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Mental illness attitudes and knowledge in non-specialist medical doctors working in state and private sectors

Minty, Yumna

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MENTAL ILLNESS ATTITUDES AND KNOWLEDGE IN NON-SPECIALIST MEDICAL DOCTORS WORKING IN STATE AND PRIVATE SECTORS

Dr Yumna Minty

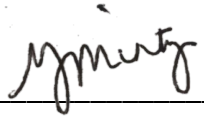
A research report submitted to the Faculty of Health Sciences at University of the Witwatersrand in partial fulfilment of the requirements for the degree of Master of Medicine in the branch of Psychiatry

Supervisor: Adj. Professor M.Y.H. Moosa

Johannesburg, 2020

DECLARATION

I, Yumna Minty, declare that this research report is my own work. It is being submitted in partial fulfilment of the requirements for the degree of Master of Medicine in the branch of Psychiatry. It has not been submitted prior to this either for another degree or examination at any institution or by any other person.



_____

Signed at Johannesburg

on this 7th day of September 2020

PRESENTATIONS ARISING FROM THIS STUDY

1. Oral presentation: 31st Annual Psychiatry Research Day, Department of Psychiatry, University of the Witwatersrand. 19th June 2019. Minty Y, Moosa MYH. The attitudes and knowledge of private and state-employed non-specialist medical doctors towards mental illness.

ABSTRACT

Research has shown that health care professionals have negative attitudes towards, as well as poor knowledge of mental illness. An increasing number of South Africans utilise primary healthcare services (either in the state or private sector) for mental health concerns; hence there is a need to objectively assess the attitudes towards and knowledge of mental illness of doctors working in these areas.

The aim of this study was to investigate aspects of mental illness knowledge and attitudes in a group of private and state-employed non-specialist medical doctors.

A self-administered online survey (which looked at demographic characteristics, attitudes towards and knowledge of mental illness) was completed by participants. Of the 140 practitioners who responded to the survey, 51.4% (n=72) worked in the state sector (SS), 41.4% (n=58) worked in the private sector (PS) and 7.1% (n=10) worked in both the state and private sectors (SPS) (χ^2_1=45.31; p<0.010). The majority (>50%) of the participants in all three groups had a positive attitude towards mental illness. The most positive attitude was noted in the PS group (total modal score=11) followed by the SS group (total modal score=8) and the SPS group (total modal score=6) (χ^2_2=1.52, p=0,468). Although there were no significant associations between attitude and socio-demographic characteristics overall (p>0.05), some associations could be made with regard to individual statements. It was noted that male SS doctors reported feeling less comfortable when dealing with mentally ill patients (p=0.015). Also, SS doctors who did not have family contact with mental illness were less agreeable towards the idea that mentally ill patients did not pose risks to others (p=0.007). The PS doctors who were less than 35 years of age felt more better trained to treat mental illness than SS doctors (p=0.026). The majority (>50%) of the participants in all three groups (modal scores=10) had an adequate level of knowledge of mental illness. There were no significant associations between knowledge and age of participants, gender, duration of practice and having a family member with mental illness (p>0.05).

Despite the findings of a positive attitude and adequate knowledge of mental illness amongst the participants of this study, it is recommended that are more targeted interventions to further improve mental health awareness and knowledge at both undergraduate and postgraduate levels.

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LIST OF NOMENCLATURE

GLZ	Generalised Model
GP	General Practitioner
HIV	Human Immunodeficiency Virus
HPCSA	Health Professions Council of South Africa
mhGAP	Mental health Gap Action Programme
MINI	Mini International Neuropsychiatric Interview
PHC	Primary Health Care
PS	Private Sector (participants)
PTSD	Post-Traumatic Stress Disorder
SASH	South African Stress and Health (survey)
SPS	State and Private Sector (participants)
SS	State Sector (participants)
WHO	World Health Organisation

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CHAPTER ONE - INTRODUCTION

1.1 Literature review

1.1.1 Prevalence of mental illness

Estimates from the Global Burden of Disease Study, conducted by the Institute of Health Metrics and Evaluation, show that in 2016 around 1.1 billion people worldwide suffered from some form of mental illness – this equates to about one in six people globally (Ritchie and Roser, 2019). Even considering these high numbers, the prevalence of mental illness, especially in developing countries with poor health data, is still under-reported. In countries with smaller health budgets and poorer services, this contributes to inadequate interventions and treatment for mental illnesses (Ritchie and Roser, 2019).

In South Africa, the lifetime prevalence of developing a mental illness, as reported in the South African Stress and Health (SASH) study, is estimated to be about 30% (Herman *et al.*, 2009). This figure correlates with the global lifetime prevalence for developing mental illness of 29.2% (Steel *et al.*, 2014). The most prevalent mental illnesses reported in the SASH study were anxiety disorders, followed by substance use disorders and mood disorders.

1.1.2 Burden of mental illness

According to the World Health Organisation, burden of disease data is a useful concept in providing information about the health of a country or region and its people (WHO, 2004). Identifying the burden of diseases is crucial to developing accurate and appropriate health policies and improving public health measures.

In the Lancet Global Burden of Disease Study, which collected data from 188 countries over 23 years (1990-2013), five mental illnesses featured in the top twenty contributors to burden of disease globally: depression, anxiety, schizophrenia, dysthymia and bipolar disorder (Vos *et al.*, 2015). In 2017, the World Health Organisation reported that depression was the single largest contributor to global disability worldwide (WHO, 2017). In the same report, depression was also rated as the largest contributor to mortality from suicide, which is the cause of almost a million deaths globally every year.

In spite of the high reported burden of mental illness, current approaches of calculating the global burden of disease actually underestimates the impact of mental illness by at least a third, whereas a more comprehensive assessment of mental illness burden would place it on a par with cardiovascular and circulatory diseases, which rank as the top causes of disability worldwide (Vigo, Thornicroft and Atun, 2016).

The differences in estimation occurred for a number of different reasons. Neurological and psychiatric diseases were grouped separately in the burden of disease study, although there is significant overlap between the two (Vigo, Thornicroft and Atun, 2016). Other reasons were that suicide and self-injury were grouped separately from mental illness, personality disorders were excluded from the estimation, and chronic pain syndromes and the contribution of severe mental illness to other causes of mortality were not taken into account (Vigo, Thornicroft and Atun, 2016).

Despite the breadth of evidence showing that the burden of mental illness is steadily growing and that mental illnesses can be just as disabling as other conditions, they are still not afforded the same concern and recognition as other illnesses (Tognazzini *et al.*, 2008). Mental illness treatment remains a low priority in many countries, particularly in lower and middle-income countries where the bulk of resources and health interventions often go towards eradicating infectious diseases and maternal and juvenile physical health (Prince *et al.*, 2007).

The burden of mental illness in South Africa has steadily increased over the past 20 years, as is the case in other lower and middle-income countries (Jack *et al.*, 2014). This increase is expected to become steeper as the contributions to mental illness from communicable diseases such as Human Immunodeficiency Virus (HIV) as well as other non-communicable diseases become apparent (Jack *et al.*, 2014). In addition, analysis of data from the SASH study showed that a significantly large number of South Africans had experienced at least one traumatic event in their lifetime; a fact which further contributes to the development of mental illnesses such as post-traumatic stress disorder and substance abuse (Atwoli *et al.*, 2013).

In the face of these statistics, South Africa does not have enough psychiatrically trained professionals to cope with the burden of mental illness (Jack *et al.*, 2014). South Africa falls

below the World Health Organisation's (2007) recommendation of a ratio of 0.5:100 000 of psychiatrists to the general population, with a recent study showing that the ratio is as low as 0.03:100 000 in rural areas (De Kock & Pillay, 2017). In addition, around 40% of psychiatrists registered with the Health Professions Council of South Africa (HPCSA) practise in the state sector, which services the bulk of the country's population (De Kock and Pillay, 2017).

The shortage of psychiatrists is a contributing factor towards the large treatment gap for mental illness in South Africa. This is evidenced from a study conducted in KwaZulu-Natal which showed that the treatment gap for mental illness (the difference between those who require treatment for a diagnosed mental illness and those who actually receive it) was approximately 80% (Burns, 2014).

1.1.3 Stigma and discrimination towards the mentally ill

Mental illness carries more stigma than any other illness and hence, sufferers are likely to be discriminated against more often and more significantly than sufferers of other illnesses (Sartorius, 2007).

Thornicroft *et al.* (2008) writes that the concept of stigma comes about because of the confluence of three core concepts: a lack of clear and accurate knowledge and the presence of misinformation; prejudiced and negative attitudes; and exclusionary or discriminatory behaviours. The combination of these three factors forms a powerful driver for the social exclusion of people who are 'othered' in society. Stigma, once entrenched, can become so pervasive that there seems to be no known country, society or culture in which those who are mentally ill are perceived to provide the same value or have the same status as someone who is not mentally ill (Thornicroft *et al.*, 2008). Negative attitudes towards mentally ill people lead to their needs not being met within society and their rights being infringed upon.

The stigma associated with the mentally ill hinges on stereotypical views. Common stereotypes regarding the mentally ill are that they are dangerous, incompetent and that they are responsible for the development and perpetuation of their psychiatric disorders (Corrigan and Watson, 2002). These stereotypes are further enhanced by the fact that

mental illness is often linked in the public sphere to problematic actions and behaviours such as alcohol and other substance use, prostitution and violent or criminal behaviour (Corrigan and Watson, 2002).

These stereotypes generate a view of mentally ill people that is prejudiced and negative, such as the idea that they are to be feared, are irresponsible, cannot make important life decisions and that they must be treated and cared for like children (Corrigan, 2004).

The stigma associated with mental illness means that sufferers are devalued by society and have less fulfilment of their social and economic needs, such as income, education and housing (Tognazzini *et al.*, 2008). The lack of these basic necessities means that mental illness sufferers experience poor health and social outcomes (Tognazzini *et al.*, 2008).

Discriminatory behaviour against the mentally ill is perpetrated in several ways: withholding assistance from mentally ill individuals; social avoidance and exclusion; and coercive treatment (Corrigan and Watson, 2002). Businesses may refuse to employ workers with a diagnosis of mental illness and proprietors may refuse to lease their properties to someone who is mentally ill (Corrigan, 2004). Other individuals may avoid socialising with, being in a relationship with, or allowing family members to have close contact with mentally ill individuals (Corrigan and Watson, 2002).

When one considers the many ways in which mentally ill people suffer because of stigma, it becomes apparent that it may be a significant reason why mentally ill people would avoid seeking mental health care and make a conscious decision not to do so in order to avoid being labelled and stigmatised (Corrigan, 2004). Negative societal views of mental illness may be one of the most powerful barriers to the development of mental health programmes and the availability of effective treatment (Tognazzini *et al.*, 2008).

Thornicroft *et al.* (2008) noted that a review of studies on the topic by the World Health Organisation found that the proportion of people with untreated mental illness was worryingly high with some studies reporting that more than half of people worldwide remained untreated. Another literature review of psychiatric epidemiology studies found low rates of treatment for mental illness (Kohn *et al.*, 2004). This was attributed, in part, to reluctance in help-seeking by individuals who suspected they had a mental illness (for fear

of being stigmatised) as well as those with a diagnosed mental illness being fearful of advocating for better treatment, lest they be discriminated against once they disclosed their illness (Kohn *et al.*, 2004).

1.1.4 Attitudes of health professionals towards the mentally ill

Stigma is closely linked to poor access to treatment and services for mentally ill people (Kohn *et al.*, 2004; Tognazzini *et al.*, 2008). Even though there is a global movement towards reducing mental health stigma, a significant proponent of mental illness-related stigma comes from health care professionals (Sartorius, 2007). Stigmatisation occurs at multiple levels in the healthcare sector, such as structural and management areas (including allocation of resources and accepted standards of care) as well as at interpersonal levels, such as when healthcare workers engage with mentally ill patients (Knaak, Mantler and Szeto, 2017). Healthcare professionals, including doctors, were not immune to having negative perceptions towards the mentally ill (Sartorius, 2007). Mentally ill people described feeling patronised, punished and humiliated by healthcare workers (Thornicroft *et al.*, 2008). They also report feeling left out of major decisions involving their healthcare, being threatened with coercive treatment and being spoken to in a manner which is demeaning (Knaak, Mantler and Szeto, 2017).

Studies looking at mental health professionals' perceptions of mental illness have found predominantly negative attitudes as well as the endorsement of restrictive and discriminatory practices toward the mentally ill (Jury, 2016; Kochaski and Cechnicki, 2017; Mariam *et al.*, 2016).

A commonly endorsed description of mentally ill people used by healthcare personnel, including medical doctors, is that they pose a danger to others (Adewuya and Oguntade, 2007) and that their behaviour is unpredictable and dangerous (Kapungwe *et al.*, 2011) (Fernando, Deane and McLeod, 2010)

Another perception expressed by healthcare workers is that mentally ill people are responsible for their conditions and are blame-worthy (Corrigan and Watson, 2002). A study of general and non-psychiatric specialist doctors in Karnataka, India found that over 50% of participants agreed with a statement that said 'mental health problems are a sign of

personal weakness' (Cowan *et al.*, 2012). Similar ideas have been expressed in other research (Fernando, Deane and McLeod, 2010).

