law, M., Stewart, D., Pollock, N., Letts, L., Bosch, J., & Westmorland, M. (1998). Guidelines for critical review form- quantitative studies. *Quantitative Review Form Guideline*, 2-11.

- Lee, C.M., Jeong, E.H., & Freivalds, A. (2001). Biomechanical effects of wearing high-heeled shoes. *International Journal of Industrial Ergonomics*, 28, 321-326.
- Lee, Y.H. & Chiou, K.W. (1994). Risk factors for low back pain and patient handling capacity of nursing personnel. *Journal of Safety Research*, 25, 1335-1345.
- Lemoyne, J., Laurencelle, L., Lirette, M., & Trudeau, F. (2007). Occupational health problems and injuries among Quebec's physical educators. *Applied Ergonomics*, 38, 625-634 doi: 10.1016/j.apergo.06.004
- Lerner, E.B., Jehle, D.V., Janickle, D.M., & Moscati, R.M. (2000). Medical communication Do our patients understand? *American Journal of Emergence Medicine*, 18, 764-766.
- Linton, S.J., Helsing, A.L., & Halden, K.A. (1998). Population based study of spinal pain among 35-45 year old individuals: Prevalence, sick leave and health care use. *Spine*, 23, 1457-1463.
- Linton, S.J., Vlaeyen, J., & Ostelo, R. (2002). The back pain beliefs of health care providers: Are we fear-avoidant? *Journal of Occupational Rehabilitation*, 12, 223-232.
- Lonberg, F., Pedersen, P.A., & Siersma, V. (2010). Early predictors of the long-term outcome of low back pain-results of a 22-year prospective cohort study. *Family Practice*, 27(6), 609-614.
- Lopper, J. (2006). *Inclination towards positive or negative way of thinking*. Retrieved March 20, 2010, from http://personaldevelopment.suite101.com/article.cfm/what_is_attitude
- Louma, K., Riihimaki, H., Luukkonen, R. Raininko, R., Viikari-Juntura, E., & Lamina, A. (2000). Low back pain in relation to lumbar disc degeneration. *Spine*, 25, 487-492.

- Louw, Q.A., Morris, L.D., & Grimmer, K.S. (2007). The Prevalence of low back pain in Africa: A systematic review. *BMC Musculoskeletal Disorders*, 8:105 doi: 10.1186/1471-2474-8-105
- Lyons, J. (2002). Factors contributing to low back pain among professional drivers: A review of current literature and possible ergonomic controls. *Work*, 19, 95-102
- Macarthur, A.J., Macarthur, C., & Weeks, S.K. (1997). Is epidural anaesthesia in labor associated with chronic low back pain? A Prospective cohort study. *Anaesthesia Analogy*, 85(5), 1066-1070.
- Maciel, S.C., Jennings, F., Jones, A., & Natour, J. (2009). The development and validation of low back pain knowledge questionnaire-LKQ. *Clinic*, 12, 1167-1175.
- Mackie, H.W., Legg, S.J., & Beadle, J. (2004). Development of activity monitoring for determining load carriage patterns in school students. *Work*, 22(3), 231-237.
- Mackie, H.W., Stevenson, J.M., Reid, S.A., & Legg, S.J. (2005). The effect of simulated school load carriage configurations on shoulder strap tension forces and shoulder interface pressure. *Ergonomics*, 36(2), 199-206.
- Maguire, M., & O'Connell, T. (2007). Ill health retirement of school teacher in the Republic of Ireland. *Occupational Medicine*, 57, 191-193 doi: 10.1093/occmed/kqm001
- Marteau, T.M., & Johnston, M. (1990). Health professionals: Source of variance in health outcomes. *Psychology and Health*, 5, 47-58.
- Martin, W. (2008). *Whole body vibration and low back pain*. First update. Retrieved November 5, 2010, from <http://www.worksafe.bc.com/evidence>

- Maul, I., Laubli, T., Klipstein, A., & Krueger, H. (2003). Causes of low back pain among nurses: A longitudinal study across eight years. *Occupational Environmental Medicine*, 60, 497-503.
- May, S. (2007). Patients' attitudes and beliefs about back pain and its management after physiotherapy for low back pain. *Physiotherapy Research International*, 12(3), 123-135.
- Mayer, J.M., Haldeman, S., Tricco, A.C., & Dagenais, S. (2010). Management of chronic low back pain in active individuals. *Spine Conditions*, 9(1), 60-66.
- McIntosh, A., & Shaw, C.F.M. (2003). Barriers to patient information provision in primary care: Patients and general practitioners' experience and expectations of information for low back pain. *Health Expectations*, 6, 19-29.
- Medical Disability Guideline. (2010). Low back pain. Retrieved March 4, 2010, from <http://www.mdguidelines.com/low-back-pain>
- Meeus, M., Nijs, J., Van Oosterwijck, J., Van Alsenoy, V., & Truijen, S. (2010). Pain physiology education improves pain beliefs in patients with chronic fatigue syndrome compared with pacing and self-management education. A double blind randomized controlled trial. *Archives of Physical Medicine and Rehabilitation*, 91(8), 1153-1159.
- Merskey, H., & Bogduk, N. (1994). *Classifications of Chronic pain. Description of chronic pain syndromes and definitions* (2nd ed.) Seattle WA: IASP Press.
- Mitchell, T., O'Sullivan, P.B., Burnett, A.F., Straker, L., & Ruud, C. (2008). Low back pain characteristics from undergraduate student to working nurse in Australia: A cross-sectional survey. *International Journal of Nursing Studies*, 45(11), 1636-1644.

Morris, C.E. (2006). *Low Back Syndromes: Integrated Clinical Management*. New York: McGraw-Hill Companies.

Mortimer, M., & Ahlberg, G. (2003). To seek or not to seek? Care-seeking behaviour among people with low back pain. *Scandinavian Journal of Public Health*, 31(3), 194-203.

Moseley, G.L. (2002). Combined physiotherapy and education is efficacious for chronic low back pain. *Australian Journal of Physiotherapy*, 48, 297-302.

Moseley, G.L. (2004). Evidence for a direct relationship for cognitive and physical change on education intervention in people with chronic low back pain. *European Journal of pain*, 8, 39-45.

Moseley, G.L., Nicholas, M.K., & Hodges, P.W. (2004). A randomized clinical trial of intensive neurophysiology education in chronic low back pain. *Clinical Journal of Pain*, 20(5), 324-330.

Mukaruzima, L. (2010). *The relationship between physical activity and low back pain among nurses in Kanombe Military Hospital*. Unpublished Master's mini thesis: University of the Western Cape.

Murphy, S., Buckle, P., & Stubbs, D. (2007). A cross-sectional study of self-reported back and neck pain among English schoolchildren and associated physical and psychological risk factors. *Applied Ergonomics*, 38, 797-804.

Mwilila, M.C. (2008). *Work related low back pain among clinical nurses in Tanzania*. Unpublished Master's thesis. Physiotherapy department: University of the Western Cape.

- Myers, D. (2006). *What is the risk factor?* Retrieved April 8, 2010, from http://coloncancer.about.com/od/fqs/f/Risk_Factor.htm
- Nachemson, A., & Johnson, E. (2000). *The scientific evidence of cause, diagnostic and treatment*. Philadelphia: Lippincott Williams and Wilkins.
- Naidoo, J., & Wills, J. (2000). *Health Promotion: Foundation for Practice* (2nded). Royal College of Nursing London: Harcourt Publishers Limited.
- Naidoo, R., & Coopoo, Y. (2007). The health and fitness profile of nurses in Kwa-Zulu Natal. *Curationis Research Magazine*, 30, 1-8.
- Nelson, A., Fragala, G., & Menzel, N. (2003). Myths and facts about back injuries in nursing. *The American Journal of Nursing*, 103(2), 32-41.
- Ng'uurah, J.N., & Frantz, J.M. (2006). Health education needs among individuals with low back pain. *South African Journal of Physiotherapy*, 62(4), 22-27.
- Nigel, H. (1999). *Alternative answers to back problems*. South Africa: Heritage publishers. Pty Limited.
- Norris, C.M. (2000). *Back stability*: United States of America: Edward brothers
- 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.
- Olsen, T.L., Anderson, R.L., Dearwater, S.R., Kriska, A.M., & Cauley, J.A. (1994). The epidemiology of low back pain in an adolescent population. *American Journal of Public Health*, 82(4), 606-608.

- Omokhodion, F.O., Umar, U.S., & Ogunnowo, B.E. (2000). Prevalence of low back pain among staff in rural hospital in Nigeria. *Occupation Medicine*, 50(2), 107-110.
- Pajares, M.F. (1992). Teachers' beliefs and education research: Cleaning up a messy construct. *Review of Educational Research*, 62(3), 307-332.
- Pengel, L.H.M., Herbert, R.D., Maher, C.G., & Refshauge, K.M. (2003). Acute low back pain: Systematic review of its prognosis. *British Medical Journal*, 327, 323-327.
- Picavet, H.S.J., Vlaeyen, J.W.S., & Schouten, J.S.A. (2002). Pain catastrophizing and kinesiophobia: Predictors of chronic low back pain. *American Journal of Epidemiology*, 156, 1028-1034.
- Pithwa, Y.K. (2011). *Tips for back and neck care*. Retrieved September 10, 2011, from <http://www.spine-surgeon.org/tips.htm>
- Poland, B.D., Green, L.W., & Rootman, I. (Eds.). (2000). *Settings for Health Promotion. Linking Theory and Practice*. Newbury Park, Canada: Sage Publication.
- Polit, D.F., Beck, C.T., & Hungler, B.P. (2001). *Essentials of Nursing Research, Methods, Appraisal, and Utilization* (5thed.). Philadelphia: Lippincott Publishers.
- Preisinger, E., Alacamlioglu, Y., Pils, K., Bosina, E., Metka, M., Schneider, B., & Ernst, E. (1996). Exercise therapy for osteoporosis: Results of a randomised controlled trial. *British Journal of Sports Medicine*, 30(3), 209-212.
- Prista, A., Balague, F., Nordin, M., & Skovron, M.L. (2004). Low back pain in Mozambican adolescents. *European Spine Journal*, 13, 341-345.

