KNOWLEDGE AND ATTITUDES OF PHYSIOTHERAPY STUDENTS ABOUT THE ROLE OF PHYSIOTHERAPY IN MENTAL HEALTH

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A Research Report submitted to the Faculty of Health Science, University of Witwatersrand, in fulfilment of the requirements for the Master of Science of Physiotherapy

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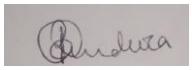
Declaration

I, Ropafadzo Ruby Gunduza (student number 2309328), declares that this Research Report is my own, unaided work. It is being submitted for the Degree of Masters of Science in Physiotherapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



(Signature of candidate)

31st day of March 2022

Dedication

To my mother, Emedie Gunduza, who continues to inspire me and push me to evolve into the best version of myself. I love you.

Abstract

Background: There is a growing body of evidence in South Africa regarding the role of physiotherapists in mental health, and the knowledge and attitudes of physiotherapists regarding this role. However, little is known about physiotherapy students' knowledge and attitudes regarding the role of physiotherapy in mental health.

Purpose: To establish the knowledge and attitudes of undergraduate physiotherapy students about the role of physiotherapy in mental health.

Methods: This was a descriptive, cross-sectional study. Third- and fourth- year undergraduate physiotherapy students at the University of the Witwatersrand, South Africa were invited to complete an online questionnaire about their knowledge and attitudes regarding the role of physiotherapy in mental health. The online questionnaire included the: Mental Health Knowledge Schedule (MAKS) and the Mental Illness Clinicians' Attitudes (MICA-4) scale. The Statistical Package for Social Sciences (SPSS) v27 was used for analysis. A univariate analysis was done to compare knowledge and attitude between third- and fourth year physiotherapy students.

Results: Thirty-four students participated in this study, representing a response rate of 34%. The results indicated a moderate level of knowledge and a positive attitude towards mental health (MAKS score was 26.94 (SD 3.57), MICA-4 score was 39.12 (SD 16.12). The fourth-year students had a lower MAKS score (26.70) indicating more knowledge when compared to the third-year students, however this difference was not statistically significant.

Conclusion: Third and fourth-year physiotherapy students have moderate knowledge and a positive attitude of the role of physiotherapy in mental health. However, further research across all universities is needed to determine whether receiving a lecture or course on mental health improves the knowledge and attitude of physiotherapy students. Thought could also be given to adding mental health to the current physiotherapy curriculum at Witwatersrand university.

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I would like to acknowledge Ms Sandy Lord and Ms Monique Keller who supervised and contributed significantly to this research study.

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Nomenclature

ATP-30: Attitudes towards Psychiatry-30 questionnaire

COPD: Chronic Obstructive Pulmonary Disease

DALYs: Disability life-adjusted years

KMI: Knowledge about Mental Illness (KMI)

MAKS: Mental Health Knowledge Schedule

MDT: Multi-disciplinary health team

MH: Mental health

MHD: Mental health disorders

MICA-4: Mental Illness Clinicians' Attitudes version 4

REDCap: Research Electronic Data Capture

SASH : South African Stress and Health Study

SD: Standard Deviation

WHO: World Health Organization

Chapter 1 Background and Need for the study

1.1 Introduction

The World Health Organization (WHO) has defined mental health as “a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2017, p.1). Mental health disorders (MHD) can present in different forms which include; anxiety, depression, bipolar, eating disorders and schizophrenia (Ritchie and Roser, 2020). The prevalence of MHD has increased over recent years. Globally, 970 million people were diagnosed with MHD in 2017 alone and as such MHD contributed a share of 5-10% to the global disease burden in the same year (Sankoh, Sevalie and Weston, 2018; Ritchie and Roser, 2020). In Africa, between the years 2000 and 2015, the number of years lost to disability due to mental health and substance abuse disorders grew by 52% (Sankoh, Sevalie and Weston, 2018). In the local context of South Africa, 16.5% of the population have common mental health problems and alarmingly, 23 people commit suicide every day (Pols, 2019).

Poor mental health can impact negatively on physical health and the risk of developing MHD can be exacerbated by poor physical health (Connaughton and Gibson, 2016). According to WHO, people with severe MHD (schizophrenia and major affective disorders such as depression and bipolar) have a general life expectancy of 10-20 years less than the general population (WHO, 2018). These premature deaths can often be attributed to poor physical health conditions (Connaughton and Gibson, 2016). To compound the problem, access to necessary comprehensive health services which include screening and health promotion are often not very accessible (Connaughton and Gibson, 2016).

As health care providers, physiotherapists are members of the multidisciplinary team (MDT). Physiotherapists are also involved in the prevention and promotion of health, including mental health, using an evidence-based approach (Probst, 2017). The physiotherapist's role involves educating individuals about mental health and eliminating common misconceptions about mental illness. Physiotherapists also promote physical activity and exercises, therefore empowering and optimising the well-being of an individual (Probst, 2017).

Despite this integral role, the physiotherapist's role in in mental health is seldom appreciated. According to Connaughton and Gibson (2016) students are equipped with knowledge and skills to manage musculoskeletal (including chronic pain), cardiopulmonary and neurological disorders. However, little training is given on how to address comorbid mental health issues which often present in these patients (Connaughton and Gibson, 2016). A positive attitude to managing patients with MHD is crucial as physiotherapists will encounter these patients in the various fields of physiotherapy. These attitudes will also inform the way these patients are managed not only in mental health care but also in general practice where patients often present with undiagnosed psychological and psychosomatic problems (Probst and Peuskens, 2010).

Little is known about the knowledge and attitudes of student physiotherapists about their role in managing patients with MHD. Therefore, this study aims to investigate the knowledge and attitudes that physiotherapy students at the University of Witwatersrand have regarding the role of physiotherapy in mental health.

1.2 Problem Statement

On a global scale, MHD are steadily increasing with up to 970 million people affected in 2017 (Ritchie and Roser, 2020). In South Africa, a similar trend is recognised. Studies on the role of physiotherapy in mental health have been conducted and show that physiotherapy plays an integral role in patient education, promoting function and overall well-being in addition to its scope of practice. In South Africa, few studies have been done to determine the knowledge and attitudes physiotherapists have regarding their role in the management of MHD overall well-being (Stubbs et al., (2014), Probst (2017), Vancampfort et al., (2018).. These studies showed that qualified physiotherapists lacked the knowledge and had poorer attitudes about MHD. There have been no studies determining the knowledge and attitudes of physiotherapy students in South Africa.

1.3 Aim of the Study

This study aimed to establish the knowledge and attitudes that physiotherapy students at the University of the Witwatersrand have regarding the role of physiotherapy in mental health.

1.3.1 Objectives of the Study

1. To describe the demographic profile of third- and fourth-year physiotherapy students.
2. To assess physiotherapy students'
   i) Knowledge of stigma-related mental health using the Mental Knowledge Schedule scale.
   ii) Knowledge of types of MHD
   ii) The role of Physiotherapy in Mental Health
3. To determine the attitudes that physiotherapy students have towards mental illness using the Mental Illness Clinicians' Attitudes scale

4. To compare the differences in knowledge and attitudes between third- and fourth-year physiotherapy students.

1.4 Significance of the Study

MHD are increasing globally and as a result, physiotherapists are more likely to manage patients with MHD. Little is known about the knowledge and attitudes of physiotherapy students regarding the role of physiotherapy in MHD. This study will add to the body of knowledge and form the basis for further research, especially towards educating physiotherapists.

Chapter 2 Literature Review

2.1 Introduction

This literature review will appraise available literature in the area of mental health and physiotherapy. In particular, the knowledge about the role of physiotherapy in mental health and attitudes of physiotherapy students regarding this role. The following databases were used as sources of literature: PubMED, Scopus and EBSCO host and literature was searched from March 2020 to September 2021. The key terms used were: mental health, physiotherapy, undergraduate, knowledge, attitudes

2.2 Mental Health Definitions

Health has been defined as, “the state of complete physical, mental and social well-being and not only the absence of disease or infirmity” (WHO, 1948). The WHO also defined mental health as "a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can make a contribution to his or her community" (WHO, 2017, page1).

2.3 Prevalence of mental health disorders

Mental health disorders have been on the rise for the past thirty years (Ritchie and Roser, 2020). The most prevalent MHD is depression, which constitutes 264 million people worldwide (James et al., 2018). Dementia ranks next at 50 million and bipolar disorders closely follows at 40 million people globally (James, Abat, Abey et al., 2018). Vancampfort, Stubbs, Probst et al (2018) state that mental and substance use disorders make up almost 20% of all disability-associated burdens in Sub-Saharan Africa (Vancampfort, Stubbs, Probst et al., 2018). Additionally, depression and anxiety disorders were in the top ten conditions that contributed to the disability life-adjusted years (DALYs) in the period 2009-2019 for people between the ages of 10-49 (Abbafati et al., 2020).

There is a paucity of current prevalence studies of common MHD in South Africa, the most recent was the South African Stress and Health (SASH) study conducted

between 2002 and 2004 (Jack et al., 2014). This study showed the lifetime prevalence of common mental disorders was 30.3%, nearly double the prevalence in the year before the survey (Jack et al., 2014). Furthermore, MHD disorders were the third highest contributor to South Africa's national burden of disease in the year 2000 (Jack et al., 2014). Additionally, the presence of severe depression or anxiety adversely affected productivity at an individual and national level. According to Lund et al. (2013) personal income per adult decreased significantly by USD$4798 per adult per year in South Africa and, consequently, a national loss of USD$3.6 billion annually (Lund et al., 2013).