Social distance towards the mentally ill and 'othering' of mentally ill people is frequently reported in research (Sartorius, 2007). A study by Kapungwe *et al.* (2011) found high levels of agreement with statements endorsing these beliefs. More than half of the participants agreed and/or strongly agreed that they found it hard to talk to mentally ill people and that they felt uncomfortable being around someone who has been treated for mental illness. In another study, around 52% of doctors reported feeling that working with mentally ill patients was difficult (Cowan *et al.*, 2012).

It has also been found that certain mental illnesses attract more stigma than others. Hori *et al.* (2011) found high levels of stigma in both the general population and medical staff towards people with schizophrenia. In another study of medical students and interns in Nigeria, participants expressed more negative attitudes towards schizophrenia than depression (James, Omoaregba and Okogbenin, 2012). Similar results were found in a Hong Kong study, wherein there were large differences in doctors' willingness to treat and interact with schizophrenic patients versus depressed patients (Lam *et al.*, 2013).

1.1.5 Knowledge of health professionals of mental illness

While mental illness stigma is a contributor to poor treatment of mental illness, other factors are also involved in mental illness sufferers receiving inadequate healthcare (Ganasen *et al.*, 2008). The extent to which patients may benefit from mental illness interventions is dependent not only upon existing mental health resources but also on the level of mental health knowledge and beliefs about mental illness within a community (Ganasen *et al.*, 2008). The mental health knowledge of healthcare workers is particularly important, as poor recognition or misdiagnosis of mental illness leads to a delay in or no treatment, with subsequent poorer outcomes for mentally ill individuals. Several studies have attempted to assess the mental health knowledge of healthcare workers and have found these to be poor or inadequate.

Cowan *et al.* (2012) found that generalist doctors in their study were not able to accurately diagnose or describe schizophrenia and depression. Although the majority of participants

reported feeling competent in providing mental health services to their patients, only about 58% provided a correct diagnosis, after reading a short vignette describing mental illness symptoms. Similar findings were described in a large sample of non-mental health professionals in China (Wu *et al.*, 2017).

In another study, conducted across seven primary health care facilities in three Canadian provinces, the rates of misdiagnosis of a mood or anxiety disorder by primary care physicians was assessed (Vermani, Marcus and Katzman, 2011). Researchers performed the Mini International Neuropsychiatric Interview (MINI) and then correlated the diagnosis obtained with that recorded in the patients' files. It was found that the percentages of patients who met criteria for depressive, bipolar, panic and anxiety disorders on the MINI but who were not diagnosed as such by the attending physician in the clinic were high. In particular, the non-detection rate of depressive disorder was 65.9%, of bipolar disorder 92.7%, panic disorder 85.8% and non-detection of generalised anxiety disorder was 71%.

Within South African samples, two studies have looked at the knowledge of nurses, both in primary health care and psychiatrically trained nursing staff, and found inadequate levels of mental illness knowledge (Dirwayi, 2002; Dube and Uys, 2016). To the knowledge of the researcher, no studies have been performed looking at the knowledge of mental illness of doctors practising in South Africa. There is thus a gap in our knowledge regarding the mental health literacy of South African doctors.

1.1.6 Effect of poor attitudes and knowledge on treatment of mental illness and its outcomes

Negative attitudes and stigma towards mental illness sufferers form a barrier for people seeking assistance for treatment of an illness, prevention of other diseases and conditions, and for support in maintaining overall health (Nyblade *et al.*, 2019). The experienced stigma may contribute to poorer mental and physical health for mentally ill individuals (Knaak, Mantler and Szeto, 2017). Henderson, Evans-Lacko and Thornicroft (2013) have described factors that increase the likelihood of poorer care for mental health; these include lack of knowledge about treatment of mental illnesses and how to access treatment, as well as the sufferers' expectation of prejudice and discrimination.

It is an established finding that people with mental illness have a greater risk of premature death compared to those without mental illness (John *et al.*, 2018). While there are several reasons for this, poorer access to healthcare for associated physical illnesses is a driving factor (Ashworth, Schofield and Das-Munshi, 2017). Diagnostic overshadowing is a well-described concept and it is frequently experienced by the mentally ill (Jones, Howard and Thornicroft, 2008). It leads to poorer care for physical illnesses, as the attending doctor may choose not to conduct important tests or prescribe medication and instead attribute physical symptoms to the mental illness. Consequently, it may lead to increased morbidity and earlier mortality.

As previously described, the lack of accurate knowledge and misinformation is a powerful driver for stigmatising attitudes. Therefore, poor knowledge of mental illnesses may contribute to not only poorer treatment, but also perpetuation of stigma and, hence, reduced access to care, creating a vicious cycle of despair for the mental illness sufferer.

1.1.7 Need for the study

This study investigated the attitudes and knowledge of non-specialist doctors in the public and private healthcare sectors towards mental illness.

As mentioned in the reviewed literature, there is a significant body of data confirming that primary healthcare and general physician doctors, amongst other categories of healthcare workers, hold negative attitudes towards the mentally ill. Research also confirms that doctors and other healthcare workers have difficulty diagnosing and instituting adequate treatment for mental illnesses. Both of these factors lead to a poorer quality of healthcare for mentally ill patients. Data on attitudes towards and knowledge of mental illness in South African samples of doctors are lacking, particularly with respect to knowledge of mental illness.

It is important to determine the attitudes and knowledge of South African doctors with respect to mental illness as both these factors impacts on the quality of care they provide to the mentally ill. Poor quality of healthcare leads to poor functional outcomes for the mentally ill as well as earlier mortality.

This study may assist in identifying gaps in mental health teaching as well as possible pitfalls (in structure and content) in the training of mental illness in non-specialist doctors. It also provides insight into the prevailing attitudes of doctors currently managing mentally ill patients at a primary care level. Consequently, this may be used to structure and develop continuing professional development for doctors in South Africa.

1.2 Hypothesis

The hypothesis adopted in this study was that there is no difference in the attitudes towards and knowledge of mental illness in private and state-employed non-specialist doctors.

1.3 Objectives

The objectives of this study were to:

a) describe the sociodemographic characteristics of the study populations;
b) describe the attitudes towards mental illness of the study populations;
c) describe the knowledge of mental illness of the study populations;
d) determine the sociodemographic characteristics associated with differences in attitudes towards mental illness and knowledge of mental illness of doctors in the study populations (state and private sectors), if any differences were found.

CHAPTER TWO – METHODS AND MATERIALS

2.1 Methodology

2.1.1 Study design

This was a cross-sectional study analysing and comparing the attitudes towards and knowledge of mental illness in three groups of non-specialist medical doctors, namely:

a) doctors working in the state sector;
b) doctors working in the private sector;
c) doctors working in both the state and private sectors.

Research using survey methods involves the collection of information from a selected sample of individuals by means of their responses to certain predefined questions. This is usually done through face-to-face interviews or questionnaires, either self-administered or researcher-administered. Surveys are useful tools for exploring and describing human behaviours and interactions (Ponto, 2015).

Data in this study were collected by means of a self-administered questionnaire. A self-administered questionnaire is a non-intrusive, quick and effective means of obtaining information from study participants. Its use in this study also ensured anonymity for the participants, as they did not have to speak to the researcher face-to-face nor were they required to identify themselves to the researcher.

An online format of the questionnaire was selected to overcome the time and cost that may have been incurred in travelling to potential participants (who would have been situated in different geographical areas). It was also deemed to be easier for the potential participants as they would have been able to respond to the questionnaire at their convenience.

A link to the study questionnaire, information about the study, details of the researcher and matters pertaining to informed consent were emailed to potential participants. Participants accessed the questionnaire through the electronic link and submitted their responses electronically.

2.1.2 Study population and sampling

All doctors in the state sector who were working at a primary healthcare level and who were not studying towards a specialist qualification in a medical field, such as paediatrics, surgery or internal medicine, were considered as eligible for the study. All doctors in the private sector who were working as general practitioners and who did not hold any postgraduate specialist qualifications were considered eligible for the study.

Using data from the Econex report on updated general practitioner (GP) and specialist numbers for 2011 and 2012, it was determined that there are approximately 12470 non-specialist doctors working in the public sector and 7673 non-specialist doctors working in the private sector (Econex Competition and Applied Economics, 2015). In addition, there were an estimated 3086 medical interns working in the country in 2016, as registered by the HPCSA. The total pool of non-specialist doctors was, therefore, 23229. Utilising a confidence level of 95% and a margin of error of 5%, it was determined that the sample size should be 376.

A convenience sampling method was used for the study.

2.1.3 Data collection tool

The data collection tool was an online questionnaire. It was designed using a freely available online platform called Google Forms, which operates similarly to the popular survey engine SurveyMonkey. Google Forms allows the owner of a Google account to design and disseminate an online questionnaire, while results are collected electronically and automatically and can only be accessed by the Google account owner who created the survey.

A questionnaire was designed to record the necessary data (Appendix A). The questionnaire consisted of three parts.

The first part of the questionnaire included:

a) age (as a continuous variable);
b) gender;

c) number of years practising medicine (less than 5 years, between 5 and 10 years, between 16 and 20 years and greater than 20 years);
d) area of medical practice (state or private sector, as well as whether their scope of practice denoted primary health care, general practice, hospital work or other);
e) if selecting 'other', participants had the option of elaborating on their scope of practice;
f) if they had a close family member with mental illness (positive responses required elaboration by choosing from a list of common mental illnesses: depression, bipolar disorder, anxiety disorder, psychotic disorder, substance use/abuse disorders and unknown or other), participants had a choice not to answer this question.

The second section of the questionnaire consisted of ten statements describing attitudes towards mental illness in general. The attitudes component was developed after looking at other studies investigating mental illness attitudes that used Likert-scale questionnaires to assess attitude scores. These were the Opening Minds Scale for Health Care Providers (Kassam *et al.*, 2012) and a questionnaire used in a study in Zambia by Kapungwe *et al.* (2011). Ten statements were compiled and used in the questionnaire. These statements covered stigma concepts such as social distance, negative attitudes, stereotyping beliefs and diagnostic overshadowing. Respondents were asked to grade their level of agreement with the statements using a 5-point Likert scale (strongly agree, agree, uncertain, disagree and strongly disagree).

The third section of the questionnaire consisted of ten questions designed to assess general knowledge of mental illness. Each question was designed to have three possible answer options (one was the correct answer, one was incorrect and the last option indicated that the participant was unsure of the answer). The knowledge component of the questionnaire was developed after perusing published mental illness literacy tests and scales that assessed general knowledge of mental illness. These were the Multiple Choice Knowledge of Mental Illness Test (Compton, Hankerson-Dyson and Broussard, 2011), the Mental Health Literacy Scale (O'Connor and Casey, 2015) and the Mental Health Knowledge Schedule (Evans-Lacko *et al.*, 2010). The questions were designed to cover factual aspects of mental illness that doctors in general practice would likely encounter frequently. This included depression and anxiety, substance use, dementia, personality disorders and treatment non-adherence.

The developed questionnaire was reviewed by a group of psychiatric consultants to determine the validity of the questions, the relevance of the themes covered and the appropriateness of language and tone. The questionnaire was amended with the provided recommendations:

a) to include an answer option of 'unknown' in the questions asking about family history of mental illness;
b) to include aspects of whether doctors felt adequately trained to treat mental illness;
c) to include answer option of 'I don't know' in the knowledge-based questions.

The questionnaire was then piloted to a group of ten non-specialist junior doctors (interns), who were not included in the actual study. Feedback received regarding the questions was that the level in terms of assessing attitudes and knowledge of generalists was appropriate. In addition, the information leaflet was amended to inform participants that they could choose not to answer any questions that may be uncomfortable for them.

2.1.4 Data collection

The questionnaire was disseminated to potential participants in the following manner:

a) Professional practitioner bodies that had non-specialist doctors as their members were contacted in order to reach doctors in private practice. The organisations were the Independent Practitioners Association, the Islamic Medical Association, the General Practitioners Management Group, Peermed Medical Practice, Medicross Medical Practice and Prime Cure Health Services. Email addresses for administrators were obtained from the websites of these organisations and an email was sent to them with the request that they disseminate the survey to the general doctors on their member lists.
b) To obtain responses from doctors in the state sector, a similar email was sent to the clinical managers at state facilities (primary healthcare clinics and district hospitals) requesting that the email be shared with medical officers working at these facilities.
c) State-employed doctors who were not working as specialists or studying within specialist fields (such as casualty medical officers and interns) were approached by

the researcher directly and invited to participate in the study. If they agreed, the email link to the questionnaire was forwarded to them.

d) Colleagues and acquaintances of the researcher who were working in the private sector as non-specialist doctors were invited to complete the survey.
e) Participants were asked to forward the survey to their colleagues and invite them to complete the survey.

