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THE IMPACT OF MENTAL ILLNESS STIGMA: EXPLORING PERCEPTIONS OF MENTAL ILLNESS WITHIN GAUTENG

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[1] Original source: https://twitter.com/academicssay/status/657529133153566722?lang=en

Declaration

I, Francois van Heerden, declare that this research report is my own, unaided work. It is submitted for the degree of Master of Arts in Social and Psychological Research by Coursework and Research Report at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination at this or any other university.

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Chapter One: Introduction

1.1 Contextualising the study

Mental illness remains an unmistakable healthcare concern both internationally and within South Africa—mental illnesses were within the top three burdens of disease after HIV/AIDS and other transmittable diseases (Lund, Kleintjes, et al., 2008; Bradshaw, Norman, & Schneider, 2007). The World Health Organization (WHO) indicates that a sizeable portion of adults within South Africa will be affected by mental illness within their lifetime: 15.8% any anxiety disorder, 9.8% any mood disorder, 13.3% any substance disorder, and any disorder was approximated at 30.3% (Kessler et al., 2009).

One area related to the difficulty of mental illness, which has received insufficient attention, is the evaluation of how people understand and conceptualise mental illness within South Africa. There is agreement that too little has been done (Botha, Koen, & Niehaus 2006; Hugo, Boshoff, Traut, Zungu-Dirwayi, & Stein, 2003; Lund, Kleintjes, et al., 2008). Similarly, there has only been a limited number of studies that have tried to address these concerns (Botha et al., 2006; Hugo et al., 2003; Lund, Kleintjes, et al., 2008; Lupuwana, Simbayi, & Elkonin, 1999; Sorsdahl, Stein, & Lund, 2012).

In many cases, mental illnesses are not readily identified, which only causes prolonged suffering as appropriate help is not sought (Gaebel, Rössler, & Sartorius, 2017). This is further exacerbated by the social and public stigma associated with mental illness in South Africa (Lund, Kleintjes, et al., 2008). Undoubtedly, stigma adds to the suffering of those with mental illnesses as they must deal with victimisation, unfair discrimination, and other social distress (Gaebel et al., 2017; Thornicroft, 2006). Furthermore, stigma can ultimately lead to self-stigma that results in further devaluation, marginalisation, shame, withdrawal, and other consequences (Boyd, Adler, Otilingam, & Peters, 2014).

Thus, there is sufficient reason to investigate the public's conceptualisation of mental illnesses as it is unlikely that people understand, conceptualise, and stigmatise different mental illnesses in the same way (Rüsch, Angermeyer, & Corrigan, 2005). As such, this study aimed to explore perceptions and knowledge related to mental illness with a specific focus on public stigma, emotional responses, and personal responsibility beliefs. In addition, this study aimed to investigate the differences between three prevalent mental illnesses and to consider the relationship between these aforementioned factors in a predictive model.

1.2 Research aims

The study intended to explore general perceptions of mental illness of the public. The study specifically tried to evaluate knowledge, familiarity, attitudes, causal beliefs, care, and management of mental illness. The study also explored emotional responses, perceived controllability, helping behaviour, and other perceptions specifically within three vignettes that represented different mental illness conditions, namely: substance use disorder, schizophrenia, and depression.

In addition to exploring these factors, the study also considered the extent to which these factors differed from each other, the relationships between certain factors, and to what extent certain factors could predict important outcome variables like care and management options and helping behaviour.

1.3 Research questions

1) What are the attitudes of mental illness among South Africans in Gauteng?
2) Do South Africans demonstrate public stigma towards individuals with mental illness?
3) What do South Africans in Gauteng perceive as the causes of mental illness?
4) Among the South African community in Gauteng, what are the care, management, and treatment choices for individuals with mental illness?

5) How are the perceptions of mental illness among the South Africans in Gauteng influenced by their knowledge of mental illness?
6) How are the perceptions of mental illness among the South Africans in Gauteng influenced by their familiarity with mental illness?
7) Can knowledge, familiarity, attitudes, and causal beliefs predict care, management, and treatment choices for individuals with mental illness?
8) What were the perceptions and attitudes that people had toward the differing vignettes?
9) Does helping pity, fear, anger, or other shared statements between the vignettes differ significantly from one another?
10) Does pity, fear, anger, personal responsibility, or other shared statements predict helping behaviour for the specific vignettes?

1.4 Outline of Chapters

Chapter One provides a brief contextualisation of the problem. It provides a brief introduction to the larger corpus of literature that is discussed within the second chapter. The research aims and questions for the study are presented in this chapter.

Chapter Two provides an overview of the core literature relevant to the study. There are several sections that discuss mental illness at length. Defining and understanding the term mental illness is discussed first. Thereafter, a necessary overview of the South African context takes place with four separate sections that specifically looks at: prevalence of mental illness, contributing factors to mental illness, current mental health systems in place, and people's general beliefs and treatment preferences. Lastly, there is also a theory based section that considers stigma, attribution, and other key variables that are of relevance to the study.

Chapter Three discusses and elaborates on the research methodology followed by the researcher. Consideration is given to the specific research design that was utilised.

Instruments are also discussed with specific focus on their utilisation and reported psychometric properties. Other features discussed within this chapter are related to data collection and general procedure; sample and respective demographics; data analyses; and relevant ethical considerations.