2.4 Physical effects of mental health disorders

A connection between 'mind and body' is known to exist, therefore mental and physical health should not be thought of as two separate entities (Connaughton and Gibson, 2016). People living with MHD have high rates of unhealthy behaviours, including smoking and substance use, physical inactivity, and poor diet (Druss and Walker, 2011). As a result of these behaviours, high rates of chronic medical conditions among people with MHD occur (Druss and Walker, 2011). These include cardiovascular, respiratory conditions, obesity and diabetes (Stein et al., 2019). Mental health disorders can lead to physical health disorders but similarly physical comorbidities are often associated with MHD (e.g. cardiovascular disease and anxiety, cancer and depression (Stein et al., 2019). Lund et al., (2013), reported 35% of HIV patients in South Africa meet the criteria for major depressive disorder, 6% for bipolar mood disorder, and 21% for generalised anxiety disorder.

2.5 Physiotherapy and mental health

The physiotherapist plays a significant role in the management of MHD and contributes to the mental health MDT. According to Probst (2017), the physiotherapist's role involves providing the patient with adequate education on mental health and referring on for specialised care where indicated. Moreover, the physiotherapist has a role in health promotion for patients with MHD (Stubbs et al., 2014). Physiotherapists are responsible for promoting functional movement and

physical activity thus optimising an individual's overall well-being (Probst, 2017, Vancampfort et al., 2018). A study by Vancampfort et al (2018) continues to expound on the effects of the different physiotherapy modalities used. Therapeutic modalities such as aerobic strength exercises, yoga, and progressive muscle relaxation were found to decrease cognitive symptoms and increase health-related quality of life (Vancampfort et al., 2018). Additionally, Alvarez et al (2021) have included cognitive behavioural therapy and graded exercise as other physiotherapy modalities that can be used in the management of MHD.

2.5.1 Promoting functional movement and physical activity

Participation in physical activity can improve a variety of outcomes in patients with MHD. It promotes healthy aging and leads to a better quality of life (Cuijpers *et al.*, 2014). The WHO recommends 150 min of moderate to vigorous physical activity per week, which should include 30 min of aerobic training (WHO, 2020). The WHO has also initiated a global action plan that is aimed at reducing the prevalence of physical inactivity among adults and adolescents by 15% by the year 2030 (WHO, 2018). This is part of an initiative to mitigate the burden of non-communicable diseases and MHD (WHO, 2018).

The benefits of physical activity and exercise include improvements in cognition, cardiorespiratory fitness, cardio-metabolic risk factors and quality of life of patients with psychosis (Firth et al., 2016, Firth et al., 2015, Vancampfort et al., 2016, Vancampfort et al., 2018). Physical activity also reduces depressive symptoms in people with various MHD such as anxiety, bipolar, and schizophrenia (Rosenbaum et al., 2014, Priyono and Pramana, 2020, Stubbs et al., 2018). Also, the articles above did not state whether this was physiotherapy-administered physical activity but rather the benefits of physical activity. Priyono and Pramana (2020) investigated the relationship between physical activity and depression scores among patients with schizophrenia. They showed a positive correlation between higher depression scores and low physical activity (Priyono and Pramana, 2020). Furthermore, a study by Vancampfortet et al., (2018) shows that males with schizophrenia are at risk of developing cardiovascular and metabolic diseases and would benefit from participating in physical activity (Vancampfort et al., 2018). Stubbs et al., (2014) state that physiotherapists should take a leading role in advocating for physical activity for

patients with schizophrenia and providing structured exercise programmes (Stubbs et al., 2014). These programmes must then be followed up with constant monitoring and use of outcome measures (Stubbs et al., 2014). Guidelines from the International Organisation of Physical therapists in Mental Health (IOPTMH) concur with the recommendation by Stubbs et al. (2014). The IOPTMH (2019) states that Physiotherapy in mental health and psychiatry addresses function, activity and participation using physical activity, exercise, relaxation, movement and body awareness approaches thus connecting the physical and mental health needs of people. Furthermore, a recent consensus states that exercise prevents and reduces mental symptoms while simultaneously improving physical health and quality of life IOPTMH (2019). Benefits are observed in a broad range of conditions including depression, anxiety, alcohol use disorders and schizophrenia (Stubbs & Rosenbaum, 2018)

2.5.2 Health promotion

Physiotherapists play a role in health promotion for patients with MHD by facilitating and encouraging patients to make healthier lifestyle choices thus optimising their function (Stubbs et al., 2014). In another study by Stubbs et al., (2017), patients with schizophrenia were found to consume less fruit than the general population which in turn contributed to their poor nutrition (Stubbs et al., 2017). This role also extends to minimising unhealthy behaviours such as excessive sugar, tobacco or alcohol consumption and referring on to a dietician for specific eating plans (Schnor et al., 2021). Moreover, patients with MHD are often prescribed chronic medications some of which cause significant weight-gain (Schnor et al., 2021). As a result, the patient can find themselves in a dilemma, needing to choose between their physical or mental health (Schnor et al., 2021). Health promotion is thus imperative to offer a solution to minimise weight-gain but benefit from pharmacological treatment and promote healthier choices (Schnor et al., 2021). Junk food and excessive alcohol were reported to increase feelings of joy for patients with MHD (such as schizophrenia, bipolar and psychosis) thus physiotherapists as part of the MHD team play a role to provide alternative and healthier sources of joy for patients in this population group. (Schnor et al., 2021)

2.5.3 Management of comorbid conditions

The role of physiotherapy also extends into the management of co-morbid physical conditions that exist concurrently with MHD. Some of these comorbid conditions include somatisation of symptoms, pain, respiratory illnesses such as chronic obstructive pulmonary disease (COPD), extrapyramidal side effects of medications, movement disorders and physical symptoms of neurological origin such as stroke (Irwin et al., 2019, Filipčić et al., 2018). Czanerki et al (2012), investigated the impact of physiotherapy on a group of patients with functional movement disorders that were as a result of psychological disorders. After a week of intensive rehabilitation that was aimed at reversing abnormal learned movement patterns, 69% of the intervention group reported an improvement in symptoms (Czarnecki et al., 2012). Additionally, physiotherapy is vital in the management of COPD which constitutes less than 10% of co-morbid conditions among people with MHD (Irwin et al., 2019, Filipčić et al., 2018). It has been associated with improvements in exercise tolerance, mobility in daily activities and reduces shortness of breath thereby increasing an individual's quality of life (Dimitrova et al., 2017). Furthermore, physiotherapy increased physical ability and mental function in patients with anxiety and depression who also a stroke as a co-morbid condition (Yuan and He, 2019). Neurodevelopmental techniques, strength training, shoulder wheel exercises and stationary cycling were Physiotherapy techniques that were used among this population group. Stroke is a neurovascular event that occurs when blood supply to the brain is impaired either owing to a blood clot in the microvessel or a rupture of a blood vessel in the brain (Yuan and He, 2019). In this article by Yuan and He (2019), stroke was the co-morbid condition for patients with pre-existing anxiety and depression disorders.

2.6 Recognition of the role physiotherapy in mental health

The vital role that physiotherapists play in mental health is clearly stated in literature, however, it is seldom appreciated among the MDT or in national policies (Lee et al., 2017). Furthermore, few professionals in the mental health MDT can identify the role of physiotherapy in mental health (Lee et al., 2017). This can be attributed to a lack of

visibility of physiotherapists in the mental healthcare sphere (Lee et al., 2017). Glowacki et al (2019) revealed that health care professionals in the mental health MDT lacked the knowledge of physical activity programmes and did not have the time to refer to professionals that promote physical activity (such as physiotherapists). According to Lee et al., (2017), the role of occupational therapists and social workers are well understood by the members of the MDT but little is known about the role of physiotherapy. It was also stated that physiotherapists lack specialised training and clinical experience further adding to the lack of acceptance of physiotherapists in mental health (MH) MDT (Lee et al., 2017). Study participants in this study were mental health professionals from the Metropolitan Health Service in Perth, Australia. These professionals had authority or influence over the referral of patients with severe and persistent mental illness to physiotherapists. Individuals with a history of schizophrenia-spectrum disorder or severe mood disorder as diagnosed by a mental health professional were recruited as participants from the community in Western Australia. According to my knowledge, there has not been any recent literature that is similar to the study by Lee et al (2017). Additionally, a study by McCurdy et al., (2020) states that the role of physiotherapist in MHD is appreciated, however this was yet to be explored. Physiotherapists along with kinesiologists, exercise physiologists and personal trainers make part of the professionals that promote physical activity (McCurdy et al., 2020). This contribution from physiotherapists includes providing specialised care and tailored physical activity programs for patients with MHD and promotion of physical activity in the management of MHD (McCurdy et al., 2020) .This tension is further appreciated in the Cartesian bio-medical model states that mind and body are separate entities yet literature has shown that a connection exists (Connaughton and Gibson (2016a). This is crucial in understanding the impact of MHD on physical well-being and the role that physiotherapists play in MH.

