BARRIERS TO TREATMENT ADHERENCE OF PATIENTS WITH LOW BACK PAIN IN PHYSIOTHERAPY OUTPATIENT CLINICS IN THE KINGDOM OF ESWATINI

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DECLARATION

I, Tapiwa Lorraine Chikaka, declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Master of Science Orthopaedic Surgery for Physiotherapists at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

TL Chikaka

(Signature of candidate)

12th day of August, 2022

DEDICATION

First and foremost, this marvellous work is wholly dedicated to my parents, Elliot and Venencia, who sacrificed all their resources from the time I was born until today for me to realise this achievement.

To my baby girl; Arielle Ruvheneko, you endured the pain of being separated from her mother as she pursued her studies.

To my siblings, Tafadzwa and Tadiwanashe, you understood and sacrificed your time and resources to take care of all that I could not in my absence.

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NOMENCLATURE

AMF:	Amplitude Modulation Frequency
ANOVA:	Analysis of Variance
BMI:	Body mass Index
CI:	Confidence Interval
COVID-19:	Corona virus diseases
CSV:	Comma-separated values
Df:	Degrees of freedom
EHHRRB:	Eswatini Health and Human Research Review Board
LBP:	Low Back Pain
OR:	Odds Ratio
REDcap:	Research Electronic Data Capture
SE:	Standard Error
SMS:	Smart Message Service
Sig:	Significance
SPSS:	Statistical Package for the Social Sciences
WHO:	World Health Organisation

CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter aims to discuss the introduction to the research topic. It introduces a brief background to low back pain, a statement to the problem and justification of the study. Furthermore, this chapter lays out the aim, specific objectives, research question and conceptual and operational definitions.

1.2 Background

"Low back pain is pain and discomfort, localised below the costal margin and above the inferior gluteal folds, with or without leg pain" (Vrbanić, 2011). In the period 1990 to 2015, disability due to low back pain increased by 54% globally (Hartvigsen *et al.*, 2018). The main causative factors being age and increasing population size, and the greatest difference in disability was seen in the middle and low-income countries (Hartvigsen *et al.*, 2018). Low back pain can affect work performance and quality of life; hence it is one of the most common reasons for medical consultations (Hartvigsen *et al.*, 2018). The prevalence of low back pain has been similar among various cultures (Vos *et al.*, 2015). The prevalence rate of low back pain in Africa is between 39% and 47%; this is higher compared to the global low back pain estimates (Morris *et al.*, 2018). According to the World Health Organisation (WHO), adherence is described as "the extent to which a person's behavior taking medication, following a diet, or executing a lifestyle change corresponds with agreed recommendations from health care providers" (WHO, 2003). Failure to adhere to the guidelines of the physiotherapy treatment as recommended by the physiotherapist in charge has resulted in problems such as recurrent pain, work absenteeism, disability and high hospital costs (Babatunde, MacDermid and MacIntyre, 2017).

Low back pain is one of the most common conditions patients present with at physiotherapy outpatient clinics (Hartvigsen *et al.*, 2018). Physiotherapy, amongst other medical management strategies, is one of the most effective interventions in treating low back pain (Lonsdale *et al.*, 2012). Physiotherapy has different treatment modalities that are employed depending on the presentation of the pain (Maher, Underwood and Buchbinder, 2017). These treatment modalities include but is not limited to, hydrotherapy, electrotherapy, manual therapy and exercise therapy (Gardner *et al.*, 2017). The treatment course and treatment modalities used are determined by the

physiotherapist after a rigorous assessment of the condition and nature of the injury. The goal of physiotherapy in treating low back pain is to eliminate pain, restore function, and prevent recurrent pain in the future.

Co-operation from the patients is essential for effective physiotherapy management. Patients must attend follow up sessions and perform the prescribed exercises to promote positive treatment outcomes (Babatunde, MacDermid and MacIntyre, 2017). Adherence to a management regime is key to any successful treatment plan resulting in a positive health and socioeconomic outcome. Barriers to the adherence of treatment plans do exist. These barriers contribute to a negative outcome on the health and socioeconomic status of an individual. Physiotherapy management of low back pain is not immune to these barriers. These can emerge through the patient, physiotherapist or the institution providing the services.

1.3 Statement of the Problem

Patients' adherence to treatment guidelines as recommended by physiotherapists can be a challenge. The causative factor for this challenge can be barriers faced by patients at different levels and results in non-adherence. Non-adherence to physiotherapy treatment can result in recurrent and chronic low back pain. Non-adherence caused by these barriers may result in unfavourable treatment outcomes, increased work absenteeism, disability, and an increased load on healthcare services and utilisation costs.

1.4 Justification

“Non-adherence is a lost opportunity for health gain and has great costs to society” (Godfrey, Down and Payne, 2011). The establishment of the barriers that contribute to non-adherence helps to highlight challenges faced by patients and influencing factors from the private institutions providing physiotherapy services. The study has the potential to contribute towards improved treatment outcomes and the patients' health. The study results may also help to tailor health policies and consequently reduce the effects of low back pain. The study results may help prevent disability, raise awareness, and improve patients’ self-management abilities. Furthermore, this study in Eswatini also highlights some context-specific considerations and contributes to the international body of knowledge.

There have been no studies done in Eswatini to understand barriers associated with poor adherence to physiotherapy treatment of patients with low back pain. The study has the potential to contribute to current treatment practice and address issues related to patient and public awareness on risks associated with poor adherence to physiotherapy treatment. In addition, the study may also further inform physiotherapy treatment and service delivery approaches based on challenges highlighted by patients and institutional factors in Eswatini.

1.5 Aim and specific objectives

Aim

The study aimed to determine barriers associated with physiotherapy treatment adherence among patients with low back pain in outpatient physiotherapy clinics in Eswatini.

Objectives

1. Describe the demographics of patients with low back pain attending outpatient physiotherapy clinics in select facilities in Eswatini.
2. Determine patient-centered barriers to treatment adherence in patients with low back pain.
3. Determine provider-centered barriers to treatment adherence in patients with low back pain.
4. Establish institutional factors in clinical practice that affect the adherence of patients with low back pain
5. To determine associations between patients adherence and the barriers.

1.6 Research question

What are the barriers associated with physiotherapy treatment adherence among patients with low back pain in outpatient physiotherapy clinics in Eswatini?

1.7 Conceptual and operational definitions

Adherence – "the extent to which a person's behavior taking medication, following a diet, and or executing a lifestyle change corresponds with agreed recommendations from health care providers" (WHO, 2003). Within physiotherapy, adherence could relate to correct performance of exercises, frequency in doing prescribed exercises,

attending appointments, doing prescribed exercises, following advice and doing more or less than advised.

Low back pain – “Pain or discomfort localised below the coastal margin and above the inferior gluteal folds, with or without leg pain” (Vrbanić, 2011).

1.8 Summary

This chapter has laid out the foundation of the research by mapping out the background, the justification of the study, the aims and specific objectives that were answered by the research study. The conceptual and operational definitions specific to the study setting were also presented. The next chapter will focus on the available literature reviewed by the researcher in this study's context.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter aims to review the literature on the research topic barriers to treatment adherence of patients with low back pain in physiotherapy outpatient clinics. A first limited search of MEDLINE (PubMed) and CINAHL was done and was followed by an analysis of the text words contained in the title and abstract of retrieved papers, and of the index terms used to describe the articles. The key words used were barriers, low back pain, adherence and physiotherapy. A second search was done using all identified keywords and index terms that were undertaken across all relevant databases on ebscohost. Thirdly, the reference lists of the identified reports and articles were searched for additional sources. This review of literature will focus on different sub-sections addressing the available literature. Topics to be considered are, low back pain, physiotherapy management of low back pain, barriers to physiotherapy treatment adherence, and the quality of life of people living with low back pain.

2.2 Low back pain

The definition, aetiology, epidemiology, and pathology of low back pain are discussed in the low back pain section.

Maher, Underwood and Buchbinder, (2017) defined low back pain as a symptom such as a headache or dizziness that can result from many causes rather than a disease. Furthermore, Cholewicki *et al.*, (2019) defined low back pain as a problem caused by various factors with interactions between the biological, psychological and social factors. Borenstein and Balagué, (2021) defined low back pain in phases, whereas the acute phase involves all spinal structures and excludes the inside of the intervertebral discs and the chronic phase as recurrent pain that results in changes of the pain pathways and does not relate to the signs of injury and inflammation.

Low back pain can present as acute, recurrent or chronic, and it is becoming a problem as the patients presenting with low back pain are increasing (Ganesan *et al.*, 2017). The causes of low back pain have been attributed to various aspects; the most common cause of low back pain cited is non-specific, whereby the anatomical pathology of the pain cannot be identified (Maher, Underwood and Buchbinder, 2017; Borenstein and Balagué, 2021). Other risk factors that contribute to low back pain are educational status, psychosocial factors, occupational factors and obesity; however, age is the most

common cause with lumbar spinal stenosis more common in the older population (Patrick, Emanski and Knaub, 2014; Borenstein and Balagué, 2021). Borenstein and Balagué (2021) identified that pathologies associated with low back pain can be mechanical, infectious, neoplastic, neurologic, psychiatric, rheumatologic, endocrinologic or miscellaneous. Ardakani, Leboeuf-Yde and Walker, (2018) highlighted that due to unclear definitions of the disease of low back pain when it initially starts, it is difficult to find the difference between the initial onset cause and the cause in recurrent low back pain episodes.

Low back pain has a global lifetime prevalence of up to approximately 84% amongst the adult patient population (Ribeiro *et al.*, 2018; Popescu and Lee, 2020; Borenstein and Balagué, 2021). Lifetime prevalence of acute low back pain globally lasting up to two weeks is 14%, whereas the lifetime prevalence of chronic disabling lower back pain lasting at least six months is up to 11% (Popescu and Lee, 2020). Maher, Underwood and Buchbinder (2017) reported a higher prevalence of low back pain in high-income countries than in the middle and low-income countries, with no difference between urban and rural areas. Conversely, Borenstein and Balagué (2021) reported, based on population studies, that the middle and low-income countries have a four times higher prevalence of low back pain compared to the high-income countries. The prevalence of low back pain has been similar among various cultures (Vos *et al.*, 2015), however in ages between 40-69 years, it is higher in females compared to males (Maher, Underwood and Buchbinder, 2017). Low back pain in Africa has prevalence rates of between 39% and 47% and still, this is higher when compared to the low back pain estimates in high-income countries of 0.024% – 20% (Morris *et al.*, 2018; Fatoye, 2019).

Low back pain is commonly resulting in disability (Hurwitz, 2018; O'Young, Gosney and Ahn, 2019; Dai *et al.*, 2020). Disability is defined as "an integrative concept that represents the negative interaction between an individual's health conditions and personal and environmental contextual factors" (O'Young, Gosney and Ahn, 2019).

2.3 Physiotherapy management of low back pain

This section will discuss the physiotherapy management of low back pain and common practices by physiotherapists worldwide.

Low back pain is one of the most common conditions patients present with at physiotherapy outpatient clinics (Hartvigsen *et al.*, 2018). Physiotherapy, amongst other medical management strategies, is one of the most effective interventions in treating low back pain (Lonsdale *et al.*, 2012). Physiotherapy has different treatment modalities that are employed depending on the presentation of the pain (Maher, Underwood and Buchbinder, 2017). These treatment modalities include but is not limited to, hydrotherapy, electrotherapy, manual therapy and exercise therapy (Gardner *et al.*, 2017). The treatment course and treatment modalities used are determined by the physiotherapist after a rigorous assessment of the condition and nature of the injury. The goal of physiotherapy in treating low back pain is to eliminate pain, restore function, and prevent recurrent pain in the future. The management of low back pain was investigated in South Africa at primary care level by Major-Helsloot *et al.* (2014); this study showed that the majority of patients were only managed with pain medication. Ahenkorah *et al.*, (2019) reported that chronic low back pain management practices in African countries are, however not well documented and do not align with the biopsychosocial management guidelines by developed countries.