Chapter Four is the results chapter and consists of all the analyse conducted by the researcher. Descriptive results are reported on first to provide an overview of results and perceptions. The descriptive statistics primarily answered research questions one to four and eight. After the descriptive statistics, correlations, mean comparisons, and regressions are reported. Correlations were used for research questions five and six. Mean comparisons, specifically matched samples t-test with effect size testing, was performed for question nine. Lastly, backwards multiple regressions were performed for both research questions seven and ten.

Chapter Five discusses the results within the broader context of the literature. The chapter primarily acts as a discussion for comparisons between the researcher's results and previously obtained results from other studies while discussing some of the implications of this study's results.

Finally, chapter six presents the limitations of research both in terms of methodological and conceptual limitations. This chapter also provides recommendations for future research specifically for instrument choice and methodology.

Chapter Two: Literature review

2.1 Introduction

Globally, mental illness is of concern in terms of its contribution to the general burden of disease and this holds also true for the South African context. South Africa, specifically, poses a variety of unique challenges and difficulties to mental illness as it is accompanied with a peculiar political past while also posing an exceptionally diverse cultural context with a variety of groups comprising its population (Lund, Kleintjes, et al., 2008).

Differences in mental illnesses have been noted to occur in terms of treatment options, understandings, and even clinical presentations within South Africa (Lund, Kleintjes, et al., 2008; Sorsdahl et al., 2009). Many of these factors require further exploration and consideration to understand the burden of mental illness. The nature of this burden is directly and indirectly affected by attributional processes and stigma. Attributional processes can lead to certain inferences and emotional reactions (Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003) while also leading to stigma that depends on the specific attributional processes implored and understanding of unwanted or undesirable characteristics that ultimately discount those who suffer from mental illness (Link, Yang, Phelan, & Collins, 2004).

This chapter discusses several key areas related to mental illness while also considering stigma and attributional processes that are involved. The first section defines and provides an overview of the term mental illness with some consideration to the difficulties that lie with it. The section that follows, which is also related to the South African context, elaborates on the prevalence of mental illness and considers a variety of factors that have been found to contribute and exacerbate the burden of mental illness. Thirdly, a brief overview of the current state of the mental healthcare system within South Africa is discussed. Thereafter, general beliefs and preferred treatment options are also discussed for

the South African context. Lastly, a theory driven section discusses some of the key concepts and understandings related to a social cognitive approach to mental illness with a specific focus on attribution theory and stigma to provide the necessary summative considerations and understandings.

2.2 Defining and understanding mental illness

At the outset, it would seem relatively simple to provide a definition for mental illness. However, there are some concerns that need to be addressed as the definition and function of the term *mental illness* is not the only academic terminology used to describe mental difficulty or adversity experienced by a person. To provide a cursory example, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) makes use of the keyword *disorder* and not *illness* (American Psychiatric Association, 2013). Thus, it is necessary to give some consideration to this before proceeding.

The issues related in defining these concepts and their difficulties are not new. In one of Szasz's most notable works (1974), he argued for the myth of mental illness and made a case, quite plainly, that there is no such thing as mental illness. Considering even older literature, it is evident that some of these issues have been discussed since 1891 by Koch (2010)[2] specifically in understanding the term *mental disorder* and inquiring what is sufficient to claim a *mental disorder*.

In more recent literature, Wakefield (1992) wrote an extensive summative paper to specifically address the concept of *mental disorder* to illustrate the difficulties related to the term and what is inherently implied by its use. As pointed out by Wakefield (1992), the concept of *disorder* is a highly disputed within the mental health field while there is also a fair level of contestation that remains upon defining the term as is already evident from the previous examples.

[2] This publication was republished in 2010. However, the original publication was in 1891.

One of the reasons that the term *mental disorder* has been such a contested issue has been about differences and meaning of the term as on the one end it can function as a normative concept based on value judgements and on the other end it can be seen as a scientific term that attempts to be value free (Kendell, 1986). As reiterated and adapted by Kendell (2002) more recently, it was specifically whether *disorder*, *illness*, and *disease* were in fact biomedical or scientific terms or if they were meant to function as socio-political terms which inherently involves a form of value judgement. Thus, a large part of the difficulty in these terms rest in whether the distinction was made and to some extent by who these terms were used and for what purpose. This distinction between *disorder*, *illness*, and *disease* were also discussed at some length by Wakefield (1992) with similar difficulty shown. Some have argued that regardless of it either functioning as *illness* or *disorder* for biomedical or socio-political reasons it was very likely inescapable of carrying some value judgements (Kendell, 2002).

Another way to illustrate the difficulties related to these terms is the active avoidance in defining the terms *diseases, illness,* and *disorder*. Kendell (2002) points to the WHO as an example of taking such an approach with the ICD-10. There is evidence for his position within the ICD-10 as it clearly states: "the term disorder is used throughout the classification, so as to avoid even greater problems inherent in the use of terms such as disease and illness. Disorder is not an exact term, but it is used here to imply the existence of a clinically recognisable set of symptoms or behaviour associated in most cases with distress and with interference with personal functions" (World Health Organization, 1992, p.1). The DSM-5, on the other hand, provides a more fixed definition for the term *mental disorder* as "a syndrome characterised by clinically significant disturbance in an individual's cognition, emotion regulation, or behaviour that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning" (American Psychiatric

Association, 2013, p.20). Thus, there would seem to be obvious grounds on which to see overlap and difficulty found within these terms. Some have argued for the synonymous and interchangeable use of these terms (Kendell, 2002). Similarly, the WHO (1992) have also allowed for interchangeable use.