- Rainville, J., Smeets, R.J., Bendix, T., Tveito, T.H., Poirandeau, S., & Indahl, A. (2011). Fear-avoidance beliefs and pain avoidance in low back pain-translating research in clinical practice. *The Spine Journal*, 11, 895-903.
- Reid, D.A., & McNairy, P.J. (2000). Factors Contributing to low back pain in rowers. *British Journal of Sports Medicine*, 34, 321-325.
- Reisbord, L.S., & Greenland, S. (1985). Factors associated with self-reported back pain prevalence: A population-based study. *Journal of Chronic Disability*, 38, 691-702.
- Retsas, A., & Pinikanana, J. (2000). Manual handling activities and injuries among nurses: An Australian hospital study. *Journal of Advanced Nursing*, 31(4), 875-883.
- Roland, M., & Dixon, M. (1989). Randomized controlled trial of an educational booklet for patients presenting with back pain in general practice. *Journal of the Royal College of General Practitioners*, 39, 244-246.
- Roupa, Z., Vassilopoulos, A., Sotiropoulou, P., Makrinika, E., Noula, M., Faros, E., & Marvaki, C. (2008). The problem of low back pain in nursing staff and its effect on human activity. *Health Science Journal*, 4, 219-225.
- Roux, C., Priol, G., Fechtenbaum, J., Cortet, B., Liu-Lecage, S., & Audran, M. (2007). A clinical tool to determine the necessity of spine radiography in postmenopausal women with osteoporosis presenting with back pain. *Annals of the Rheumatic Disease*, 66, 81-85.
- Royal College of General Practitioners. (1994). *Clinical standards advisory guidelines-back pain*. London: Her Majesty's Stationery Office (HMSO).

- Rugelj, D. (2003). Low back pain and other work-related musculoskeletal problems among physiotherapists. *Applied Ergonomics*, 34(6), 635-639.
- Ryan, C.G., Gray, H.G., Newton, M., & Granat, M.H. (2010). Pain biology education and exercise classes compared to pain biology education alone for individuals with chronic low back pain: A pilot randomised controlled trial. *Manipulative Therapy*, 15, 382-387.
- Samad, I.A., Abdullah, H., Moin, S., Tamrin, B.M., & Hashim, Z. (2010). Prevalence of low back pain and its risk factors among school teachers. *American Journal of Applied Sciences*, 7(5), 634-639.
- Samanta, A., & Beardsley, J. (1999). Low back pain: Which is the best way forward? *British Medical Journal*, 318, 1122-1123.
- Sandmark, H. (2000). Musculoskeletal dysfunction in physical education teachers. *Occupational Environmental Medicine*, 57, 673-677 doi: 10.1136/oem.57.10.673
- Sarah, K. (2000). *Back sufferer's bible. You can treat your own back*. Australia: Allenand and Unwin publishers.
- Schneider, S., Hauf, C., & Schiltewolf, M. (2005). Back care programs for Health Promotion-representative user profile and correlates of participation in German. *Preventive Medicine*, 40, 227-238.
- Schneider, S., Schmitt, H., Zoller, S., & Schiltewolf, M. (2005). Work stress, life style and social factors are correlates of back pain. A representative study of the German working population international association. *Occupation Environmental Health*, 78, 253-269.

- Sievert, L., & Goode-Null, S. (2005). Musculoskeletal pain among women of menopausal age in Puebla, Mexico. *Journal of Cross Cultural Gerontology*, 20(2), 127-140.
- Sikiru, L., & Hanifa, S. (2010). Prevalence and risk factors of low back pain among nurses in a typical Nigerian hospital. *African Health Sciences*, 10, 26-30.
- Skelton, A.M., Murphy, E.A., Murphy, R.J.L., & O'Dowd, T.C. (1996). Patient's views of low back pain and its management in the general practice. *British Journal of General Practice*, 46, 153-156.
- Skulmoski, G.J., Hartman, F.T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education*, 6, 1-20.
- Smedley, J., Egger, P., Cooper, C., & Coggon, D. (1995). Manual handling activities and risk of low back pain in nurses. *Occupational and Environmental Medicine*, 52(3), 160-163.
- Smith, D.R., Sato, M., Miyajima, T., Mizutani, T., & Yamagata, Z. (2003). Musculoskeletal disorders self-reported by female nursing students in central Japan: A complete cross-sectional survey. *International Journal of Nursing Studies*, 40(7), 725-729.
- Soucy, I., Truchon, M., & Cote, D. (2006). Work related factors contributing to chronic disability in low back pain. *Work*, 26, 313-326.
- Stergioulus, A., Fillippou, D.K., Triga, A., Grigoriadis, E., & Shipkov, C.D. (2004). Low back pain in physical education teachers. *Folia Medicine*, 46(3), 51-55.
- Suh, D., & Kim, S. (1995). Bone mineral density findings in women with chronic low back pain. *Journal of Korean Academy of Rehabilitation Medicine*, 19, 823-830.

- Symonds, T.L., Burton, A.K., Tillotson, K.M., & Main, C.J. (1995). Absence resulting from low back trouble can be reduced by psychosocial intervention at the work place. *Spine*, 20(24), 2738-2745.
- Symonds, T.L., Burton, A.K., Tillotson, K.M., & Main, C.J. (1996). Do attitudes and beliefs influence work loss due to low back trouble? *Occupational Medicine*, 46, 25-32.
- Tavafian, S.S., Eftekhar, H., Mohammad K., Jamshidi, A.R., Assasi, N., Shojaeezadeh, D., & Ghofranipour, F. (2004). Patient's knowledge, perception and belief about the reasons of low back pain. *Iranian Journal of Public Health*, 33(4), 57-60.
- Tavafian, S.S., Jamshidi, A.R., Mohammad, K., & Montazeri, A. (2007). Low back pain education and short term quality of life: A randomized trial. *BMC Musculoskeletal Disorders*, 8:21 doi: 10.1186/1471-2474-8-21
- Toroptsova, N.V., Benevolenskaya, L.I., Karyakin, A.N., Sergev, I.L., & Erdesz, S. (1995). Cross-sectional study of low-back pain among workers at an industrial enterprise in Russia. *Spine*, 20,328-32.
- Trevelyan, F.C., & Legg, S.J. (2006). Back pain in school children-Where to from here? *Applied Ergonomics*, 37, 45-54.
- Trinkoff, A.M., Lipscomb, J.A., Geiger-Brown, J., & Brady, B. (2002). Musculoskeletal problems of the neck, shoulder, and back and functional consequences in nurses. *American Journal of Industrial Medicine*, 41(3), 170-178.
- Truchon, M., & Fillion, L. (2000). Bio psychosocial determinants of chronic disability and low back pain: A review. *Journal of Occupational Rehabilitation*, 10(2), 117-142.

- Tugwell, P.S., Santesso, N.A., O'Connor, A.M., & Wilson, A.J. (2007). Knowledge translation for effective consumers. *Physical Therapy*, 87(12), 1-12.
- Twomey, L., & Taylor, J.R. (Eds.). (2000). *Physical therapy of the low back* (3rd ed.). Edinburg, UK: Churchill Livingstone.
- United Nations Children's Education Fund. (2010). *Life skills*. Retrieved March 4, 2010, from http://www.unicef.org/lifeskills/index_7308.html
- United States of America, Bureau of Labor Statistics. (1998). *Current population survey and labor force, employment and unemployment from current population survey: US*. Department of Labor, Washington DC. Retrieved May 10, 2010, from <http://www.bls.gov/cps/home.htm> External Web Site Icon
- Urquhart, D.M., Bell, R.J., Cicuttini, F.M., Cui, J., Forbes, A., & Davis, S.R. (2008). Negative beliefs about low back pain are associated with high pain intensity and high level disability in the community-based women. *BMC Musculoskeletal Disorders*, 9:148 doi: 10.1186/1471-2474-9-148
- Valat, J.P., Goupille, P., & Vedere, V. (1997). Low back pain: Risk factors for chronicity. *Rheumatism Review*, 64(3), 189-194.
- Van Tulder, M.W., Koes, B.W., & Bouter, L.M. (1995). A cost of illness study of back pain in the Netherlands. *Pain*, 62, 233-240.
- Van Tulder, M. & Koes, B. (2002). Low back pain and sciatica: Acute. *Clinical Evidence Concise*, 8, 226-228.