Jee Hyun Suh et al., (2019) studied the effect of lumbar stabilisation exercises and walking in a randomised controlled trial and concluded that these exercises not only provide pain relief but also prevent chronic back pain. Gomes-Neto *et al.*, (2017) concluded that stabilisation exercises are as efficient as manual therapy and they help reduce pain and prevent disability. Exercise therapy reduces pain and functional limitation as reported by Hayden *et al.*, (2020) however having a less demanding workload and low BMI (Body Mass Index) contributed to a favourable functional outcome compared to no treatment or usual care. Lightweight exercises (stretching and rhythmic exercises) helped improve endurance, reduce fear avoidance and reduce health care utilisation (Chaléat-Valayer *et al.*, 2016; Geneen *et al.*, 2017). Karlsson *et al.*, (2020) concluded that when exercise therapy is compared with other usual care strategies, including sham ultrasound, spinal manipulative therapy, advice to stay active and educational booklets, there was no difference in the outcome of pain and disability. However, in investigating which specific mode of exercise is most effective for treating low back pain Owen *et al.*, (2020)'s systematic review showed low evidence on the effectiveness of pilates, stabilisation/motor control exercises, resistance training and aerobic exercises. Namnaqani *et al.*, (2019) investigated the effectiveness of the McKenzie method compared to manual therapy, and concluded that it's an effective

exercise method in decreasing pain in the short term (one to two months) and improving function in the long term (12 months follow up). The McKenzie method as a self-management exercise paired with education did not prevent the reoccurrence of episodes of low back pain but reduced care seeking (de Campos *et al.*, 2020). Pain and "posturography" (a technique used to quantify postural control) outcomes improved with Pilates exercise (Patti *et al.*, 2016), however its effectiveness could not be ascertained, as it was not compared to any type of intervention.

Kinesiology taping is an effective method that helps improve pain and disability. In a randomised controlled trial, kinesiology taping showed effectiveness after three days of application (with or without tension). After 3 to 10 days, when applied with tension, it improved disability (Macedo *et al.*, 2019). Nelson (2016) recommended that kinesiology tape be combined with other therapeutic interventions to improve range of motion, motor control, and muscular endurance. Electrotherapy is also an adjunct intervention commonly used in managing chronic low back pain. Ebadi *et al.*, (2020) highlighted that therapeutic ultrasound use is not supported by current evidence in managing low back pain. Almeida *et al.*, (2020) reported that interferential therapy of carrier frequency 4 kHz and AMF (Amplitude Modulation Frequency) 100Hz produced immediate analgesic effects in individuals with chronic low back pain.

Good communication and patient education strategies effectively manage low back pain (Langridge, 2019). The extent of knowledge of low back pain amongst patients is not well reported however, behaviour modification and exercise compliance is greatly improved by education on pain science, gradual exposure and varied interventions (Barbari *et al.*, 2020). Furthermore, self-management, graded activity and coaching have short-term effects compared to pain science education, graded exposure and multimodal interventions (Barbari *et al.*, 2020). Huang *et al.*, (2020) also reported that exercise and education prevent the occurrence of recurrent low back pain and work absenteeism associated with low back pain. After a mediation analysis of cognitive functional therapy, O'Neill *et al.*, (2020) reported that it effectively improves pain, self-efficacy and disability. When cognitive behavioural therapy was combined with supportive care and delivered telephonically, the results showed comparable benefits for back pain and severity of disability (Rutledge *et al.*, 2018). Ogbeivor and Elsabbagh (2021), in a systematic review, found that stratified care approaches of prognostic screening and targeted treatment yielded superior clinical, economic and health-related outcomes compared to standard physiotherapy practice.

2.4 Barriers to physiotherapy treatment adherence

This section will discuss the barriers to treatment adherence, patient factors including beliefs, perceptions, culture, attitudes, economy, mental, emotional, health literacy; physiotherapist factors, including attitude and communication followed by institutional factors where resources, environment and policies are mentioned.

Patient centered barriers

The knowledge of the benefits of long term exercise and correct performance contribute to adherence to the treatment programme (Saner *et al.*, 2018). In some patients, adherence to home-based programmes has been negatively affected by weather conditions and increasing pain (Van Koppen *et al.*, 2016). Exercise, the health care journey, patient presentations, and the home environment was found to be barriers to adherence to an exercise programme given by the physiotherapist in the management of low back pain (Palazzo *et al.*, 2016). Factors such as fatigue, absence of results, fear of pain, lack of motivation, more important daily priorities, unforeseen situations, expensive costs, lack of equipment and support, and forgetting were highlighted by patients as reasons for their non-adherence to the recommended treatment programme as provided by their physiotherapists (Mathy *et al.*, 2015).

There is an increased risk of non-adherence to exercise programmes amongst individuals with chronic pain (Geneen *et al.*, 2017). At baseline minimal levels of physical activity has poor adherence outcomes; however, there are other factors such as low self-efficacy, depression, anxiety, helplessness, poor social support, perceived barriers to exercise and increased pain levels during exercise, which affect outcomes negatively (Jack *et al.*, 2010; Essery *et al.*, 2017). Zadro *et al.*, (2019) reported that having a physically active family is a good predictor of exercise adherence versus having sedentary family members. An improvement in treatment outcome in terms of function and pain levels reinforces adherence amongst patients with chronic low back pain (Van Dillen *et al.*, 2016). In a study on geriatric patients with low back pain and their adherence, the following factors were highlighted as barriers; location (where they live), accessibility to the physiotherapy clinic, travelling difficulties to the physiotherapy clinic, paying expenses, and longer treatment duration. Further identified factors included less encouragement from family for exercises, confidence to return to exercise after a break, difficulty remembering exercises, other medical conditions, anxiety and depression and ability to perform ADLs (Anjum and Sonia, 2019). Nava-

Bringas *et al.*, (2016) reported concerning the stability exercise programme in patients with chronic low back pain that depression, anxiety and fear of running activities were not predictors of non-adherence.

Provider centered barriers

Co-operation from the patients is essential for effective physiotherapy management. Patients must attend follow up sessions and perform the prescribed exercises to promote positive treatment outcomes (Babatunde, MacDermid and MacIntyre, 2017). However, physiotherapists also have the potential to introduce barriers to treatment adherence in terms of their speech, conduct, treatment choices and applications.

A survey in Sweden revealed that "lack of time and knowledge, administrative aspects, the interaction between physiotherapist and patient and applicability and validity of the patient" are major barriers in treatment outcome measures (Östhols, Boström and Rasmussen-Barr, 2019). Furthermore, physiotherapists' communication skills impact the patient to physiotherapist relationship. They can determine whether the patient feels comfortable continuing with physiotherapy and attending the follow-up treatments (Lonsdale *et al.*, 2012). Amongst other barriers, delayed consultations have been found to contribute to poor outcomes in managing low back pain (Chen *et al.*, 2018). Providing information to the patient for them to understand their diagnosis, purpose of the treatment procedure, the treatment programme, follow up sessions has also been found to affect the patients' adherence to their physiotherapy treatment (Babatunde, MacDermid and MacIntyre, 2017).

Institutional factors

Supp *et al.*, (2020) and Bachmann, Oesch and Bachmann (2018) highlighted that patients do remember the advice from their physiotherapists when shared decision making was used during the first consultation, prescribed exercises were simple to do and a few in number, patients concerns about their diagnosis were addressed and patient expectations were identified and addressed. Roitenberg (2019) noted an association between physiotherapists' work setting and clinical experience with low back pain and their attitude towards low back pain. Perreault *et al.*, (2018) also reported that in managing low back pain, the physiotherapists are influenced by professional and organisational-level factors. Health literacy is the ability of an individual to be able to make the right health decision with an understanding of the basic health information and

health services available to address the health condition; moreover, low literacy is associated with adverse health outcomes (Ratzan and Parker, 2006).

2.5 The quality of life of people with low back pain

This section will discuss the quality of life of people with low back pain.

The lower back supports our physical stamina; hence pain in this area causes optimal function to be limited in some cases leading to long term hospitalisation and disability (Williams *et al.*, 2015). Not only is their physical function impacted, the social wellbeing, work performance, and cost of living are also affected (Buchbinder *et al.*, 2018). In the elderly population, wellbeing and independence are affected (Ferreira and de Luca, 2017). Low back pain increases health care utilisation. Factors such as negative beliefs about pain, lifestyle behaviours, sociodemographic factors, depressive symptoms, and insomnia are common in people with low back pain and they frequently use health care services (Beyera, O'Brien and Campbell, 2020). Furthermore, Opseth, G. *et al.*, (2018) reported that individuals with low back pain have a negative perception of their health and illness and utilise physiotherapy services more frequently.

Guidelines in the clinical practice for physiotherapy (these are active treatment approaches, educating patients and minimizing bed rest) set for managing low back pain showed that using the clinical practice guidelines reduce health care utilisation and related costs (Hanney *et al.*, 2016). Based on the quality-adjusted life year's utilisation, a multifaceted e-Health strategy improved cost-utility results, however, it did not improve pain beliefs, disability, and work absenteeism (Suman *et al.*, 2019). Patients who received cognitive patient education demonstrated improved quality of life (Løchting *et al.*, 2016). Although evidence suggests a relationship between a patient's expectations and the level of function, there is no evidence that there is a relationship between a patient's expectations and health-related quality of life, as reported by Mohamed Mohamed *et al.*, (2020).

2.6 Summary

In summary, the definition of low back pain anatomically and otherwise was comprehensively reviewed. The physiotherapy management of low back pain has been well investigated in terms of effectiveness, and guidelines have been established for managing low back pain. The next chapter will discuss the methodology used in conducting the research study.

CHAPTER 3: METHODS

3.1 Introduction

This chapter will discuss the methodology of the research study. The description of the primary study setting, the study population, inclusion and exclusion criteria employed, sampling and outcome measures are mentioned. The methodology of the pilot study and main study will be presented, followed by the ethical consideration.

3.1.1 Primary Study setting

The research was conducted in Eswatini. Eswatini is a country with an estimated population of 1.2 million. It has two capital cities, one central and a royal and legislative capital. It has four regions namely Hhohho, Manzini, Shiselweni and Lubombo.

3.1.2 Study Design

This study was a cross-sectional descriptive survey.

3.1.3 Study Population

Individuals in the study population were attending private outpatient physiotherapy clinics in Eswatini. Eleven private outpatient physiotherapy clinics are currently spread across four cities and towns: Mbabane, Ezulwini, Matsapha and Manzini based on the Physiotherapists association of Eswatini registry. Patients attending these private clinics have a variety of conditions, namely, musculoskeletal, neurological, cardiopulmonary, orthopaedic, paediatric, pre and post-natal and sport-related conditions. Low back pain is one of the most common musculoskeletal conditions seen in these clinics. However, there is a lack of actual data regarding the exact numbers of patients attending these facilities. The researcher estimated that 55% to 70% of the patients seen monthly in these clinics have musculoskeletal conditions such as low back pain based on data trends from the clinics.

3.1.4 Inclusion and Exclusion Criterion

Inclusion Criterion

1. Patients presenting with low back pain coming for their second or more visits.
2. Aged between 18 to 80 years and above, both male and female
3. Physiotherapists who render care to the patients

Exclusion Criterion

1. Confirmed or suspected pregnant women complaining of low back pain
2. Neurological impairments
3. Formally diagnosed psychiatric conditions
4. Individuals presenting with low back pain with another joint pain for example hip pain

3.1.5 Sampling

All eleven private physiotherapy clinics were contacted, and permission was asked to participate in the study. Six facilities that gave consent were included in the study. A convenience sampling strategy was used for selecting the study population. This entailed targeting a conveniently available patient pool in a period of seven months. The sample size for the patient-centred component was calculated using a population size of 100, expected frequency of 50%, confidence limits at 5%, design effect of 1.0, cluster of 1 and confidence level of 80%. This gave a sample size of 62. Ten per cent of the sample size participated in the pilot study (six).

3.1.6 Instrumentation and outcome measures

The researcher used a self-developed survey to collect data. A REDCap survey was used as the data collection tool. The survey consisted of demographic data, including gender, age, education level, employment status, region of clinic and source of referral. Aspects questioned further included but are not limited to patient and provider-centred questions.

The survey was translated into SiSwati and back-translated to English to ensure consistency and accuracy in translation. The translation was done by independent translators proficient in reading and writing in English and SiSwati. The survey comprised of two different sections, one which addresses the potential barriers to adherence related to the patients and one which addresses the potential provider/institutional barriers to adherence answered by the attending physiotherapist.

The survey content was developed from available literature. The survey was assessed for readability, clarity and comprehensiveness by the help of the supervisor who is an expert in the field. The survey was also administered to the same respondent twice on different times and it produced the same results. No further validity tests were undertaken.

3.2 Procedure

3.2.1 Pilot Study

A pilot study was conducted to test the content, construct validity and reliability of the survey and the time taken to complete the survey. The researcher selected one of the private physiotherapy clinics through simple random sampling using the drawing out of the hat method. The names of the clinics were written on cards and placed in a hat; a card was picked for the pilot study. The physiotherapist rendering care to the patients was also asked to participate. The pilot study's methods were the same as the main study except that more clinics were added.