Thus, on these grounds it would seem sufficient to use these terms synonymously and the researcher will make use of the term *mental illness* throughout with the presupposition that it carries the definition of the DSM-5 as mentioned above. Per implication, this implies an etic approach to *mental illness* as the universality of mental illness is presupposed and specifically based on western psychiatric taxonomy (Patel, 1995). Notwithstanding, this should not take away from the difficulty or complexity related to these terms and their implicit use as discussed. With a working understanding of mental illness in place, further consideration can be given to mental illness within the South African context specifically.

2.3 South African Context: An Overview of Mental Illness

2.3.1 Prevalence and instances of mental illness within South Africa

Undoubtedly, each country faces their own difficulties related to mental illness. South Africa is no exception in this regard. As it was noted earlier, the prevalence rate of mental illnesses in South Africa was at an all-time high with both at a given time and lifetime prevalence being substantial (Kessler et al., 2009). It has also been projected that the burden of mental illness will rise worldwide to 15% by 2020 (Lund, Kleintjies, et al., 2008).

Considering the specifics, Stein et al. (2008) found that the most prevalent lifetime DSM-IV disorders in South Africa were substance abuse (specifically alcohol abuse at 11.4%), major depression (9.8%), and agoraphobia without panic (9.8%). By class, the most prominent class of disorders in South Africa were anxiety disorders (15.8%), substance use disorder (13.3%), and mood disorders (9.8%) (Kessler et al., 2009; Stein et al., 2008).

These national values were similar to the values obtained for the Gauteng province. Gauteng had a reported prevalence of 15.7% anxiety disorder, 10.2% mood disorder, and 12.3% substance use disorder (Herman et al., 2009). In terms of provincial differences, significant differences have been found in lifetime prevalence across the nine provinces with the Western Cape and Free State showing significantly higher rates of mental illness (Herman et al., 2009). The differences between provinces were not adequately explained nor has it been sufficiently investigated (Herman et al., 2009).

The median age of onset for these mental illnesses ranged between 24 years of age for substance use disorder, 32 for anxiety disorder, and 37 for mood disorders (Stein et al., 2008). A larger disparity for the age of onset is evident while considering both the 25th percentile and 75th percentile for these three groups of illnesses, as it ranged from as young as 16 to as old as 57 years of age (Stein et al., 2008). Aside from age of onset, researchers have found that similar proportions of children and adolescents suffer from mental illnesses but these rates were still lower than their adult counterparts (Kleintjies et al., 2006). When considering other group comparisons, specifically socially defined and racial groups within South Africa, no evidence has been found for differences in the prevalence of mental illnesses (Kleintjies et al., 2006; Williams et al., 2008). However, differences between men and women existed with more women typically showing representations of mood and anxiety disorders, while substance use disorders seem to be more common among men (Herman et al., 2009). Evidence was also found for increased severity of the 12-month prevalence of mental illnesses especially under women (Herman et al., 2009).

Aside from the above-mentioned points that provide necessary context and information on current prevalence rates of mental illness, it was also of value to discuss several key points related to prevalence studies and their estimations. Many researchers made use of the South African Stress and Health (SASH) study as it provided one of the largest

nationally representative studies (specifically an area probability sample with a sample that exceeded 4000 participants) to date but it also had some key limitations (Herman et al., 2009). As noted by Herman et al. (2009), their results could not account for several crucial DSM-IV disorders as this was not covered by the original SASH study and is often a problem with WMH surveys (WHO – World Mental Health). Aside from this notable limitation, certain population groups were also not part of the area probability sampling which lead to the exclusion of homeless, institutionalised, prison, hospital, and military populations among others (Herman et al., 2009). For methodological reasons and constraints, it would seem reasonable that only some mental illnesses were covered and that some sample groups were excluded given the complexity and size of such a study and design. However, it is arguable and likely that national prevalence rates were reported lower than the actual estimations would be given that certain populations were excluded and that certain diagnoseable DSM-IV disorders were also excluded. Another concern related to SASH is that the data is becoming dated, especially given that the data collection for the study took place in 2003-2004 and stigma is known not to be static and to change over time, specifically as a cultural phenomenon (Schomerus & Angermeyer, 2017). Nonetheless, this should not necessarily dissuade use of these studies or results, but at the very least it should be noted.

Given the full discussion, it provides a sufficient understanding of the prevalence of mental illness, both on the overall and specific level for South Africa. However, it does not address the reason for the high prevalence rates. This is discussed within in the following section.

2.3.2 The burden of mental illness and its contributing factors

The all-time high prevalence rates of mental illness faced within South Africa are very likely due to specific contributing factors within South Africa. Certain factors have exacerbated the burden, while others have tried alleviating it. Some of the key factors that

have been cited to worsen mental illness specifically within South Africa were: high rates of racial discrimination, gender inequality, violence, staggering poverty issues, and the effects of other illnesses (e.g. HIV and TB) (Dunkle et al., 2004; Hirschowitz & Orkin, 1997; Karim, Churchyard, Karim, & Lawn, 2009; Lund et al., 2015; Lund, Kleintjes, et al., 2008; Patel & Kleinman, 2003; Schneider et al., 2016; Williams et al., 2008). It is necessary to discuss and elaborate on some of these factors.