- Van Vuuren, B.J., Becker, P.J., Van Heerden, H.J., Zinzen, E., & Meunisen, R. (2005). Low back pain problems and occupational risk factors in a South African steel industry. *American Journal of Industrial Medicine*, 47(5), 451-457.
- Van Vuuren, B.J., Van Heerden, H.J., Becker, P.J., Zinzen, E., & Meunisen, R. (2007). Lower back problems and work related risk in a South African manganese factory. *Journal of Occupational Rehabilitation*, 17, 199-211.
- Vanti, C., Gasperini, M., Morsillo, F., & Pillastrini, P. (2010). Low back pain in adolescents gymnasts. Prevalence and risk factors. *Scienza Rehabilitation*, 12(2), 45-50.
- Vieira, E. (2006). *Back pain a common problem for nurses*. Retrieved May 7, 2011, from <http://www.medicalnewstoday.com/articles/48381.php>
- Vindigni, D., Bruce, F., Walker, Jamison, J.R., Costa, C.D., Parkinson, L., & Blunden, S. (2005). Low back pain risk factors in a large rural Australian Aboriginal community. An opportunity for managing co-morbidities? *Chiropractic and Osteopathy*, 13:21 doi: 10.1186/1746-1340-13-21
- Vlok, J. (2005). *An investigation into the prevalence and occupational risk factors of low back pain in emergency medical services personnel*. Unpublished Master's thesis: Durban Institute of Technology.
- Volinn, E. (1997). The Epidemiology of low back pain in the rest of the world. A review survey in low and middle income countries. *Spine*, 22, 1747-1757.
- Von Korff, M., Lin, E.H., Fenton, J.J., & Saunders, K. (2007). Frequency and priority of pain patients' health care use. *Clinical Journal of Pain*, 23(5), 400-408.

- Waddell, G., Feder, G., & Lewis, M. (1997). Systematic reviews of bed rest and advice to stay active for acute low back pain. *British Journal of General Practice*, 47, 647-652.
- Waddell, G. (Ed.). (2004). *Pain and disability. The back pain revolution* (2nd ed.). Edinburgh, UK: Churchill Livingstone.
- Walker, B.F. (2000). The prevalence of low back pain: A systematic review of the literature from 1996 to 1998. *Journal of Spinal Disorders*, 13(3), 205-217.
- Walker, B.F., Muller, R., & Grant, W.D. (2004b). Low back pain in Australian adults. Health provider utilization and care seeking. *Journal of Manipulative Physiotherapy*, 27, 327-354.
- Watson, K.D., Papageorgiou, A.C., Jones, G.T., Taylor, S., Symmons, D.P.M., Silman, A.J., & Macfarlane, G.J. (2002). Low back pain in schoolchildren: Occurrence and characteristics. *Pain*, 97, 87-92.
- Weinman, J., Yusuf, G., Berks, R., Rayner, S., & Petrie, K.J. (2009). How accurate is patients' anatomical knowledge: A cross-sectional, questionnaire study of six patient groups and a general public sample. *BMC Family Practice*, 10:43 doi: 10.1186/1471-2296-10-43
- Werner, E.L. (2008). *Media campaign for improving knowledge, attitudes and practice in low back pain*. Dissertation for the degree of doctor of medicine. University of Bergen, Norway.
- West, D.J., & Gardner, D. (2001). Occupational injuries of physiotherapists in North and Central Queensland. *Australian Journal of Physiotherapy*, 47(3), 179-186.

- Whittfield, J., Legg, S.J., & Hedderley, D.I. (2005). Schoolbag weight and musculoskeletal symptoms in New Zealand secondary schools. *Applied Ergonomics*, 36, 193-198.
- Wilder, D.G., Pope, M.H., & Magnusson, M. (1996). Mechanical stress reduction during seated jolt/vibration exposure, *Seminars in Perinatology*, 20, 54-60.
- Woby, S.R., Roach, N.K., Urmston, M., & Watson, P.J. (2007). Outcome following physiotherapy led intervention for chronic low back pain: The important role of cognitive processes. *Physiotherapy*, E1-E10 doi:10.1016/j.physio.2007.08.008
- Woolf, A., & Pfleger, B. (2003). Burden of major musculoskeletal conditions. *Bull World Health Organ*, 81(9), 646-656.
- Woolf, A.D., Walsh, N.E., & Akesson, K. (2004). Global core recommendation for undergraduate curriculum. *Annals of Rheumatic Diseases*, 63, 517-524.
- Worku, Z. (2000). Prevalence of low back pain in Lesotho mothers. *Journal of Manipulative and Physiological Therapeutics*, 23(3), 147-154.
- World Health Organization. (2003). *Non Communicable disease Prevention and Health Promotion. Health and development through physical activity and sport*. Retrieved August 2, 2011, from http://whqlibdoc.who.int/hq/2003/WHO_NMH_NPH_PAH_o3.2.pdf
- World Health Organization. (2005). *Bangkok Charter for Health Promotion in a Globalized World*. Retrieved March 4, 2010, from http://en.wikipedia.org/wiki/Health_promotion
- World Health Organization. (1998). List of basic terms. *Health Promotion Glossary*. Retrieved May 14, 2010, from http://www.who.int/hpr/NPH/docs/hp_glossary_en.pdf

- Yildirima, Y., Karaa, B., Genc, A., Baskurt, Z., Baskurt, F., & Erbayraktarb, S. (2007). Evaluation of functional results according to Body Mass Index in patients with acute non-specific low back pain. *Journal of Back and Musculoskeletal Rehabilitation*, 20, 49-53.
- Yip, Y.B. (2004). New low back pain in nurses: Work activities, work stress and sedentary lifestyle. *Journal of Advanced Nursing*, 46, 430-440.
- Yip, B.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, B.Y., & Ho, S.C. (2001). Effects of socio-psychological stress on new and recurrent low back pain among Chinese community middle-aged women. *Psychology, Health and Medicine*, 6(4), 362-372.



APPENDIX A : Questionnaire (English version)

Questionnaire No.....

PATIENTS' VIEWS ON LOW BACK PAIN – A QUESTIONNAIRE

Dear participant,

I thank you for agreeing to participate in the study; you are encouraged to ask questions if you need further clarification and understanding regarding the questions in the questionnaire. Your participation to the study is completely voluntary. Your information will be treated confidentially, and will not be disclosed in any means without your prior consent. You are allowed to withdraw from the study at any time without any litigation. To ensure your privacy and anonymity **DO NOT** write your name on this questionnaire.

The purpose of the questionnaire is to gather information about your knowledge of low back pain, and your beliefs on contributing factors to your low back pain. So we need your ideas as to what have caused your back pain and what contributes to recurrence and lasting of your (and other) back pain. Therefore:-

SECTION A-1 will enquire about your demographic and social information

SECTION A-2 will gather information on the current state of *your back pain*

SECTION B-1 will capture information on what you think about *your back pain*

SECTION B-2 seeks your opinion on the causes of *back pain in general*

SECTION B-3 will capture your opinion on contributing factors to *low back pain in general*

SECTION B-4 intend to identify the sources of your knowledge and views on low back pain

SECTION A-1: SOCIAL-DEMOGRAPHIC DATA.

Age (Please indicate)

Gender: Male Female

Marital status: Single Married Divorced Separated

Widow Widower Others

Education level: Primary Level Secondary level Tertiary level

Never attended school

Employment status: Employed Not employed



(a) If you are employed please indicate your occupation:

.....

(b) If you are **NOT** employed, what income generating activities are you involved in?

(Please indicate)

1.....
2.....

Living area: Rural Urban

SECTION A-2: YOUR CURRENT BACK ACHE SITUATION

1. Is your current low back pain?

- Intermittent [i.e. comes and goes]
- Continuous [never without back pain]
- The first episode

2. For how long have you had back pain problems?

- 1 week 2 weeks 4 weeks 2 months
- 3 months More than 6 months

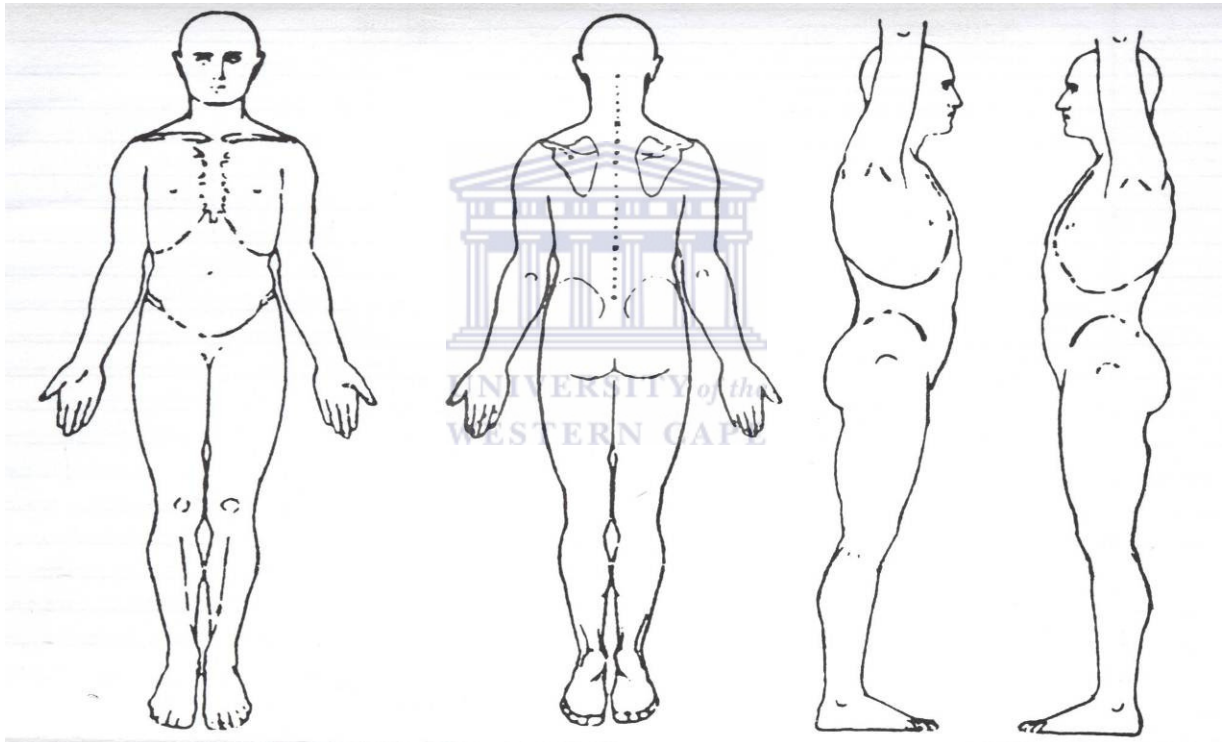
3. Have you had treatment for your low back pain?