Data responses were originally recorded automatically by the Google Forms platform as an online database. This information was manually exported and recorded in a Microsoft Excel spreadsheet. The data was then cleaned and organised by response category, i.e. state sector respondents, private sector respondents and combined state and private sector respondents before further analysis was performed.

The initial emailing and collection of data took place from December 2017 to May 2018. Owing to a poor number of responses received initially, a second tranche of emails was sent, and the data collection period was extended for a further three months. In the second tranche of emails, the potential participants were requested not to complete the survey if they had already done so, so as to avoid duplication of responses.

2.1.5 Data analysis

Statistical analyses were conducted using Statistica (version 7; www.statsoft.com). Tests with two-tailed probability values and statistical significance were accepted when $\alpha \leq 0.05$. The data sets were tested for departure from normality using the Shapiro-Wilk test. If they were not normal, appropriate tests for non-parametric data were used.

The sociodemographic characteristics of the study population were described by means of proportions and percentages and illustrated using bar graphs, pie charts and tables for graphical representation. The sociodemographic characteristics of the study populations were analysed and compared using chi-square contingency tests for all variables except age distribution. Age distribution was analysed using a generalised model (GLZ) with a Poisson error structure because the data set was large. Wald χ^2 outputs were reported for all GLZ analyses and estimates and SE were reported for significant responses.

The attitudes and knowledge components were expressed using tables and bar charts for graphical representation. For analysis, responses to the statements were scored to obtain numerical values for comparison. Modal scores for all of the statement were obtained. The sum of modal scores for each study group was compared using chi-square tests to determine any statistically significant difference in the three study groups. Responses to each question were then compared using a GLZ model to determine if there were any significant differences between the study groups for individual statements.

A GLZ model was used to determine if any of the recorded sociodemographic variables (age, gender, years of practice and having a family member with mental illness) influenced differences in responses between the study groups.

2.2 Ethical considerations

Ethical approval from the University of the Witwatersrand Human Research Ethics Committee was sought prior to conducting the study. The study was approved, with protocol number M170733 (Appendix B).

Participation in the study was entirely voluntary. An information leaflet was distributed along with the questionnaire (by email), which contained the relevant information about consent for participation in the study (Appendix C). Owing to the nature of the questionnaire, i.e. that it was an online questionnaire and not in written format, it was understood that written consent could not be obtained from each participant. The information leaflet, therefore, made participants aware that tacit consent to participate in the study was implied once an individual clicked on the link to access the questionnaire and began completing the questions. Participants were also informed that they had the option of not continuing with the questionnaire at any point or choosing not to submit their answers. They were also not obliged to answer any question that they did not wish to answer and were still able to complete the rest of the questionnaire even if they chose not answer certain questions.

CHAPTER THREE – RESULTS

3.1 Sociodemographic characteristics of the study population

Of the 140 practitioners who responded to the survey, 51.4% (n=72) worked in the state sector (SS), 41.4% (n=58) worked in the private sector (PS), and 7.1% (n=10) worked in both the state and private sectors (SPS) (Figure 1). This distribution was significantly different to chance ($\chi^2_1 = 45.31$; $p < 0.010$).

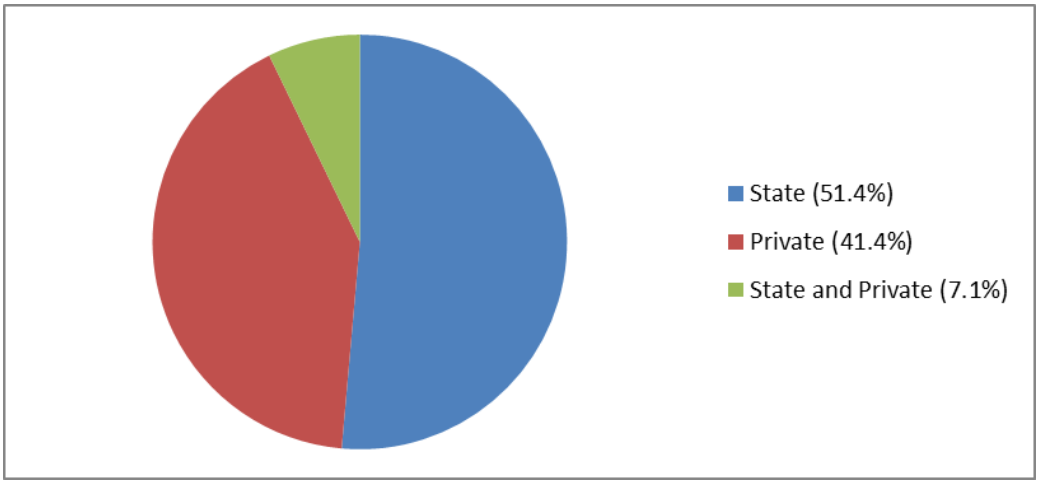


Figure 1. The proportion of responses to the survey by sector of practice

A breakdown of the respondents in the state sector (SS) group was as follows (Figure 2): 51.4% (n=37) were working in a hospital, 26.4% (n=19) in a primary health care (PHC) clinic, 4.2% (n=3) in both a PHC clinic and a hospital and 18.1% (n=13) in other sectors. The other sectors included: an HIV clinic (n=2), research environment (n=2), a non-governmental organisation (n=1), public health environment (n=1), and emergency department (n=1).

A breakdown of respondents in the private sector (PS) group was as follows (Figure 2): 82.8% (n=48) worked as GPs, 3.4% (n=2) worked as a GP and in a hospital, 3.4% (n=2) worked as a GP and in another sector, and 6.9% (n=4) worked in other sectors. The other sectors included research and occupational health (n=1), occupational services (n=1), locum work (n=1), and addiction medicine (n=1).

A breakdown of respondents in the state and private sector (SPS) group was as follows (Figure 2): 40% (n=4) worked in both a hospital and as a GP, 20% (n=2) in both a PHC clinic

and as a GP, 10% (n=1) in a PHC clinic, a hospital and as a GP, 10% (n=1) as a GP and other, 10% (n=1) in a PHC and another sector, and 10% (n=1) in both private and state hospitals.

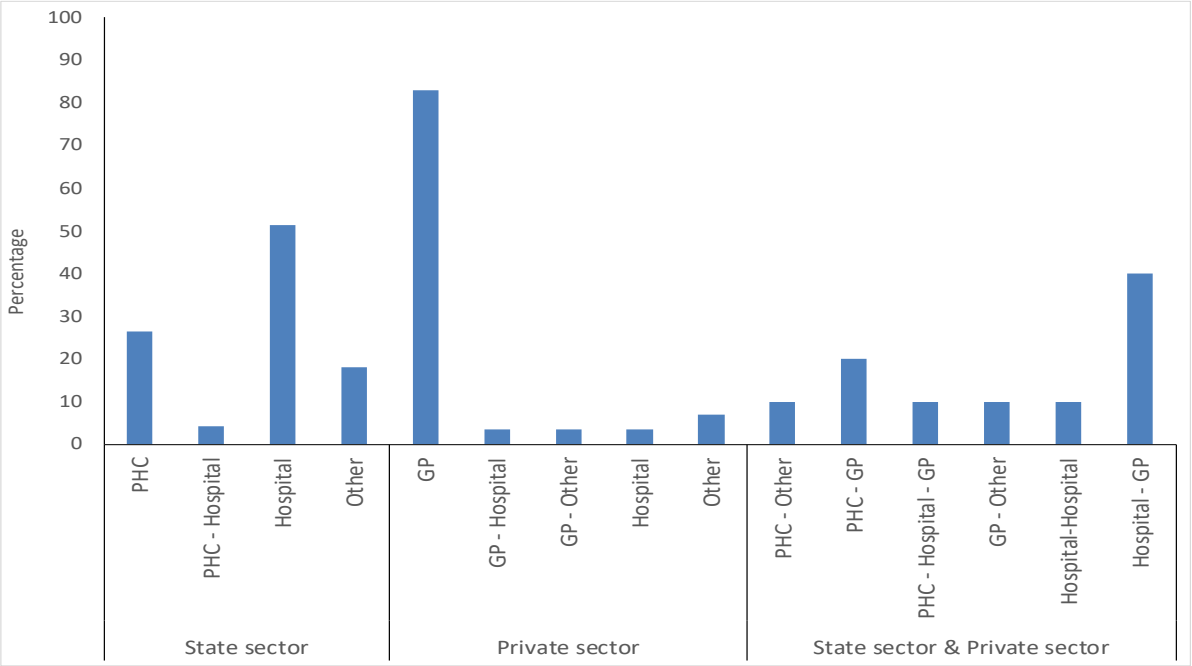


Figure 2. Distribution of study population by sector of employment

The age distribution of participants in the three study groups was as follows:

a) SS group - mean age 34.4 years with a range from 23 to 56 years,
b) PS group - mean age 44.6 years with a range from 29 to 71 years,
c) SPS group - mean age 44.3 years with a range from 31 to 64 years.

Respondents in the SS group were significantly younger compared to those in the PS group, as well as those in the SPS group (Wald χ^2_2=90.73; $p < 0.010$). The age of the participants was condensed into four age categories for the purposes of further analysis (less than 35 years, 35 to 45 years, 46 to 55 years, more than 55 years).

Table 1 illustrates the frequency distribution of the sociodemographic variables of the study population.

Table 1. Frequency distribution of sociodemographic variables of the study population

Sociodemographic Variable	State Sector (n=72)		Private Sector (n=58)		State and Private Sector (n=10)	
	n	%	n	%	N	%
Age						
< 35 years	38	52,3	8	13,8	1	10
35-45 years	21	29,2	21	36,2	5	50
46-55 years	11	15,3	13	22,4	1	10
> 55 years	1	1,4	10	17,2	2	20
Gender						
Male	24	33,3	35	60,3	8	80
Female	48	66,6	23	39,7	2	20
Years of Practice						
< 5 years	28	40,3	0	0	0	0
5-10 years	18	25	10	17,2	2	20
11-15 years	16	22,2	17	29,3	5	50
16-20 years	5	6,9	10	17,2	1	10
> 20 years	5	6,9	20	34,5	2	20
Family Member with Mental Illness						
Yes	30	41,7	27	46,6	4	40
No	35	48,6	24	41,4	5	50
Unsure	12	16,7	5	8,6	1	10

The majority of participants were younger than 35 years of age in the SS group (52.3%, n=38). In the PS group, the largest number of participants were in the age group 35 to 45 years (36.2%, n=21), while the largest number of participants were between 35 and 45 years in the SPS group (50%, n=5). Noteworthy was that 17.2% (n=10) of participants in the PS group and 20% (n=2) in the SPS were over 55 years of age compared to only 1.4% (n=1) in the SS group (Table 1).

There was no statistically significant difference in the gender of the PS group, with the following figures: males (60.3%, n=35) and females (39.7%, n=23) (χ^2_1=90.73; p=0.115). In contrast, there were statistically significantly more females (66.6%, n=48) than males (33.3%, n=24) in the SS group (χ^2_1=8.00; p=0.005). There was a trend for more male (80%, n=8) than females (20%, n=2) to be working in the SPS group (χ^2_1=3.60; p=0.060) (Table 1).

The majority of participants (40.3%, n=28) in the SS group were practising for less than five years, for more than 20 years (34.5%, n=20) in the PS group and for between 11 and 15 years (50%, n=5) in the SPS group. The relationship between duration of practice and sector of practice was statistically significant (χ^2_6=12.96; p=0.044). Noteworthy was that none of the doctors in the PS and the SPS groups were practising for less than five years.

Within the sector groups, significantly more respondents were employed in the SS group for less than five years and significantly fewer for 20 years or more (χ^2_4=27.71; p < 0.001). There was no significant difference in the duration of practice in the PS group (χ^2_3=3.07; p=0.382) and the SPS group (χ^2_3=3.50; p=0.321) (Table 1).

There was no significant difference between the presence nor absence of a family member with mental illness within the SS group (41.7% vs 48.6%) (χ^2_1=0.07; p=0.791), the PS group (46.6% vs 41.4%) (χ^2_1=0.18; p=0.671) as well as the SPS group (40% vs 50%) (χ^2_1=2.60; p=0.107) (Table 1).

There was also no statistically significant difference between the three groups in terms of family contact with mental illness (χ^2_2=0.6005; p=0.740). The frequency distribution of the various types of mental illness reported in family members are listed in Table 2.

Table 2. Frequency distribution of responses to the question of whether participants had a family member with mental illness

Mental Illness	State Sector (n=72)		Private Sector (n=58)		State and Private Sector (n=10)	
	N	%	N	%	n	%
Depression	14	46,7%	18	66,7%	0	0
Bipolar Disorder	5	16,7%	4	14,8%	2	50%
Anxiety Disorder	5	16,7%	5	18,5%	1	25%
Psychotic Disorder	0	0	2	7,4%	1	25%
Substance Disorders	6	20%	4	14,8%	0	0
Unsure	3	10%	0	0	0	0
Other	1	3,3%	1	3,7%	0	0

In the SS group, the most common mental illness amongst family members was depression (46.7%, n=14), followed by substance use disorders (20%, n=6), bipolar disorder (16.7%, n=5) and anxiety disorder (16.7%, n=5). Within the PS group, the most common mental illness was depression (66.7%, n=18) followed by anxiety disorder (18.5%, n=5), bipolar disorder (14.8%, n=4), substance use disorder (14.8%, n=4), and dementia (3.7%, n=1). In the SPS group, the most frequent mental illness was bipolar disorder (50%, n=2), followed by anxiety disorder (25%, n=1) and psychotic disorder (25%, n=1) (Table 2).