3.2.1.2 Pilot Study Procedure

Records were requested from the attending physiotherapists by the researcher to identify potential participants. Diagnosis and patient notes were checked to see if they fit the inclusion criteria. Patients' contact details were used to contact the prospective participants. Patients were called for permission to use their personal information and participate in the study. Phone numbers were saved on the researcher's smartphone. Survey links were sent via Whatsapp for those who had the Whatsapp application and those without the Whatsapp application; it was sent via SMS (short message service) or email.

A tablet was proposed to be used in the study to collect data; however, it could no longer be used due to a lack of funding. For participants present on the day, either a hard copy survey was given, printed directly from Redcap survey or offered a survey link sent via Whatsapp where they completed the survey using their own smartphones.

Ten per cent (ten participants) of the study sample size was used for the pilot data analysis. Two participants gave reports while participating in the pilot study. One could not move to the next page when prompted for assistance; they did not respond; the other one could not open the link, and they were sent a new link to respond from. If they managed to access the survey with the new link, no acknowledgement was received. Two physiotherapists from the clinic participated in the survey. Two participants preferred to use the hard copy; one managed to return the document the same day, and the other failed to return the hard copy due to personal commitments. One participant opted to have a face to face interview with the researcher asking and entering the responses into her smartphone.

Data was exported from the REDcap software into the excel spreadsheet as comma-separated values (CSV) file. Data were cleaned and checked for errors before performing statistical calculations. A Two-Factor ANOVA without replication was performed first in Excel, followed by the Cronbach's Alpha to check for internal consistency of the survey. A value of 0.924458 was obtained, interpreted as excellent internal consistency.

Short comments on questions answered during the pilot study will now be presented. The region they attend physiotherapy, source of referral to physiotherapy and the duration they have been experiencing pain; was answered well. It showed that the participants understood what was asked of them and there was no identifying information that was asked to be given. The question; how many physiotherapy consultations have you had so far concerning this low back pain? Had some outliers of frequency of 9, 10, 15 and 30. However, it is justifiable if the person has been suffering from back pain for a long time. It will be possible to be having up to 30 sessions. Other questions were answered well, which reflected that the participants understood the questions well and responded.

The steps taken in the pilot study were done and followed to do the main study. No changes were applied to the survey after the pilot study, and the survey was used to collect data for the main study (it is both valid and reliable). The participants were included in the main study.

3.2.2 Sample size

One hundred participants agreed to participate. However, 38 participants did not complete the survey fully and the surveys subsequently had to be omitted from the data analysis. Sixty-two participants' surveys were included in data analysis.

Nine participants were identified initially for the organisational component and were recruited. Eight physiotherapists responded and completed the organisational component of the survey. The participants were identified from the different private physiotherapy clinics in Hhohho and Manzini. Out of the eleven identified clinics in the country, six participated in the study.

3.2.3 Main Study

The clinics' physiotherapists helped identify participants and introduce them to the researcher. The participants who were present were approached for permission to participate in the study, and information about the research was given. An option to use

a survey link was given to the participants via Whatsapp or email. Patients who were not physically present but met the inclusion criteria were approached by their physiotherapists or assistants for permission to participate in the study.

Survey links were given via Whatsapp, email or SMS when they agreed to participate. Participants received reminders via the same platform that they received the first link. Reminders were sent within two to three weeks if they did complete the survey. The link remained available to the participant as long as they did not complete the survey and expired after completion. Data collection took a period of seven months from April 2021 to November 2021. The physiotherapists were also approached for permission to participate in the survey.

3.3 Data analysis

Data was exported from the electronic survey onto a data extraction form in Microsoft Excel. The data set was cleaned before data analysis. This process entailed checking if the data set had any missing values, outliers or irregular entries. The data was analysed using the IBM SPSS Statistics 20 software package using descriptive analysis, regression analysis and bivariate analysis with odds ratios.

3.4 Ethics

The researcher kept and followed the principles of research ethics. Participants were protected by minimising the risk of harm, obtaining written informed consent, voluntary participation and confidentiality, providing the right to withdraw from the study without penalty, and avoiding misleading practices.

Data collection only commenced after obtaining ethical clearance from the Medical Human Research Ethics Committee at the University Of Witwatersrand with number M201018 (Appendix 1) and from the Eswatini Health and Human Research Review Board (EHHRRB) with the number SHR 328-9/2021 (Appendix 2). Permission to conduct the study at the private clinics was obtained from the clinical directors or the department heads of the physiotherapy unit (Appendix 3). Data collected is stored in the researcher’s password protected laptop. All hard copy surveys are stored in a locked cabinet in the researcher’s office that is locked.

3.5 Summary

In this chapter, the methodology of the study was presented, looking at the, study design, instrumentation and outcome measures, sampling methods, study population

and the inclusion and exclusion criteria. Further, the procedures done in the pilot study and main study were also outlined. The data analysis process and ethical considerations was described. The next chapter will present the results.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter outlines the research results by first showing the distribution of participating clinics and participants. The sociodemographic data and baseline characteristics are described next. Patient-centred barriers to treatment adherence will be presented, followed by the provider centred barriers to treatment adherence. Finally, the institutional factors in clinical practice that influence patient adherence will be presented.

4.2 Distribution of participating clinics and participants

Figure 4.1 below shows how the final study participants used in the analysis were obtained.

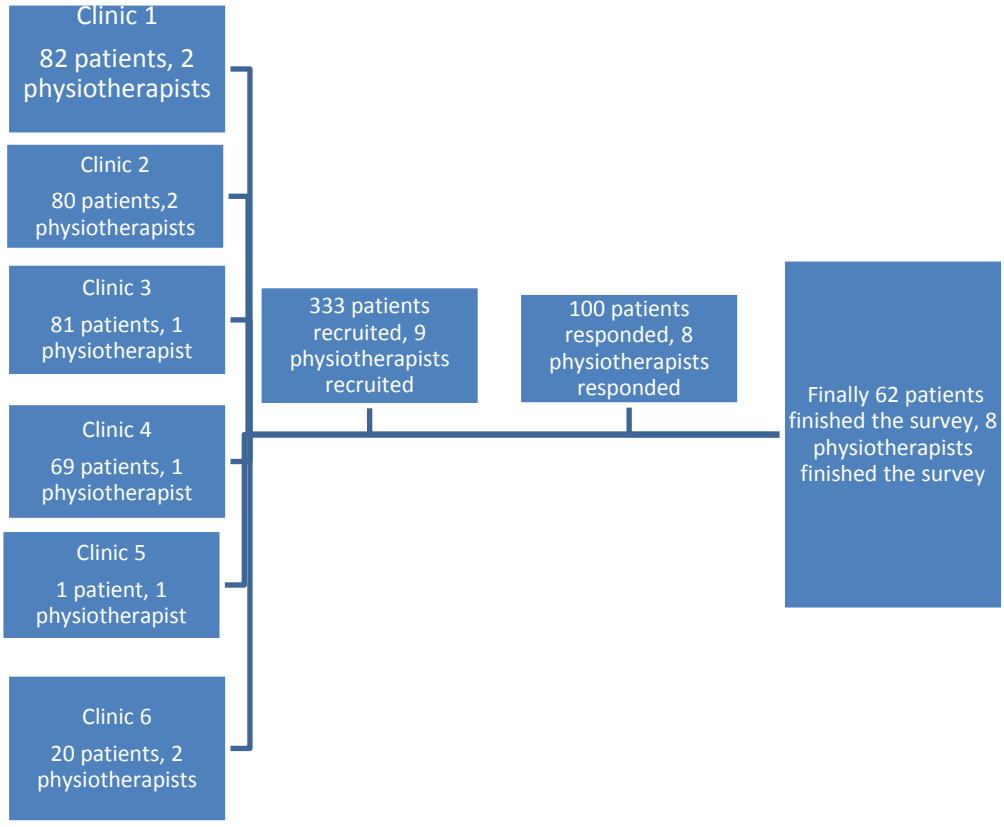

Figure 4.1: Flow chart showing selection of participants per clinic

4.3 Sociodemographic factors

This section presents the sociodemographic data of the patients who participated in the survey. The gender, age, education level, employment status, region of physiotherapy clinic and the source of referral are presented.

Forty-eight (77.4%) of the participants were females. Thirty-two (51.6%) participants were aged between 31– 40 years. The highest level of education was secondary, three (4.8%) and tertiary 59 (95.2%). Fifty-one (82.3%) of the participants are employed. Most participants attended their physiotherapy clinics located in Manzini 44 (71%) and Hhohho 18 (29%). Forty-two (67.7%) of the participants were referred by their consulting doctor. Table 4.1 below illustrates the demographic factors for the patients that participated in the survey.

Table 4.1: Sociodemographic characteristics

Sociodemographic characteristics (N=62)	n	%
Sex		
Female	**48**	**77.4***
Male	14	22.6
Age		
< 21 years - 30 years	7	11.3
31 years- 40 years	**32**	**51.6***
41 years - 50 years	10	16.1
51 years - 60 years	11	17.7
61 years - 70 years	2	3.2
Highest level of education		
Secondary	3	4.8
Tertiary	**59**	**95.2***
Employment status		
Employed	**51**	**82.3***
Retired	1	1.6
Self-employed	7	11.3
Student	1	1.6
Unemployed	2	3.2
Region of the physiotherapy clinic		
Hhohho	18	29.0
Manzini	44	71.0
Source of referral		
Colleague	6	9.7
Consulting Doctor	**42**	**67.7***
Family member	1	1.6
Friend	7	11.3
Pharmacist	1	1.6
Spouse	5	8.1

Values in bold and asterisks (*) shows the highest prevalence per category.

4.4 Patient-centered barriers

This section presents the data for the patient-centred barriers. Patient-centred characteristics such as duration of low back pain, number of consultations completed, missed appointments, reasons for missing appointments, understanding of low back pain and availability of time to attend physiotherapy sessions are presented. Furthermore, the reasons given by the group of patients that highlighted that they do not have time in their daily schedule to attend physiotherapy sessions are presented.

Thirty-four (54.8%) of the participants have been suffering from low back pain for 0-12 months. Fifty (80.6%) of the participants had consulted with their physiotherapist at least one to five times. Forty (64.5%) participants have not missed their set physiotherapy appointments. Thirty-two (51.6%) participants completed three to five sessions in the consultation that they were currently in. Based on their current status, 30 (48.4%) reported having pain less than 5/10 on the numeric pain rating scale, 14 (22.6%) had 5/10 and 18 (29.0%) had pain greater than 5/10. Forty-four (71%) participants clearly understood their condition (low back pain). Fifty-eight (93.5%) participants understood how physiotherapy would help them treat their low back pain. Forty-eight (77.4%) indicated that they had time in their daily schedule to attend their set physiotherapy sessions.

For those who had missed their physiotherapy appointments, nine (40.9%) highlighted being busy at work. Five (22.7%) participants mentioned that their medical aid provision was not enough and could not afford to pay cash. Two (9.1%) forgot the appointment, not feeling the pain anymore reported by three (13.6). One participant (4.5%) said each of the following conflicting priorities, COVID-19, felt like it wasn't helping, felt like wasn't getting the correct diagnosis, political unrest and transport issues. Table 4.2 below illustrates patient-centred characteristics.

Table 4.2: Patient-centered characteristics

Patient-centred characteristics N=62	n	%
Duration of low back pain (months)		
0-12	**34**	**54.8***
13-24	8	12.9
25-36	5	8.0
37-48	3	4.8
49-60	1	1.6
>60	**11**	**17.7***
Number of physiotherapy consultations completed		
1-5	**50**	**80.6***
6-10	9	14.5
>10	3	4.8
Missed scheduled physiotherapy appointments		
No (not missed)	**40**	**64.5***
Yes (missed)	22	35.5
Reasons for missing physiotherapy appointments		
Busy at work	**9**	**40.9***
Conflicting priorities	1	4.5
COVID-19	1	4.5
Felt like wasn't helping	1	4.5
Had forgotten my appointment	2	9.1
Had travelled	1	4.5
I didn't have the pain anymore	3	13.6
I felt like I'm not getting the right diagnosis	1	4.5
Medical aid provisions not enough. Cannot afford many cash sessions.	**5**	**22.7***
Political unrest	1	4.5
Transport issues	1	4.5
Physiotherapy sessions completed in current consultation		
0-2	28	45.2
3-5	**32**	**51.6***
>5	3	4.8
Low back pain numeric pain rating scale		
<5/10	**30**	**48.4***
5/10	14	22.6
>5/10	18	29.0
Clear understanding of low back pain		
No (I do not understand)	18	29.0
Yes (I do understand)	**44**	**71.0***
Understanding of how physiotherapy helps low back pain		
No (I don't understand)	4	6.5
Yes (I do understand)	**58**	**93.5***
Availability of time in daily schedule to attend physiotherapy		
No (I do not have time)	14	22.6

Yes (I do have time)	**48**	**77.4***

Values in bold and asterisks presents the significant frequencies.