Given South Africa's problematic history of apartheid, it is impossible to deny its adverse effect on mental illness given the history of exclusion, violence, and racial discrimination that took place during that time (Lund, Kleintjes, et al., 2008). Many of these accounts can be read today (Truth and Reconciliation Commission, 2000) while researchers have also evaluated and attempted to gauge these effects on the mental health and mental illness (Balarjan, Stein, Swartz, & Walaza, 2000; Kaminer, Stein, Mbanga, & Zungu-Dirwayi, 2001; Stein, 1998).

Aside from South Africa's legacy, there are also unique co-morbidity problems faced within South Africa that some have termed the double burden of disease or even the quadruple burden of disease (Boutayeb, 2006; Bradshaw, Schneider, Dorrington, Bourne, & Laubscher, 2002; Schneider et al., 2016). In South Africa, both HIV and TB are of the most pressing health issues currently faced by the country as high prevalence rates remain for both conditions (Karim et al., 2009). A variety of papers have shown the high prevalence rates of mental illnesses were evident in patients who suffered from either HIV or TB (Freeman, Nkomo, Kafaar, & Kelly, 2008; Kagee & Martin, 2010; Karim et al., 2009; Peltzer, Naidoo, et al., 2012; Peltzer, Louw, et al., 2012). Thus, the concern of co-occurrence is obvious and it heavily contributes to this specific co-morbidity problem where effectively at least two conditions or illnesses required treatment instead of only the original condition (Schneider et al., 2016). Unfortunately, there is additional complexity and interplay as research has also

shown that an increased risk of HIV for instance existed for people with mental illness (Meade, Graff, Griffin, & Weiss, 2008; Meade & Sikkema, 2005; Rosenberg et al., 2001; World Health Organization, 2008) while other research have also shown that having a mental illness is often associated with poorer adherence of treatments to conditions like HIV and TB respectively (Nakimuli-Mpungu et al., 2012; Prince et al., 2007; Uthman, Magidson, Safren, & Nachega, 2014). Thus, in many ways these brief points begin to reveal the multifaceted problems that have existed and persist within mental illness and other conditions, specifically HIV and TB, but also the problems that exist between these conditions.

An additional factor that was also of grave concern is poverty. Some studies have demonstrated more recently that there were noticeable associations between ill mental health and poverty while other aspects of social deprivation and exclusion have also been associated with poverty (Flisher et al., 2007; Lund, Breen, et al., 2008). Undoubtedly, poverty is known to lead to higher levels of stress, social exclusion, malnutrition, increased risk of violence, and other negative consequences which in turn worsens outcomes associated with mental illness and leads to increased prevalence (Patel, 2001). It is known that South Africa faces severe issues with poverty as the Gini coefficient for the country, which is a measure of inequality, remained as one of the highest reported inequality values worldwide (0.68 for 2015) (Statistics South Africa, 2017). Some have argued that there has been a notable decline into further poverty as seen in recent years with a far higher inequality score than current estimates have shown (Bond, 2015; Bond, 2016). Regardless of the controversy, it was noted by Statistics South Africa (2017) that even if the Gini coefficient could be brought down to 0.6 by 2030, South Africa would remain one of the countries with the highest inequality rates worldwide (Statistics South Africa, 2017).

Poverty would seem to show similarities to previously discussed factors where a malicious cycle is perpetuated between mental illness and poverty (Lund et al., 2011; Lund,

Breen, et al., 2008; Patel, 2001). Mental illness has been found to lead to increased health spend, reduced productivity, job loss, and social isolation which finally leads to poverty (Saraceno, Levav, & Kohn, 2005). Other researchers have also shown that people with mental illness end up disproportionately more in poorer neighbourhoods with inadequate housing that is often accompanied with restrictions to healthcare and transportation along with far greater exposure to violence (Draine, Salzer, Culhane & Hadley, 2002; Norman, Matzopoulos, Groenewald, & Bradshaw, 2007; Topor et al., 2014).

Regrettably, violence remains of significant concern to South Africa. The South African Medical Research Council (SAMRC) found that interpersonal violence was the second worst factor related to years of life lost in South Africa with a direct increase in the burden of mental illness (Norman, Bradshaw, et al., 2007) while data from SASH have also shown high incidence of violence with repercussions for mental health (Atwoli et al., 2013). High rates of violence remained a concern as those who suffer from mental illness are far more likely to be the victims of violent crime than the perpetrators (Choe, Teplin, & Abram, 2008; Desmarais et al., 2014). The rate of experiencing violent victimisation for those who suffer from a mental illness ranged from 20% to as high as 44% within a 12-month period (Desmarais et al., 2014; Teplin, McClelland, Abram, & Weiner, 2005). There are several potential explanations for the high rates of violence experienced but one significant role player is stigma, as stigma is known to facilitate acts of victimisation, discrimination and suffering (Sartorius, 2007; Thornicroft, 2006; Thornicroft, Rose, Kassam, & Sartorius, 2007). Similarly, stigma is known to facilitate communities to mistreat people who suffer from mental illness and even in some instances family and friends participate in mistreatment (Thornicraft, 2006). Torrey (2011) proposed a similar explanation based on stigma, but postulates a far more complex and controversial position to understand violence against the mentally ill. His position is that stigma has increased over the last 50 years, while violent acts