There is poor recognition of the role of physiotherapy in MH with regards to national health policies. Vancampfort et al (2018) investigated the role of physiotherapy within current MH policies and plans of Sub-Saharan African countries and found that only two out of twenty-two health policies namely from Namibia and Nigeria recognised and included a component of physiotherapy (Vancampfort, et al., 2018). In Namibia the policy stated that physiotherapists should facilitate the integration of the mental health policy into primary health care and identify specific training needs in mental health

care. Additionally, physiotherapists should provide input into the development of information, education and communication materials, policies, guidelines and standards for mental health that are affiliated with the World Health Organisation.The Nigerian policy stated that physiotherapists are involved in mental health care services, but a specific role was not defined.

2.7 Physiotherapists' knowledge of the role of physiotherapy in mental health

Despite literature outlining the roles and benefits of physiotherapy in MH physiotherapists have shown limited knowledge of this role and consequently reduced confidence in managing patients with MHD. This is evident in an Australian study that investigated the perceptions that physiotherapists have about their role in managing the physical health of people with severe and persistent mental illnesses (Andrew et al., 2019). Survey questions inquired about the role of the physiotherapist in this population group and responses ranged from pain management and exercise therapy. Still, overall, the participants were unsure of the contribution that physiotherapy makes in this regard (Andrew et al., 2019). Similarly, physiotherapists themselves expressed a lack of education and experience within MH specialities and the effect that had on managing patients' psychosocial aspects of care (Hemmings and Soundy, 2021).
The study by Hemmings and Soundy (2021) was conducted in Birmingham UK and participants were recruited from different mental health trusts. These included patients with severe mental illness and co-morbid physical health problems requiring input from a physiotherapist (Hemmings and Soundy, 2021). Physiotherapists with at least one year experience working in the field of adult mental health and currently employed by a mental health trust were also recruited into the study (Hemmings and Soundy, 2021). Additionally, Connaughton and Gibson (2016) reported that physiotherapists in Western Australia lack adequate communication strategies and skills to effectively treat patients with MHD. No further information regarding communication skills could be found in the article. The respondents highlighted that treatment is less effective due to the communication difficulties. The authors did not elaborate on the lack of communication skills later in the article.

A study by Stubbs et al (2014) explored physiotherapy in the management of patients with schizophrenia through an online survey across 31 countries worldwide. They

revealed that physiotherapists perceived their role as providing expertise in physical health within the psychiatric MDT and promote health for patients in this population group. In addition, the physiotherapists stated that they also contributed positively by prescribing tailored exercise programs to suit individual's current level of physical health, improve the physical activity levels of patients with schizophrenia and optimise function (Stubbs et al., 2014). Physiotherapists in this study were also aware of the psychosocial interventions such as mindfulness and body awareness strategies to harness the power of the mind-body connection to improve the physical health of these patients (Stubbs et al., 2014). This research by (Stubbs et al., 2014) is the first international study that explored the role of physiotherapy in patients with schizophrenia with responses from MH physiotherapists worldwide. No there were no significant differences between the countries. Participants were recruited from member countries of the IOPTMH. The responses reported on where from different participants on various themes investigated in the study hence it was difficult to make any comparisons. The authors did not comment on the differences per country. Their findings were valuable however they solely focused on patients with schizophrenia and not other types of MHD and physiotherapists who responded had experience in a MH facility of a year and greater. This 'specialist' experience was evident in their increased levels of knowledge of the roles of physiotherapy as compared to the physiotherapists in the studies by Connaughton and Gibson (2016a) and Andrews et al (2019). Interestingly, in this international study by Stubbs et al (2014), there is no record of responses from physiotherapists from an African country which shows the need for further research in this area on the continent.

An important theme in literature is the need for further training to mitigate the fear in physiotherapists in managing patients with psychiatric conditions (Connaughton and Gibson, 2016a, Hemmings and Soundy, 2021, Andrew et al., 2019 Driver et al., 2017). In South Africa, physiotherapists in Kwazulu-Natal expressed surprise that they had a role to play in managing patients living with MHD as emphasis during undergraduate training was on the management of physical health (Hooblaul et al., 2020). Respondents were managers of the Department of Health Physiotherapy departments of hospitals in Kwazulu-Natal (Hooblaul et al., 2020). Their mean age was 38, with ages ranging between 26 and 57 (Hooblaul et al., 2020). They also echoed the lack of adequate undergraduate training of physiotherapists in MH and how it contributed to

a lack of confidence in treating patients with MHD and stigmatisation towards them (Hooblaul et al., 2020).

Lastly, physiotherapists also recognise that the role they play in the assessment of musculoskeletal conditions in patients with MHD does not differ from the assessment of a patient with a musculoskeletal condition in the absence of MHDs (Stubbs et al., 2014). Additionally, physiotherapists are aware of their contribution to health promotion in managing co-morbid conditions commonly occurring in patients with MHD such as schizophrenia and other applicable risk factors such as metabolic syndrome, obesity, diabetes and other related chronic diseases. Furthermore, physiotherapists perceive that they positively influence the MH of schizophrenia through promoting social interaction, increasing self-awareness and self-confidence, and fostering a sense of achievement in improving their physical health. (Stubbs et al., 2014).

2.8 Knowledge and attitudes of physiotherapy students about the role of physiotherapy in mental health

Few published papers have examined the knowledge that physiotherapy students have of mental health or the role that the profession plays. Also, these papers often investigate the attitudes of the students towards MH simultaneously with the knowledge aspect therefore this section of the literature review will examine both entities together (Connaughton and Gibson, 2016a).

According to Connaughton and Gibson (2016a), by the end of their undergraduate training, physiotherapy students in Australia are thoroughly equipped to manage conditions of the musculoskeletal, cardiorespiratory and neurological systems but are not as empowered to address issues of mental illness and psychiatry. This study stated that by the end of their undergraduate training, physiotherapists in general practice were better trained to manage physical symptoms than issues of mental health and psychiatry. Another study, explored the physiotherapy curricula offered at most universities in Australia, particularly the amount of content on MHD and psychiatry covered at the undergraduate level (Connaughton and Gibson, 2016b). The study was two-fold. The first part involved physiotherapy students in their first, second

and fourth year of study at one University, the University of Notre Dame, Australia. The second part included staff members of the Physiotherapy Clinical Education Managers Australia and New Zealand. 10 universities participated in the latter.
None of the universities had a specific unit that addressed MHD and psychiatric conditions, and half of the universities reported that they did not provide definite content on the pathophysiology of most MHD and psychiatry conditions (Connaughton and Gibson, 2016b). The studies highlighted the need for further education of the signs and symptoms of mental health illnesses, medical and physiotherapy management as well as effective communication strategies to use in this population group (Connaughton and Gibson, 2016b)

Probst and Peuskens (2010) also examined the attitude of Flemish students towards psychiatry and a comparison between physiotherapy students and students without a biomedical background was considered, the latter students were the control group.
Participants were in their first and second year of their Rehabilitation Sciences and Physiotherapy program and undergraduate students from different disciplines such as (social sciences, law, theology, communication sciences). The authors did not specify the study years of the latter group. (Probst and Peuskens, 2010). Results from this study showed that students without a biomedical background had a more favourable attitude toward patients with psychiatric conditions compared to their physiotherapy student counterparts. This could be attributed to the fact that the second-year physiotherapy students had a 67-hour course on 'Pathology and psychomotor rehabilitation for patients with psychopathological illnesses' lecture between the time the first and second questionnaires was administered (20weeks). Also, responses from the non-medical students scored more items as neutral/no opinion (score 3), while physiotherapy students scored in a variable way (scores 1-5). A further comparison was made within this study between first-year physiotherapy students who had not received a psychiatry course and second year physiotherapy students after receiving this course (Probst and Peuskens, 2010). Results revealed that second-year students showed a better attitude in contrast to their first-year peers, suggesting that there may be a link between knowledge of psychiatry and attitudes towards psychiatric conditions (Probst and Peuskens, 2010). Further, other differences emerged; female students had a more favourable attitude and were more empathetic towards those with

mental illness compared to their male counterparts. Additionally, a more favourable attitude was observed among those with prior experience in mental illness.

However as this was a cross-sectional study, cause-and-effect correlations could not be determined. The authors went on to recommend that further training of physiotherapy students into the area of psychiatry could foster a better attitude toward people in this population group and minimise the likelihood of stigma against them (Probst and Peuskens, 2010).

Connaughton and Gibson (2016) also showed that physiotherapy students who had been on clinical placements had significantly more positive attitudes toward psychiatry and MH compared to those who were yet to attend the clinical placements. Additionally, male students had a more negative attitude than their female counterparts which was similar to that of Probst and Peuskens (2010). A more negative attitude was indicated by a lower ATP-30 score for male physiotherapists compared to their female peers Probst and Peuskens (2010). A difference between these studies is that the Australian study used practical learning through attendance at clinical placements to differentiate the two groups whereas the Flemish study used theoretical attendance to a psychiatric course. Also, the Australian study only recruited physiotherapy students however, the Flemish study recruited physiotherapy students and students without a biomedical background. From these studies a more positive attitude towards MH and psychiatry is associated with practical learning through attendance at clinical placements.