Table 4.3 below shows responses for not having time in their daily schedule to attend set physiotherapy appointments. From the majority of participants highlighting that they do not have time in their daily schedule; eight (57.1%) agreed that their schedule is already full to accommodate the session; eight (57.1%) agreed that I am too busy; six (42.9%) agreed that I have other important priorities and six (42.9%) agreed that I rarely get the opportunity in my day. Fourteen (100%) disagreed that; it is not helping them, I do not believe it is helping my low back pain, and the visits are too frequent.

Table 4.3: Distribution of participants by reason for not attending physiotherapy

Reasons for not having time in daily schedule to attend physiotherapy N= 14	Agree n (%)	Disagree n (%)
I have other important priorities	**6(42.9)**	4(28.6)
My schedule is already full to accommodate the sessions	**8(57.1)**	3(21.4)
I am too busy	**8(57.1)**	3(21.4)
I rarely get the opportunity in my day	**6(42.9)**	4(28.6)
It is inconvenient for me to continuously engage in the sessions	2(14.3)	**7(50.0)**
It is not helping me	0(0.0)	**14(100.0)**
I do not believe it is helping my low back pain	0(0.0)	**14(100.0)**
The visits are too frequent	0(0.0)	**12(100.0)**
Other unforeseen situations	2(14.3)	**6(42.9)**
I am only available during the weekends and night time	**4(28.6)**	0(0.0)
Physiotherapy clinic is far from my place of residence	**1(7.1)**	0(0.0)

Values in bold presents more frequent responses.

Table 4.4 presents the barriers experienced with prescribing home exercise programmes. Thirty (53.6%) disagreed that I do not have time to do the exercises, forty (71.4%) disagreed that I am afraid to do the exercises on my own without supervision, thirty-eight (67.9%) disagreed that exercises are too many I do not remember some of them, thirty-six (64.3%) disagreed that I forget the exercises and I do not have a reference to follow, twenty-three (41.1%) disagreed that the exercises are too difficult for me to do at home, twenty-nine (51.8%) disagreed that my back becomes painful when I do the exercises, thirty-four (60.7%) disagreed that I rarely get the opportunity to do the exercises, forty-five (80.4%) disagreed that I do not believe that the exercises will help me, forty (71.4%) disagreed that I do not have support from home to help me to do the

exercises and forty-four (78.6%) disagreed that I do not see any improvement as I do the exercises.

Table 4.4: Distribution of participants by exercise barriers

Exercise Barriers N=62	Agree	Disagree
Barriers to performing prescribed exercises	**n (%)**	**n (%)**
I do not have time to do the exercises	11(19.6)	**30(53.6)***
I am afraid to do the exercises on my own without supervision	12(21.4)	**40(71.4)***
The exercises are too many I do not remember some of them	9(16.1)	**38(67.9)***
I forget the exercises and I do not have a reference to follow	11(19.6)	**36(64.3)***
The exercises are too difficult for me to do at home	3(5.4)	**23(41.1)***
My back becomes painful when I do the exercises	15(26.8)	**29(51.8)***
I rarely get the opportunity to do the exercises	9(16.1)	**34(60.7)***
I do not believe that the exercises will help me	2(3.6)	**45(80.4)***
I do not have support from home to help me do the exercises	6(10.7)	**40(71.4)***
I do not see any improvement as I do the exercises	5(8.9)	**44(78.6)***

Table 4.5 below illustrates the general barriers experienced towards attending physiotherapy sessions. Thirty-seven (59.7%) agreed that I already feel better. Twenty-seven (43.5%) disagreed that it is a burden to change the routine, fifty seven (91.9%) disagreed that I have to keep it a secret, thirty-seven (59.7%) disagreed that I am disheartened by my condition, forty-five (72.6%) disagreed that there is a considerable burden in travelling (distance, accessibility and cost), forty-seven (75.8%) disagreed that I do not see any result, fifty-six (90.3%) disagreed that I do not see the importance of doing this, twenty nine (47.8%) disagreed that the cost of continuing with treatment is too much, fifty-eight (93.5%) disagreed a previous negative experience, thirty-one (50%) disagreed that it is painful, thirty-seven (59.7%) disagreed that it is taking too long to resolve, fifty-one (82.3%) disagreed that people with this condition are often stigmatised in my society, fifty-six (90.3%) disagreed that It does not fit my cultural beliefs, forty-seven (75.8%) disagreed that the weather can be unfavourable, fifty-four (87.1%) disagreed that I do not believe this can help my condition and forty-two (67.7%) forgets follow up appointments.

Table 4.5: Barriers to attending set physiotherapy sessions

Barriers to attending set physiotherapy sessions N=62	Agree n (%)	Disagree n (%)
It is a burden to change my routine	21(33.9)	**27(43.5)***
I have to keep it a secret	2(3.2)	**57(91.9)***
I am disheartened by my condition	16(25.8)	**37(59.7)***
There is a huge burden in travelling (distance, cost, accessibility)	7(11.3)	**45(72.6)***
I do not see any result	5(8.1)	**47(75.8)***
I do not see the importance of doing this	2(3.2)	**56(90.3)***
The cost of continuing with treatment is too much	21(33.9)	**29(47.8)***
Previous negative experience	1(1.6)	**58(93.5)***
It is painful	21(33.9)	**31(50.0)***
It is taking too long to resolve	17(27.4)	**37(59.7)***
People with this condition are often stigmatised in my society	1(1.6)	**51(82.3)***
It does not fit my cultural beliefs	2(3.2)	**56(90.3)***
The weather can be unfavourable	8(12.9)	**47(75.8)***
I do not believe this can help my condition	8(12.9)	**54(87.1)***
I have no support from my family and friends	3(4.8)	**48(77.4)***
I already feel better	**37(59.7)***	19(30.6)
Forget follow up appointment	11(17.7)	**42(67.7)***

Values in bold and asterisks present the most frequent responses.

Table 4.6 below illustrates the barriers experienced during the treatment sessions. Fifty-five (88.7%) disagreed that I do not understand the treatment procedure, fifty-five (88.7%) disagreed that they are passive and not engaged in the activities, sixty-one (98.4%) disagreed that therapist has low confidence in own skills, forty-five (72.6%) disagreed that the treatment procedure is monotonous, forty-two (67.7%) disagreed that the activities are too many, forty-one (66.15) disagreed that there is lack of follow up, fifty-nine (95.1%) disagreed that too busy to move on to the next waiting patient, sixty one (98.4%) disagreed that the therapist is aggressive, sixty (96.8%) disagreed that the therapist is not patient in between activities, fifty-five (88.7%) disagreed that I always have to wait when I arrive at my time of appointment, fifty-seven (91.9%) disagreed that it is difficult to contact the therapist to cancel or reschedule appointment, fifty-three (85.5%) disagreed that they do not call to reschedule appointments, sixty (96.8%) disagreed that I see a different therapist each time, sixty-one (98.4%) disagreed that it is

too noisy, sixty (96.8%) disagreed to lack of privacy and fifty-nine (95.2%) disagreed to lack of air conditioning.

Table 4.6: Barriers during treatment sessions

Barriers with physiotherapists during physiotherapy sessions N=62	Agree n (%)	Disagree n (%)
I do not understand treatment procedure	3(4.8)	**55(88.7)***
They are passive, not engaged in the activities	2(3.2)	**55(88.7)***
Therapist has low confidence in own skills	0(0.0)	**61(98.4)****
The treatment procedure is monotonous	10(16.1)	**45(72.6)***
The activities are too many	6(9.7)	**42(67.7)***
There is lack of follow up	11(17.7)	**41(66.1)***
Too busy to move on to the next waiting patient	0(0.0)	**59(95.1)****
The therapist is too aggressive	0(0.0)	**61(98.4)****
The therapist is not patient in between activities	1(1.6)	**60(96.8)***
I always have to wait when I arrive at my time of appointment	2(3.2)	**55(88.7)***
It is difficult to contact the therapist to cancel or reschedule appointments	2(3.2)	**57(91.9)***
They do not call to reschedule appointments	4(6.5)	**53(85.5)***
I see a different therapist each time	1(1.6)	**60(96.8)***
It is too noisy	0(0.0)	**61(98.4)****
Lack of privacy	2(3.2)	**60(96.8)**
Lack of air conditioning	1(1.6)	**59(95.2)**

Values in bold and asterisks shows the most frequent responses

4.5 Provider-centred barriers

This section presents the data for the provider centred barriers. Provider-centred barriers are introduced by the interaction between the physiotherapist and the patient. Factors such as exercise prescription, communication, routine follow up, provision of reference material, a reminder of upcoming appointments and waiting period posed by the physiotherapist are presented. Further, the barriers to home exercise programmes and barriers during the treatment sessions are presented.

Fifty-six (90.3%) of the patients had prescribed exercises as part of their management routine. Fifty-eight (93.5%) reported that clear communication was rendered concerning

their condition and treatment procedure. The physiotherapists did a routine follow-up for 32 (51.6%) of the patients. Thirty-nine (62.9%) of the patients received reminders for upcoming appointments. At most, fifty-one (82.3%) of the patients had 0-14 days waiting for the next appointment. Five (8.1%) reported being afraid to contract COVID-19, and seven (11.3%) reported medical aid exhaustion as the reason for stopping their physiotherapy treatment. Table 4.7 below illustrates the provider centred characteristics.

Table 4.7: Provider centred characteristics

Provider centred barriers characteristics N=62	n	%
Exercise prescription by the attending physiotherapist		
No (they did not prescribe)	6	9.7
Yes (they prescribed)	**56**	**90.3**
Clear communication from the physiotherapist		
No (it was not clear)	4	6.5
Yes(it was clear)	**58**	**93.5**
Routine follow up by the physiotherapist		
No (they do not follow up)	23	37.1
Yes (they do follow up)	**39**	**62.9**
Provision of reference material		
No (they do not provide)	30	48.4
Yes (they provide)	**32**	**51.6**
Reminder of upcoming appointment		
No (they don't remind)	23	37.1
Yes (they do remind)	**39**	**62.9**
Waiting period by physiotherapist for follow-up appointment (days)		
0-14	**51**	**82.3**
15-28	1	1.6
29-42	4	6.5
>43	6	9.7
Other factors that contribute to stopping physiotherapy treatments		
Afraid of contracting covid	**5**	**8.1**
clear explanations of the condition were not given	1	1.6
Completely cured	4	6.5
Medical aid exhaustion and its expensive to pay cash	**7**	**11.3**
Busy at work	2	3.2

I have no patience	1	1.6
No follow up on appointments	2	3.2
Facility too far and expensive to get there	2	3.2
It's painful sometimes	1	1.6
Lack of motivation and follow up activities	1	1.6
No permanent solution	1	1.6

4.6 Institutional factors in clinical practice characteristics

This section presents the data for the institutional factors in clinical practice. This section focuses on the section that was answered by the physiotherapists. Factors such as age, gender, places of practice, level of education, years of experience, number of physiotherapists working per clinic, adequacy of physiotherapists, enough resources for the management of low back pain, waiting period before the next appointment, mode of communication used to remind patients of their upcoming appointments and whether the same physiotherapists treat the same patients all the time, are presented.

Table 4.8 below shows the sociodemographic and organisational characteristics of the attending physiotherapists. Six (75%) of the physiotherapists were female. Five (62.5%) of the physiotherapists were between 21-30 years of age. Some of the physiotherapists were working in more than one clinic and distributed as follows; six (75%) in Mbabane, two (25.0%) in Ezulwini, three (37.5%) in Matsapha and one (12.5%) in Manzini. Five (62.5%) of the physiotherapists have at least a Bachelor's degree. The number of years of experience is distributed as follows; two (25%) 0-3 years, three (37.5%) 4-6 years and three (37.5%) more than 7 years.