committed by mentally ill people have also increased in the last 50 years with the implication that perceptions of violent behaviour attributed to the mentally ill have effectively worsened in part by these violent behaviours that have been a driving force in worsening stigma against the mentally ill (Torrey, 2011). Torrey has not attempted to take away the victimisation or the disproportionate violence experienced by those who suffer from mental illness, but instead attempts to show this secondary growing concern and ultimately the value of treatment as adequate treatment has shown to decrease violent behaviour with the implication that stigma is also lowered (Torrey, 2011). Irrespective, violence and the other discussed factors would seem to be of notable concern.

2.3.3 The Mental Health System and care in South Africa

Despite the contextual issues that plague South Africa, the mental healthcare and its systems have tried to alleviate some of the difficulties associated with mental illness through treatment and other recourse. Originally, South Africa had centralised institutional care during the apartheid era; however, there was growing need to shift towards a more decentralised approach with a greater focus on a community-based approach given the specific constraints of South Africa (Thom, 2000). Thus, the healthcare system became decentralised and mental health services have become the responsibility of each respective province (Kakuma et al., 2010).

Some have critiqued the transition and especially the poor implementation that was taken during this decentralisation. For instance, Botha et al. (2006) pointed out that the reform to a more community-based psychiatric care took place without conducting sufficient research to understand the public's view and opinions on mental health for this type of restructuring to be effective. Petersen and Lund (2011), with their evaluation from 2000 to 2010, similarly painted a negative picture of mental healthcare in South Africa as the clear shortage of resources to adequately support the move to a more decentralised and

community-based approach was evident. Some have even demonstrated that an actual decline has taken place and that no increase occurred in community-based mental health facilities in the face of reducing the number of mental hospitals which has resulted in an overall loss and even a downward spiral in existing service delivery (Lund, Kleintjes, Kakuma, Flisher, & MHaPP Research Programme Consortium, 2010).

Petersen and Lund (2011) also indicated that many common mental illnesses remained undetected and untreated (See also: Seedat et al., 2009). Far worse, it has also been found that only one in four people who suffer from mental illness had access to some form of care which was also not considered to be sufficient (Seedat et al., 2008; Seedat et al., 2009; Bateman 2015).

Most have attributed a lot of the pervading difficulties experienced in the mental health system to the overall poor health expenditure for mental health specifically (Bateman, 2015). WHO (2007) indicated that spending towards mental health was only 5% of the total health expenditure budget for the 3 provinces that could be evaluated. The implication of such limited spending has affected research (only 2% of all health publications were on mental health during the last 5 years), training and expanding on human resources (9.3 per 100 000 overall where psychologists and psychiatrists accounted for 0.6 per 100 000 people), and improvement and expansion of current infrastructure (World Health Organization., 2007). These concerns have been voiced by other researchers that show the dire need for far larger expenditure (Petersen & Lund, 2011).

More recently, Bateman (2015) has also critiqued the current government for their "grossly inadequate" expenditure on mental health and lack of involvement. This critique came despite a national development plan that was adopted in 2013, that was set to guide development until 2020, with the intention of bolstering available number of professionals, expenditure, and integrating mental health into the South African health system (Saxena,

Funk, & Chisholm, 2013; South African National Department of Health, 2013). Although most would agree this to be action in the right direction, many remain sceptical of the feasibility, sustainability, and integration of this plan (Bateman, 2015; Schneider et al., 2016; Stein, 2014).

2.3.4 Beliefs about mental illness and preferred treatment options in South Africa

As mentioned earlier, differences in mental illness have been noted to occur specifically in terms of treatment options and accompanying understandings within South Africa (Lund, Kleintjes, et al., 2008; Sorsdahl et al., 2009) and has been understood to be partially due to the diverse cultural contexts that makes up the South African population (Lund, Kleintjes, et al., 2008).

In terms of treatment, Williams et al. (2008) found that 15.9% of all respondents, within a nationally representative sample, received some form of treatment in the past 12 months. A higher incidence of treatments was reported based on severity of condition, but a fair proportion (13.8%) also received treatment without the presence of a disorder (Williams et al., 2008). Overall, it was estimated that 75% of people who do require treatment did not receive treatment and this has been effectively branded as the "treatment gap" (Lund et al., 2015; Williams et al., 2008). It is also understood that non-white race groups receive poorer quality of mental health treatment within South Africa (Lund, Kleintjes, et al., 2008; Sorsdahl et al., 2009).