- Yes No (If “NO” skip question 4 below)

4. What effect did the treatment received had on your back pain?

- Helped until this episode
- Only relieved LBP for a few hours
- Did not really change my back pain

5. Indicate by shading or circling on the body figures below where you feel your low back pain



SECTION B-1: ATTITUDES AND BELIEFS OF THE PARTICIPANTS ABOUT THEIR BACK PAIN

Indicate your response from “*Strongly Agree*” to “*Strongly Disagree*” on each of the following statements about your opinion on your low back pain.

Please indicate your answer by putting X in the appropriate box.

	Statement	Strongly agree	Agree	Do not know	Disagree	Strongly disagree
1	Because of your low back pain you should avoid movements that involve your low back as you may cause more injuries.					
2	Accepting your pain may facilitate recovery from low back pain					
3	It is only the health personnel that can cure your low back pain					
4	Self- management on your low back pain has no effect on the recovery from low back pain					
5	Low back pain will eventually stop you from working					
6	Your low back pain will last for the rest of your life					
7	Your low back pain will never stop you from doing what you really want to do					
8	Because of your low back pain, you should abandon your life duties, and should not do any physical activities as you may cause more damage.					
9	Having low back pain, may mean you will end up with disability.					
10	You can control how much pain you feel by changing your thoughts.					
11	To know more about your pain, the best way is to go to the health care facility					
12	Low back pain gets progressively worse later in life.					

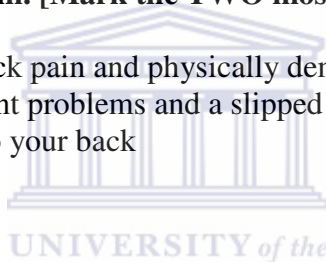
SECTION B-2: YOUR KNOWLEDGE ABOUT THE COURSE AND CAUSES OF LOW BACK PAIN IN GENERAL.

1. With regards to acute low back pain, Mark the TWO most CORRECT statements:

- a) The great majority of patients recover in three weeks.
- b) After recovery and improvement of the pain, the patient is cured and there is no risk of further crises.
- c) Instructions on how to protect the spine are only important during the crisis.
- d) The actions and exercises for spine protection and energy conservation should be routine in patients with a history of low back pain because relapses are frequent.
- e) I don't know.

2. These can cause low back pain. [Mark the TWO most CORRECT statements]

- a) Previous history of back pain and physically demanding work
- b) Postural problems, joint problems and a slipped disc
- c) Trauma and injuries to your back
- d) Diabetes
- e) I don't know.



3. Indicate the factors which could contribute to the development and maintenance of low back pain. (You can indicate more than one)

- a) Physical factors
- b) Social factors.
- c) Psychological factors
- d) Work-related factors
- e) None of the above.
- f) I don't know.

4. To protect your spine, mark the TWO most CORRECT statements [i.e. which two are the most likely to protect your spine?]:

- a) The best way to sleep is on your stomach.
- b) Sit down to put on your socks and shoes.
- c) Pick up objects from the floor without bending your knees.
- d) Wash the dishes with your stomach leaning against the sink.
- e) I don't know.

5. Again, in relation to spinal protection, mark **ONEWRONG statement** below [i.e. which **one CANNOT** protect your spine?]:

- (a) You should get out of bed carefully, turning sideways with the help of your hands.
- (b) Avoid carrying too much weight on one side of your body (divide the load between both arms).
- (c) Avoid twisting of your spine.
- (d) Wear high heels all day.
- (e) I don't know.

6. In the following blocks indicate what you think could be the possible reasons for low back pain. [You can indicate more than one].

- (a) Poor sitting
- (b) Bending and twisting the trunk
- (c) Poor lifting of heavy loads
- (d) Poor working environment
- (e) Physical inactivity
- (f) I don't know

(g) Others (Please specify)

.....
UNIVERSITY of the
WESTERN CAPE

SECTION B-3: PARTICIPANTS' BELIEFS ON CONTRIBUTING FACTORS TO LOW BACK PAIN

In this part you are given list of factors which you can rate from '*Strongly Agree*' to '*Strongly Disagree*'

Please indicate your answer by putting X in the appropriate box

Statement	<i>Strongly agree</i>	<i>Agree</i>	<i>Do not know</i>	<i>Disagree</i>	<i>Strongly disagree</i>
1. Repetitive heavy lifting causes/worsens low back pain					
2. Compensation situations, e.g. work injuries could contribute to chronic low back pain					
3. A high frequency of twisting and bending of the spine worsens low back pain					
4. Previous back injuries do not lead to chronic low back pain					
5. Mechanical vibration of the whole body e.g. driving of trucks puts us in danger of developing low back pain.					
6. Physically demanding jobs could contribute and worsen low back pain.					
7. Low back pain may be as result of trauma or injury of the back					
8. Flexion combined with compressive force to the lumbar spine, e.g. in lifting heavy objects poses the risk of developing low back pain.					
9. Fear, that movement may injure structures in the back, may actually worsen back pain					

SECTION B-4: SOURCES OF YOUR KNOWLEDGE AND VIEWS ON LOW BACK PAIN

1. Have you ever been instructed or received information on low back pain and its contributing factors?

Yes No (If “YES” please answer questions number 2 to 5)

2. Where did you receive the information? (Please indicate as appropriate)

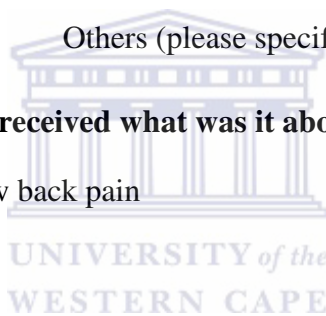
At school From the doctor From the Physiotherapist

From the Internet Media e.g. Radio, newspaper, TV

From the books Others (please specify).....

3. The type of information you received what was it about? [Mark as many as you want]

- a) Contributing factors to low back pain
- b) Self-care for your back
- c) Exercises for your back
- d) Importance of medication
- e) None of the above



4. Did you understand the information you were given about low back pain?

Completely Partially Not at all

5. Was the information that you received helpful for your low back pain?

Yes No I don't know

“Thank you very much for participating”

APPENDIX B : Questionnaire (Chichewa version)

Nambala ya Kafukufuku.....

MAGANIZO A ODWALA PAMOMWE AKUMVERA KUPWETEKKA MMUNSI MWA NSANA- MAFUNSO.

Okonedwa, Amai/Abambo

Zikomo povomereza kuchita nawo kafukufukuyu. Muli oloedwa kufunsa mafunso ngati simunamvetse mafunso omwe ali munsiwa. Kuchita nawo kafukufukuyu sikokakamiza. Choncho zonse zokhudzana ndi inu zidzasungidwa machinsinsi ndipo sizidzawuliridwakwa wina aliyense pokhapokha inu eni ake mutavomemereza kutero. Mulinso oloedwa kusiya kuchita kafukufukuyu pa nthawi ina iliyonse popanda kuyimbidwa mlandu wina uliwense. Muli kuwuzidwanso kuti musalembe dzina lanu ngati njira yokusungungira chinsinsi pa zonse mwalemba.

Cholinga cha mafunso otsatirawa ndi kufuna kupeza zonse inu mukudziwa pa zakupweteka kwa munsi mwa nsana, komanso zomwe inu mumakhululupirira kuti zimayambitsa kupweteka kwa nsana. Ndiponso tikufuna kumva maganizo anu pa zomwe zimayambitsa komanso kuwonjezera kuti nsana wanu upweteke.

Tifunanso kudziwa kuchokera m'maganizo anu zomwe zimapangitsa nsana kupweteka pafupipafupi komanso kusiya kupweteka. Choncho:-

CHIGAWO CHOYAMBA A-1: Mufunsidwa za kumalo kumene mukukhala komanso za chikalidwe chanu.