The distribution of the number of physiotherapists working per clinic are as follows; three (37.5%) have three physiotherapists, two (25%) have two physiotherapists and three (37.5%) have one physiotherapist. Seven (87.5%) agree that there are adequate physiotherapists to meet the available workload. Five (62.5%) agree that there are enough resources to help manage low back pain. Four (50.0%) of the physiotherapists wait for at least one day to set the next follow up appointment. Six (75.0%) of the physiotherapists make use of calling before the appointment. Seven (87.5%) agree that the same physiotherapist always sees the patients.

Table 4.8: Characteristics of attending physiotherapists

Variable N=8	n	%
Age		
<21 – 30	**5**	**62.5***
31 – 40	1	12.5
41 – 50	2	25.0
Sex		
Female	**6**	**75.0***
Male	2	25.0
Places of practice		
Mbabane	**6**	**75.0***
Ezulwini	2	25.0
Matsapha	3	37.5
Manzini	1	12.5
Highest level of education		
Bachelor's Degree	**5**	**62.5***
Master's Degree	3	37.5
Number of years of experience		
0-3	2	25.0
4-6	**3**	**37.5***
>7	**3**	**37.5***
Number of physiotherapists working per clinic		
1	**3**	**37.5***
2	2	25.0
3	**3**	**37.5***
Adequate physiotherapists available for the available workload		
Agree (they are adequate)	**7**	**87.5***
Disagree(they are not adequate)	0	0
Enough resources for management of low back pain		
Agree (resources are enough)	**5**	**62.5***
Disagree (resources are not enough)	2	25.0
Waiting period for follow up appointments (days)		
1	**4**	**50.0***
2	3	37.5

3	1	12.5
Communication done to remind patients of appointments		
Write on card time and date	3	37.5
Send an sms prior to the appointment	0	0
Give a call prior to the appointment	**6**	**75.0***
Send an email prior to the appointment	0	0
We do not remind patients to attend follow up appointments	3	37.5
We only give calls to those that have requested	1	12.5
Treatment of patients by the same therapist		
Sometimes (treated by the same therapist)	1	12.5
Yes (treated by the same therapist)	7	87.5

Values in bold and asterisks presents the most frequent responses.

4.7 Further analysis

This section presents the multivariable analysis (logistic regression) and bivariate analysis with odd ratios. Different variables were being compared with adherence to scheduled physiotherapy appointments. Table 4.9 below shows adherence to physiotherapy appointments compared to barriers, understanding of the condition, exercise prescription and clear communication regarding the condition. Factors significantly associated with adherence to scheduled physiotherapy appointments could understand the condition (p = 0.001).

Table 4.9: Barriers being compared to scheduled physiotherapy appointments.

		Adherence to Scheduled Physiotherapy Appointments				
		No	Yes	Total	p-value	cORs
Understanding of the condition	No	6	12	18		
	Yes	34	10	44	**0.001*****	1.87(1.162 - 3.010)
Exercise prescription	No	5	1	6		
	Yes	35	21	56	0.311	2.75 (.343 - 22.08)
clear communication regarding the condition	No	2	2	4		
	Yes	38	20	58	0.53	1.045(0.899 - 1.214)

Values in bold and asterisks shows the most significant values p≤0.005

The table 4.10 below shows adherence to exercises when compared to exercise barriers. Too many exercises were significantly associated with adherence to scheduled physiotherapy appointments

Table 4.10: Exercise Barriers compared to adherence to scheduled appointments

		Adherence to Scheduled Physiotherapy Appointments				
		Yes	No	Total	cOR	p-value
no time for exercising	No	15	15	30	ref	
	Yes	9	2	11	3.19 (0.79 - 12.93)	0.067
afraid to exercise without supervision from therapist	No	26	14	40	ref	
	Yes	5	5	10	0.61 (0.20 - 1.84)	0.382
exercises too many	No	26	12	38	ref	
	Yes	3	6	9	4.3 (0.9 - 20.3)	**0.05***
forget the exercises	No	24	12	36	ref	
	Yes	5	7	12	2.80 (0.73 - 10.7)	0.125
exercises too difficult	No	29	14	43	ref	
	Yes	1	2	3	4.14 (0.35 - 49.7)	0.23
increased pain when doing exercises	No	19	10	29	ref	
	Yes	9	6	15	1.27 (0.35 - 4.58)	0.71
rarely get the opportunity to do the exercises	No	22	12	34	ref	
	Yes	4	5	9	2.29 (0.52 - 10.18)	0.269
do not believe exercises will help	No	29	16	45		
	Yes	2	0	2	ref	0.299
no support from home	No	25	15	40	ref	
	Yes	1	4	5	6.67 (0.68 - 65.4)	0.07

Table 4.11 below shows the values included in the equation for the logistic regression analysis. The odds of defaulting are 6.4 times higher if a patient does not understand the condition. The odds of defaulting are 3 times higher if a patient does not have an exercise prescription.

Table 4.11: Variables in the equation for multivariate analysis logistic regression

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Understanding of the condition	1.861	0.621	8.963	1	0.003	6.427	1.901	21.726
	Exercise prescription	1.108	1.306	0.720	1	0.396	3.029	0.234	39.135
	Clear communication regarding the condition	-0.530	1.159	0.209	1	0.648	0.589	0.061	5.711
	Constant	-1.738	1.449	1.439	1	0.230	0.176		

a. Variable(s) entered on step 1: Understanding of the condition, Exercise prescription, and Clear communication regarding the condition.

Values highlighted in red shows the most significant values p≤0.005

Table 4.12 below shows the sociodemographic variables compared to adherence to scheduled physiotherapy appointments. Being old is associated with fewer chances of defaulting. Females are less likely to default than males, and patients are three times more likely to attend sessions if referred by a doctor than anyone else.

Table 4.12: Sociodemographic variables compared to adherence to scheduled physiotherapy appointments.

	P-Value	OR	(95%CI)	
Age	0.12	0.43	(.15 - 1.3)	Being old is associated with less chances of defaulting
Gender	0.61	0.99	(0.29 - 3.42)	Females are less likely to default than males
Source of referral	0.08	3.00	(0.86 - 10.5)	Patients are 3 times more likely to attend sessions if referred by a doctor as compared to anyone else

4.8 Conclusion

This chapter outlined the results and analysis from the survey. Descriptive analysis, multiple logistic regression and bivariate analysis were carried out. The next chapter discusses these findings.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter discusses the study findings in relation to the objectives to explore the patient-centred factors, provider-centred, and institutional factors associated with physiotherapy treatment adherence among patients with low back pain in private outpatient physiotherapy clinics in Eswatini. This chapter also highlights the strengths and limitations of the study, recommendations and concluding statements. Comparisons are made with other studies, and similarities and differences are highlighted.

5.2 Discussion of study findings

Demographic factors

This study is the first in Eswatini to explore different barriers faced with patients undergoing physiotherapy management for low back pain. The prevalence of low back pain has been similar among various cultures (Vos *et al.*, 2015), however in ages between 40-69 years, it is higher in females than in males (Maher, Underwood and Buchbinder, 2017). This study found that low back pain was most prevalent in the age group 31-40 years and higher in females than males. The most prevalent group affected in this population is the employed (82.3%). It can be inferred in this group that there is a high risk of work absenteeism due to low back pain. The literature reported that work absenteeism is increasing due to low back pain Huang *et al.*, (2020). However, there is a need to investigate if being employed is associated with low back pain and the related causes in the various working environments. Also, this study showed that being in an advanced age is associated with fewer chances of defaulting, and females are less likely to default than males.

The lifetime prevalence of acute low back pain globally is 14%, and it lasts up to two weeks, whereas the lifetime prevalence of chronic disabling lower back pain lasting at least six months is up to 11% (Popescu and Lee, 2020). Compared to the global estimates, the study showed that low back pain mostly lasts up to twelve months (54.8%). The reason why the pain is lasting for a more extended period, especially in this population, is still unknown and can be an area for further research.

Literature reports that low back pain is one of the major causes of consultations in primary health care (Hartvigsen, 2018). Similarly this study also showed an increased

frequency of physiotherapy consultations. Most participants had done one to five consultations (80.6%) and completed at most three to five sessions (51.6%). This could be due to the recurrent nature of low back pain. However, non-adherence in literature has been reported to cause adverse effects such as recurrent pain. In this population, non-adherence has been reported though it was the minority.

The study shows that most referrals are from consulting doctors at the primary health care level (67.7%). Also, this study showed that patients are three times more likely to attend sessions if referred by a doctor than anyone else. In a study done in South Africa on the management of low back pain at the primary care level, referrals to physiotherapy were rarely being done. Patients were mainly being managed with pain medication (Major-Helsloot *et al.*, 2014). In Eswatini, current practices in low back pain management still need to be investigated compared to the global guidelines in managing low back pain. This needs to be done on the primary care level and the specific private physiotherapy practices. A recent study showed that chronic low back pain management practices in African countries are not well documented and do not align with developed countries' biopsychosocial management guidelines (Ahenkorah *et al.*, 2019).

Patient centered Barriers

Within physiotherapy, the concept of adherence varies. Although the majority of the participating patients in this study (64.5%) have not missed physiotherapy appointments, 34.5% did. This is important to note because non-adherence still affects the treatment outcome and increases the number of consultations. The barriers reported in this study for non-adherence were work commitments, being afraid of contracting corona virus disease (COVID-19) during sessions, feeling like it was not helping, forgotten the appointment, they had travelled, did not have the pain anymore, felt like they were not getting the right diagnosis, medical aid provision was not enough, cannot afford many cash sessions and transport issues. This is similar to a study done by Mathy *et al.*, (2015). Mathy *et al.*, (2015) did a content analysis study on 30 patients with low back pain in Belgium that were undergoing regular physical activity treatment. The difference between the study and this research is that the COVID-19 pandemic was not a problem.

This study concluded that 77.4% of patients have time in their daily schedule to attend scheduled physiotherapy sessions. It can be inferred that having time in their daily

schedule is not a barrier to attend their physiotherapy sessions for most of the patients in this study population. Moreover, the 22.6% of patients that did not have time in their daily schedules to attend physiotherapy sessions agreed that the following factors were barriers; other important priorities, schedule already full to accommodate sessions, too busy and rarely gets an opportunity during the day. They also disagreed that these factors were barriers, inconvenience to continuously engage in scheduled sessions, "It is not helping me", "I do not believe it is helping me", and other unforeseen situations. 28.6% went on to highlight further that they are only available during the weekends and night time as well as the physiotherapy clinic was far from their place of residence (7.1%).

Other aspects highlighted in this study were afraid to contract COVID-19, clear explanations to the condition was not given, completely cured, medical aid exhaustion, expensive to pay cash, busy at work, no patience, no follow up on appointments, facility too far and expensive transport costs to get to the hospital. They also highlighted that "it is painful sometimes", lack of motivation and follow up activities and no permanent solution as factors that would prevent them from continuing with their prescribed physiotherapy sessions.

Compared to other studies Saner et al., (2018) did a qualitative study in a randomised controlled trial with 44 participants and concluded that the knowledge of the benefits of long term exercise and correct performance does contribute to the adherence of the treatment programme. Van Koppen et al., (2016) did a crossectional observational study with 51 patients investigating adherence rate and factors influencing adherence in following home based activity advice in patients' reffered to a physiotherapy clinic with no specific low back pain. Weather conditions and increasing pain were found to be barriers. Palazzo et al., (2016) did a qualitative study based on semi structured interviews with 29 patients to assess views of patients with chronic low back pain concerning barriers to home-based exercise program adherence and to record expectations regarding new technologies. Health care journey, patient presentations and home environment were found to be barriers. Anjum and Sonia (2019) did a survey using a structured self-questionnaire from outpatient physiotherapy centres with 150 to identify barriers and their association with adherence to physiotherapy treatment I a geriatric population. The following were highlighted as barriers, location, accessibility, paying expenses, long treatment duration, less encouragement from home and lack of confidence.

The literature has reported an increased risk of non-adherence to exercise programmes (Geneen *et al.*, 2017). This study showed that the majority of the participants disagreed with the commonly highlighted barriers in literature such as fatigue, absence of results, fear of pain, lack of motivation, more important daily priorities, unforeseen situations and increased pain levels during exercise, Van Koppen *et al.*, 2016 ; Palazzo *et al.*, 2016; Jack *et al.*, 2010; Essery *et al.*, 2017; Zadro *et al.*, 2019. However, the minority of the population agreed that these were barriers to performing their prescribed home programmes.

Although the knowledge of low back pain amongst patients is not well reported (Barbari *et al.*, 2020), the majority of the participants highlighted that they understood their condition (low back pain) (71%) and how physiotherapy was going to help them (93.5%). It is also important to note that 29% of the patients do not understand their condition. Future studies need to be conducted to show patients' knowledge of low back pain.