3.2 Attitudes towards mental illness

The largest number of participants in all three groups agreed that:

a) people with mental illness rarely pose a risk to their families,
b) employers should hire a person with a managed mental illness if he/she is the best person for the job,
c) they felt they were adequately trained and had sufficient knowledge to be able to diagnose and initiate treatment in a person with mental illness, and
d) they would not mind if a person with mental illness lived next door to them (Table 3).

The largest number of participants in all three groups disagreed that:

a) most people with mental illness don't try hard enough to get better,
b) they sometimes perceived people with mental illness as being weak or lacking in willpower and self-discipline, and
c) if a mentally ill person complained of physical symptoms, they would likely attribute this to their mental illness (Table 3).

Table 3. Frequency distribution of the responses for each of the attitude statements in the study population

Attitude Statements	State Sector (n=72)		Private Sector (n=58)		State and Private Sector (n=10)	
	N	%	N	%	N	%
i. People with mental illness rarely pose a risk to their families and communities.						
Strongly agree	4	5,6	7	12,1	0	0
Agree	36	50	32	55,2	5	50
Uncertain	4	5,6	3	5,2	1	10
Disagree	23	31,9	8	13,8	4	40
Strongly disagree	5	6,9	7	12,1	0	0
ii. I am more comfortable treating someone with a physical illness than a mental illness.						
Strongly agree	5	6,9	3	5,2	1	10
Agree	47	65,3	23	39,7	5	50
Uncertain	2	2,8	3	5,2	0	0
Disagree	15	20,8	24	41,4	4	40
Strongly disagree	3	4,2	5	8,6	0	0
iii. Employers should hire a person with a managed mental illness if he/she is the best person for the job.						
Strongly agree	20	27,8	26	44,8	2	20
Agree	46	63,9	29	50	5	50
Uncertain	4	5,6	0	0	1	10
Disagree	2	2,8	2	3,4	0	0
Strongly disagree	0	0	1	1,7	2	20
iv. Healthcare providers have a role in assisting mentally ill patients in becoming active members of their communities.						
Strongly agree	33	45,8	32	55,2	4	40
Agree	37	51,4	24	41,4	5	50
Uncertain	2	2,8	1	1,7	1	10
Disagree	0	0	0	0	0	0
Strongly disagree	0	0	0	0	0	0
v. Most people with mental illness don't try hard enough to get better.						
Strongly agree	0	0	1	1,7	0	0
Agree	13	18,1	14	24,1	0	0
Uncertain	7	9,7	4	6,9	0	0
Disagree	45	62,5	35	60,3	8	80
Strongly disagree	7	9,7	4	6,9	2	20
vi. I sometimes struggle to feel compassion for a person with mental illness.						
Strongly agree	19	26,4	0	0	0	0
Agree	0	0	16	27,6	4	40
Uncertain	4	5,6	4	6,9	0	0
Disagree	41	56,9	25	43,1	2	20
Strongly disagree	8	11,1	13	22,4	4	40
vii. If a person with mental illness complained of physical symptoms (e.g. headache, nausea), I would likely attribute this to their mental illness.						
Strongly agree	1	1,4	0	0	0	0
Agree	18	25	6	10,3	2	20
Uncertain	6	8,3	0	0	0	0
Disagree	42	58,3	43	74,1	6	60
Strongly disagree	5	6,9	8	13,8	2	20

viii. I feel that I am adequately trained and have sufficient knowledge to be able to diagnose and initiate treatment in a person with mental illness.						
Strongly agree	4	5,6	7	12,1	0	0
Agree	29	40,3	29	50	6	60
Uncertain	11	15,3	4	6,9	1	10
Disagree	26	36,1	17	29,3	3	30
Strongly disagree	2	2,8	1	1,7	0	0
ix. I would not mind if a person with mental illness lived next door to me.						
Strongly agree	4	5,6	9	15,5	3	30
Agree	58	80,6	43	74,1	6	60
Uncertain	5	6,9	2	3,4	0	0
Disagree	5	6,9	4	6,9	1	10
Strongly disagree	0	0	0	0	0	0
x. I sometimes perceive people with mental illness as being weak or lacking in willpower and self-discipline.						
Strongly agree	0	0	1	1,7	0	0
Agree	17	23,6	8	13,8	1	10
Uncertain	3	4,2	3	5,2	1	10
Disagree	41	56,9	38	65,5	5	50
Strongly disagree	11	15,3	8	13,8	3	30

While the majority of the SS and SPS groups (65.3% and 50% respectively) agreed that they felt more comfortable treating someone with a physical illness rather than a mental illness, the largest number of participants in the PS group (41.4%) disagreed with this statement (Table 3).

While the majority of the SS and SPS groups (51.4% and 50% respectively) agreed that healthcare providers have a role in assisting mentally ill patients in becoming active members of their communities, the majority of PS group (55.2%) strongly agreed with this statement (Table 3).

While the largest number of participants in the SS and PS group (56.9% and 43.1% respectively) disagreed with the statement that they sometimes struggled to feel compassion for a mentally ill person, participants in the SPS group equally agreed and strongly disagreed (40%) with this statement (Table 3).

The overall attitude of the respondents towards mental illness was determined by allocating numerical values to the responses towards the attitude statements. This was done as follows: strongly agree = 2, agree = 1, uncertain = 0, disagree = -1, strongly disagree = -2. Statements 1, 3, 4, 8 and 9 were scored as described while statements 2, 5, 6, 7 and 10 were

scored in reverse to reflect accurate portrayal of positive and negative attitudes, i.e. strongly agree = -2, agree = -1, uncertain = 0, disagree = 1 and strongly disagree = 2. A higher score indicated a positive attitude towards mental illness and a lower score indicated an attitude that was less positive. Modal scores for each statement in each of the three sectors were obtained. A modal score is a value that appears most often in a set of data. Hence, the modal score within each group was a representation of the attitude most commonly endorsed within that group.

The most positive attitude towards mental illness was noted in the PS group (total modal score = 11) followed by the SS group (total modal score = 8) and the SPS group (total modal score = 6) (Table 4). The differences in scores between the groups were not statistically significant (χ^2_2 =1.52, p=0,468).

A GLZ model was used to determine any statistically significant difference in responses between the SS and PS sector for each individual question. The SPS group was excluded from this analysis because of the small sample size. The only significant difference found was that participants in the SS group were more likely to agree that they were more comfortable treating someone with a physical illness than a mental illness when compared to the PS group (Wald χ^2_1 = 15.691; p = 0.047) (Figure 3).

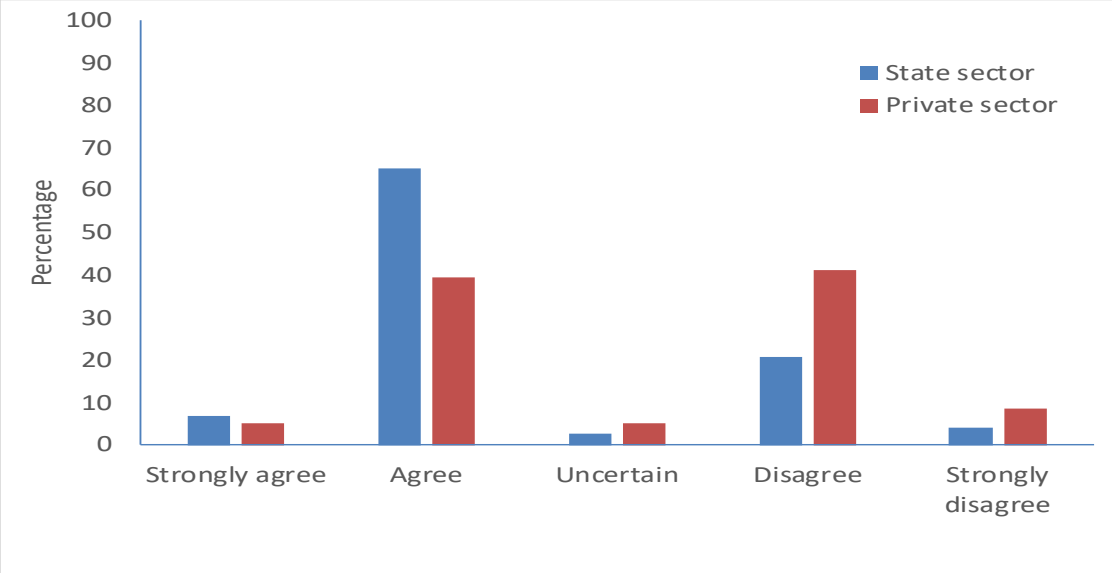


Figure 3. The percentage of respondents in the state and private sectors responding to the second statement (I am more comfortable treating someone with a physical illness than a mental illness).

3.3 Knowledge of mental illness

The majority of participants in all three groups (>50%) gave the following correct responses to questions:

a) psychotherapy may be the most beneficial intervention in personality disorders;
b) someone who has a close family member with depression is at risk of developing depression;
c) people with schizophrenia who do not take their treatment regularly most likely do so because they do not recognise that they have an illness;
d) people with post-traumatic stress disorder are at high risk for developing alcohol abuse;
e) a woman with borderline personality disorder who frequently becomes suicidal due to an ongoing fear is most likely fearful of abandonment;
f) an elderly patient who is brought to the doctor by her family as she has become difficult and unmanageable at home over the past few months, hiding things away and accusing family of stealing things from her, is most likely suffering from dementia (Table 4).

Table 4. The proportion of responses in each of the response categories for each of the questions in the three study groups

Knowledge Statements	State Sector Group (n=72)		Private Sector Group (n=58)		State and Private Sector (n=10)	
	N	%	N	%	N	%
i. People who have had an episode of depression are most at risk for a psychotic disorder or another episode of depression.						
Correct	68	94,4	58	100	10	100
Incorrect	4	5,6	0	0	0	0
Unsure	0	0	0	0	0	0
ii. Psychotherapy may be the most beneficial intervention in personality disorders or learning disorders.						
Correct	58	80,6	50	86,2	9	90
Incorrect	11	15,3	7	12,1	1	10
Unsure	3	4,1	1	1,7	0	0
iii. A man, at the airport, who is talking and laughing very loudly, passing out money to people and talking about his plans to fly around the world, is most likely suffering from mania or delirium.						
Correct	64	88,9	51	87,9	10	100
Incorrect	8	11,1	6	10,3	0	0
Unsure	0	0	1	1,7	0	0
iv. Someone who has a close family member with depression is at risk of developing depression or dementia.						
Correct	57	79,2	47	81	7	70
Incorrect	14	19,4	9	15,5	2	20
Unsure	0	0	2	3,4	1	10
v. People with schizophrenia who do not take their treatment regularly, most likely do so because they do not recognise that they have an illness or they believe that medication is ineffective.						
Correct	49	68,1	45	77,6	7	70
Incorrect	21	29,2	12	20,7	3	30
Unsure	2	2,7	1	1,7	0	0
vi. People with post-traumatic stress disorder are at high risk of developing dementia or alcohol abuse.						
Correct	57	79,2	44	75,9	8	80
Incorrect	13	18,1	13	22,4	2	20
Unsure	2	2,7	1	1,7	0	0
vii. A woman with borderline personality disorder who frequently becomes suicidal due to an ongoing fear is most likely fearful of abandonment or gaining weight.						
Correct	70	97,2	56	96,6	8	80
Incorrect	2	2,8	0	0	2	20
Unsure	0	0	2	3,4	0	0
viii. A woman who has been isolating herself from friends and family and no longer pursues hobbies and interests as before is most likely suffering from generalised anxiety disorder or depression.						
Correct	65	90,3	49	84,5	10	100
Incorrect	7	9,7	9	15,5	0	0
Unsure	0	0	0	0	0	0
ix. Mental illness can most often be attributed to chemical imbalances or structural damage to the brain or poor self-control.						
Correct	70	97,2	55	94,8	10	100
Incorrect	2	2,8	3	5,2	0	0
Unsure	0	0	0	0	0	0
x. An elderly patient is brought to the doctor by her family as she has become difficult and unmanageable at home over the past few months, hiding things away and accusing family of stealing things from her. She is most likely suffering from dementia or delusional disorder.						
Correct	59	81,9	50	86,2	8	80
Incorrect	12	16,7	7	12,1	1	10
Unsure	0	0	0	0	1	10

The majority of the doctors in the SS group (>50%) and all of the doctors in the PS group and SPS group responded correctly to question 1, in which the answer stated that people who have had one episode of depression are most at risk for another episode of depression (Table 4).