CHIGAWO CHOYAMBA A-2: Mufunsidwa za momwe kupweteka kwa nsana wanu kuliri panopa

CHIGAWO CHACHIWILI B-1: Mufunsidwa za momwe mukudziwa za kupweteka kwa munsi mwa nsana

CHIGAWO CHACHIWILI B-2: Mufunsidwanso za maganizo anu mwa chidule pa zomwe mukukhuganiza zimayambitsa kupweteka munsi mwa nsana.

CHIGAWO CHACHIWILI B-3: Mupeleka maganizo anu pa zomwe mukuganiza kuti zimathandizira kapena kuwonjezera kupweteka pa nsana wanu.

CHIGAWO CHACHIWILI B-4: Mufotokoze njira zomwe zinakuthandizani kuti mudziwe za kupweteka kwa munsi mwa nsana.

CHIGAWO CHOYAMBA A-1: CHIKHALIDWE- MAONEKEDWE AMALO.

Zaka (Chonde lembani)

Munthu: Wamamuna Wamkazi

Banja: Wosakwatiwa Wokwatiwa Banja linatha Munalekana

Mkazi wamasiye Mamuna wamasiye Zina

Maphunziro: Pulaimale Sekondale Maphunziro aukachenjede

Simunapite kusukulu

Ntchito: Muli pa ntchito Simuli pantchito



(a) Ngati muli pantchito, chonde tchulani ntchito yanu:.....

.....
.....

(b) Ngati simuli pantchito, ndi zinthu ziti zomwe zimakupezetsani ndalama?

(Chonde lembani)

1.....
2.....

Malo amene mukhala: Kumudzi Mtawuni

CHIGAWO CHOYAMBA A-2: MAPWETEKEDWE ANSANA WANU PANOPA

1. Kapwetekedwe kamunsi mwa nsana wanu ndi:-

[] Mwakanthawi [kubwera ndi kupita]

[] Kopitiriza [nthawi zonse umapweteka]

[] Ndikoyamba

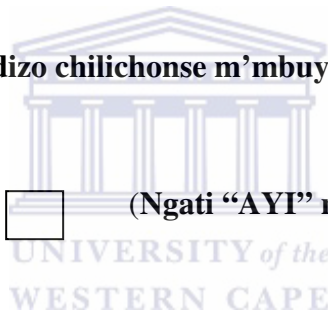
2. Msana wanu wakhala ukupweteka kwa nthawi yayitali bwaji?

Sabata imodzi Sabata ziwiri Sabata zinai Miyezi iwiri

Miyezi itatu Kupitirira miyezi isanu ndi umodzi

3. Mudalandirapo chithandizo chilichonse m'mbuyomu?

Inde Ayi (Ngati "AYI" musayankhe funso lachinayi)



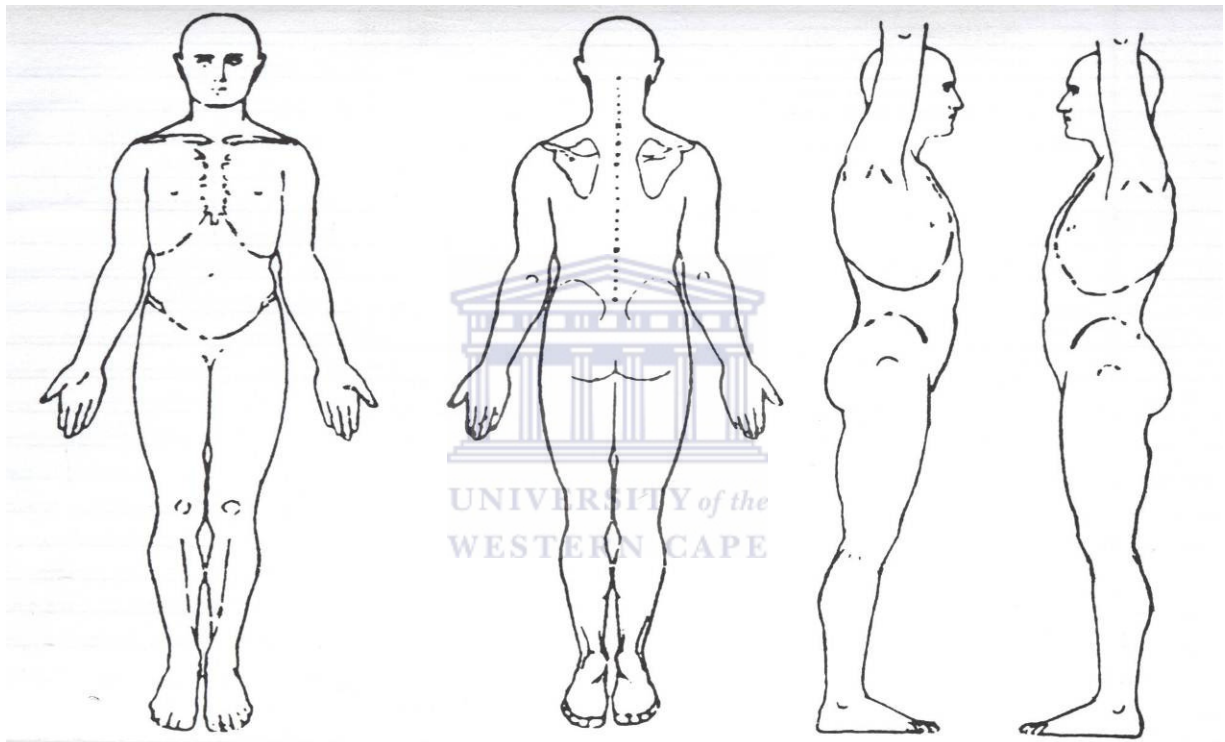
4. Padali kusintha kotani mutalandira chithandizo??

[] Unasiya kupweteka wangoyambanso pasachedwa.

[] Kupweteka kundayamba kwasiya kwa nthawi kochepea

[] Kupweteka kwa nsana sikudasinthe

5. Onetsani pa zithunzipa pamene mumamva kupweteka munyi mwa nsana wanu.



CHIGAWO CHACHIWIRI B-1: MUMAGANIZA BWANJI ZA KUPWETEKWA KWA NSANA WANU.

Onetsani yankho lanu ndi mau oti, “**ndikugwirizana nazo kwambiri**” mpakaso mau oti “**ndikukanitsitsa**” pa maganizo anu pa zakupweteka kwa muni mwa nsana wanu.

Chonde lembani yankho lanu polemba ndi chilembo cha X mubokosi loyenera.

	<i>Sitetimenti</i>	Ndikugwirizana nazo kwambiri	Ndikugwirizana nazo	Sindi kudziwa	Ndikukana	Ndikukana kwambiri
1	Chifukwa cha kupweteka kwa nsana wanu musamachite zinthu zomwe zimachititsa nsana wanu kupweteka, zimene zingavulalitse nsana wanu mopitirira					
2	Kuvomereza za kupweteka kwa nsana wanu kungapangitse kuti nsana wanu uchire					
3	Ndi anthu achipatala okha omwe angachize kupweteka kwa muni mwa nsana wanu wonse					
4	Kuzithandiza nokha nsana ukapweteka, sikungakuthandizeni kuti nsana wanu uchire					
5	Kupweteka kwa muni mwa nsana wanu kungadzakupangitseni inu mpaka kusiyana kugwira ntchito					
6	Kupweteka kwa muni wa nsana wanu kudzakhala choncho mpaka moyo wanu wonse.					
7	Kupweteka kwa muni mwa nsana wanu, sikungakupangitseni kusiyana kuchita zomwe mukufuna					
8	Chifukwa cha kupweteka kwa muni mwa nsana wanu, muyenera musiyana ntchito zonse mumagwira komanso musiyana ntchito zoremetsa powopetsa kuti mwina mutha kuvulalititsa nsana wanu mopitirira.					
9	Kupweteka kwa muni mwa nsana, kungathe kutanthauza kuti mudzakhala olumala moyo wanu					
10	Mungachepetse ululu posaganiza kwambiri za kupweteka kwa nsana wanu.					
11	Kuti mudziwe za mbiri za kupweteka kwa nsana wanu, muyenera kupita kuchipata					
12	Kapwetekedwe ka muni mwa nsana, kumakulirakulira, maka munthu akamakula					

**CHIGAWO CHA CHIWIRI B-2: KUDZIWA KWANU PAZOMWE
ZIMAYAMBITSA KUPWETEKWA MUNSI MWA NSANA WANU.**

1. Potengera kupweteka komwe kwangoyamba kumene kwa nsana wanu, chongani ziganizo ziwiri munsimo zomwe mukuona kuti ndizolondola:

- a) Anthu ambiri odwala amachira pakapita sabata zitatu.
- b) Anthu akachira komanso kupweteka kukasintha, odwala amachiriratu ndipo sadzamvanso kupweteka kuli konse kwa nsana.
- c) Malangizo a momwe tingasamalire nsana wathu ndiwofunika kwa mbiri. pa nthawi yomwe nsana ukupweteka kwambiri.
- d) Zochitachita, komanso zorimbitsa nsana kuti ukhale ndi mphamvu ziyenera kumachitika nthawi zonse kwa odwala omwe ali ndi mbiri ya vuto la nsana, chifukwa vutoli limatha kuyambiranso nthawi ina iliyonse.
- e) Sindikudziwa.