A study by Yildirim et al., 2015, showed that physiotherapy students had a moderately positive attitude towards mental illness regardless of their year of study. Participants in the study by Yildirim et al (2015) were physiotherapy students in their first to fourth year of study from two universities in Turkey. The Belief towards Mental Illness questionnaire was used to evaluate participants' beliefs about Mental Illness. Results showed that students with prior exposure to any mental problem who consulted a psychiatrist/psychologist showed more positive beliefs than the students who did not consult for medical help in case of a mental problem. This difference could have been attributed by pre-existing negative beliefs towards mental illness thus the individual avoiding to seek medical help. Additionally, students who had a relationship with a

person with a mental problem had more favourable beliefs compared to those who did not have a relationship. Furthermore, participants who knew or had a relationship with someone with a mental illness had a favourable attitude towards mental illness compared to participants who did not, an aspect that was not examined in the studies by Probst and Peuskens (2010) and Connaughton and Gibson (2016). Lastly, this study included physiotherapy students from two different universities in Turkey, whereas the former two studies recruited participants from one university only. A limitation of this study was the lack of a control group. All the physiotherapy students from the first to fourth year of study were included as participants with no comparison made between the year groups.

2.9 Conclusion

From this literature review, physiotherapists have a role to play in MH but often lack knowledge. It is clear that further research of the knowledge and attitudes about the role of physiotherapy amongst physiotherapy students is required. This is especially relevant in African countries especially in the sub-Saharan region where MH conditions are on the rise. Furthermore, there is a paucity of literature investigating the attitudes and knowledge of physiotherapists about in mental health in Africa. The few studies done in Western countries show that physiotherapy students who have received some training in MH have a more positive attitude toward people with MHD compared to those without training. In Chapter three, a description of the methodology used for this study will be given.

Chapter 3 Methodology

This chapter will outline the methodology used in this research study.

3.1 Type of Study

This was a descriptive cross-sectional survey study

3.2 Participants

Participants were third- and fourth-year undergraduate physiotherapy students at the University of Witwatersrand.

3.3 Source of Participants

Participants were recruited from the University of the Witwatersrand Physiotherapy department.

3.4 Sample Method and Size

A sample of convenience was used for this study. Third-year and fourth-year physiotherapy students were invited to participate. There were approximately 55 third-year and 56 fourth-year physiotherapy students at the time of data collection from March 2021 to October 2021. The identity of the participants remained anonymous and it was unknown whether there were any students repeating or not. Therefore, the impact on the outcome could not be determined. An online survey was conducted and questionnaires were sent to all third- and fourth-year physiotherapy students through the Research Electronic Data Capture (REDCap) platform.

Inclusion Criteria

- Students studying a BSc (Physiotherapy) degree at the University of Witwatersrand in their third or fourth year of study. At the University of Witwatersrand, clinical placements occur in the third and fourth years thus participants were selected from this group. At the University of Witwatersrand, clinical placements occur in the third and fourth years thus participants were selected from this group.

3.5 Instrumentation and Outcome Measures

The outcomes measured were knowledge and attitudes. The Mental Health Knowledge Schedule (MAKS) (Appendix A) was used to assess knowledge and the Mental Illness Clinicians' Attitudes (MICA-4) scale (Appendix B) investigated attitudes. A section on demographics and knowledge of the roles of physiotherapy was also included in the MAKS (Appendix C). A participation information sheet was also included with the MICA and MAKS (Appendix D). It outlined information about the study and an invitation to participate. Consent was assumed by completion of the MICA and MAKS.

Mental Health Knowledge Schedule (MAKS)

The Mental Health Knowledge Schedule (MAKS) was formed in the United Kingdom to evaluate stigma-related MH knowledge (Evans-Lacko, Little, Meltzer et al., 2010). It includes six questions that evaluate MH knowledge that is associated with stigma such as; help seeking, support, recognition, treatment and recovery as well as employment. The other six questions assess the knowledge of mental illness conditions (Evans-Lacko, Little, Meltzer et al., 2010). A Likert scale is used to score items on the MAKS. Responses range from one (strongly disagree) to five (don't know). The total score for stigma-related statements range from six to thirty, with higher scores indicating less stigma-related knowledge (Martensson, G, Jacobsson J.W, Engstrom, 2014).The MAKS has been shown to have moderate to substantial overall test–retest reliability (0.71 Lin's concordance statistic) and an overall internal consistency of 0.65 (Cronbach's α) (Evans-Lacko, Little, Meltzer et al., 2010).

Mental Illness Clinicians' Attitudes (MICA-4) Scale

The self-administered MICA-4 Scale assesses attitudes about psychiatry and people with mental illness and was used in this study. The MICA-4 Scale is used by nurses and other professionals in health and social services. Literature is unclear on the country where the questionnaire is used but explains the population in which it has been used, that is, with healthcare professionals. It contains 16 statements and responses are scored on a Likert-type scale. The score ranges between 16 and 96 and is the sum of the individual item scores. An overall low score indicated more positive attitude. The MICA-4 Scale has been demonstrated to be a valid scale and

responsive to various interventions (Siddiqua and Foster, 2015). The internal consistency of the MICA is 0.79 (Cronbach's α) with a split-half correlation of 0.73. The test–retest reliability is high at 0.80.

3.6 Procedure

3.6.1 Pilot Study

The questionnaires (the MICA-4, MAKS) were developed and loaded onto REDCap was initially sent to ten students who satisfied the inclusion criteria. However only five responses were received. The aim of the pilot study was to assess whether the questions were easy to understand and answer as well as the estimated time taken to answer the questionnaire. A feedback section was included on these questionnaires to allow the participants to comment on the questionnaire and alterations were made accordingly. Some feedback received was that some of the statements were vague and as such the student was unsure how to answer the question. Therefore, the following changes were made; further clarification was made by adding examples of what the statement referred to and the year of study was also included. The pilot study participant data was included in the overall research as procedures did not change after conducting the pilot study as these changes were very minimal so whilst there may have been a difference it was not significant.

3.6.2 Main Study

Data collection started in March 2021 and continued until October 2021. The questionnaires were sent to students via a link generated by REDCap and responses were anonymously sent back and captured on the same platform. Students were required to click on the link to access the questionnaires. This link included the participation information sheet and two questionnaires. The first questionnaire was the MAKS (Appendix A), which included a section on demographic information followed by the MICA-4 (Appendix B) which appeared as soon as the MAKS was completed. The MAKS also included a section which asked about the roles of PT in MH. The questions were informed by the following articles; Stubbs et al (2014)- Understanding the role of physiotherapists in schizophrenia: an international perspective from members of the International Organisation of Physical Therapists in Mental Health

(IOPTMH), Vancampfort (2018) – Physiotherapy for people with mental health problems in Sub-Saharan African countries: a systematic review and Probst (2017)- Physiotherapy in mental health. The survey was completed electronically and took approximately seven minutes to complete. A link to the questionnaire was sent to the third and fourth-year physiotherapy students via the year coordinators to preserve the students' anonymity. Weekly reminders to complete the questionnaires were sent to the students via emails sent through the year coordinators. Due to the poor response rate, the physiotherapy student council president was asked to also disseminate the link to possible participants. In order to recruit more participants, a one-minute video explainer was produced for the class coordinators to send via Whatsapp messenger to the students. The short video clip explained the aim and purpose of the study and invited students to participate. The video was made by the principal investigator and disseminated through the year coordinators.The survey link stayed open from the day it was initially sent. Data was collected between March 2021 until October 2021. A total of 34 responses were received. The data was entered on Microsoft Excel and analysed by the statistical package for social sciences (SPSS v27). Different statistical tests were used for the analysis of the results:

1. Frequency tables were used to present categorical data; the Demographic profile, MICA and MAKS scores
2. Averages and means were calculated from the data from the MICA and MAKS total scores.
3. The data was normally distributed.
4. The group comparisons were calculated using multiple regression analysis as advised by the statistician.

A statistician from the University of Witwatersrand was also consulted to ensure accuracy in the data analysis. Additionally, the statistician assisted with information of what type of tests to used based on the type of data compiled. She also gave information on the best way to illustrate the data.

3.7 Ethical Considerations

Permission to conduct the study was requested from the following; Head of Department of University of Witwatersrand Physiotherapy department, Head of

Department of the School of Therapeutic Sciences and the faculty Registrar in order to obtain permission and ethical clearance. Ethical clearance was obtained from the Human research Ethics Committee (Medical) (Ethics clearance number: M200913) (Appendix E). The students were invited to participate and the participant information sheet was provided on the REDCap explaining the purpose of the study. If the student completed the survey informed consent was assumed. Participants were informed that participation was voluntary and they were able to withdraw from the study without penalty. There were no financial costs incurred by the participants in this study. Anonymity was maintained as all communication to the participants and distribution of the survey link was made through the year co-ordinators and the REDCap platform also hid the identity of the respondents.

Chapter 4 Results

4.1 Introduction

This chapter will describe the main results of this study as they correspond to the study objectives. The demographic profile results from the MICA-4 and MAKS as well as the differences between third- and fourth- year students will be described.

4.2 Demographic profile physiotherapy students

A total of 34 physiotherapy students participated in this study, of which 47.1% were male and 52.9% were female students. There were 11 participants in their third year of study, which is 20% of all third-year physiotherapy students at Wits university. Likewise, there were 23 fourth-year students which were 41% of all fourth-year physiotherapy students. The average age of participants were 21.74 years. Table 3.1 outlines the demographic profile of the students. 67.6% of the sample were fourth year students, whereas 32.4% were in their third year of study.