The majority of doctors in the SS and PS groups (>50%) gave the following correct responses to questions:

g) a man at the airport who is talking and laughing very loudly, passing money to people and talking about his plans to fly around the world is most likely suffering from mania;
h) a woman who has been isolating herself from friends and family and no longer pursues hobbies and interests as before is most likely suffering from depression;
i) mental illness can most often be attributed to chemical imbalances or structural damage to the brain (Table 4).

All of the doctors in the SPS group gave the following correct responses to questions:

a) a man at the airport who is talking and laughing very loudly, passing money to people and talking about his plans to fly around the world is most likely suffering from mania;
b) a woman who has been isolating herself from friends and family and no longer pursues hobbies and interests as before is most likely suffering from depression;
c) mental illness can most often be attributed to chemical imbalances or structural damage to the brain (Table 4).

The overall knowledge of the respondents towards mental illness was determined by allocating numerical values to the responses to the knowledge questions. The scoring was as follows: a correct response had a score of 1 and an incorrect response had a score of -1. A response of unsure carried a score of 0. A higher score indicated a better knowledge of mental illness.

Modal scores for each question in each of the three sectors were obtained. A modal score is a value that appears most often in a set of data and therefore the modal score within each sector was a representation of the answer most commonly selected within that study group.

The sum of the modal scores for all three groups was the same, indicating that there was no statistical difference between the knowledge scores of the three groups.

3.4 Association between sociodemographic characteristics and attitude towards mental illness

A GLZ model was used to assess the influence of sociodemographic variables on responses to individual statements, as well as on modal scores for each participant. The objective was to determine if any of the sociodemographic characteristics influenced differences in responses between the study groups. Wald χ^2 outputs were reported for all GLZ analyses. The SPS group was excluded from this analysis because of the small sample size.

Analyses of the modal scores showed no statistically significant difference in the overall attitude towards mental illness between the SS and PS groups with respect to age (Wald χ^2_1=9.564; p=0.089), gender (Wald χ^2_1=0.636; p=0.425), duration of practice (Wald χ^2_1=0.292; p=0.999), and having a family member with mental illness (Wald χ^2_1=3.248; p=0.197).

With respect to specific attitude statements:

a) Doctors in the SS group who were practising for between 11 and 15 years were more likely to disagree with the statement 'people with mental illness rarely pose a risk to their families and communities', as compared to those in the PS group who were practising for the same duration of time (Wald χ^2_1=16.896; p=0.010) (Figure 4).

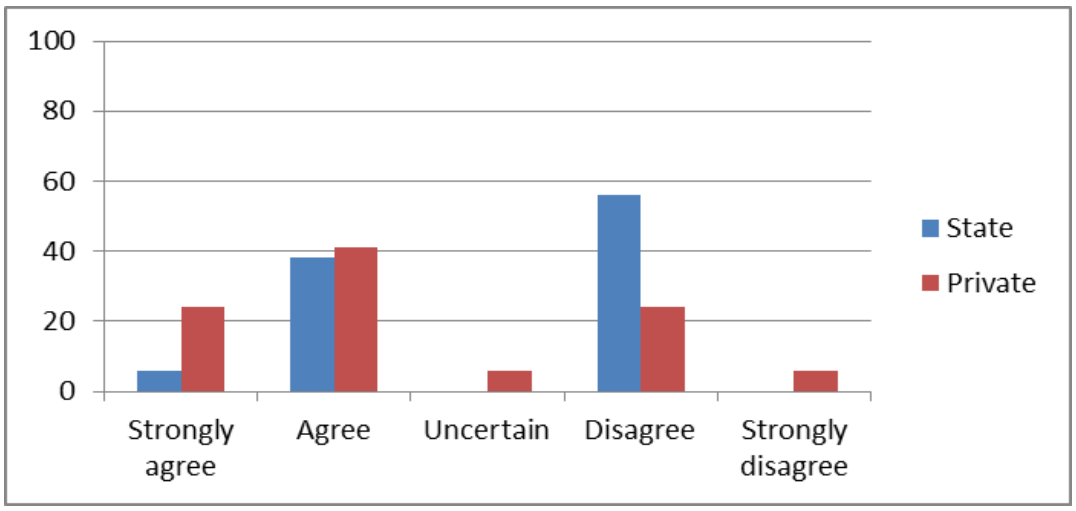


Figure 4. Responses (in percentages) of doctors in the state and private sector who were practising medicine for between 11 and 15 years, to the first statement (people with mental illness rarely pose a risk to their families and communities).

b) Doctors in the SS group who did not have a family member with mental illness were more likely to disagree with the statement 'people with mental illness rarely pose a risk to their families and communities', as compared to those in the PS group (Wald χ^2_1=9.908; p=0.007) (Figure 5).

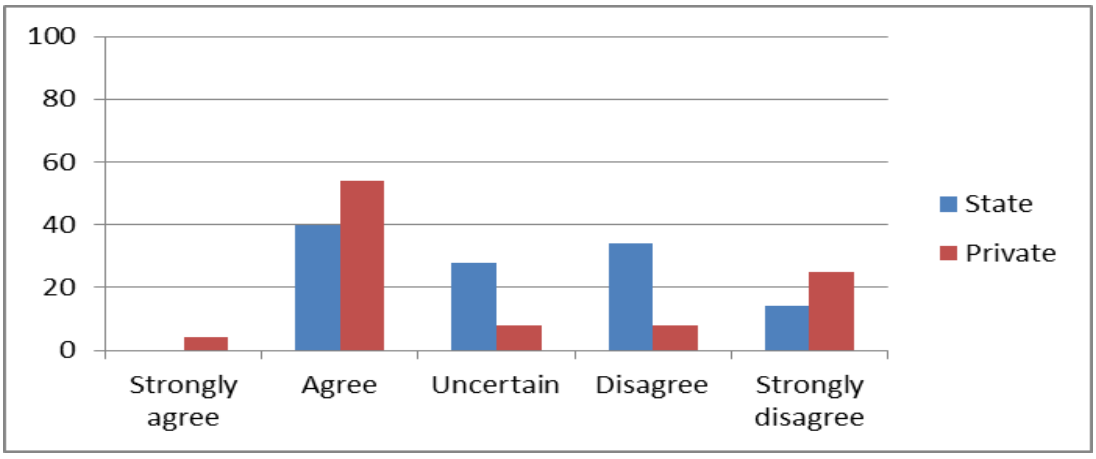


Figure 5. Responses (in percentages) of state and private sector doctors who reported not having a family member with mental illness, to the first statement (people with mental illness rarely pose a risk to their families and communities).

c) Male doctors in the SS group were more likely to agree with the statement 'I am more comfortable treating someone with a physical illness than a mental illness' than male respondents in the PS group. In addition, male doctors in the PS group were more likely to disagree with this statement when compared to male doctors in the SS group (Wald χ^2_1=5.924; p=0.015) (Figure 6).

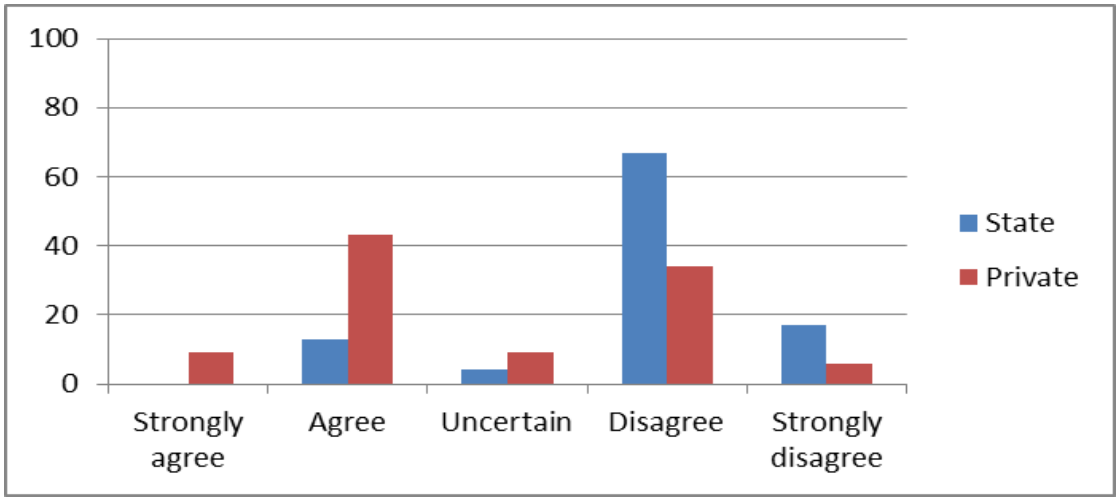


Figure 6. Responses (in percentages) of male doctors in the state and private sector, to the second statement (I am more comfortable treating someone with a physical illness than a mental illness).

d) Doctors in the PS group who reported not having a family member with a mental illness were more likely to strongly agree with the statement 'employers should hire a person with a managed mental illness if he/she is the best person for the job' than those in the SS group (Wald χ^2_1=6.171; p=0.046) (Figure 7).

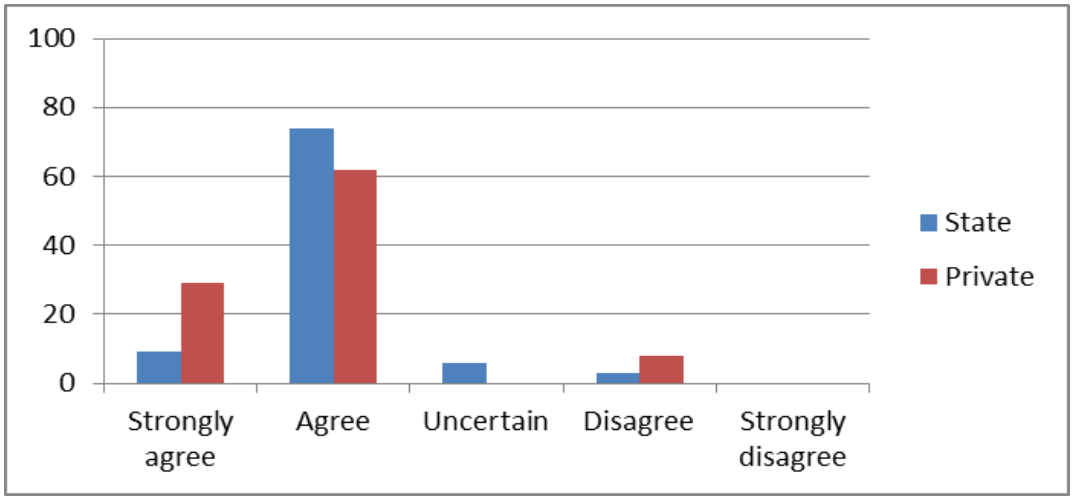


Figure 7. Responses (in percentages) of state and private sector doctors who reported not having a family member with mental illness, to the third statement (employers should hire a person with a managed mental illness if he/she is the best person for the job).

e) Doctors in the PS group who reported having a family member with a mental illness were more likely to disagree with the statement 'most people with mental illness don't try hard enough to get better' when compared to those in the SS group (Wald χ^2_1=8.310; p=0.016) (Figure 8).

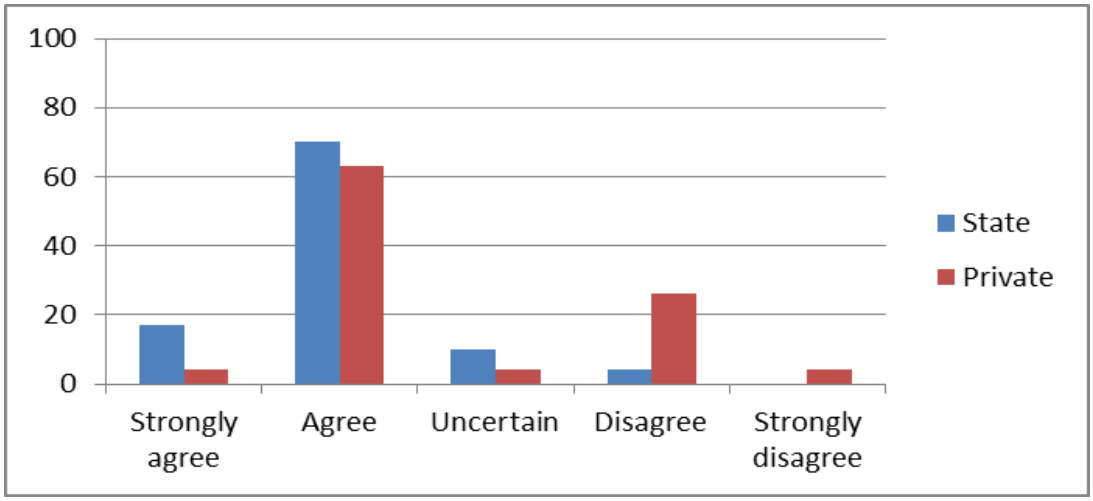


Figure 8. Responses (in percentages) of doctors in the state and private sector who reported having a family member with mental illness, to the fifth statement (most people with mental illness don't try hard enough to get better).

f) Doctors in the PS group who were less than 35 years of age were more likely to agree with the statement 'I feel that I am adequately trained and have sufficient knowledge to be able to diagnose and initiate treatment in a person with mental illness' than those in the SS group (Wald χ^2_1=12.715; p=0.026) (Figure 9).