2. Izi zingapangitse kupweteka kwa munsu mwa nsana. Chongani ziganizo ziwiri zomwe ndizolondola:

- a) Mbiri ya kapwetekedwe ka nsana ndi mtundu wa ntchito yomwe yimapweteketsa nsana.
- b) Makhalidwe omwe amapweteketsa nsana, ndi vuto lomwe limabwera mkati mwa mafupa a nsana komanso ngati *madisiki* achoka mmalo mwake.
- c) Kumenyetseka ndi kuvulala kwa nsana.
- d) Matenda a *shuga*.
- e) Sindikudziwa.

3. Onetsani zinthu zomwe sizingathandizire kuti nsana wanu ukhale bwino, komanso kuchepetsa kupweteka kwa nsana. (Mutha kuonetsa zinthuzo mopitirira chimodzi)

- a) Ntchito zonse za manja (Zofunika mphamvu).
- b) Zinthu zokhudzana ndi chikhalidwe.
- c) Zinthu zomwe zokhudzana ndi momwe timaganizira.
- d) Zinthu zomwe zokhudzana ndi magwiridwe antchito.
- e) Palibe pa zonsezi
- f) Sindikudziwa.

4. Kuti munthu ateteze nsana wake, chongani ziganizo ziwiri zomwe ndizolondola zimene zingateteze nsana wanu:

- a) Njira ya bwino ndi kugona chafufumimba.
- b) Khalani pansi pamene mukuvala sokosi kapena nsapato.
- c) Tengani zinthu zonse kuchokera pansi mosapinda maondo anu.
- d) Tsukani ziwiya zodyera mutatsamira mimba yanu pa sinki.
- e) Sindikudziwa.

5. Poyang'ananso za kuteteza nsana wanu, chongani chiganizo CHOSALONDOLA pa ziganizo zili munsimu: (Ndi chiganizo chiti chomwe sichingateteze nsana wanu)?

- (a) Mudzuke pa bedi mosamala, tembenukani pothandizidwa ndi manja anu.
- b) Musamanyamule zinthu zolemera mbali imodzi ya thupi lanu. (gawani zolemerazazo mofanana mmanja anu).
- c) Musamapinde nsana wanu.
- d) Valani nsapato za zitali zitendene
- e) Sindikudziwa.

6. Mumabokosi ali muniwa, chongani chomwe chingayambitse kupweteka muni mwa nsana. (Mutha kuchonga zopitirira chimodzi).

- (a) Kukhala kosayenera
- (b) Kupinda ndi kukhotetsa thupi
- (c) Kunyamura zinthu zolemera mosasamala
- (d) Kugwira ntchito malo osayenera
- (e) Kusagwira ntchito za mphamvu
- (f) Sindikudziwa
- (g) Zina (Chonde lembani zinthu zake).....
.....

CHIGAWO CHACHIWIRI B-3: ZOMWE ZIMATHANDIZIRA KUPWETEKA MUNSI MWA NSANA

Apa mwapatsidwa zinthu zothandizira kuchokera zimene “mwagwirizanazo kwambiri” mpaka zimene “mukuzikana kwambiri”

Chonde onetsani yankho lanu polemba Chilembo cha X malo moyenerera.

<i>Sitetimenti</i>	<i>Ndikugwirizana nazo kwambiri</i>	<i>Ndikugwirazana nazo</i>	<i>Sindikudziwa</i>	<i>Ndikukana</i>	<i>Ndikukana kwambiri.</i>
1. Kuwirikiza kunyamula zinthu zolemela, kumapangitsa nsana kupweteka					
2. Nsana umapweteka chifukwa cha kuti ziwalo zina za thupi zavulala choncho mukuyenda mokhota					
3. Kupinda ndi kukhotetsa nsana kwambiri kumawonjezera munsu mwa nsana wanu kupweteka.					
4. Kuvulala nsana kwakale sikupangitsa nsana kumapweteka nthawi yayitali.					
5. Ntchito zina zomwe zimapangitsa thupi kuyendayenda kapena kunjanga monga kuyendetsa galimoto ya <i>traki</i> kumayambitsa nsana kupweteka.					
6. Ntchito zofunika kugwira mwa mphamvu zimawonjezera kupweteka kwa nsana wanu kwambiri.					
7. Kupweteka kwa munsu mwa nsana kutha kubwera chifukwa cha kuvulala kwa nsana kalekale.					
8. Kupinda ndi kuthinikiza nsana monga kunyamula zolemetsa zimabweretsa chiopsezo cha kupweteka nsana.					
9. Kuopa kulikonse koti kuyendetsa nsana kutha kuwononga nsana wanu, Mudziwe kuti ndiye kumawonjezera kupweteka kwa nsana.					

CHIGAWO CHACHIWIRI B-4: NJIRA ZOMWE ZINAKUTHANDIZANI KUTI MUDZIWE KOMANSO KUKUPATSANI MAGANIZO ZA KUPWETEKA KWA MUNSI MWA NSANA.

1. **Kodi mudalangizidwapo kapena kulandira uphungu wokhudzana ndi kupweteka kwa muni mwa nsana, komanso ndi zomwe zimathandizira kuti nsana upweteke?**

Inde Ayi (Ngati ndi “INDE” yankhani funso lachiwiri mpaka lachisanu)

2. **Kodi munadziwa kuchokera kuti?** (Chonde onetsani moyenera)

Kusukulu Kwa dokotara Kwa opangitsa *mafizo*

Kanema *yaintaneti* Kwa otola nkhanu ngati: Wailesi, nyuzi pepala, Kanema

Mabuku Zina (lembani njira zake).....

3. **Kodi ndizokhudzana ndichiyani pa zonse zimene unalandira kapena unamva?.**

[Chongani zimene mungathe kuchonga]

- a) Zothandizira kuti muni mwa nsana mupweteke.
b) Kuzisamalira nokha nsana wanu.
c) Kumachita masewero olimbitsa nsana wanu.
d) Ubwino womwa mankhwala.
e) Palibe mwa zonsezi

4. **Kodi munamvetsetsa zokhudzana ndi kupweteka kwa muni mwa nsana wanu?**

Ndidamva kwambiri Ndidamva pang'ono Sindinamve

5. **Kodi zimene munamvazo, zinali zothandiza pa kupweteka kwa muni mwa nsana wanu?**

Inde Ayi Sindikudziwa

“Zikomo kwambiri chifukwa chotenga nawo mbali pa kafukufukuyu”

APPENDIX C : List of simplified medical terms after pilot study

Section in the questionnaire	Question No	Term	Changed to:-
A-2	1	Episodic	Intermittent/comes and goes
B-2	2(b)	Athrosis	Joint problems
	2(b)	Herniated disc	Slipped disc

APPENDIX D : Information sheet (English version)



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9593647, Fax: 27 21-9592542

E-mail: jphillips@uwc.ac.za

INFORMATION SHEET

Dear Participant, greetings.

I am **Nesto Salia Tarimo**, a postgraduate student, currently pursuing a Master's degree in Physiotherapy at the University of The Western Cape (UWC) in the Republic of South Africa. As part of the programme I am required to conduct a research project to fulfil the requirements for the Master of Science degree in Physiotherapy. **The title for my research study is "Knowledge, attitudes and beliefs on contributing factors to low back pain among patients attending physiotherapy outpatient departments in Malawi."**

What is this study about?

This is a research project being conducted by **Nesto S. Tarimo**, at the University of the Western Cape. We are inviting you to participate in this research project because you are one of the participants who meet the inclusion criteria for this research study, which requires a participant who is suffering from low back pain and is currently receiving treatment for his or her pain.

The purpose of this research project is to establish the knowledge (understanding), attitudes and beliefs on contributing factors to low back pain among patients seeking physiotherapy services for their low back pain in Malawi.

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

You will be asked to sign up an agreement form for participation, and then you will be asked to answer the questionnaire concerning knowledge, attitudes and beliefs on contributing factors to low back pain. It will take you about 30 minutes to complete the questionnaire.

Would my participation in this study be kept confidential?

We will do our best to keep your personal information confidential. To help protect your confidentiality, the questionnaire that you will answer will not have your name on it and the completed questionnaires will be numbered. There will be nothing on the questionnaire that will identify you. If we write a report or article about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

There are no known risks associated with participating in this research project.

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 knowledge, attitudes and beliefs on contributing factors among patients suffering from low back pain. We hope that, in the future, other people might benefit from this study through improved understanding of the knowledge, attitudes and beliefs among the patients.

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

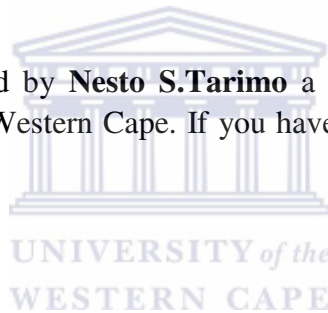
Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized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

Is any assistance available if I am negatively affected by participating in this study?

Any sensitive issues or questions which may arise from the study and could negatively affect the participant will be carefully observed and intervened accordingly.

What if I have questions?