Table 4.1 Demographic profile of physiotherapy students (n=34)

Variable	**N**	**%**
Gender		
Male	16	47.1
Female	18	52.9
Age	21.74 (average)	
Year of study		
Third year	11	32.4
Fourth year	23	67.6
Ethnicity		
Black	13	38.2
White	13	38.2
Coloured	3	8.8
Indian	5	14.7
Asian	0	0

Prior experience working in a mental health facility		
Yes	1	2.9
No	33	97.1

4.3 Knowledge of the roles of physiotherapy in mental health

The MAKS questionnaire was used to determine the students' knowledge of MHD and the roles of physiotherapy. The average total MAKS score was 26.94 (SD 3.57), the highest possible score was 36. The MAKS scores ranged from 43 to 63. The higher the score the less knowledge demonstrated. Table 4.2 outlines the scores for each question is presented.

Table 4.2 Scores from MAKS questionnaire

MAKS Question	**Frequency as a percentage (%) (n=34)**					
	Agree strongly	**Agree slightly**	**Neither agree nor disagree**	**Disagree strongly**	**Disagree slightly**	**Don't know**
1. Most people with mental health problems want to have paid employment	32.4	32.4	14.7	2.9	5.9	11.8
2. If a friend had a mental health problem, I know what advice to give them to get professional help.	23.5	58.8	11.8	2.9	2.9	0
3. Medication can be an effective treatment for people with mental health problems	32.4	44.1	14.7	0	5.9	2.9
4. Psychotherapy (e.g. Talking therapy or counseling) can be an effective treatment for people with mental health problems.	55.9	41.2	0	0	2.9	0
5. People with severe mental health problems can fully recover.	20.6	29.4	17.6	8.8	11.8	11.8
6. Most people with mental health problems go to a healthcare professional to get help.	5.9	8.8	8.8	47.1	26.5	2.9

Do you think each condition is a type of mental illness? Check 1 box only						
7. Depression	61.8	23.5	2.9	8.8	2.9	0
8. Stress	35.3	23.5	8.8	17.6	8.8	5.9
9. Schizophrenia	73.5	11.8	5.9	2.9	0	5.9
10. Bipolar disorder (manic depression)	79.4	8.8	0	8.8	0	2.9
11. Drug/substance addiction	50.0	20.6	5.9	11.8	2.9	8.8
12. Grief	8.8	35.3	14.7	14.7	23.5	2.9
The following are roles of physiotherapy in mental health:						
13. Informing individuals adequately about mental health	58.8	32.4	2.9	2.9	2.9	0
14. Eliminate misconceptions about mental illness	82.4	11.8	2.9	0	2.9	0
15. Refer necessary patients to specialized professionals in mental health and psychiatry	85.3	5.9	0	0	5.9	2.9
16. Optimizing well-being	91.2	2.9	0	2.9	2.9	0
17. Empowering the individual by promoting functional movement	82.4	8.8	2.9	0	5.9	0
18. Promoting movement awareness	82.4	8.8	2.9	0	5.9	0
19. Promoting physical activity and exercises	88.2	5.9	0	0	5.9	0

4.4 Attitudes about the role of physiotherapy in mental health

The Mental Illness Clinicians' (MICA-4) Scale was used to measure the attitudes of physiotherapy students towards the role of physiotherapy in mental health. The average score was 39.12 (SD 16.12), the highest possible score was 96. The scores ranged from 40 to 69. The higher the score the more negative the attitude, therefore a score of 39.12 shows a positive attitude. This is inferred as the categorisation of scores was unavailable from the author of the MICA-4 questionnaire. There were four incomplete entries which were excluded from the analysis because they had incomplete information and would adversely affect the analysis. Thus, the total number of participants who completed the MICA-4 questionnaire was 30.

There were a total of 16 questions in the MICA-4. The results of each section will be given below. A large proportion of students (80%) strongly disagreed that they were to use terms like "nutter", ''crazy'' or "mad'' to describe people with mental illness to colleagues (Figures 4.1). Also, 70% of respondents "agreed" that working in mental health (MH) was just as reputable as working in other professions (Figures 4.2), however, 32.4% reported that they would not learn about MHD if they did not have to (Figure 4.3). A majority of students, (70%) "strongly disagreed" that they would follow instructions if a senior colleague instructed them to speak to patients with mental illness disrespectfully. Also, half the students (53.3%) "strongly disagreed" that healthcare professions working with patients with mental illness should also ensure that they get the patient's physical health assessed. Likewise, half the students (53.3%) "disagreed" that being a healthcare professional working in the mental health field was not the same as a 'real' healthcare professional.

Almost an equal proportion of students "disagreed" (26.7% "strongly disagreed" and 30% "disagreed") that they would never admit having mental illness to their friends for fear of being treated differently. Similarly, approximately half the students "disagreed" that "Patients with mental illness are dangerous more often than not" (26.7% "strongly disagreed" and 26.7% "disagreed"). Most students "disagreed" that general practitioners should not do a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist (30% "strongly disagreed", 26.7% "disagreed" and 26.7% "somewhat disagreed"). Additionally, similar proportions

were seen with the statement; “If a patient with mental illness complained of physical symptoms such as chest pain, I would attribute it to their mental illness” (30% “disagreed” and 30% “somewhat disagreed”).

A variable pattern with almost equal percentages across the responses was observed with the last questions. For example, the statement “Health/social care professionals know more about the lives of people treated for mental illness than do family members or friends” had 26.7% “disagree” and 26.7% “somewhat agree”, 16.7% “disagree strongly”, 10% “somewhat disagree”, 10% “agree” and 10% “agree strongly” for each response. 20% of the respondents “strongly disagreed”, 20% “disagreed” and 20% “somewhat agreed” that they would never admit having a mental illness to colleagues for fear of being treated differently. Furthermore, an equal number of students (23.3%) “disagreed” and “disagreed strongly” that they would feel comfortable talking to a person with mental illness as they would someone with physical illness. A lack of consensus was also seen with the statement, “the public does not need to be protected from a person with severe mental illness.” 33.3% “disagreed somewhat” whilst 26 “somewhat agreed”, on the other hand 13.3% “disagreed” whilst an equal number “agreed.”

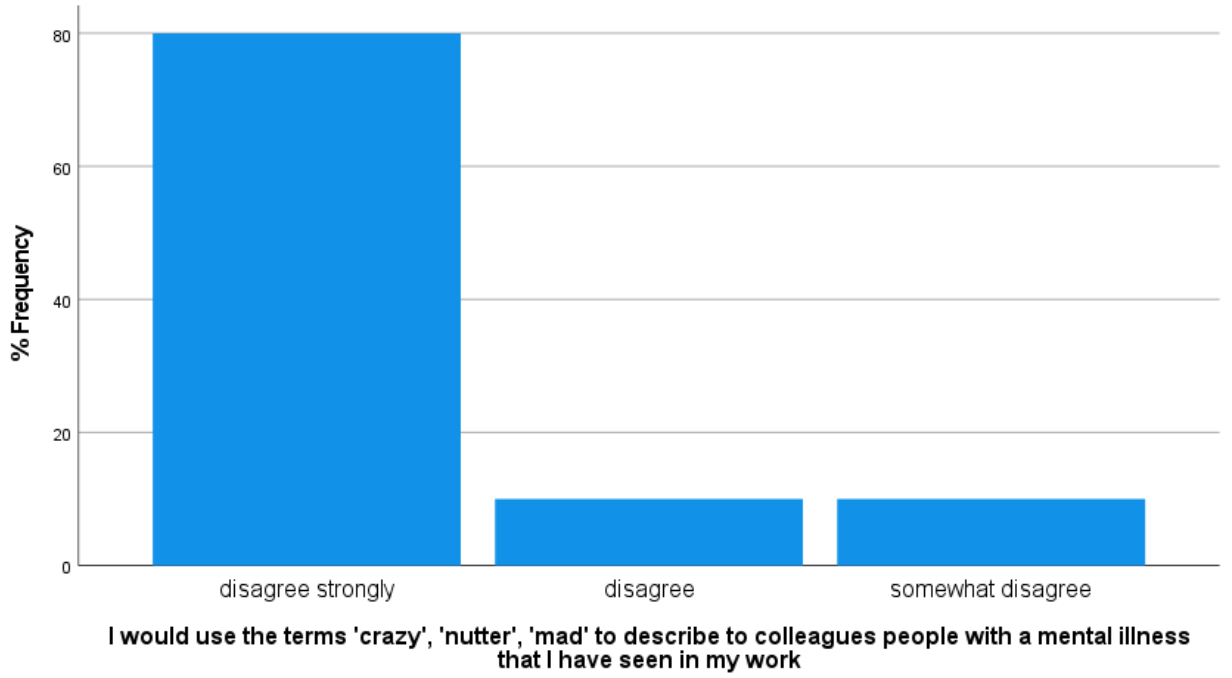

Figure 4-1: Scores of the question, “I would use the terms 'crazy', 'nutter', 'mad' to describe to colleagues people with a mental illness that I have seen in my work”