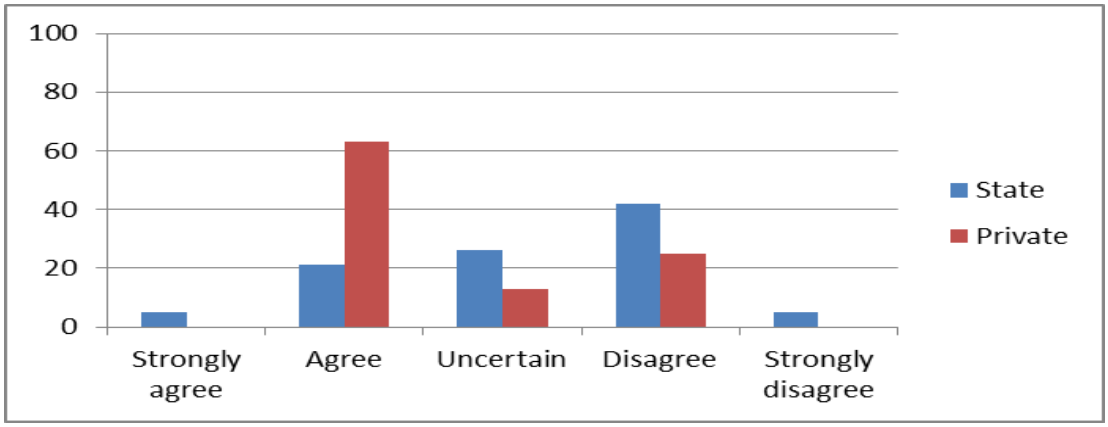


Figure 9. Responses (in percentages) of doctors in the state and private sector who were less than 35 years of age, to the eighth statement (I feel that I am adequately trained and have sufficient knowledge to be able to diagnose and initiate treatment in a person with mental illness).

There were no significant associations between any of the demographic variables and differences in responses between groups for the other attitude statements.

3.5 Association between sociodemographic characteristics and knowledge of mental illness

A GLZ model was used to assess the influence of the sociodemographic variables on responses to individual statements, as well as modal scores for each participant. Wald χ^2 outputs were reported for all GLZ analyses. The SPS group was excluded from this analysis because of the small sample size. The model was run for questions 2, 3, 4, 5, 6, 7 and 10. However, the model could not be run for questions 1, 8 and 9 as there was insufficient variance between responses between the sectors.

No significant associations between overall knowledge scores and any of the sociodemographic variables could be found - the GLZ model could not be run because all modal scores were 1 (there was insufficient variance to run the model). There were also no significant influences of sociodemographic variables on differences in individual responses to any of the knowledge questions.

CHAPTER FOUR – DISCUSSION

4.1 Attitudes towards mental illness

This study found that the overall attitude towards mental illness of both state-employed and private sector doctors is positive.

This finding is supported by other published studies. Fujii *et al.* (2018) reported in their study that doctors held the most positive attitudes, in comparison to other study participants (including nurses, pharmacists and the general public). Aldahmashi *et al.* (2019), in a study of non-psychiatric physicians, reported that participants held a positive attitude towards patients when assessed on the Revised Depression Attitude Questionnaire. High scores were obtained on the survey for therapeutic optimism. Similarly Wang *et al.* (2017), in a study of Chinese non-psychiatric hospital doctors, reported that the participants expressed generally positive attitudes; over 80% of respondents reported feeling that they had a responsibility towards their patients in assisting with management of their psychological distress. Nauta *et al.* (2019) found that general hospital consultants had positive attitudes towards managing the psychiatric and psychological distress of their patients. Additionally, a literature review by Alshahrani (2018) included two studies involving GPs, which showed mostly positive attitudes towards mental illness.

Additionally, studies have also shown positive attitudes in healthcare workers other than doctors, such as medical and nursing students (Chang *et al.*, 2017) and educators, social workers and healthcare assistants (Cremonini *et al.*, 2018).

In South African samples, it has been shown that some healthcare professionals hold a positive attitude towards mental illness. In one such study, psychiatrists reported the stigmatising attitudes when compared to pre-clinical and post-clinical medical students. Mausling, Macharia and Jordaan (2017) showed that second-year medical students were positive about psychiatric illness and psychiatry, although their reactions towards electroconvulsive therapy as a treatment intervention were mixed. Another study demonstrated that nurses working in primary healthcare clinics were positive about the management of psychiatric patients and psychiatric illness (Dube and Uys, 2016). To the

knowledge of the researcher, there are no studies that have found positive attitudes toward mental illness among non-specialist medical doctors working in South Africa.

It is evident from the literature that, similar to the findings of the current study, both internationally and locally published studies demonstrate that doctors and other healthcare professionals generally exhibit positive attitudes towards people with mental illness.

However, there is also a significant body of literature, which also shows that doctors have negative attitudes towards mental illness. A recent literature review (Alshahrani, 2018) of relevant articles found that psychiatrists, nurses and psychologists as well as other categories of hospital employees, medical students and members of the general public held predominantly negative attitudes towards mental illness. Chronically ill patients who had more hospital admissions were viewed more negatively than patients with milder symptoms. Studies that looked at stigma from the viewpoint of mentally ill patients themselves reported that they often encountered stigma in the form of disinterest and authoritarianism from healthcare workers.

General hospital doctors commonly displayed stigma towards patients with mental illness, particularly schizophrenic patients and those with personality disorders (Noblett *et al*., 2015) and substance use problems (Naeem *et al.*, 2006).

In Africa specifically, a study of Nigerian doctors found high levels of social distance as well as negative and discriminatory attitudes towards mentally ill patients (Adewuya and Oguntade, 2007). Similarly, Kapungwe *et al*. (2011) found that stigmatising and discriminatory attitudes were widespread amongst psychiatric nurses and general medical officers.

In a South African sample, Jury (2016) described negative attitudes towards mental illness in specialist doctors practising in state sector teaching hospitals, particularly towards patients with schizophrenia and borderline personality disorder. Additionally, nurses in South Africa were found to hold mainly negative attitudes towards the mentally ill (Mavundla and Uys, 1997).

The finding of a generally positive attitude amongst the doctors in the current study could be accounted for by the following reasons. There is increasing recognition that the

contribution of mental illness to the global disease burden is on the rise (Ritchie and Roser, 2019). A consequence of this is that doctors and healthcare workers have increased exposure to mental illness compared to previously and thus may have a more positive perception of mental illness. With mental health issues such as the Life Esidimeni tragedy (Ferlito and Dhai, 2018) and the recent suicides of prominent community figures being widely covered in the news and social media, awareness and advocacy for mental health has improved. This is likely to have led to a more sympathetic stance towards mental illness among doctors and in other sectors of the general population.

A positive attitude in this study may be, at least partly, a consequence of improved training and exposure to psychiatry at the undergraduate level, as well as exposure to psychiatric patients during the internship period. This is supported by du Preez *et al.* (2015), who studied medical students' experiences and perceptions of their psychiatric teaching rotations at the University of Pretoria. It was found that students had a high rate of exposure to the major psychiatric illnesses (overall rate of 95%), as well as to medical admissions (overall rate of 82%) and the teaching of ethics principles (overall rate of 78%) and this, in turn, led to positive perceptions.

Mental illness is on the rise within the medical profession. Recent statistics have shown a considerable prevalence of mental illness in doctors; the prevalence of depression or depressive symptoms in physicians was 28.8% in a systematic review (Mata *et al*., 2015). Another review showed a similarly high rate of depressive symptoms and psychological distress in medical students (Onyishi *et al.*, 2016). This may be another contributing factor to more positive attitudes, as doctors may be more likely to have a favourable opinion of mental illness if they have personally experienced symptoms related to poor mental health. They are less likely to think of mentally ill individuals as 'other' and consequently less likely to desire distance from them.

Although the difference was not statistically significant, the current study found that doctors in the state sector were slightly less positive towards mental illness than their private sector counterparts.

Similar findings have been reported by other studies. These include research by Ma *et al.* (2018), Lam *et al.*(2013) and Jury (2016), which all found the presence of negative attitudes in state-employed doctors, with respect to mental illness.

In contrast, Sujaritha *et al.* (2017) found that only 25% of private sector doctors in India had positive attitudes towards mental illness, while Cowan *et al*. (2012) reported that doctors working in the private sector had more negative and separatist attitudes towards the mentally ill when compared to state-employed doctors. Sri and Dempster (2015) reported similar findings, particularly with respect to substance use disorders, schizophrenia and depression.

The finding in the current study that state sector doctors have a less positive attitude towards mental illness than private sector doctors may be accounted for by the following reasons:

a) Non-psychiatric doctors working in the state sector are likely to have less exposure to mental illness. This may be due to multiple factors, such as the lack of adequate integration of mental healthcare at the primary healthcare level as well as the demanding workload of medical officers in the state sector (meaning that the focus of consultations is often on physical complaints with less time devoted to mental health complaints).
b) Inadequate exposure to mental illness likely contributes to a poorer attitude towards mental illness. Studies have shown that increased exposure to mentally ill people leads towards more positive attitudes (Chandramouleeswaran *et al.*, 2017; Telles-Correia *et al.*, 2015).
c) The state sector doctors were generally younger and less experienced than the private sector doctors. Therefore, it is likely that the factors of age and lesser experience contributed towards less positive attitudes, as has been described in other studies (Adewuya and Oguntade, 2007; Ubaka *et al.*, 2018).

There were some differences in the attitudes of doctors in the state and private sectors for specific questions in this study that are noteworthy, despite the findings being not statistically significant.

a) *State-employed doctors were more comfortable treating someone with a physical illness than a mental illness.*

Cowan *et al.* (2012) and Nauta *et al.* (2019) reported similar findings. Some of the reasons given were time constraints and lack of skills in managing psychological problems (Nauta *et al.*, 2019).

The phenomenon of mentally ill patients being treated differently is referred to as diagnostic overshadowing, which describes the tendency of clinicians to attribute physical symptoms to a patient's underlying psychiatric illness or cognitive impairment (Jones *et al.*, 2008). Shefer *et al.* (2014) found that time constraints and pressure to assess and manage patients timeously, in emergency care doctors, were a constant difficulty. Similarly, Lam *et al.* (2013) found that public sector doctors felt there was often not enough time to help mentally ill patients, and consequently they were more reluctant to consult with these patients.

Similar explanations can be attributed to the findings of the current study. Within the state sector, a large patient load, time constraints, a lack of effective resources and poor integration of psychiatric services are common problems. These factors may contribute to the reluctance of doctors to deal with patients' mental health problems, as these consultations may be seen as tedious and time-consuming. A large part of the workforce in primary healthcare in the state sector consists of younger junior doctors, who may lack experience in dealing with mental illness and therefore do not have adequate skill to identify psychiatric or psychological problems. They may also feel uncomfortable dealing with such problems.

b) *Private sector doctors were stronger in their agreement with the statement 'healthcare providers have a role in assisting mentally ill patients to become active members of their communities'.*

A similar finding by Wang *et al.* (2017) showed that non-psychiatric doctors working in general hospitals felt that they had a responsibility towards their patients' psychological health.

It is likely that private sector doctors are more open to advocating for their mentally ill patients because of the lesser demands and time constraints of their work environment when compared to the state-employed doctors. Within private practice, it is easier for doctors to develop long-lasting relationships with their patients, as patients most often consult with the same doctor multiple times and develop a relationship with their doctor. This is unlike the state sector, where many doctors work in a single department and doctors rotate through different sections of a hospital or clinic, meaning that they often do not consult regularly with the same patient. This fragmented relationship with patients in the state sector may contribute to doctors having a greater distance to their patients, and therefore they may be less likely to advocate for them.

4.2 Sociodemographic variables associated with attitudes towards mental illness

Sociodemographic variables of age, gender, duration of practice and having a family member with mental illness were not significantly associated with overall attitudes towards mental illness in the study.

Similar findings were reported by Sujaritha *et al.* (2017), who found that gender and level of qualification of both doctors and nurses did not have any influence on attitudes towards mental illness. In addition to the aforementioned, age, training and years of experience have also been found to hold no associations with stigma towards mental illness (Rojas Vistorte *et al.*, 2018), while personal or family contact with an individual suffering from a psychiatric condition did not increase the positivity of attitude towards mental illness Chandramouleeswaran *et al.*, 2017).

This is contrary to the findings of other published studies, which have reported both positive and negative associations. Winkler *et al.* (2016) found that Czech female doctors were much less stigmatising than male doctors. Ucok *et al.* (2006) found that female GPs were more positive towards schizophrenic patients than their male counterparts. Jury (2016) found that male doctors in a South African teaching hospital were less sympathetic towards mentally ill patients than female doctors. In addition, Stuber *et al.* (2014) noted that younger female mental health professionals were less stigmatising than older male professionals.