Provider centered barriers

Providing information to the patient to understand their diagnosis, purpose of the treatment procedure, the treatment programme, follow up sessions has also been found to affect the patients' adherence to their physiotherapy treatment (Babatunde, MacDermid and MacIntyre, 2017). This study showed that 93.5% of the participants communicated clearly with their physiotherapist regarding their condition, treatment strategies, and outcome. Fifty-six (90.3%) of the patients were prescribed home exercise programmes by their physiotherapists, and 51.6% received reference material for their exercises. 62.9% of the participants were being followed up routinely by their physiotherapists, and 62.9% received reminders for their upcoming appointments. The waiting period reported by patients in this study was 0-14 days and up to more than 43 days in a small number of patients. The waiting period was contrary to the three days the physiotherapists reported the waiting times were. Lack of time among physiotherapists has been highlighted as one of the major barriers in managing patients with low back pain (Östhols, Boström and Rasmussen-Barr, 2019). Current literature does not clearly state if lack of time is also a barrier to setting patient treatment sessions.

Furthermore, barriers that were significantly associated with adherence to scheduled physiotherapy appointments were; understanding the condition ($p = 0.001$) and too many exercises ($p = 0.005$). The odds of defaulting are 6.4 times higher if a patient does not understand the condition. The odds of defaulting are 3 times higher if a patient does not have an exercise prescription. The understanding of the condition as related to adherence is not well reported in the literature; however, this study showed that most patients admitted that they understood their condition. However, the extent of this knowledge needs to be investigated. However Supp *et al.*, (2020) and Bachmann, Oesch and Bachmann, (2018) highlighted that patients do remember the advice from their physiotherapists when prescribed exercises were simple to perform and a few in number. Similarly in this study, a portion of participants (16.1%) did agree that the exercises were too many and could not remember them. This also goes hand in hand with whether reference material was given on the exercises. In this study, 48.4% did not receive reference material, and 51.6% received reference material for the prescribed exercises. Reference material helps to aid in remembering the exercises and carefully doing them correctly.

Institutional Factors

Administrative aspects also play a role in introducing barriers in the management of patients (Östhols, Boström and Rasmussen-Barr, 2019). Some of the administrative aspects reviewed in this study demonstrate that efforts are being made to ensure the best care is given to the patients. These include prior communication provided to the patients to remind them of their appointments, enough resources to manage the condition, ensuring continuity with one therapist maintaining the same patients, and reduced waiting days for the next follow-up appointment. Comparing with the following studies, a survey in Sweden revealed that "lack of time and knowledge, administrative aspects, the interaction between physiotherapist and patient and applicability and validity of the patient" are some of the major barriers in treatment outcome measures (Östhols, Boström and Rasmussen-Barr, 2019).

Physiotherapists' communication skills impact the patient to physiotherapist relationship. This can determine whether the patient feels comfortable continuing with physiotherapy and attending the follow-up treatments (Lonsdale *et al.*, 2012). Amongst other barriers, delayed consultations have been found to contribute to poor outcomes in

managing low back pain (Chen *et al.,* 2018). Providing information to the patient to understand their diagnosis, purpose of the treatment procedure, the treatment programme, follow up sessions have also been found to affect the patients' adherence to their physiotherapy treatment (Babatunde, MacDermid and MacIntyre, 2017).

5.3 Conclusion

Similar to other studies, the barriers affecting adherence to physiotherapy treatment were mainly related to the financial aspect, tight work schedules, transport issues in distance and costs, being asymptomatic and the COVID-19 pandemic. Barriers to treatment adherence are not universal to every population. Factors significantly associated with adherence to scheduled physiotherapy appointments for the study population in Eswatini were; understanding the condition ($p = 0.001$) and too many exercises ($p = 0.005$). The odds of defaulting are 6.4 times higher if a patient does not understand the condition. The odds of defaulting are 3 times higher if a patient does not have an exercise prescription. Also, being old is associated with fewer chances of defaulting. Females are less likely to default than males, and patients are three times more likely to attend sessions if referred by a doctor than anyone else. Although the participating patients identified different barriers for non-attendance, these barriers still pose a potential to cause non-adherence. There is a need to assess barriers in every patient population to understand their different challenges and deliver patient-centred care. Some barriers highlighted were due to the occurrences of the Covid-19 pandemic and the country political unrest. It is during these times that therapists should strategize to give proper care to the patients.

Study Weaknesses

The survey was long, which prompted incomplete surveys. However, regular follow-ups encouraged various patients to remember and complete their surveys. The technical issue that was present was that answering the survey on whatsapp with the mobile number of the sender not saved caused the link to the survey not to open on some mobile smartphones. Hence if it was not reported by the participant they could not complete the survey at all. This was rectified by following up and prompting them to save the mobile number. The limitation of this study design is that it cannot establish the cause and effect relationship. However, this type of research can identify the areas for further research.

Recommendation and future research

There is paucity in research considering adherence and quality of life of people living with low back pain. There is currently no standardised assessment outcome measure or tool available to assess patient-adherence barriers. It is not clear in most of the studies done by researchers if adherence to set physiotherapy treatments for low back pain is assessed at baseline and reassessed to check to what extent it affects treatment outcome. Research can also be done in other settings like the public sector to establish the barriers they also face and can be compared to the population in private. Furthermore, the survey can also be tested in other conditions to modify it and apply it in various practice areas or disciplines.

Currently, there are no policies to combat the barriers to physiotherapy treatment of low back pain in Eswatini. These barriers need to be addressed at every level. The public needs to be sensitised and educated (employers, employees and otherwise) on the barriers to treatment of low back pain and its adverse effects if they cause non-adherence. Also, this condition primarily affects women in the working cluster. Further investigation is needed to establish the causes.

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APPENDICES

Appendix 1: Medical Human Research Ethics Committee at the University Of Witwatersrand ethical clearance.

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research and Postgraduate Affairs)

TO:	Ms T Chikaka School of Therapeutic Sciences Department of Physiotherapy Medical School University
	E-mail: tapiwalorrainec@gmail.com
CC:	Supervisor: Ms M Keller <Monique.Keller@wits.ac.za> and <HREC-Medical Research Office@wits.ac.za>
FROM:	Mr Iain Burns Human Research Ethics Committee (Medical) Tel: 011 717 1252
	E-mail: Iain.Burns@wits.ac.za
DATE:	2021/04/08
REF:	R14/49
PROTOCOL NO:	**M201018** (This is your ethics application reference number. Please quote it in all enquiries, oral or written, relating to this study.)
PROJECT TITLE:	*Determining the barriers to treatent adherence of patients with low back pain in physiotherapy outpatient clinics in the Kingdom of Eswatini*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to Government funding of the University.

MSWorks2000/Iain0007/Clearscan.wps

UNIVERSITY OF THE
WITWATERSRAND
JOHANNESBURG

R49 Ms T Chikaka

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M201018

NAME:
(Principal Investigator) Ms T Chikaka

DEPARTMENT: School of Therapeutic Sciences
Department of Physiotherapy
Medical School
University

PROJECT TITLE: *Determining the barriers to treatent adherence of patients with low back pain in physiotherapy outpatient clinics in the Kingdom of Eswatini*

DATE CONSIDERED: 2020/10/30

DECISION: Approved unconditionally

CONDITIONS:

SUPERVISOR: Ms M Keller

APPROVED BY: CB Penny
Dr CB Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL: 2021/04/08

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **October** and therefore reports and re-certification will be due in the month of **October** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator _____ Date _____

Appendix 2: Eswatini Health and Human Research Review Board ethical approval

.

ESWATINI HEALTH AND HUMAN RESEARCH REVIEW BOARD
MBANDZENI HOUSE, 3RD FLOOR, CHURCH STREET
P.O. BOX 5, MBABANE, ESWATINI

ONE YEAR RESEARCH PROTOCOL APPROVAL CERTIFICATE

BOARD REGISTRATION NUMBER	FWA 00026661/IRB 00011253								
PROTOCOL REFERENCE NUMBER	SHR328/2021								
Type of review	Expedited	X		Full Board					
Name of Organization	**Master' student**								
Title of study	Barriers to treatment adherence of patients with low back pain in physiotherapy outpatient clinics in the Kingdom of Eswatini								
Protocol version	1.0								
Nature of application	New		Amendment		Renewal		Extension		CT updates
	X								
List of study sites	Physiomed Health, Matsapha Health Care physiotherapy, Healing Hands, SOPREC, L and V Physiotherapy, Philani Clinic Physiotherapy								
Name of Principal Investigator	**Ms. Tapiwa Lorraine Chikaka**								
Names of Co- Investigators	N/A								
Names of steering committee members in the case of clinical trials	N/A								
Names of Data and Safety Committee members in the case of clinical trials	N/A								
Level of risk (Tick appropriate box)	Minimal		More than minimal		High				
	X								
Initial study Approval information	**Approved**	X	**Study completion date**		**Certificate expiry Date**	16/03/2022			
	Approval date	16/03/2021							
Study renewal approval information	**Renewal date**				**End date**				
Study amendment approval information	**Amendment date**				End date				
Study extension approval information	**Extension date**				End date				
Signature of Chairperson									
Signing date	**16/03/2021**								
Secretariat Contact Details	Name of contact officers		**Babazile Shongwe**						
	Email address		ehhrrbeswatini@gmail.com						
	Telephone no.		**(00268) 2404 7751/9553**						

ESWATINI HEALTH & HUMAN RESEARCH REVIEW BOARD
16 MAR 2021
P.O BOX 5, MBABANE H100
TEL: (+268) 2404 4810
EHHRRB

APPROVAL CONDITIONS

Ref.	Conditions	Indication of conditions (tick appropriate box)				
1	Implementation of approved version of protocol					
2	Provide a specific insurance cover certificate in respect of this particular study within 14 days of receiving this Ethics Clearance certificate					
3	Update information on adverse events both on the addendum and the informed consent form to include measures for addressing life threatening adverse events that occur at home.					
4	Reporting of adverse events within 5 days of occurrence					
5	Submission of progress reporting for multi-year studies	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 4**	**Yr. 5**
6	Submission of end of project report (Hard copy)	✓				
7	Submission of end of project report (Soft copy)	✓				
8	Submission of data sets	✓				

List of reviewed documents

Ref.	Documents	Reviewed documents (tick appropriate box)
1	Completed application form	✓
2	Cover letters	✓
3	Evidence of administrative permission to conduct the research by involved institutions/sites (where applicable)	
4	Detailed current resume or curriculum vitae of Principal Investigator/s including Principal investigators declaration	✓
5	Summary resume or biography for other investigator(s)	✓
6	Evidence of approval/rejection by other Ethics Committees, including comments and requested alterations to the protocol, where appropriate.	✓
7	Research protocol (see outline in Annex 1)	✓
8	Questionnaires and interview guides (with back-translated versions where applicable)	✓
9	Case report forms (CRFs), abstraction forms and other data collection tools	
10	Participant/subjects Information Statement(s) (where applicable)	✓
11	Informed consent form(s) including photographic and electronic media consent statements.	✓
12	Advertisements relevant to the study (where applicable)	
13	Source of funding and detailed budget breakdown including material and incentives to participants if applicable	✓
14	Notification form for adverse effects/events.	
15	Proof of payment	✓
16	Proof of insurance cover for research subjects in clinical trials or where applicable	
17	Any other special requirements should be stated, if applicable	N/A

Appendix 3: Approvals from clinical directors

Preety Daya Physiotherapy PTY Ltd
P.O. Box 7124, Mbabane, Swaziland

Matsapha Health Care
43 Matsapha Crescent
Direct line: 2518-8625
Tel: 2518-4110

Mbabane Clinic
Direct line 2404-7174
Tel: 2404-2423/4
E-mail: pdaya@swazi.net

www.pdayaphysio.com

REF: LETTER OF APPROVAL

This serves to confirm that Tapiwa L Chikaka has been given permission to conduct her study entitled **BARRIERS TO TREATMENT ADHERENCE OF PATIENTS WITH LOW BACK PAIN IN PHYSIOTHERAPY OUT PATIENTS CLINICS IN THE KINGDOM OF ESWATINI**; at 2 clinics situated in Matsapha and Mbabane.

Yours Sincerely

Bothwell Parirenyatwa

(Director)

PhysioMed
"Physical Health, Our Pride"

Mallmed Family Clinic
Emphalweni Mall
Shishayi Street
Mbabane.