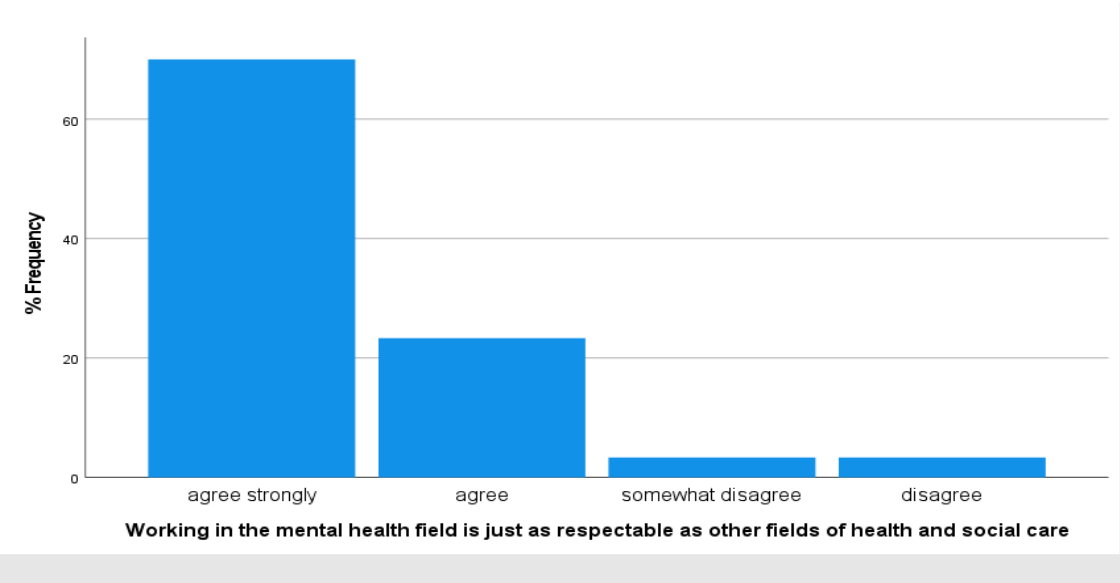

Figure 4-2: Scores of the question, “Working in the mental health field is just as respectable as other fields of health and social care.”

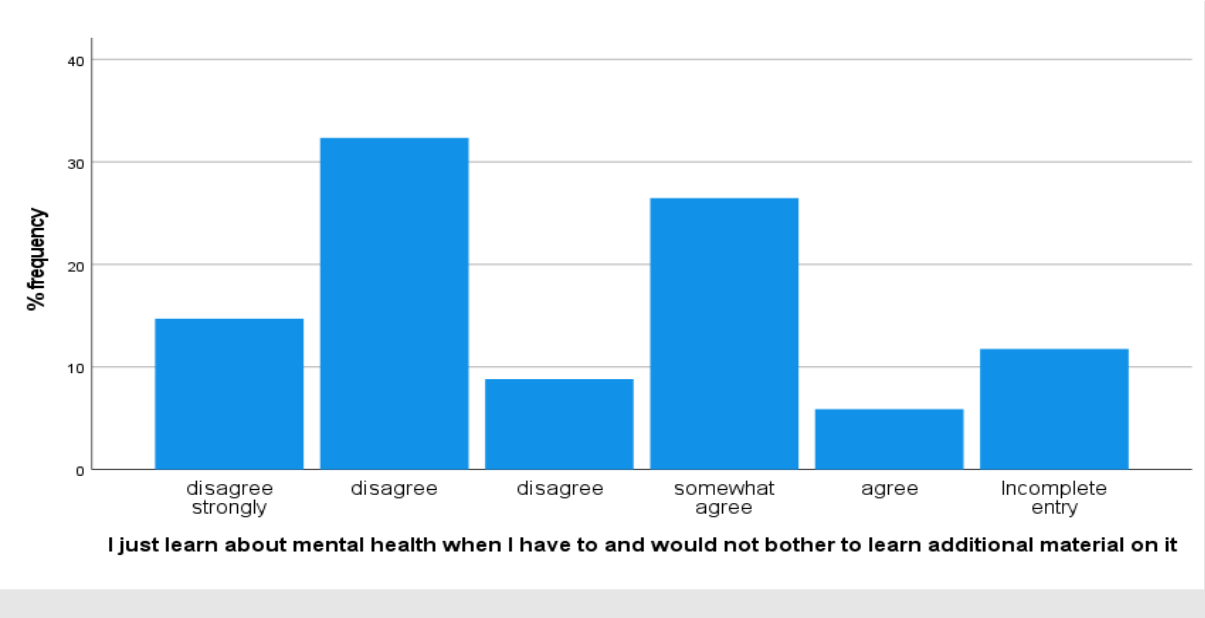

Figure 4-3: Scores for the question, “I just learn about mental health when I have to and would not bother to read additional material on it.’’

4.5 Differences in knowledge and attitudes between third and fourth-year physiotherapy students

A univariate analysis was done was done through SPSS to compare MAKS (knowledge) and MICA (attitude) scores between genders and year groups. There were 11 third year students and 23 fourth year students. Table 4.3 below shows

differences in their knowledge (MAKS) scores. The fourth-year students had a lower MAKS score (26.70) compared to their third-year counterparts (27.45) which demonstrated more knowledge among in the fourth-year students. Table 4.4 below shows differences in the attitude scores between the year groups. The third-year students had a higher average score (40.09) compared to fourth years (38.65), which indicated a more negative attitude towards mental illness. These differences were not significant.

Table 4.3 Differences in knowledge (MAKS) scores between the year groups

Year of study	**Gender**	**Average MAKS score**	**Standard deviation**
Third	Male	27.40	4.04
	Female	27.50	1.87
	Total for third years	**27.45**	**2.88**
Fourth	Male	26.55	4.40
	Female	26.83	3.71
	Total for fourth years	**26.70**	**3.89**

Table 4.4 Differences in the attitude (MICA-4) scores between the year groups

Year of study	**Gender**	**Average MICA-4 score**	**Standard deviation**
Third	Male	44.00	9.03
	Female	36.83	18.90
	Total for third years	**40.09**	**15.00**
Fourth	Male	37.36	20.07
	Female	39.83	14.31
	Total for fourth years	**38.65**	**16.94**

4.6 Conclusion

In this chapter, the results show that third- and fourth-year physiotherapy students have moderate knowledge of mental illness and the roles of physiotherapy in mental health. Also, they have a good attitude toward mental illness. Fourth year physiotherapy students have more knowledge about MHD, and they have a more positive attitude toward and mental illness compared to their third year peers.

Chapter 5 Discussion

Introduction

This chapter will discuss the results of the study. The strengths and limitations of the study will also be outlined and recommendations made.

5.1 Findings and interpretation

This study aimed to determine the knowledge and attitudes that physiotherapy students at the University of Witwatersrand have of the role of physiotherapy in mental health. Results demonstrated that third- and fourth-year physiotherapy students have some knowledge of the role of physiotherapy in mental health. Additionally, a good attitude toward mental illness was observed. Knowledge and attitude scores of third-year physiotherapy students were lower on average than those of fourth-years which suggested less knowledge and a more negative attitude compared to their fourth-year counterparts. This finding is similar to Probst and Peuskens (2010) who found that students who were more familiar with mental illness had more positive attitudes about mental illness than students without previous exposure. Connaughton and Gibson (2016) and Probst and Peuskens (2010) also reported a greater proportion of female physiotherapy students took part in their studies. These studies also recruited physiotherapy students from their first, second or fourth year of study (Connaughton and Gibson 2016, Probst and Peuskens (2010). In contrast, third- and fourth-year students were included in this study. At the University of Witwatersrand, clinical placements occur in the third and fourth years thus participants were selected from this group.

5.2 Demographic profile of participants

A total of 34 physiotherapy students participated in this study. Female students formed the majority of participants (52.9%) and the average age among participants was 21.74 years (SD 3.99). Additionally, most of the students were in their fourth year of study (67.6%). Only one participant had prior experience working/volunteering at a mental health facility and this was not statistically significant. No evidence in literature regarding culturally-bound interpretations of mental health disorders was considered

5.3 Physiotherapy students' knowledge of mental health disorders

Studies have shown that depression is the most common mental health disorder and has a greater impact on productivity at an individual and national level (Abbafati et al., 2020, Van der Walt et al., 2020). A majority of participants correctly identified that depression was a type of MHD, together with schizophrenia and bipolar disorder. Furthermore, only 50% of the participants agreed that drug/substance use was a type of MHD, yet in Sub-Saharan Africa they make up almost a fifth of all disability-associated burdens (Vancampfort et al., 2018). With the high prevalence of depression and substance use particularly in the South African context, students are more likely to have patients with these disorders in their clinical placements as well as once they have graduated. Seventy percent of participants agreed that substance abuse is a type of MHD, however others did not know or disagreed. This could be attributed to high levels of substance usage among 10.3% of the adult population (15 years or older) consumes alcohol and approximately 8.6% use illicit drugs (Pengpid, S., Peltzer, K., Rahmlagan, S. 2021). Knowledge of these more common MHD enables the physiotherapist to screen for and manage or refer to the necessary health care professional, assess for excessive drug/substance use and provide relevant education to patients. If the physiotherapist is unaware of the impact of depression or drug/substance abuse, they may not refer on to MH specialists or provide the patient with adequate information on the sequelae of depression.