In terms of all reported treatment, a fair number reported making use of health care that consisted of general medicine (10.6%) and mental healthcare (2.7%) while many also reported making use of non-health care (i.e. traditional healers, religious advisors and so forth) (7.0%) (Williams et al., 2008). Participants with lifetime DSM-IV diagnosis reported that 29% made use of western treatments while 20% made use of alternative practitioners which also shows a notable role of alternative practitioners at play in the delivery of mental

healthcare within South Africa (Sorsdahl et al., 2009). Others have also noted the use of alternative practitioners in mental healthcare and their extensive use (Ensink & Robertson, 1999; Freeman et al., 1994). Often, alternative practitioners are seen to be far more accessible than western forms of mental health care to the larger population of South Africa (Sorsdahl et al., 2009) while being far more culturally relevant (Nattrass, 2005). A variety of studies have shown the importance of alternative practitioners as having a central role to play in addressing mental health care needs by offering more culturally relevant treatments (Mbanga et al., 2002; Nattrass, 2005; Sorsdahl et al., 2009)

Many people ascribe to traditional African belief systems, which inform the cause of mental illness to be understood as part of bewitchment or wrongdoing to ancestors and thus traditional healers and religious advisors are often sought and or act as the first point of contact (Mkize & Uys, 2004; Sorsdahl et al., 2009). This is not uncommon as *amafufunyana* ("evil spirits") are encountered by many black population groups within South Africa (Visser & du Plessis, 2009). Others have also demonstrated that significant difficulties like relationship problems, anxiety, drug or alcohol abuse, and other problems are often regarded as part of *amafufunyana* and not considered as a distinct illness with its own difficulties, aetiology, and problems (Ensink & Robertson, 1999). Some have argued that traditional beliefs, specifically witchcraft, are more common in rural areas, but traditional healing practices have been continually found within urban settings too (Nattrass, 2005; Sorsdahl et al., 2009).

On the other hand, western biomedical models, which typically understand the aetiology or cause of mental illness to be biological, medical, or hereditary, are often more likely dependent on levels of education and thus individuals with little to no formal education are less likely to make use of them in comparison to those with more extensive educational backgrounds (Sorsdahl et al., 2009). However, even with samples who subscribe more readily

to western biological models, cases are often conceptualised as due to lack of willpower or stress related instead of being necessarily seen as distinct medical illnesses (Hugo et al., 2003).

The interplay between treatment and aetiological understanding is somewhat apparent, but nonetheless complex. These systems are not mutually exclusive in terms of people's aetiological understandings nor their treatment options as other studies have demonstrated that a variety of people and groups make use of both alternative and western practises simultaneously (Lund, Kleintjes, et al., 2008; Seedat et al., 2009; Sorsdahl et al., 2009). Furthermore, even with the reduction in treatment costs and accessibility, it is likely that low treatment rates will remain as long as mental health literacy remains low and stigmatisation of mental illnesses persist (Hugo et al., 2003; Sorsdahl et al., 2009; Williams et al., 2008).

2.4 The public's perception – understanding perception, stigma, and attribution

Several points have been made on stigma within this chapter already, but the concept of stigma has not been addressed sufficiently nor has it been underpinned to a theoretical understanding and model. This section will briefly provide an overview of stigma followed with a working understanding of the social cognitive model specifically for attribution theory.

Today, the concept of "stigma" is synonymous with Goffman as his work has left a lasting legacy on stigma (Link & Stuart, 2017). His work and ideas were extended upon and served widely in the measurement of stigma and the conceptualisation of it (Link et al., 2004; Link & Stuart, 2017)[3]. One of the most common definitions provided by Goffman was that *stigma* is an "attribute that is deeply discrediting" while also reducing "a whole and usual person to a tainted, discounted one" (Goffman, 1963, p.3). For Goffman (1963) it was evident that there was some relationship between attribute and stereotype to understand stigma.

[3] For a recent and comprehensive overview of Goffman's contributions and work see Link and Stuart (2017)

Consequently, Goffman was one of the earliest researchers who considered causal attribution across illnesses and investigated the difference between attribution that occurred to physical and mental illness (Corrigan, 2000).

Since Goffman, the approach to stigma research has evolved from the discrediting mark alone to addressing the various ways in which relationships are affected by stigma (Krupchanka & Thornicroft, 2017). Stigma was in many cases only considered from the position of public stigma alone, but a variety of other forms exist today and up to 8 core types of stigma has been identified and have been studied since Goffman, which include forms such as self-stigma, structural stigma, stigma power and so forth (Link & Phelan, 2001; Sheehan, Nieweglowski, & Corrigan, 2017). Stigma Power, or the implication of power relationships on stigma, were for instance one of the more recent types that have been considered that specifically evaluate ways in which stigmatised individuals are kept marginalised (Link & Phelan, 2001; Link & Phelan, 2014).

Given the local context on stigma, there is still a lack of available information on the role and power of stigma on mental illness in South Africa (Botha et al., 2006; Kakuma et al., 2010). A few studies have tried try to assess the levels of stigma associated with mental illness in South Africa (Hugo et al., 2003; Botha et al., 2006; Sorsdahl et al., 2012), but it has been too few to ascertain much more beyond these specific communities that were investigated. Botha et al. (2006) focused specifically on individuals with schizophrenia and found high incidences of abuse as a form of stigmatisation among this population. Hugo et al. (2003) found that there were arguably enough indication to showcase that there was still widespread misinformation about mental illness which very likely contributed to the stigmatisation of mental illness. A larger more representative study conducted in Bellville, Cape Town, by Sorsdahl et al. (2012) found that most of the South Africans were generally unable to identify common mental disorders while the levels of stigma associated with each

mental illness varied drastically. Overall, it seemed evident that people stigmatised against various mental illnesses in different ways and that there was agreement that far more was required to understand the underlying beliefs and position held within stigma (Rüsch et al., 2005; Sorsdahl et al., 2012).