P.O Box 6168
Mbabane
Email:physio.experties@gmail.com

Mkhiwa Clinic,
Inyatsi Building,
David Hind Road
Manzini.

Tel: (+268) 2505929
Cell: (+268) 78016000

15/01/2021

To whom it may concern

REF: LETTER OF APPROVAL

This serves to confirm that Tapiwa L Chikaka has been given permission to conduct her study entitled **BARRIERS TO TREATMENT ADHERENCE OF PATIENTS WITH LOW BACK PAIN IN PHYSIOTHERAPY OUT PATIENTS CLINICS IN THE KINGDOM OF ESWATINI**; at PhysioMed 3 compasses situated in Manzini, Matsapha and Mbabane.

Yours Sincerely

Sharon Masona (Director)

LINAMANDLA
MEDICAL CENTRE
"Be Healed, Be Transformed!"

28 January 2021

The Head of Department

Physiotherapy Department

University of Witswatersrand

Parktown

Johannesburg

RE: PERMISSION TO CONDUCT RESEARCH STUDY

This serves to confirm that Tapiwa L Chikaka has been given permission to conduct her masters research study entitled BARRIERS TO TREATMENT ADHERENCE OF PATIENTS WITH LOW BACK PAIN IN THE KINGDOM OF ESWATINI at Linamandla Medical Centre, Swazi Plaza, Mbabane.

For any further information please contact us.

Yours Sincerely

Zolile Shabangu

Director

Unit 42, Swazi Plaza
Next to Clicks Mbabane

Tel: (+268) 2404 9354
Cell: (+268) 7921 3822

info.linamandla@gmail.com
swaziphysio01@gmail.com

Appendix 4: Study Questionnaire First Component

PHYSIOTHERAPY LOW BACK PAIN ADHERENCE QUESTIONNAIRE

Please complete the survey below.

Thank you!

What is your gender? Ululili buni?	◯ male ◯ female
What is your age? Unangakhi weminyaka?	◯ less than or equal to 20 years ◯ < 21 years - 30 years ◯ 31 years- 40 years ◯ 41 years - 50 years ◯ 51 years - 60 years ◯ 61 years - 70 years ◯ 71 years - 80 years (please select from the given age range)
What is the highest level of education that you have completed? Please select from below. Ufundze wefika kuliphi libanga? Khetsa lokungentasi.	◯ Non/ angikafundzi ◯ Primary/ Ngifike esigabeni seprimary ◯ Secondary/ Ngifike esigabeni sesecondary ◯ Tertiary/ Ngifike esigabeni setertiary (please select from the menu)
What is your employment status? Please select below. Uyasebenta yini? Khetsa kulokungentasi	◯ Unemployed/ angikacashwa ◯ Employed / ngicashiwe ◯ Self-employed/ ngiyatisebenta ◯ Student/ ngiyafundza ◯ Retired/ sengapenishelwa ◯ Unable to work/ angikhoni kusebenta (please select from the menu)
If unable to work, please state why? Nawungasebenti, yini lekubangela kutsi ungasebenti?	_____ (PLEASE ANSWER THIS QUESTION IF YOU SELECTED UNABL TO WORK FROM THE PREVIOUS QUESTION.)
Which region is the physiotherapy practice that you are currently attending? Please select below. Ngusiphi sifundza lapho welashelwa khona? Khetsa kulokusentasi.	◯ Manzini ◯ Hhohho ◯ Shiselweni ◯ Lubombo (please select in the drop down menu)

For how long have you experienced low back pain? Please state the number of years, months or weeks.

Sonesikhatsi lesinganani uphetfwe buhlungu bemgogodla? Shano kutsi seminyaka lemingakhi, tinyanga, emaviki noma emalanga lamangakhi.

_____
(please select the duration(days/ months/weeks/years))

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
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- ◯ 95
- ◯ 96
- ◯ 97
- ◯ 98
- ◯ 99
- ◯ 100

What is your source of referral for physiotherapy treatment of the low back pain? Please select bellow.

Ngubani lowatsi ungaya kuyolapha lobuhlungu bemgogodla? Khetsa kulokusentansi.

- ◯ Consulting Doctor/ Dokotela
- ◯ Nurse/ linesi
- ◯ Pharmacist/ ngulokuniketa imitsi noma emaphilisi
- ◯ Parent/ ngumtali
- ◯ Spouse/ nguloshade naye
- ◯ Family member/ lilunga lemndeni
- ◯ Colleague/ ngulosebenta naye
- ◯ Friend/ ngumngani

(please select from the menu)

Some people often fail to fulfil their treatment plans set by their physiotherapist due to one or more of the factors indicated in the questions. Please answer each question based on your personal experience of your physiotherapy journey by filling in the answer or selecting one from the provided responses.

Etikhatsini letinyenti labagula ngekulimala bayaye bangakhoni kucedzelela kwelashwa kwabo ngetizatfu letihlukahlukene letivetwa ngulemibuto lelapha kulesigaba. Phendvula lemibuto lelandzelako ngalondlule kuko wena usalashwa ngekutsi ugcwalise ngalokungiko noma ukhetse timphendvulo loniketwe tona.

How many physiotherapy consultations have you had so far concerning this low back pain ?

Sewute kangakhi kutolashelwa lomgogodla ?

_____

Have you missed any physiotherapy sessions? Please select below.

Wake wapholota yini kuta emtfola mphilo? Khetsa kulokusentansi.

◯ yes/ yebo
◯ no/ chake
(please select in the drop down menu)

If yes please explain why?

Yebo, yini lekubangela?

_____
(please type in your reason if have selected yes from above question)

In this current consultation how many sessions have you done?

Kuloku kwanyalo kugula sewute kangakhi?

_____
(enter the number of times you have seen your physiotherapist in this current session)

On a scale of 1 to 100 how much is your low back pain today?

Nawubekisa usentisa tinombolo kusuka ku 1 kuya 100 lobuhlungu bukhulu kanganani?

(From 1 is the lowest and 100 is the highest/ 1 umele buhlungu lobuncane bese 100 umele buhlungu lobukhulu kakhulu)

Mild moderate severe

(Place a mark on the scale above)

Do you have an understanding of your condition? Please select below.

Uyakucondza yini kugula kwakho? Khetsa kulokuvela entansi.

◯ yes/ yebo ◯ no/ chake

Do you have an understanding of how physiotherapy is going to help you?

Uyacondza yini kutsi dokotela noma lolokwelaphako utokukwelapha kanjani?

◯ yes/ yebo ◯ no/ chake

If no, please select why? Nangabe awucondzi, khetsa inchanzelo kuletiphendvulo lotiniketiwe entansi.	☐ I was not given a clear explanation of what and why we are doing this./ Angikachazeleki kahle kutsi yini lelekumele ngiyente futsi ngiyentelani. ☐ I did not ask why and how physiotherapy is going to help me./ Angikabuti kutsi leni nekutsi kahle kahle lendlela yekulashwa itongisita kanjani. ☐ There was no enough time given to ask questions./ Bengite sikhatsi sekubuta imibuto. ☐ I did not think it was important to know./ Angikakuboni kumcokwa kutsi ngibute. (please select as many as apply to you)
Other, please specify? Nakukhona lokunye lokungakavetwa langetulo ungakusho?	_____ (please type in if you have any other reason not mentioned above)
Do you have time in your daily schedule to attend physiotherapy sessions? Unaso yini sikhatsi elangeni lakho sekuta utolashwa?	◯ yes/ yebo ◯ no/ chake

If no, for the following responses please select either strongly agree, agree, neutral, disagree or strongly disagree.

Nangabe utokhetsa kutsi chake, kuletinchazelo letilandzelako ungasho utsi; ngiyavuma ngalesikhulu siciniseko, ngiyavuma, ngime emkhatsini, angivumi noma angivumelani nako kakhulu

	strongly agree	agree	neutral	disagree	strongly disagree
I have other important priorities/ kukhona lokumcokwa lengikwentako	○	○	○	○	○
My schedule is already full to accommodate the sessions/ lilanga lami lihlala ligcwele angikhoni kuta kutolashwa	○	○	○	○	○
I am too busy/ ngihlala ngimatasatasa	○	○	○	○	○
I rarely get the opportunity in my day/ angisitfoli sikhatsi sekuta	○	○	○	○	○
It is inconvenient for me to continuously engage in the sessions/ akusikolula kutsi bengingachubeka nekutotfola lusito	○	○	○	○	○
It is not helping me/ Angisitakali	○	○	○	○	○
I do not believe it is helping my low back pain / angitiva ngisitakala kulobuhlungu bemgogodla	○	○	○	○	○
The visits are too frequent/ Tinengi kakhulu letikhatsi lekumele ngite ngato	○	○	○	○	○
Other unforeseen situations arise/ Ngivame kuvelelwa timo bengingkatigadzi	○	○	○	○	○

Other, Please specify?

Nakukhona letinye tizatfu letingakeveli ungatibhala lapha ?

_____
(please type in if you have any other reason that is not indicated above)

Did your physiotherapist prescribe for you home exercise program?

○ yes/ yebo
○ no/ chake

Lokusitako ngabe ukunikule yini longakwenta ekhaya kute ululame?

If yes, concerning the exercises that are recommended for you by your physiotherapist; Please select strongly agree, agree, neutral, disagree or strongly disagree for the following responses, as a reason why you might not do them.

Nangabe utokhetsa kutsi Yebo, kuletinchazelo letilandzelako letichaza kutsi awukhoni ngani kuchubeka neluhlelo lwasekhaya ungasho utsi; ngiyavuma ngalesikhulu siciniseko, ngiyavuma, ngime emkhatsini, angivumi noma angivumelani nako kakhulu

	strongly agree/ ngiyavuma ngalesikhulu siciniseko	agree/ ngiyavuma	neutral/ ngime emkhatsini	disagree/ angivumi	strongly disagree/ angivumelani nako kakhulu
I do not have time to do the exercises/ Ngite sikhatsi lesanele	○	○	○	○	○
I am afraid to do the exercises on my own without the supervision of my physiotherapist/Ngiyesaba kutentela angekho loceceshelwe kutsi angisite	○	○	○	○	○
The exercises are too many I do not remember some of them/kunengi lenginiketwa kutsi ngikwente ngisekhaya, ngibese lokunye ngiyakukhohlwa	○	○	○	○	○
I forget the exercises and I do not have a reference to follow/ ngiyakhohlwa kutsi ngimele ngenteni kute nalapho ngingabuka khona kute ngitikhumbute	○	○	○	○	○
The exercises are too difficult for me to do at home/ kulikhuni kwenta loku lenginiketwe kona	○	○	○	○	○
My back becomes painful when I do the exercises/ umgogodla wami uphatfwa tinhlungu nangenta lokulenginiketwe kona	○	○	○	○	○
I rarely get the opportunity to do the exercises/ angisitfoli sikhatsi	○	○	○	○	○
I do not believe the exercises will help me / angikholelwa kutsi letinhlelo lenginiketwe tona kutsi ngitente ekhaya titongisita	○	○	○	○	○

I do not have support from home to help me do the exercises/ kute longisekelako noma longelekelelako ekhaya	○	○	○	○	○
I do not see any improvement as I do the exercises/ nangenta letinhlelo angibuva buncono	○	○	○	○	○

Other, please specify.

Nakukhona letinye tizatfu letingakeveli ungatibhala lapha .

_____
(please type in if you have any other reason not mentioned above)

Concerning your physiotherapy sessions that you are recommended to complete by your physiotherapist; Please select strongly agree, agree, neutral, disagree or strongly disagree for the following responses, as a reason that might demotivate you to continue.