Ewalds-Kvist, Hogberg and Lutzen (2012) found that while females were more open to the integration of mentally ill individuals into society, they were also more likely than males to be fearful and avoidant of mentally ill persons. Even though older individuals in their study were more open-minded towards mentally ill people, they were also less likely to be supportive of community psychiatric services and integration. A similar finding was reported by Sri and Dempster (2015) who found no significant overall difference in the prevalence of negative perceptions towards mental illness between male and female private practitioners. However, the type of perception differed. Males were more likely to have negative perceptions of individuals with schizophrenia (saying that they were difficult to communicate with), while females were more likely to have negative perceptions of individuals with depression and eating disorders (saying that they were to blame for their illness).

Ubaka *et al.* (2018) found that age, gender and years of practice had an influence on attitudes to mental illness. Doctors who were younger, as well as female doctors were more likely to have negative attitudes. Adewuya and Oguntade (2007) also reported that female-gender, younger age and lesser experience were associated with increased stigma and social distance towards the mentally ill.

Conversely, the association of increased clinical experience and less stigmatisation has been reported by Mukherjee *et al.* (2002) who studied the attitudes of medical students and doctors in a London teaching hospital. Adewuya and Oguntade (2007) also reported lower levels of stigmatisation in individuals who had a family member with mental illness. Similar findings were reported by Lam *et al.* (2013) who noted that primary care physicians who had friends suffering from mental illness were more sympathetic towards the mentally ill.

The overall impression from reviewing the available literature is that there are no consistent sociodemographic predictors of mental illness attitudes as the relationship between variables and attitudes differs across studies. This suggests that the relationship between sociodemographic characteristics and mental illness attitudes is complex and multifaceted. The interplay between demographic factors and cultural influences is also likely to play a role in how mentally ill people are viewed by others.

Noteworthy is that positive attitudes towards mental illness appear to be associated with a better knowledge of mental illness as well as self-perceived competence in dealing with mental illness (Chandramouleeswaran *et al.*, 2017; Rojas Vistorte *et al.*, 2018). Negative attitudes appear to be associated with a lack of mental health training and a self-perceived lack of competence in managing mental illness (Cowan *et al.*, 2012). This demonstrates that attitudes and knowledge towards mental illness have a close association, and both are likely to have an important contribution towards patients receiving adequate mental healthcare. Therefore, it stands to reason that in order to reach an end goal of improved healthcare for mentally ill patients, both doctors' attitudes and mental health literacy need to be adequately addressed.

Although sociodemographic characteristics overall did not appear to influence the attitudes of doctors towards mental illness in this study, there were significant associations made for specific attitude statements that are worth mentioning.

a) *State-employed doctors who had been practising for between 11 and 15 years, as well as those with no mental illness contact in their families were more likely to regard mentally ill people as posing a risk to their friends and families.*

It can be argued that doctors who work in the state sector have a high patient load and often consult with patients who are acutely unwell. This may include encountering at close range mentally ill patients who are acutely psychotic or manic and therefore may be agitated or aggressive towards others. Such interactions over the years may lead to doctors having the perception that mentally ill patients are dangerous and pose a risk to others because they may be aggressive or violent when unwell. In addition, it has been shown that having a family member or close contact with a mentally ill person is often a protective factor against stereotypically negative views of mentally ill people (Lam *et al.*, 2013). Hence, it is likely that doctors who encounter mentally ill people only in an acutely unwell state, while having no other personal contact with mentally ill people, are likely to perceive these patients as dangerous.

b) *Male doctors working in the state sector, compared to those in the private sector, were more likely to feel uncomfortable with treating mental illness rather than a physical illness.*

A similar finding by Lam *et al.* (2013) was that primary care doctors working in the public sector expressed having greater distance to mentally ill patients than patients with a physical illness. Although it does not explain the gender difference, most doctors working in the state sector often have to contend with large patient loads, significant time constraints and a lack of privacy in large wards or emergency departments. When considering that taking a psychiatric history and consulting with a patient who presents with psychological stressors is more time-consuming than conducting a physical examination, it is likely that doctors may feel uncomfortable when dealing with psychiatric issues. In addition, doctors may be uncomfortable with discussing sensitive issues such as suicidality, self-harming behaviour and in-depth sexual histories with their patients.

c) *Doctors in the private sector, compared to those in the state sector, who did not have a family member with mental illness, were more likely to be of the opinion that employers should hire a person with a managed mental illness if he/she is the best person for the job.*

This is in contrast to research that has reported negative views in doctors regarding the ability of mentally ill individuals being able to work (Adewuya and Oguntade, 2007) (Almanzar *et al.*, 2014).

Facilitating economic independence in mentally ill individuals is important when one considers the numerous studies that show how closely mental illness is linked to poverty (WHO, 2007). Employment is an important and necessary precursor to alleviating poverty and improving mental health. Employers may be reluctant to hire someone with a mental illness because of fears of unpredictability in the workplace, absenteeism and poor work performance (Mechanic, Bilder and McAlpine, 2002). A negative perception of mentally ill individuals by doctors may further contribute to poor socioeconomic circumstances and thus poorer access to healthcare. Hence, doctors who hold positive views on employment in mentally ill people, as found in this study, may be able to advocate for the employment of their patients and thus contribute to better outcomes for them.

The state-employed doctors in this study are likely exposed to patients that are more ill and appear less functional and independent. Consequently, they can be perceived as less able to cope with employment than the patients seen in the private sector. It may also be that,

since these doctors are younger, they do not have as much experience and knowledge of the long-term functional prognosis of mental illness. Such a finding was reported by Aruna *et al.* (2016) who found that 49% of medical undergraduate students (who would have not had as much exposure to psychiatric patients as qualified doctors) felt that even recovered psychiatric patients were not able to be employed productively.

d) *State-employed doctors, compared to those in the private sector, with no family contact with mental illness, were less positive about mentally ill patients' capacity for self-improvement.*

Pessimistic attitudes of doctors and healthcare workers regarding recovery are often perceived as stigmatising by sufferers of mental illness and can be a barrier to effective treatment (Knaak, Mantler and Szeto, 2017). Negative views are also likely to lead to less definitive treatment interventions from doctors, which may lead to poorer care for mental illness sufferers (Knaak and Patten, 2016).

As previously discussed, having a family member with mental illness appears protective against perpetuating stigma and discrimination towards the mentally ill (Lam *et al.*, 2013). However, state sector doctors could be less positive about mentally ill patients' recovery because they are exposed to patients who appear more unwell than those in the private sector. In addition, frequent medication shortages, lack of resources and the unavailability of newer and better medications for mental illness in the state sector are likely to lead these doctors to view mentally ill patients as having a poor prognosis.

e) *Private sector doctors, compared to those in the state sector, who were less than 35 years of age, were more likely to express positive attitudes about their capabilities for managing mentally ill patients.*

Doctors' general lack of confidence in their ability to manage mental illnesses has been described previously. Liu, Lu and Lee (2008) reported that only half of the doctors in their study were comfortable with diagnosing depression, while around one-third felt confident in managing depression with medication. Similarly, Almanzar *et al.* (2014) found that less than half of the participants in their study felt comfortable diagnosing and treating depression and consequently they were more likely to refer such patients to a psychiatrist.

State sector doctors in the current study may have felt less comfortable in their ability to manage mental illness because the majority were younger and would have had less clinical experience than most of the doctors in the private sector. As reported by Dube and Uys (2016), primary healthcare workers in the state sector had negative perceptions of their own knowledge and capabilities in managing mental health and were more likely to refer these patients elsewhere. Within the state sector environment, it is also easier to refer patients to specialist services because of the easy accessibility of referral services, often at no additional cost to the patient. State sector doctors tend to refer mentally ill patients to these psychiatric services and do not have to make management decisions regarding treatment. Therefore they may express discomfort and a lack of confidence if required to make such decisions.

4.3 Knowledge of mental illness

The study found that doctors had adequate knowledge of mental illness, as evidenced by the high modal scores.

Similar findings have been reported in other studies. Al-Atram (2018) reported that family practitioners had fair to good knowledge of mental illness, while GPs and other specialists in the study had a lower level of knowledge. It was thought that the family physicians' greater exposure to psychiatric conditions, as well as supervision and teaching by psychiatrists (as part of their speciality training) had an influence on their level of knowledge. Zabihi Mahmood-Abadi *et al.* (2012) found that non-psychiatric physicians had a moderate-to-good level of knowledge and were fairly confident in making a diagnosis of depression, albeit their level of knowledge about pharmacotherapy and management of depression was poorer. Liu, Lu and Lee (2008) found that non-psychiatric physicians had adequate knowledge about depression, though lesser knowledge about treatment and interventions.

In contrast, some studies have reported low levels of mental illness knowledge amongst doctors. Cowan *et al.* (2012) found that just half of the participants in their study were able to correctly name three signs or symptoms of depression, while less than a third (28.3%) were able to do the same for schizophrenia. Around one-third of participants reported not having received any formal training on mental illness, while the majority of those who did receive training reported that it occurred once they had already graduated from university.

Similarly, a large study in China assessing knowledge of depression, generalised anxiety disorder and schizophrenia found that less than 60% of non-psychiatric health professionals could identify the correct diagnoses from clinical vignettes (Wu *et al.*, 2017). While the participants in this study did not indicate their previous experience with mental health training, it was noted that in China medical practitioners receive very little formal training in psychiatry. This was thought to be a possible contributing factor to low levels of mental health literacy. An Indian study amongst GPs found that while a large number reported seeing patients with psychiatric and psychological problems fairly frequently, around 80% reported not knowing the diagnostic criteria for any psychiatric disorders or having had any formal psychiatric training (Chaudhary, Mishra and Puri, 2009). This is a worrying finding, as these doctors lack the requisite skills or knowledge to adequately diagnose or treat patients presenting with psychiatric problems.

In an African study, it has been shown that knowledge of depression in GPs is inadequate (James *et al.*, 2012). To the knowledge of the researcher, there are no similar studies that have been conducted in South Africa.

It would appear that non-psychiatric doctors are, at the very least, comfortable in diagnosing common mental illnesses such as depression but feel less confident about being able to treat mentally ill patients effectively (Norton *et al.*, 2011). Similarly, it has been shown that primary care physicians have better general knowledge of depression and psychosis, but poorer knowledge about management and pharmacological and non-pharmacological treatments (Spagnolo *et al.*, 2018). These findings illustrate that, as can be expected, increased training and exposure to psychiatric conditions improves the capabilities of non-psychiatric doctors to diagnose and manage mental illnesses.

The adequate levels of knowledge found in the current study may have in part been due to training and exposure to psychiatry in medical teaching facilities in South Africa. South African universities have established training programmes for medical and psychiatric teaching, with four of South Africa's medical schools being ranked in the top 300 best universities globally for clinical medicine (U.S.News & World Report , n.d.). Another possible explanation may be that the questions were too simple and straightforward and mainly dealt with diagnosis and symptomatology. As the literature shows, non-psychiatric doctors

mainly have difficulties with instituting treatment for mental illness and appropriate pharmacotherapy. Hence there appear to be significant gaps in primary care and non-specialist doctors' knowledge of mental illness with regards to interventions. Including questions about treatment and pharmacotherapy in the questionnaire may have yielded different, albeit more representative, results of the level of knowledge in the study sample.

This study found no difference between the doctors in the SPS groups with respect to their level of knowledge about mental illness.

4.4 Sociodemographic variables associated with knowledge of mental illness

Overall, no significant associations between sociodemographic variables and knowledge of mental illness could be made in the study groups.

Significant associations have been made in other studies. It was found that younger age was associated with better diagnostic and practical knowledge of mental illness, particularly depression (Liu, Lu and Lee, 2008). This was thought to be as a result of improved training programmes compared to older methods of teaching psychiatry. It has also been shown that engagement in mental health training not long before participation in a research study is associated with a better knowledge of mental illness (Norton *et al.*, 2011; Spagnolo *et al.*, 2018).

Similarly, Al-Atram (2018) found that family physicians had better knowledge of anxiety and depression when compared to GPs and other specialists. The better performance of family physicians was thought to be because their university curricula would have included formal training in psychiatry. An important finding from the study was that better knowledge in family physicians was associated with a positive attitude towards mental illness; GPs and other specialists had a less positive attitude.

Considering medical students, Aruna *et al.* (2016) found that the level of knowledge in undergraduate medical students increased with progressive years of study, such that students in their final years answered more questions correctly than those in their first year of study. This is not an unexpected finding, as students in later years would have been exposed to more psychiatric teaching than students in earlier years of study.

The general finding appears to be that doctors who engaged in some form of compulsory psychiatric training, over and above the standard medical teaching at undergraduate level, have better knowledge of mental illness and are thus better able to manage psychiatric conditions. Also, better mental illness knowledge appears to be associated with a more positive view of mental illness and psychiatric practice in general.