Very few African studies investigate knowledge of mental illness among students. Chukwujekwu (2018) assessed the knowledge and attitude of Nigerian undergraduate students toward people with MHD. Physiotherapy students and students without a biomedical background were considered in this study Chukwujekwu (2018). The authors found that the knowledge of MHD was 'deficient.' This was different to this study where students showed that there had some knowledge of MHD. Also, in contrast to this study, the instrument used to measure knowledge was the Knowledge about Mental Illness (KMI) scale instead of the MAKS. Both are good scales to assess knowledge however the Knowledge about mental illness scale is better used in a middle school population as opposed to the MAKS which is used with adults. Additionally, the MAKS includes the effect of stigma on knowledge. Results from Chukwujekwu (2018) show minimal knowledge about types of MHD, with

approximately half of the participants unable to give a description of schizophrenia and even less knew about bipolar disorder. Chukwujekwu (2018) also recruited participants from different faculties which was different to this study as we only included physiotherapy students, (Chukwujekwu, 2018).

In summary, there is a moderate level of knowledge of mental illness among physiotherapy students.

5.3.1 Roles of physiotherapy in mental health

Physiotherapists have a recognised role to play in the management of MHD. Most of the participants recognised that physiotherapists contribute to the management of patients with MHD by optimising well-being, promoting physical activity and referral to specialised professionals in mental health and psychiatry. An appreciation of this role among physiotherapy students is critical as they can contribute effectively to the mental health MDT and improve patients' quality of life. Additionally, these roles are consistent with literature which states that the physiotherapist is responsible for encouraging movement and function thus maximising an individual's health (Stubbs et al., 2014, Probst, 2017, Vancampfort et al., 2018). In this study, a low percentage (58.8%) strongly agreed that physiotherapists have a role in educating individuals adequately about mental health. This could be attributed to a lack of education and experience within mental health specialities at an undergraduate level, a finding reported by Hemmings and Soundy (2021).

There is evidence that physiotherapists have a significant role to play in the management of MHD. Andrew et al (2019) and Stubbs et al (2014) found that physiotherapists perceived their role in the MDT to be provision of expertise in physical health through tailored exercise programs and to promote health for patients in this population group. This includes pain management and exercise therapy. Similarly in this study, the participants identified that physiotherapists play the role of promoting physical activity and exercises. This is contrasted by qualified physiotherapists working in the public health sector in KwaZulu-Natal, South Africa. The study by Hooblaul et al (2020) investigated the knowledge, attitudes and perceptions of physiotherapists working in the Department of Health in Kwazulu-Natal. An aim of the study was to determine whether the physiotherapy undergraduate training prepare them to manage people living with mental health. Physiotherapists expressed that they

did not know they had a role to play in the management of patients with MHD, as this was not covered in their undergraduate curriculum (Hooblaul et al (2020).

5.4 Attitudes towards mental health

Very few studies investigated the attitudes of physiotherapy students towards the role of physiotherapy in MHD. One such study by Probst and Peuskens (2010) examined the attitude of Flemish students towards psychiatry and a comparison between physiotherapy students and students without a biomedical background was considered. Results showed that students without a biomedical background had a better attitude toward patients with psychiatric conditions compared to their physiotherapy student counterparts (Probst and Peuskens, 2010). This study went on to compare attitude scores between first and second-year physiotherapy students, after the latter had received a course in psychiatry (Probst and Peuskens, 2010). Results revealed that second-year students showed a more positive attitude compared to their first-year peers (Probst and Peuskens, 2010). This was similar to this study where the senior year (fourth-years) had a more positive attitude compared to the junior year group (third-years).

Converse to this study, Probst and Peuskens (2010) had a control group of students and also compared physiotherapy students to students without a biomedical background. They also used a different instrument, the Attitudes towards Psychiatry-30 questionnaire (ATP-30), whereas in this study the MICA was used. The ATP-30 has been used in previous literature with physiotherapy students, thus comparisons can be made. Another difference is that third and fourth-year physiotherapy students participated in this study and Probst and Peuskens (2010) recruited first and second year physiotherapy students.

Yildirim et al. (2015) investigated the beliefs towards mental illness of physiotherapy students. They used the Beliefs to Mental Illness (BMI) Scale which showed that physiotherapy students had moderately positive beliefs towards mental illness regardless of their year of study. Unlike this study, the aspect of beliefs was investigated thus the use of the Belief towards Mental Illness (BMI) scale, whereas we used the MICA-4 that assessed attitudes.Yildirim et al (2015) included participants from first to fourth-year students where this study only recruited third and fourth year

students. There was no significant difference in belief scores among the year groups in the study by Yildirim et al. (2015) and in this study third-year students had a more negative attitude towards MHD compared to the fourth-years, though the difference was insignificant.

5.5 Comparison of knowledge and attitudes towards mental illness according to year groups

Probst and Peuskens (2010), demonstrated that students had a better attitude towards patients with psychiatric conditions after receiving training in psychiatric conditions. This suggests that there is a link between knowledge and attitudes and this is similar to this study. In this study, third year students had higher MAKS and MICA scores which suggested less knowledge and a more negative attitude compared to their fourth-year counterparts. A finding that was similar to that of Probst and Peuskens (2010). Furthermore, fourth years students had a more favourable attitude towards MHD which could have been influenced by the experiences they had during their clinical placements that third year students were yet to have. Third-years were having their clinical placements at the time of data collection thus had less clinical experience than their fourth-year peers. A negative attitude towards patients with MDH could lead to bias and affect the quality of physiotherapy care given. This in turn could influence patient adherence to physiotherapy and patient satisfaction (Probst and Peuskens (2010).

In this study, third year physiotherapy students had a more negative attitude to mental illness compared to their fourth-year peers. These findings were comparable to those of Connaughton and Gibson (2016), who reported that fourth-year physiotherapy students who had been on clinical placements had a more significantly positive attitude toward psychiatry and mental health compared to earlier physiotherapy year groups. The difference between these two groups was fourth years attended clinical placements and earlier year groups had not (Connaughton and Gibson, 2016). This study included only third- and fourth-year physiotherapy students because by the third year, students would have been exposed to clinical work and would have possibly encountered patients with co-morbid MHD. Additionally, by the fourth year of study, students would have received at least one lecture on MHD. For future research, students from all years of physiotherapy can be included so that comparisons can be

made between students who would have been taught about MHD and those who would have not.

5.7 Strengths and limitations of study

This study showed the current l knowledge and attitudes of future physiotherapists towards MHD and consequently to patients with MHD. However, this study had a few limitations. Firstly, there was a poor response rate of 34%. Despite regular emails to remind students to participate and invitations to participate being sent through other digital communication platforms such as Whatsapp, the level of response remained low. Secondly, the study was conducted using online questionnaires on REDCap. The response rate may have been higher if the surveys were completed in a face-to-face environment. Additionally, a cross-sectional design was used hence a control group was not included, a factor that can be considered for future studies. A strength of this study was it was the first of its kind at the University of Witwatersrand.

5.8 Recommendations for future research

For future research the following factors could be considered:

- An experimental approach or randomised controlled trial with a pre- and post-test design could be considered, where the intervention is a lecture or practical clinical visit to a mental health facility.
- A study design that includes all physiotherapy year groups; from first to fourth year students and makes comparison per year group.
- A comparison with undergraduate physiotherapy students from other Universities in South Africa or undergraduate students from different faculties could be considered in order to increase the sample size and generalisability of results.
- Further research to determine if the addition of a short course on MHD could improve the knowledge and attitudes about MHD.

Chapter 6 Conclusion

This study aimed to establish the knowledge and attitudes that physiotherapy students at the University of the Witwatersrand have regarding the role of physiotherapy in MH.

The main outcome measures were knowledge (MAKS) and attitude (MICA-4). The average score from the MAKS was 26.94 (SD 3.57) which indicates moderate knowledge. The subsection on the role of physiotherapy in MH was well answered which shows good knowledge. The average MICA-4 score was 39.12 (SD 16.12) which demonstrated a good attitude. Additionally, an analysis was made comparing MAKS and MICA-4 scores between the third year and fourth year physiotherapy students. Results show that third year students had lower scores on knowledge and attitude about mental illness compared to their fourth-year counter parts. A comparison in differences in knowledge and attitudes towards mental health between the global North and Africa is difficult to make because in the former, different instruments have been used to determine knowledge and attitudes (such as the ATP-30) (Probst and Peuskens 2010). Secondly, studies that have investigated something similar have had control/comparison groups such as non-medical students or included intervention group (Connaughton and Gibson 2016). Additionally, in developed countries there is some training at an undergraduate level given to physiotherapists regarding mental health and psychiatry compared to South Africa where there is no clear module in the physiotherapy curriculum that addresses physiotherapy management in mental health.

The area of physiotherapy in mental health could benefit from further research. Thought could also be given to including MHD in current physiotherapy curriculum at an undergraduate or post-graduate level. An experimental approach and comparison with undergraduate physiotherapy students from other Universities in South Africa could be considered for future studies.