In conjunction with the several forms of stigma that have been identified over time, a few theoretical approaches have also been developed since Goffman's original work (1963). A few paradigms have gained prominence in explaining stigma, respectively: sociocultural perspectives (i.e. understanding how stigma justifies and maintains social injustice), motivational biases (i.e. understanding the interaction between basic psychological needs and stigma), and social cognitive approaches (Corrigan, 2000; Krupchanka & Thornicroft, 2017).

For social cognitive theories, stigma was primarily understood as the consequence or product of several knowledge structures that individuals utilise (Corrigan, 1998; Corrigan, 2000; Krupchanka & Thornicroft, 2017). For the social cognitive approaches, there were typically three key features found across their research on stigma: *stereotypes*, *prejudice*, and *discrimination* (Krupchanka & Thornicroft, 2017). *Stereotypes* were understood loosely as negative beliefs about a social group (Krupchanka & Thornicroft, 2017), but in more technical terms *stereotypes* were understood as a specific knowledge structure that were affected by the meaning of *signals* (i.e. labels) and often lead to specific *behavioural reactions* or *discrimination* (Corrigan, 2000). *Prejudice* on the other hand, was agreement with these *stereotypes* or negative *affective responses* that were typically *fear*, *pity*, or *anger* (Krupchanka & Thornicroft, 2017). *Discrimination* was one of the potential outcomes and was understood as a *behavioural reaction* that showed a punishing behaviour towards the recipient (Corrigan, 2000).

For attribution theory, as a form of social cognition, the key generic formation was: *discriminative stimuli*, *cognitive mediators*, and *behavioural responses* (Corrigan, 2000). In many ways, it mimics the sequence and structure as discussed above.

For this research, the researcher based their approach on Corrigan's proposed attribution model (Corrigan 2000; Corrigan et al., 2003), that was originally adapted from Weiner's work (Weiner, 1985, 1988, 1995). In this model, there were effectively four key concepts: *signalling event*, *cognitive mediators*, *affective response*, and *behavioural reaction*. The *signalling event* were typically those salient features that individuals became aware of that were typically the mental illness labels, physical features, or often in the case of mental illness the psychiatric symptoms (Corrigan, 2000). The *signalling event* or discriminative stimuli, preceded *cognitive mediators* and or *stereotypes* (Corrigan, 2000). *Cognitive mediators* on the other hand, were typically understood within this model as how controllable or uncontrollable the features were seen or understood from the *signalling event* (Corrigan, 2000). *Controllability* was understood as the amount of volition an individual had over a specific representation or cause (Weiner, 1995). Thus, depending on how mental illness was understood, the presupposition of controllability will differ and that will in turn affect how blame was also attributed (Corrigan, 2000).

In many cases, if the cause or maintenance of mental illness was understood to be due to the individual's volition, they were often likely blamed for it (Corrigan et al., 2003). Thus, if it was understood to be genetic or biological it was often understood not to be within an individual's control and they were less likely to be blamed for it (Corrigan et al., 2003). Researchers have found significant associations for controllability on mental illness with specifically two emotional responses: anger and pity (Corrigan, 2000; Lin, 1993; Menec & Perry, 1998; Weiner, Perry, & Magnusson, 1988). However, lower controllability specifically for biological understandings were not necessarily in all circumstances within an individual's

favour as it has been found that higher perceptions of dangerousness, fear, and social distancing occur when an individual was not seen as having any agency in reducing the symptoms or signs (Kvaale, Gottdiener, & Haslam, 2013; Schomerus & Angermeyer, 2017; Schomerus, Matschinger, & Angermeyer, 2014). Thus, the interplay between controllability and the specific mental illness greatly depended on how consequent *affective responses* were formed and what *behavioural reactions* stemmed from it (Corrigan et al., 2003; Schomerus & Angermeyer, 2017). In the case of fear specifically, a variety of studies have found relationships between dangerousness and fearing people with mental illness (Angermeyer & Matschinger, 1996; Corrigan et al., 2003; Levey & Howells, 1995; Wolff, Pathare, Craig, & Leff, 1996).

Aside from affective responses, a plethora of *behavioural reactions* also existed that typically range from *helping behaviours* to *punishing behaviours* (Corrigan, 2000; Corrigan et al., 2003). For this study specifically, *helping behaviour* was of most interest as existing literature showed extensive support for understanding helping behaviours in attributional models (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Corrigan, River, et al., 2001; Corrigan et al., 2003; Graham, Weiner, & Zucker, 1997; Reisenzein, 1986). Understanding *helping behaviours* was also of considerable value given that it is a double positive when compared to efforts that only reduce values of stigma or efforts that inhibit *punishing behaviour*. Furthermore, higher incidence of *helping behaviours* towards mentally ill, were by proxy, an indication of lower stigma as higher stigma was often not associated with helping behaviour (Corrigan et al., 2003).

To summarise, this section provided a short overview of the concepts, mechanisms and understanding involved in the social cognitive model of attribution as they pertain to mental illness perceptions. Many points were not discussed within this section given the vast

corpus of work done on social cognitive approaches and attribution theory alone, but sufficient explanations on the key concepts required for this study were discussed.