This research is being conducted by **Nesto S.Tarimo** a Masters student in Physiotherapy department at University of the Western Cape. If you have any questions about the research study itself, please contact:



Nesto S. Tarimo,
Physiotherapy Department,
University of the Western Cape,
Private Bag X17,
Bellville,
Tell +27 21 959 2542 (department),
Cell: +27732006816.
Email: tarimonesto2003@yahoo.co.uk

OR 3073915@uwc.ac.za

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:

Professor J. Phillips,
Head of Physiotherapy Department,
University of the Western Cape,
Private Bag X17,
Bellville 7535,
Tel: +2721 9592546
Email: jphillips@uwc.ac.za

Professor R. Mpofu,
Dean Faculty of Community and Health Sciences,
University of the Western Cape
Private Bag X17
Bellville 7535,
Tel: +27 21 959 2631,
Email: rmpofu@uwc.ac.za

Professor Mfutso Bengo,
Chair person,
College of Medicine Research and Ethics Committee,
University of Malawi,
Private Bag 360,
Chichiri-Blantyre3.
Malawi.
Tel: +265 (0) 1877 245
Email: comrec@medicol.mw



This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee, also has been approved by Research and Ethics committee of College of Medicine of University of Malawi (COMREC).

APPENDIX E : Information sheet (Chichewa version)



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9593647, Fax: 27 21-9592542

E-mail: jphillips@uwc.ac.za

Folomu ya Chidziwitso

Okonedwa otenga nawo mbali, moni.

Ine ndine **Nesto Salia Tarimo**, wophunzira za u kachenjede wa za mafupa ku sukulu ya maphunziro a pamwamba ku, ya Western Cape (UWC) ku South Africa. Ngati mbali imodzi ya maphunziro anga ndi kuyenera kuchita kafukufuku pokwanilitsa zofunnika pa maphunziro a ukachenjede wokhudzana ndi za mafupa.

Mutu wa Kafukufuku yu ndi “M’meneanthu amadziwira, komanso mmene anthu amakhulupirira zinthu zomwe zimapangitsa ululu wa chapambali pa kumbuyo omwa anthu amamva ndipo amabwera ndi dandauloli kuti adzapeze chithandizo ku chipatala cha maupa cha ku Blantyre, Malawi”

Kodi kafukufukuyu ndi wa chiani?

Mukafukufukuyu tikufuna anthu omwe ali ndi bvuto la ululu wa pambali kumbuyo ndipo pakali pano anthuwa akulandlira chithandizo cha mankhwala kuchipatala cha mafupa. Cholinga chake ndikuti tikufuna kudziwa zomwe zimapangitsa ululuwu.

Kodi zomwe mudzafunsidwe ndiziti ngati mutabvomereza zodzapanga nawo mbali mukafukufukuyu?

Mudzafunsidwa ku dinda chidindo chobvomereza kutenga nawo mbali komanso mudzafunsidwa ku yankha mafunso okhudzana ndi kadziwidwe ndi zikhulupiriro zomwe zimapangitsa ululu wa chapambali ku mbuyo. Padzatenga pafupifupi mphindi makumi awiri kuti mumalize kuyanhka mafunsowa.

Kodi mudzandisungila chinsisi ndikatenga nawo mbali mukafukufukuyu?

Tidzayesetsa kusunga chinsisi choti musadziwike kwa anthu ena. Pofuna kuti musadziwike ndi anthu ena, chikalata chomwe padzakhale mafunso sipadzakhala dzina lanu koma padzangokhala numbala. Sipadzakhala chilichonse chokuzindikilitsani. Ngati padzakhale mwawi wolemba nkhani ya kafukufukuyu tidzayesetsa kukusungirani chinsisi mnjira ina iliyonse yomwe tingathere.

Kodi mukafukufukuyu muli zoyika moyo pa chiswe?

Palibe chodziwika chilichonse choti chingayike moyo wanu pa chiswe ngati mutatenga nawo mbali mukafukufukuyu.

Kodi kafukufukuyu ali ndi phindu lanji?

Kafukufukuyu sikuti adzathandiza inuyo kwenikweni, koma zotsatila zake zidzathandiza wofufuzayo kuti adziwe zambiri za mene anthu amadziwira za matendawa, zikhulupiliro zawo, komanso kuti adziwe zomwe zimapangitsa ululu wa chapambali kwamsana. Ndichiyembkezo chathu kuti zotsatila za kafukufukuyu zidzathandiza anthu ena kuwonjezera nzeru pa zikhulupiliro ndizomwe zimapangitsa kuti anthu azidwala matendawa.

Kodi ndiyenera kutenga nawo mbali mukafukufukuyu, nanga nditatenga nawo mbali, ndingasinthe maganizo anga ndikusiya kutenga nawo mbali nthawi ili yonse?

Kutenga nawo mbali mukafukufukuyu ndikongothandiza. Mukhoza kusankha kusatenga nawo mbali. Ngati mwafuna kutenga nawo mbali, muli ndi ufulu wosiya kutenga nawo mbali nthawi iliyonse. Mukasintha maganizo kusapiliza kutenga nawo mbali sikuti mudzalandila chilango kapena kutaya mwawo uli onse wopeza zomwe mukanapeza potenga nawo mbali mukafukufukuyu.

Kodi padzakhala thandizo lili lonse loperekedwa ngati kutenga nawo mbali mukafukufukuyu kudza bwezeretse zichitochito zanga?

Zinthu kapena mafunso amene angapezeke pa nthawi ya kafukufukuyu woti angabweretse m'mbuyo zichitochito zanu pa kutenga nawo mbali mukafukufukuyu zidzawunikidwa bwino ndipo zidzakonzedwa munjira yolongosoka.

Nanga nditakhala kuti ndili ndi mafunso?

Ngati mutakhala kuti muli ndi mafunso, chonde pititsani mafunso anu kwa mkulu wofufuza zakafukufukuyu kapena kadaulo/katakwe wa kafukufukuyu amene ma keyala awo alembedwa pamusipa pa chikalatachi.

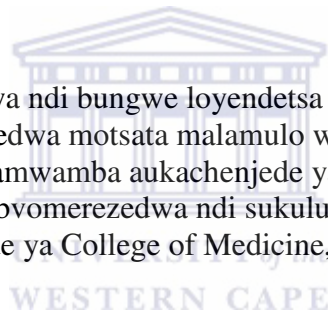
Nesto S. Tarimo,
Physiotherapy Department,
University of the Western Cape,
Private Bag X17,
Bellville,
Tell +27 21 959 2542 (Department),
Cell: +27732006816.
Email: tarimonesto2003@yahoo.co.uk OR 3073915@uwc.ac.za

Professor J. Phillips,
Head of Physiotherapy Department,
University of the Western Cape,
Private Bag X17,
Bellville 7535,
Tel: +27 21 959 2546,
Email: jphillips@uwc.ac.za

Professor R. Mpofu,
Dean of the Faculty of Community and Health Sciences,
University of the Western Cape,
Private Bag X17,
Bellville 7535,
Tel: +27 21 959 2631,
Email: rmpofu@uwc.ac.za

Professor Mfutso Bengo,
Chair person,
College of Medicine Research and Ethics Committee,
University of Malawi,
Private Bag 360,
Chichiri- Blantyre 3.
Malawi.
Tel: +265 (0) 1877 245
Email: comrec@medicol.mw

Kafukufukuyu wabvomerezedwa ndi bungwe loyendetsa za kafukufuku lomwe limawona kuti kafukufukuyu adzayendetsedwa motsata malamulo woyenera akafukufuku. Bungweli ndi la sukulu ya maphunziro a pamwamba aukachenjede ya Western Cape ku South Afilika. Komanso Kafukufukuyu wabvomerezedwa ndi sukulu ya maphunziro a pamwamba aukachenjede ya College of Medicine, ku Blantyre.



APPENDIX F : Consent form (English version)



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9593647, Fax: 27 21-959

E-mail: jphillips@uwc.ac.za

CONSENT FORM

Title of Research Project: “Knowledge, attitudes and beliefs on contributing factors among low back pain patients attending outpatient physiotherapy treatment in Malawi”.

The study has been described to me in 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.....

Witness’s name.....

Witness’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:

Study Coordinator’s Name: Dr. JH (Ina) DIENER.

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: (021)959-2542

Fax: (021)959-1217

Email: idiener@icon.co.za

Professor Mfutso Bengo,

Chair person,

College of Medicine Research and Ethics Committee,

University of Malawi,

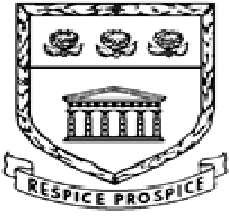
Private Bag 360,

Chichiri- Blantyre 3.

Malawi.

Tel: +265 (0) 1877 245

Email: comrec@medicol.mw



APPENDIX G :Consent form (Chichewa version)
UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9593647, Fax: 27 21-959

E-mail: jphillips@uwc.ac.za

Folomu yobvomereza

Dzina la Kafukufuku:

“M’mene anthu amadziwira, komanso mmene anthu amakhulupirira zinthu zomwe zimapangitsa ululu wa munsu mwa msana omwe anthu amamva ndipo amabwera ndi dandauloli kuti adzapeze chithandizo cha mafizo muzipatala M’Malawi”

Zochitika za mukafukufukuyu za fotokezedwa kwa ine muchilankhulo choti ndi machimva ndipo ndabvomereza mwa ine ndekha mwakufuna kwanga kutenga nawo mbali mukafukufukuyu. Mafunso onse amene ndinali nawo okhudzana ndi kafukufukuyu ayankhidwa. Ndamvetsa kuti zotenga nawo mbali mukafukufukuyu zidzakhala za chinsisi, anthu ena sadzadziwa zoti ndikutenga nawo mbali mukafukufukuyu komanso ndauidwa kuti ndili ndi ufulu wosiya kutenga nawo mbali mukafukufukuyu nthawi iliyonse posapereka chifukwa chilichonse ndipo kusapitiliza kutenga nawo mbali mukafukufukuyu sikuti ndizalandila nako chilango kapena kutaya mwayi wozeza zilizonse zomwe ndinayenera kuzeza potenga nawo mbali mukafukufukuyu.