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Appendices

Appendix A: The Mental Knowledge Schedule Questionnaire

Question	Agree strongly	Agree slightly	Neither agree nor disagree	Disagree strongly	Disagree slightly	Don't know
1. Most people with mental health problems want to have paid employment						
2. If a friend had a mental health problem, I know what advice to give them to get professional help.						
3. Medication can be an effective treatment for people with mental health problems						
4. Psychotherapy (e.g. Talking therapy or counseling) can be an effective treatment for people with mental health problems.						
5. People with severe mental health problems can fully recover.						
6. Most people with mental health problems go to a healthcare professional to get help.						
Do you think each condition is a type of mental illness? Check 1 box only						
7. Depression						
8. Stress						
9. Schizophrenia						
10. Bipolar disorder (manic depression)						
11. Drug/substance addiction						
12. Grief						

Adapted from *Evans-Lacko, S. et al. (2010) 'Development and Psychometric Properties of the Mental Health Knowledge Schedule', Canadian Journal of Psychiatry, 55(7), pp. 440–4*

Appendix B: Mental Illness Clinicians' Attitudes Scale

Instructions: for each of questions 1-16, please respond by ticking one box only.

Question	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
1. I just learn about mental health when I have to, and would not bother reading additional material on it.						
2. People with a severe mental illness can never recover enough to have a good quality of life						
3. Working in the mental health field is just as respectable as other fields of health and social care.						
4. If I had a mental illness, I would never admit this to my **friends** because I would fear being treated differently.						
5. People with a severe mental illness are dangerous more often than not.						
6. Health/social care staff know more about the lives of people treated for a mental illness than do family members or friends.						
7. If I had a mental illness, I would never admit this to my **colleagues** for fear of being treated differently						
8. Being a health/social care professional in the area of mental						

health is **not** like being a real health/social care professional.

Question	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
9. If a senior colleague instructed me to treat people with a mental illness in a disrespectful manner, I would **not** follow their instructions.						
10. I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness.						
11. It is important that any health/social care professional supporting a person with a mental illness also ensures that their physical health is assessed.						
12. The public does **not** need to be protected from people with a severe mental illness.						
13. If a person with a mental illness complained of physical symptoms (such as chest pain) I would attribute it to their mental illness						
14. General practitioners should **not** be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist.						
15. I would use the terms ‘crazy’, ‘nutter’, ‘mad’ etc. to describe to colleagues people with a mental illness who I have seen in my work.						

16. If a colleague told me they had a mental illness, I would still want to work with them.

Adapted from *Mental Illness: Clinicians' Attitudes Scale MICA-4 © 2010. Health Service and Population Research Department, Institute of Psychiatry, King's College London*.

Appendix C: Demographic Characteristics and Knowledge on the Role of Physiotherapy in Mental Health Questionnaire (Main study version)

Please indicate with an 'X'

1. What is your age? _____

2. What is your year of study? _____Third

   _____ Fourth

3. What gender do you identify with? _____Male

   _____Female

   _____ I would rather not say

4. Which ethnicity best describes you? _____Black

   _____White

   _____Coloured

   _____Indian

   _____Asian

   _____Other (please specify)

5. Do you have any prior experience working or volunteering in a mental health facility?

The following are roles of physiotherapy in mental health:	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
7. Informing individuals adequately about mental health						
8. Eliminate misconceptions about mental illness						
9. Refer necessary patients to specialized professionals in mental health and psychiatry						
10. Optimizing well-being						
11. Empowering the individual by promoting functional movement						
12. Promoting movement awareness						
13. Promoting physical activity and exercises						

Appendix D: Information and Consent Sheet

Study title: KNOWLEDGE AND ATTITUDES OF PHYSIOTHERAPY STUDENTS ABOUT THE ROLE OF PHYSIOTHERAPY IN MENTAL HEALTH

Dear Sir/Madam. Thank you for taking the time to read through the synopsis of this research project. Please find more information below.

Introduction:

I Ropafadzo Gunduza, am doing a research investigating the knowledge and attitudes that physiotherapy students have about the role of physiotherapy in mental health. Research is a process used in seeking new knowledge. Mental health disorders are on the rise on a global scale and also within the local context of South Africa. Literature shows that physiotherapy has an integral role in the management of mental health disorders. In this study we want to learn what physiotherapy students know about the role of physiotherapy in mental health and their attitudes towards this role. Acquiring this data may influence the amendment of current curricula to include physiotherapy management of mental health conditions.

Invitation to Participate:

I am inviting you to take part in this research study entitled, ‘’Knowledge and attitudes of physiotherapy students about the role of physiotherapy in mental health.’’

Procedure:

If you agree to participate in this research study, the following will occur:

You will fill in two questionnaires; the Mental Illness Clinicians' Attitudes scale (MICA-4) and the Mental Knowledge Schedule questionnaire (MAKS) which are standardised instruments used to assess attitudes about people living with mental illness. You will complete these questionnaires online on the REDCap platform. Kindly note that engaging in the online process implies you have granted consent to take part in the study. Please answer the questions as truthfully as possible.

Content of questionnaires:

The MAKS is composed of six stigma-related mental health knowledge questions which inquire aspects such as; help seeking, recognition, support, employment, treatment and recovery. The other six questions are based on the knowledge of mental illness conditions. The MICA-4 Scale is a short, self-administered instrument developed to assess attitudes about psychiatry and people with mental illness. It has 16 items. Both questionnaires are scored on a six-point Likert-type scale ranging from strongly disagree to strongly agree.

Time required: It will take you about five minutes to complete both questionnaires.

Risks of being involved in the study: There are no risks associated with participation in this study.

Benefits of being in the study: There will be no direct benefit to you from participating in this research study.

Participation is voluntary: Please note that refusal to participate in this study will involve no penalty. As a participant in this study you may discontinue participation at any time without penalty and with no requirement to provide a reason for withdrawing. Any data collected from you will in default be destroyed, unless you specifically consent to its retention.

Confidentiality: All personal information will be treated in the strictest confidence and will only be available to the Principal Investigator (PI) and her Supervisors. If results are published, this may, exceptionally, lead to cohort, or more rarely, individual identification. All data collected in the course of the study will be securely retained for two (2) years, if a scientific publication arises from the study and six (6) years, if there is no publication. Thereafter, it will be destroyed accordingly. No individual identities will be used in any reports or publications resulting from the study hence anonymity will be preserved.

Contact details of researcher: If you have any questions about the study, please contact the principal investigator Ropafadzo Gunduza, by writing an email to 2309328@students.wits.ac.za or on cell phone number +264818794246. Alternatively, you can contact the supervisors; Sandy Lord at sandy.lord@wits.a.za or on telephone number 011 717 3715 and Monique Keller at monique.keller@wits.ac.za or on telephone number 011 717 3715.

Outputs: The anticipated output of this study is to increase to the body of knowledge of physiotherapy with regards to mental health.

Contact details of HREC administrator and chair: This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg. A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research. If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za

Thank you for reading this Study Information Sheet.

Date: August 2020

Appendix E: Ethical approval

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R49 MS RR Gunduza

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M200913

NAME: **(Principal Investigator)**	MS RR Gunduza
DEPARTMENT:	School of Therapeutic Sciences Department of Physiotherapy Medical School University
PROJECT TITLE:	*Knowledge and attitudes of physiotherapy students about the role of physiotherapy in mental health*
DATE CONSIDERED:	2020/10/02
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Mesdames M Keller and S Lord
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	2021/01/19

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 **September** and therefore reports and re-certification will be due in the month of **September** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator Date

Appendix F: Turnitin report

ORIGINALITY REPORT

SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
14%	10%	11%	6%

PRIMARY SOURCES

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12	researchspace.ukzn.ac.za Internet Source	<1%

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Publication

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34	Mihloti Shimange, Marie Poggenpoel, Chris P.H. Myburgh, Nompumelelo Ntshingila. "Lived experiences of family members caring for a relative with mental illness", International Journal of Africa Nursing Sciences, 2022 Publication	<1%

35	doi.orgInternet Source	<1%
36	“The Marcé International Society International Biennial General Scientific Meeting", Archives of Women's Mental Health, 2013 Publication	<1%

Exclude quotes	Off	Exclude matches	< 15 words
Exclude bibliography	Off		

Appendix G: Demographic Characteristics and Knowledge on the Role of Physiotherapy (Pilot Study version)

1. What gender do you identify with?

Please indicate with an 'X'

_____Male

_____Female

_____I would rather not say

2. What is your age range?

_____12-18 years old

_____18-29 years old

_____30-49 years old

_____50-64 years old

_____65 years and over

3. Which ethnicity best describes you?

_____Black

_____White

_____Coloured

_____Indian

_____Asian

_____Other (please specify)

4. Which province do you currently reside in?

_____Western Cape
_____Eastern Cape
_____Northern Cape
_____North West Cape
_____Kwazulu-Natal
_____Gauteng
_____Limpopo
_____Mpumalanga

5. Which ethnicity best describes you?

_____Black
_____White
_____Coloured
_____Indian
_____Asian
_____Other (please specify)

6. Do you have any prior experience in working or volunteering in a mental health facility?

_____Yes
_____No

The following are roles of physiotherapy in mental health:	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
7. Informing individuals adequately about mental health						
8. Eliminate misconceptions about mental illness						
9. Refer necessary patients to specialized professionals in mental health and psychiatry						

10. Optimizing well-being

11. Empowering the individual by promoting functional movement

12. Promoting movement awareness

13. Promoting physical activity and exercises