Does better mental illness knowledge lead to more positive attitudes or does a more positive attitude towards mental illness lead individuals to careers specialities and careers wherein there are better exposure and teaching of mental illness? While it may not be possible to discern whether better knowledge is a consequence of positive attitudes or vice versa, it seems clear that the two share a significant association.

Focusing on improving both factors is likely to lead to significantly better health outcomes for mentally ill individuals. Training relating to the recognition and management of mental illnesses aimed at non-specialist doctors may lead to reducing the stigma associated with mentally ill patients within healthcare services. Consequently, this may lead to an increased willingness for families and patients to seek help, leading to earlier diagnosis, better recognition of illnesses and improved outcomes.

Conversely, a focus on fostering positive attitudes towards mental illness in non-specialist and primary healthcare doctors may make doctors more receptive to learning more about mental illnesses. This, in turn, may mean that doctors are willing to spend more time with mentally ill patients to determine their psychiatric symptoms and stressors and manage their illnesses better.

4.5 Limitations and strengths of the study

An important limitation of this study is that the finding of positive attitudes may be attributed to selection bias. Participants in the study were selected through convenience sampling. Doctors who are generally more positive towards mental illness may have been more likely to complete the survey compared to doctors who would have expressed negative attitudes, thereby skewing the study findings in favour of a more positive result. In addition, doctors who completed the questionnaire may have been over-estimating the positive aspects of their attitudes towards mental illness.

Another limitation is that the questionnaire used in the study was developed for the purposes of conducting the study only and has not been previously validated or used in any other study – this may affect the comparison of the study findings to findings in other research.

Notwithstanding the limitations, the study is one of a limited number of studies that have researched attitudes towards the mentally ill and knowledge of mental illness amongst non-specialist medical practitioners. It also compares the attitude and knowledge of state-employed versus private sector doctors, where anecdotally the impression is that state doctors fare better in these aspects. The distribution of the participants allows for a certain degree of generalisation of these findings to all non–specialist doctors in the country.

4.6 Recommendations

This study gives rise to both interventional recommendations as well as recommendations for further research.

Although positive findings were demonstrated overall, some doctors seem to prefer a greater distance from mentally ill patients. They also have a greater estimation of their dangerousness and are pessimistic regarding patients' recovery and rehabilitation. Other South African samples have displayed overall negative attitudes towards mental illness, which lends weight to the necessity of anti-stigma interventions for South African healthcare professionals.

While the doctors who participated in this study appear to have a good knowledge of mental illness, improving on all aspects of psychiatric knowledge in non-specialist doctors has the potential to improve care at a primary healthcare and generalist level, thereby relaxing the burden placed on the small workforce of South African psychiatric specialists.

A number of stigma-reduction interventions have been researched and evaluated; these involve approaches at varying levels, including interpersonal, institutional and structural levels. Similarly, there are varying modes of imparting mental health training to doctors and would-be doctors that can include individualised training, e-learning approaches, workshops and continuous professional development and mentoring programmes coordinated by specialists.

Both of these objectives (i.e. reducing mental illness stigma and improving mental health knowledge) can be achieved simultaneously through improved and consistent education and training, both at an undergraduate level as well as upskilling and continuous professional development for qualified healthcare professionals.

Several educational programmes and teaching interventions have been developed to improve mental illness outcomes at the primary healthcare level, such as the World Health Organisation's Mental Health Gap Action Programme (mhGAP). The mhGAP guidelines were initially implemented and evaluated in Ethiopia. Primary healthcare professionals received en-bloc, on-site training of common mental illnesses as well as ongoing mentoring services from psychiatric specialists (Ayano *et al.*, 2017). Healthcare workers who undertook the training and were subsequently evaluated showed significant improvement in mental illness knowledge attitudes towards the mentally ill and clinical practice. Programmes such as these may prove beneficial in upskilling non-specialist doctors to better approach and manage mentally ill patients.

Improving mental health training and focusing on stigma reduction at an undergraduate level is another strategy that may provide beneficial results, as studies have shown stigmatising attitudes amongst medical students and junior doctors. Possible interventions include increasing the length of time that medical students spend in a psychiatric rotation, increasing exposure to stable patients and rehabilitative services for the mentally ill (to improve students' perceptions of recovery and functioning in the mentally ill) and introducing specialised and specific anti-stigma teaching into psychiatric rotations (du Preez *et al.*, 2015; Economou *et al.*, 2012).

CHAPTER FIVE – CONCLUSION

This study showed that non-specialist doctors in both the state and private sectors generally held positive attitudes towards mental illness in contrast to other studies. Doctors working in the private sector were slightly more positive in their attitudes than state-employed doctors. Although there were no statistically significant sociodemographic predictors of the positive attitude, minor associations could be made. Among the state-employed doctors, male doctors felt more comfortable with treating physical illnesses than mental illnesses; those practising for more than ten years felt that patients who are mentally ill pose a high risk to their families and communities; younger doctors had less confidence in their abilities to adequately manage mental illness; those who have no close contact with mental illness are less positive about psychiatric patients' ability be gainfully employed and their capacity for self-improvement and feel that mentally ill patients pose a risk to others. Doctors in the private sector advocate more strongly for the integration of the mentally ill into society than their state sector counterparts.

Both state and private sector doctors participating in this study displayed adequate levels of psychiatric knowledge, particularly with respect to the symptoms and diagnosis of mental illness.

To the knowledge of the researcher, no other studies looking at mental illness stigma and psychiatric knowledge in non-specialist doctors in South Africa have been performed. The findings of this study are important and relevant when one considers the high burden of mental illness in South Africa, as well as the prevalence of mental illness in patients consulting at the primary healthcare level. Doctors working in general practice and primary healthcare are often the first port of call for psychiatrically unwell patients who seek help for mental or physical ailments. It is an important task to support these doctors in developing positive perceptions of the mentally ill as well as improving their knowledge of mental illness, as the quality of care received by patients depends, to a large extent, on these factors.

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APPENDIX A – QUESTIONNAIRE

Questionnaire to assess the attitudes towards and knowledge of mental illness of private and state-employed medical doctors

Demographic details:

Participant number:

Age (in years):

Gender:

- Male
- Female

Number of years in practice:

- < 5 years
- 5-10 years
- 11-15 years
- 16-20 years
- > 20 years

Current type of practice (if you work in both public and private sector, please tick both options):

- Public health sector
    - Hospital
    - Primary health care clinic
    - Other (specify)
- Private health sector
    - Hospital
    - GP practice
    - Other (specify)

Do you have a close family member with mental illness:

- Yes
- No
- Not sure
- Prefer not to say

If the answer to the above question is yes, please specify what illness:

- Depression
- Bipolar Disorder
- Anxiety Disorder
- Psychotic disorder, e.g. schizophrenia
- Substance use/abuse
- Unknown/ not sure of diagnosis
- Other (specify)

The following set of questions is aimed at establishing your current attitudes towards mental illness. Please choose the response you feel most accurately describes your level of agreement with each of the following statements:

1. People with mental illness rarely pose a risk to their families and communities.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

2. I am more comfortable treating someone with a physical illness, than a mental illness.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

3. Employers should hire a person with a managed mental illness if he/she is the best person for the job.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

4. Healthcare providers have a role in assisting mentally ill patients in becoming active members of their communities.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

5. Most people with mental illness don't try hard enough to get better.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

6. I sometimes struggle to feel compassion for a person with mental illness.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

7. If a person with mental illness complained of physical symptoms (e.g. headache, nausea), I would likely attribute this to their mental illness.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

8. I feel that I am adequately trained and have sufficient knowledge to be able to diagnose and initiate treatment in a person with mental illness.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

9. I would not mind if a person with mental illness lived next door to me.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

10. I sometimes perceive people with mental illness as being weak or lacking in willpower and self-discipline.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree

The following set of questions is aimed at establishing your current knowledge of mental illness. Each question has one right answer. Please choose the response you feel is most correct:

1. People who have had an episode of depression are most at risk for

- A psychotic disorder
- Another episode of depression
- Unsure of answer

2. Psychotherapy may be the most beneficial intervention in

- Personality disorders
- Learning disorders
- Unsure of answer

3. A man, at the airport, who is talking and laughing very loudly, passing out money to people and talking about his plans to fly around the world, is most likely suffering from

- Mania
- Delirium
- Unsure of answer

4. Someone who has a close family member with depression is at risk of developing

- Depression
- Dementia
- Unsure of answer

5. People with schizophrenia who do not take their treatment regularly, most likely do so because

- They do not recognise that they have an illness
- They believe that medication is ineffective
- Unsure of answer

6. People with post-traumatic stress disorder are at high risk for developing

- Dementia
- Alcohol abuse
- Unsure of answer

7. A woman with borderline personality disorder who frequently becomes suicidal due to an ongoing fear, is most likely fearful of

- Abandonment
- Gaining weight
- Unsure of answer

8. A woman who has been isolating herself from friends and family and no longer pursues hobbies and interests as before is most likely suffering from

- Generalised anxiety disorder
- Depression
- Unsure of answer

9. Mental illness can most often be attributed to

- Chemical imbalances or structural damage to the brain
- Poor self-control
- Unsure of answer

10. An elderly patient is brought to the doctor by her family as she has become difficult and unmanageable at home over the past few months, hiding things away and accusing family of stealing things from her. She is most likely suffering from

- Dementia
- Delusional disorder
- Unsure of answer

Thank you for your time

APPENDIX B – ETHICAL CLEARANCE CERTIFICATE

R14/49 Dr Yumna Minty

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M170733

NAME: (Principal Investigator)	Dr Yumna Minty
DEPARTMENT:	Psychiatry
PROJECT TITLE:	Attitudes and Knowledge of Private and State-Employed Medical Doctors towards Mental Illness
DATE CONSIDERED:	28/07/2017
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof Yusuf Moosa
APPROVED BY:	Professor CB. Penny Co-Chairperson, HREC (Medical)
DATE OF APPROVAL:	27/09/2017

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary in Room 10004,10th floor, Senate House/3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand. I/We fully understand the conditions under which I am/we are authorised 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 resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. in this case, the study was initially review July and will therefore be due in the month of July each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX C – INFORMATION LEAFLET

STUDY TITLE: Attitudes and Knowledge of private and state-employed non-specialist medical doctors towards mental illness

INVESTIGATOR: Dr Yumna Minty

INSTITUTION: University of Witwatersrand, Parktown, Johannesburg.

Introduction

I am Dr Yumna Minty and I am currently a registrar in the Department of Psychiatry at the University of Witwatersrand. I am doing a research project as part of the requirements for MMed and I would like to invite you to participate in this research project. I would be very grateful for your participation.

Before agreeing to participate, it is important that you read the following regarding the purpose of the study, the study procedures, benefits and risks, as well as your rights as a participant to withdraw. This information leaflet is to help you to decide if you would like to participate. You should fully understand what is involved before you agree to participation in the study.

Purpose of the study

A significant amount of research suggests that doctors working in general practice and primary health care facilities have increasing contact with patients who have a mental illness. Research also suggests that the attitudes, perceptions and knowledge of treating doctors have an impact on the diagnosis of mental illness, as well as the health-seeking behaviours of patients. The aim of this study is to assess the attitudes and knowledge of private and state-employed doctors toward mental illness and to determine if any difference exists.

Procedures

The study is in the form of an online questionnaire comprising three parts:

1. Demographic details
2. Assessing attitudes towards mental illness
3. Assessing knowledge of mental illness

The questionnaire should take approximately 5-7 minutes to complete.

Unforeseen risks and potential benefits

There are no unforeseen risks to you as a participant. However, the potential benefit is that we will have a better understanding of doctors' attitudes towards and knowledge of mental

illness. This will allow policy makers and managers to develop strategies and interventions to address any deficits that may arise from this study.

Rights as a participant in the study

It is up to you to decide whether to take part in this study. Your participation is entirely voluntary. If you decide to take part, please click on the link provided to access the online questionnaire.

The results will be made available to you on your request. The results will be strictly confidential. If the data are published, your name will not be used. For this reason, please do not fill in any personal particulars in the questionnaire. You will also not be able to recall your answers once you have submitted them. There will be no costs to you from the study and there are no risks attached to this study.

BY CHOOSING TO COMPLETE THE QUESTIONNAIRE AND SUBMITTING IT ELECTRONICALLY, IT IS IMPLIED THAT YOU HAVE GIVEN YOUR INFORMED CONSENT TO PARTICIPATE IN THE STUDY.

You may refuse to participate or withdraw your participation at any time, by not proceeding further with the questionnaire. If there are any questions you do not wish to answer, you may leave these blank and proceed with the rest of the questionnaire.

Ethical approval

The clinical study protocol has been submitted to the University of Witwatersrand Human Research Ethics Committee (HREC) and written approval has been granted by that committee.

Additional information

Should you wish to contact the researcher, or obtain further clarity or information regarding the study, please email yumna.minty@wits.ac.za or call me on 0828957868.

Should you wish to contact the Wits Human Research Ethics Committee administrator/chair, please email zanele.ndlovu@wits.ac.za.

Thank you for your time.

Dr Yumna Minty