Dzina la wotenga nawo mbali

Saini ya wotenga nawo mbali Tsiku.....

Dzina la mboni..... Saini ya mboni.....

Tsiku.....

Ngati mutakhala kuti muli ndi mafunso, chonde pititsani mafunso anu kwa mkulu wofufuza zakafukufukuyu kapena kadaulo/katakwe wa kafukufukuyu ma keyala amene alembedwa munsimu.

Study Coordinator’s Name: Dr. JH (Ina) DIENER.

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: (021)959-2542

Fax: (021)959-1217; Email: idiener@icon.co.za

Professor Mfutso Bengo,

Chair person,

College of Medicine Research and Ethics Committee,

Private Bag 360,

Chichiri- Blantyre 3.

Malawi.

Tel: +265 (0) 1877 245 ; Email: comrec@medicol.mw

APPENDIX H : Permission letter from physiotherapy department(UWC)

DEPARTMENT OF PHYSIOTHERAPY

Private Bag X17, Belville, 7535
South Africa
Tel: +27 (0) 21 959 2542/ 2546
Fax: +27 (0) 21 959 1217
E-mail: jfrantz@uwc.ac.za
Website: www.uwc.ac.za

27th September 2010

TO WHOM IT MAY CONCERN
Re: Tarimo Nesto
Student number: 3073915

Dear Sir/Madam

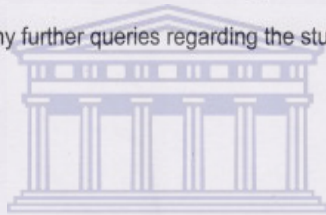
The following student Mr. Nesto has submitted his Research Proposal to the University of the Western Cape Higher Committee for ethical clearance and upon successful acceptance from the committee the student would be allowed to collect data.

We therefore request you to assist the student accordingly in his research project.

Contact the department for any further queries regarding the student + 27 21 959 3647 or email mwarner@uwc.ac.za

Yours sincerely

M. Warner
.....
Ms. Marla Warner
Postgraduate Administrator



UNIVERSITY of the
WESTERN CAPE



UNIVERSITY of the
WESTERN CAPE

A place of quality, a place to grow, from hope to action through knowledge.

APPENDIX I :Ethical clearance letter (University of the Western Cape)

**OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH
DEVELOPMENT**

Private Bag X17, Bellville 7535
South Africa
Telegraph: UNIBELL
Telephone: +27 21 959-2948/2949
Fax: +27 21 959-3170
Website: www.uwc.ac.za

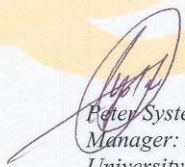
27 October 2010

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and the ethics of the following research project by:
Mr. N Tarimo (Physiotherapy)

Research Project: Knowledge, attitudes and beliefs on contributing factors among low back pain patients attending outpatient physiotherapy treatment in Malawi

Registration no: 10/9/22


Peter Syster
Manager: Research Development Office
University of the Western Cape



**UNIVERSITY of the
WESTERN CAPE**

A place of quality, a place to grow, from hope to action through knowledge

APPENDIX J :Ethical clearance letter from Ethics Committee Malawi



UNIVERSITY OF MALAWI

Principal
K.M Maleta, MBBS, PhD
Our Ref.:
Your Ref.: P.10/10/1005

College of Medicine
Private Bag 360
Chichiri
Blantyre 3
Malawi
Telephone: 01 877 245
01 877 291
Fax: 01 874 700
Telex: 43744

8th December 2010

Mr. Tarimo Nesto
C/O Dr. L. Kalilani-Phiri
College of Medicine
Public Health Department
Blantyre 3

Dear Mr. T. Nesto,

RE: P.10/10/1005 – Knowledge, Attitudes and Beliefs on Contributing Factors to Low Back Pain among Patients Attending Physiotherapy Outpatient Departments in Malawi

I write to inform you that COMREC reviewed your proposal mentioned above which you resubmitted for expedited review. The following points have been dealt with:

1. Chichewa consent has been submitted.
2. Clarification of study period has been made.

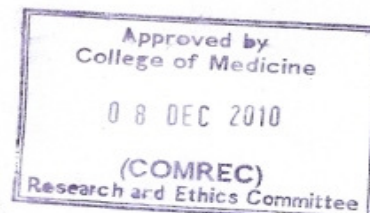
I am pleased to inform you that your protocol **was approved** after considering that you addressed all the queries raised in the initial review.

As you proceed with the implementation of your study we would like you to adhere the amended protocol ICH GCP requirements and the College of Medicine Research requirements as indicated on the attached page.

Yours Sincerely,

Dr. S. Kamiza
For:CHAIRMAN - COMREC

SK/ck



APPENDIX K : Permission letter from Kamuzu Central Hospital



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

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

E-mail:

The Hospital Director,
Kamuzu Central Hospital,
P. O. Box 149,
Lilongwe,
Malawi.

13th December 2010

Dear Sir/madam

RE: PERMISSION FOR DATA COLLECTION

The heading above refers; I am Nesto S. Tarimo, a postgraduate student (Masters Degree) at University of the Western Cape, Department of Physiotherapy. As a part of the requirements of the degree program I am required to conduct a research project. The title of my research is "**Knowledge, Attitudes and Beliefs on Contributing factors to low back pain among patients attending physiotherapy outpatient departments in Malawi**".

The research proposal has already been approved by the Senate of the University Western Cape High Degree Committee and College of Medicine Research and Ethical Committee (Comrec).

I am expecting to start data collection starting from January 2011. It is with this regard, I request for your permission to access your hospital for data collection. Attached with this letter is a copy of research proposal together with Ethical clearance letters as obtained from the University of the Western Cape and College of Medicine Research and Ethical committee.

Thank you for your kind consideration.

Nesto S. Tarimo

Dr. Ina Diener

Dr. Linda Kaliani Phiri

Principal investigator

Study Supervisor

Study Collaborator



APPENDIX L : Permission letter from Queen Elizabeth Central Hospital



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592542, Fax: 27 21-9591217

E-mail:

The Hospital Director,
Queen Elizabeth Central Hospital,
P. O. Box 95,
Blantyre,
Malawi.

13th December 2010

Dear Sir/madam

RE: PERMISSION FOR DATA COLLECTION

The heading above refers; I am Nesto S. Tarimo, a postgraduate student (Masters Degree) at University of the Western Cape, Department of Physiotherapy. As a part of the requirements of the degree program

I am required to conduct a research project. The title of my research is "Knowledge, Attitudes and Beliefs on Contributing factors to low back pain among patients attending physiotherapy outpatients departments in Malawi"

The research proposal has already been approved by the Senate of the University Western Cape High Degree Committee and College of Medicine Research and Ethical Committee (Comrec).

I am expecting to start data collection starting from January 2011. It is with this regard, I request for your permission to access your hospital for data collection. Attached with this letter is a copy of research proposal together with Ethical clearance letters as obtained from the University of the Western Cape and College of Medicine Research and Ethical committee.

Thank you for your kind consideration.

Nesto S. Tarimo

Dr. Ina Diener

Dr. Linda Kaliani Phiri

Principal investigator

Study Supervisor

Study Collaborator

APPENDIX M : Invitation letter to the experts for the Delphi study



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-9592642, Fax: 27 21-9591217

19th November 2010

Dear Colleagues, My name is **Nesto S. Tarimo**, a Masters student in Physiotherapy at the University of the Western Cape.

As part of the program requirements, I am conducting a research study. The title for my research study is "**Knowledge, attitudes and beliefs on contributing factors to low back pain among patients attending physiotherapy outpatient departments in Malawi**".

To develop a questionnaire for the patients to complete, a literature review was done to identify a list of possible contributing factors to low back pain. We attempt to validate this list of factors by doing a Delphi study amongst knowledgeable physiotherapists in this field. With regards to this, you have been identified as a potential participant in the Delphi study.

There will be 3 rounds, the first round you will be asked to add some contributing factors to low back pain to the identified list, if you think it's necessary. In the second and third rounds you will be asked to rank the factors according to their importance.

I promise that this will not take you longer than **5-10 minutes** per round, and hope that you will help me to validate the questionnaire that I will use for my study in this way. However, your participation is voluntary, and if you kindly decide to participate, you can withdraw at any time with no litigation.

Planned timeframe:

First round out **20 November 2010** and returned by **1 December 2010**

Second round out by **3 December** and returned by **10 December 2010**

Last round out by **12 December** and returned by **22 December 2010**

I therefore request you to add your expertise to the attached list – where possible with a reference to the study that have demonstrated the contributing factor, or else – that you add it from your own clinical experience with low back pain patients

Thank you

Nesto S. Tarimo

Study Leader: Dr Ina Diener [Lecturer at the University of the Western Cape]