Nangabe utokhetsa kutsi Yebo, kuletinchazelo letilandzelako letichaza kutsi awukhoni ngani kuchubeka neluhlelo lwasekhaya ungasho utsi; ngiyavuma ngalesikhulu siciniseko, ngiyavuma, ngime emkhatsini, angivumi noma angivumelani nako kakhulu.

	strongly agree	agree	neutral	disagree	strongly disagree
It is a burden to change my routine/ akusikolula kugucula lusuku lwami	○	○	○	○	○
I have to keep it a secret/ kuyimfihlo yami	○	○	○	○	○
I am disheartened by my condition/ Lesimo lengikuso singivisa buhlungu kakhulu	○	○	○	○	○
There is a huge burden in travelling (distance, cost and accessibility)/ akusiko lula kufika lapho ngingatfola khona lusito (kukhashane, tindleko tekufika khona tisetulu noma lendzawo ayitfolakali lula)	○	○	○	○	○
I do not see any result/ angiyiboni imiphumela lemihle	○	○	○	○	○
I do not see the importance of doing this/ angibuboni bumcoka bekuchubeka	○	○	○	○	○
The cost of continuing with treatment is too much/ kudulile kuchubeka naleluhlelo	○	○	○	○	○
Previous negative experience/ Angikaphatseki kahle emveni	○	○	○	○	○
It is painful/kubuhlungu	○	○	○	○	○
It is taking too long to resolve/kutsatsa sikhatsi lesidze kuphela	○	○	○	○	○
People with this condition are often stigmatised in my society/ emmangweni siyabandlululeka	○	○	○	○	○

It does not fit in my cultural beliefs/ angikholelwa kiko	○	○	○	○	○
The weather can be unfavourable/ simo selitulu asivami kungivumela	○	○	○	○	○
I do not believe this can help my condition/ angikholwa kutsi ngingasitakala kulendlela lena	○	○	○	○	○
I have no support from family and friends /ekhaya abangikhutsati	○	○	○	○	○
I already feel better/ sengitiva ngincono	○	○	○	○	○
Forget follow up appointment/ngiyasikhohlwa sikhatsi lekumele ngibuye ngaso	○	○	○	○	○

Other, please specify.

Nakukhona letinye tizatfu letingakeveli ungatibhala lapha.

_____
(please type in if you have any other reason not mentioned above)

Some people often fail to fulfil their treatment plans set by their physiotherapist due to one or more of the factors indicated in the questions. Please answer each question based on your personal experience of your physiotherapy journey by filling in the answer or selecting one from the provided responses.

Labanye bantfu bayehluleka kucedzela noma kuchubeka nalabakuniketwe kona ngulabalababasita kutsi balulame, ngendzaba yanati tizatfu letiniketiwe ngentasi. Njengalosita bantfu labagula ngetekulimala phendvula lemibutongekutsu ugcwalise noma ukhetse lokuniketiwe.

Did your physiotherapist communicate clearly regarding your condition, treatment plan and treatment goals and follow up?

Ngabelolokusitako wakuchazela yini ngesimo sakho, ngedlela lotolashwa ngawo nangekutsi utokulandzelela kanjani?

- ◯ yes/ yebo
- ◯ no/ chake

If no, please select why? Nangabe ukhetse kutsi; chake, khetsa sizatfu kunati loniketwe tona

- ☐ There was a language barrier/ asivananga ngendzaba yekutsi sisebentisa lulwimi lolwehlukene
- ☐ The words were too complicated to understand/ lamagama avakala amakhulu ngangakhoni kuwacondza
- ☐ There was no time allocated to ask questions/ bekute sikhatsi sekutsi ngibute imibuto
- ☐ The therapist did not take time to listen to my story/ lolongisitako akatinikanga sikhatsi sekulalela indzaba yami.
- ☐ The information given was too much/ nganiketwa tinchazelo letiningi kakhulu
- ☐ No clear information was given on how attending the physiotherapy sessions will help me./ angichazekelelanga kahle kutsi kuta kwami kutongisita kanjani
- ☐ No clear steps were given for my progress and expected time of recovery/ tindlela tekutsi ngitolapheka kanjani atifikanga , ngavele nganiketwa kutsi sikhatsi lekubhekeke kutsi ngilulame ngaso ngusiphi
- ☐ I was not advised on what to expect and not to expect during this time/ angichazelwanga kutsi ngigadzeni futsi ngingagadzi ini kulesikhatsi

(please select as many as apply to you)

Other, please specify.

Nayikhona lenye inchazelo lengakaveli kuleti lotinikiwe ungayisho

_____

(please type in if you have any other reason not mentioned above)

Concerning your physiotherapist during treatment sessions, Please select strongly agree, agree, neutral, disagree or strongly disagree for the following responses, as a reason that might demotivate you to continue.

Mayelana nalona lokusita kutsi ululame ngabe kukhona yini lokwentekako lokukwenta ungakukhutsaleli kuta utolashwa. Khetsa kunati tinchanzelo loniketwe tona, ungasho utsi; ngiyavuma ngalesikhulu siciniseko, ngiyavuma, ngime emkhatsini, angivumi noma angivumelani nako kakhulu.

	strongly agree	agree	neutral	disagree	strongly disagree
I do not understand the treatment procedure/ angiyicondzi indlela lengilashwa ngayo	○	○	○	○	○
They are passive, not engaged in the activities/ abakunakisisi lokulabanginika kutsi ngikwente	○	○	○	○	○
Therapist has low confidence in own skills/ abetetsembi kutsi ngabe umsebenti wabo bawenta kahle yini	○	○	○	○	○
The treatment procedure is monotonous/ kusetjentiswa yinye indlela njalo nangitolashwa	○	○	○	○	○
The activities are too many/ kunengi kakhulu labanginika kutsi ngikwente	○	○	○	○	○
There is lack of follow up/ abangilandzeleli kahle	○	○	○	○	○
Too busy to move on to the next waiting patient/ baphishaneke kakhulu bajake kunaka labanye labalandzelako	○	○	○	○	○
The therapist is too aggressive/ lona longisitako unelidlame kakhulu	○	○	○	○	○
The therapist is not patient in between activities/ lona longisitako utesineke sekungisita	○	○	○	○	○
I always have to wait when I arrive at my time of appointment/ ngicale ngime kucala noma ngifike ngsikhatsi lenganiketwa sona	○	○	○	○	○

It is difficult to contact the therapist to cancel or reschedule appointments/ akusiko lula kuchumana nalona longisitako kutsi ngishintje noma ngicishe lipoyinti lalelosuku	○	○	○	○	○
They do not call to reschedule appointments/ abashayi kutokusho kutsi sekushintja sikhatsi sekuhlangana	○	○	○	○	○
I see a different therapist each time/ ngihlale ngisitwa ngumuntfu lohlukile sonkhe sikhatsi	○	○	○	○	○
It is too noisy/ kuhlale kunemsindvo	○	○	○	○	○
Lack of privacy/ kuhlale kuphishanekile angitiva ngikhululekile	○	○	○	○	○
Lack of air conditioning/ angikhoni kushaywa ngumoya kahle	○	○	○	○	○

Other, please specify.

Nakukhona lokunye lokungakashiwo ngetulu ungakubhala.

_____
(please type in if you have any other reason not mentioned above)

Does your physiotherapist do a routine follow up on your condition?

Ngabe lolokusitako uyakhona yini kukulandzelela?

○ Yes
○ No

Does your physiotherapist provide you with reference material for given home programes?

Ngabe lolokusitako kukhona yini lakuniketa kona, lapho lobukakhona kutsi engabe usenta kahle yini noma usekhaya?

○ Yes
○ No

Does your physiotherapist remind you of your upcoming appointment before the time via, sms, email or call?

Ngabe lolokusitako uyakukhumbuta yini kutsi sikhatsi sekuta kwakho utolashwa sesisondzele, ngekutsi akutfumelele umlayeto noma akushayele lucingo?

○ Yes
○ No

How long do you wait for the follow up session?

Umasikhatsi lesinganani kute uphindze ubuyele utositakala?

_____
(please select the duration(days/ months/weeks/years))

- ◯ Days
- ◯ week(s)
- ◯ month(s)
- ◯ year(s)

In your own words please state any other factor that can contribute to stopping the set treatment plans by your physiotherapist?

Ngekusebentisa emagama akho, shano noma ngabe yini lengakuvimba kutsi ukhone kutochubeka nekusitakala?

_____
(please type in if you have any other reason not mentioned)

Appendix 5: Study Questionnaire Second Component

Confidential

ORGANISATIONAL FACTORS IN CLINICAL PRACTICE QUESTIONNAIRE

Please complete the survey below.

Thank you!

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1) What is your age?

Unangakhi weminyaka?

- ◯ < 21 - 30
- ◯ 31 - 40
- ◯ 41 - 50
- ◯ 51 - 60
- ◯ 61 - 70
- ◯ 71 - 80

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2) What is your gender?

Ubulili buni ?

- ◯ Male
- ◯ Female

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3) Which region are you working in?

Usebenta kusiphi sifundza?

- ☐ Mbabane
- ☐ Ezulwini
- ☐ Matsapha
- ☐ Manzini

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4) What is the training level of the physiotherapist attending patients with low back pain?

Ufundze wefika kusiphi sigaba lona losita bantfu labagula ngemgogodla?

- ◯ Diploma
- ◯ Bachelors Degree
- ◯ Masters Degree
- ◯ Doctorate

5) For how long have you been practising as a physiotherapist?

Isikhathi esingakanani Ubululonga njenge kusita bantfu labagula ngemgogodla?

_____

◯ 1	◯ 2	◯ 3	◯ 4	◯ 5	◯ 6	◯ 7	◯ 8	◯ 9	◯ 10	◯ 11	◯ 12	◯ 13
◯ 14	◯ 15	◯ 16	◯ 17	◯ 18	◯ 19	◯ 20	◯ 21	◯ 22	◯ 23	◯ 24	◯ 25	
◯ 26	◯ 27	◯ 28	◯ 29	◯ 30	◯ 31	◯ 32	◯ 33	◯ 34	◯ 35	◯ 36	◯ 37	
◯ 38	◯ 39	◯ 40	◯ 41	◯ 42	◯ 43	◯ 44	◯ 45	◯ 46	◯ 47	◯ 48	◯ 49	
◯ 50	◯ 51	◯ 52	◯ 53	◯ 54	◯ 55	◯ 56	◯ 57	◯ 58	◯ 59	◯ 60	◯ 61	
◯ 62	◯ 63	◯ 64	◯ 65	◯ 66	◯ 67	◯ 68	◯ 69	◯ 70	◯ 71	◯ 72	◯ 73	
◯ 74	◯ 75	◯ 76	◯ 77	◯ 78	◯ 79	◯ 80	◯ 81	◯ 82	◯ 83	◯ 84	◯ 85	
◯ 86	◯ 87	◯ 88	◯ 89	◯ 90	◯ 91	◯ 92	◯ 93	◯ 94	◯ 95	◯ 96	◯ 97	
◯ 98	◯ 99	◯ 100										

6) How many attending physiotherapists do you have in your clinic?

Bangakhi labasita labo labaphetfwe ngumgogodla kulomtfolamphilo lona?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10

7) Do you have enough physiotherapists in the clinic for the workload of patients attending the clinic?Please select below.

Ngabe laba lasita tigulane letigula ngetekulimala ninabo ngalokwenele yini? Khetsa kulokuvetiwe entansi.

- ◯ Strongly agree/ ngiyavuma ngalesikhulu siciniseko
- ◯ Agree/ ngiyavuma
- ◯ Neutral/ ngime emkhatsini
- ◯ Disagree/ angivumi
- ◯ Strongly disagree/ angivumelani nako kakhulu

8) Do you have enough resources available in the clinic to assist physiotherapists in treating patients appropriately?

Ngabe ninako ngolokwanele yini lokungasita loyo logula nekwetekulimala?

- ◯ Strongly agree/ ngiyavuma ngalesikhulu siciniseko
- ◯ Agree/ ngiyavuma
- ◯ Neutral/ ngime emkhatsini
- ◯ Disagree/ angivumi
- ◯ Strongly disagree/ angivumelani nako kakhulu

9) How long is the waiting time for the follow up appointments?

Labatofuna lusito balindza sikhatsi lesinganani?

_____

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
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- ◯ 98
- ◯ 99
- ◯ 100

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10) How do you remind the patients to attend the follow up appointments? Please select below

Nibakhumbuta njani abagulako kutsi babuye kutolashwa? / Khetsa kulokusentansi.

- ☐ Write on card time and date/ sibhala lilanga nesikhatsi ekhadini letigulane
- ☐ Send an SMS prior to the appointment/ sitfumela umlayeto ngelucingo nasekusondzele lilanga lelipoyinti
- ☐ Give a call prior to the appointment/ sishaya lucingo nasekusondzele lilanga lelipoyinti
- ☐ Send an email prior to the appointment/ sitfumela umlayeto ku email nasekusondzele lilanga lelipoyinti
- ☐ we do not remind the patients to attend the follow up sessions

---

11) Other, please specify.

Nakukhona lokunye lokungakashiwo ngetulu ungakubhala? _____

---

12) Does the same physiotherapist see the same patient during a follow up session?

Ngabe lolophatsekile unakwa ngulositako munye aze alulame yini?

- ◯ Yes / Yebo
- ◯ No/Chake
- ◯ Sometimes/ ngalesinye sikhatsi
- ◯ Rarely/ akukavami