2.5 Conclusion

Unfortunately, the state of mental illness discussed within this chapter paints a grim picture. It is evident from the literature review that far more needs to be done on several areas within South Africa to improve on both mental illness and mental health. Given how little has been done on mental illness and stigma, specifically within the context and the complexity associated with understanding mental illness and stigma, this study aims to explore the relationship between several of these factors. Specifically, this study will attempt to explore the relationship between stigma, beliefs toward mental illness, aetiology, care and management, familiarity, knowledge, emotional responses, and helping behaviours.

Chapter Three: Research Methodology

3.1 Introduction

This chapter discussed the methodology that was utilised and followed for the study. First, all the hypotheses of the study are presented. Secondly, the relevant research design is discussed. Thereafter, consideration for the sample and sampling procedure, the instruments that were used along with a discussion concerning their attributes, validity and reliability are reported on. Finally, the research procedure, the statistical procedures, and ethical considerations of the study are then discussed.

3.2 Hypotheses

Several hypotheses were considered by the researcher for the study. Descriptive questions did not have any hypothesis statements. Thus, the hypotheses were:

- Familiarity and mental illness knowledge associate significantly with stigma and dangerousness.
- Knowledge, familiarity, stigma, attitudes and causal beliefs predict care and treatment choices for individuals with mental illness.
- Significant mean differences exist between vignette conditions in terms of pity, fear, anger, and personal responsibility beliefs.
- Pity, fear, anger, personal responsibility beliefs, and other shared statements (e.g. if behaviour is a normal response) predict helping behaviour.

3.3 Research Design

The research design was a quantitative, non-experimental cross-sectional research design as none of the independent variables were manipulated, nor was there any control groups nor random assignment. The study was classified as a cross-sectional research design as the study was only designed to be conducted at one point in time (Stangor, 2014).

Primarily, the choice in research design was to avoid several issues related to cost, complexity, and time constraints. Typically, the advantages associated with cross-sectional designs are that they are easy to carry out, manage, and they tend to not have any difficulty associated with testing effects and maturation as data collection takes place at only one point in time (Stangor, 2014). Thus, for the purposes of this study, the design was adequate as it guaranteed many responses within a reasonable amount of time which would aid the researcher in establishing some form of a baseline for perceptions related to mental illness.

Since the design is known for its straightforwardness it has other related benefits to its simplicity. Specifically, the design poses no stringent ethical concerns to consider which tends to be the case with some more elaborate experimental designs. Another key benefit is that it is possible for other researchers to replicate a similar study without conceptual or methodological difficulty or high associated costs (Stangor, 2014).

3.4 Sample and Sampling

The study made use of a non-probabilistic method that was a combination of both convenience and snowball sampling (Laher & Botha, 2012). It is always in the researcher's advantage to make use of randomised sampling as it is far more likely to produce representative and generalisable results (Stangor, 2014), but the costs associated with performing such a sampling was beyond the researcher's resources.

The sample consisted of individuals from the Gauteng province in South Africa. The two main responders to the study were members of students' communities and the students themselves. University students at the University of Witwatersrand functioned as one of the researcher's links to older and more diverse population groups outside the immediate confines of the university that would greatly aid in reducing the difficulty and cost associated with obtaining a sample. Thus, undergraduate students in the Department of Psychology were tasked with administrating the questionnaire to any person above the legal age of consent

within their immediate community. Second to this, students could also complete the questionnaire if they wished to.

Responses were excluded if whole sections were missing from a respondent's questionnaire as it would add little value to the analysis or the quality of the study. Similarly, any respondent who indicated that they have been diagnosed with a mental illness (n = 26) or who did not answer this item (n = 3) was also excluded from the final sample. The final sample consisted of 279 participants. The demographic information of the sample is presented in Table 3.1.

Table 3.1

Demographic information of the sample

Variable		**Frequency**	**%**
Gender	Male	85	30.5
	Female	193	69.2
	Missing	1	0.4
Ethnicity	African	137	49.1
	Coloured	20	7.2
	White	91	32.6
	Indian	30	10.8
	Other	1	0.4
Religious affiliation	No Religion	16	5.7
	Christianity	197	70.6
	Hinduism	16	5.7
	Islam	17	6.1
	Judaism	13	4.7
	Traditional African religion	5	1.8
	Other	14	5
	Missing	1	0.4

Highest level of education	Primary School	1	0.4
	High School	79	28.3
	Some university	93	33.3
	Diploma	32	11.5
	Degree/ Post-Graduate	73	26.2
	Missing	1	0.4
Home Language	Afrikaans	9	3.2
	English	136	48.7
	IsiNdbele	9	3.2
	IsiXhosa	30	10.8
	Isizulu	35	12.5
	Sepedi	12	4.3
	Sesotho	15	5.4
	Setswana	15	5.4
	Siswati	3	1.1
	Tshivenda	5	1.8
	Xitsonga	3	1.1
	Other	6	2.2
	Missing	1	0.4

From Table 3.1, it is evident that most of the sample identified as African (49.1%) and female (69.2%). A sizeable portion of the sample also identified as white (32.6%). In terms of religious affiliation, a greater majority identified as Christian (70.6%). Highest level of education for the sample comprised of three categories, namely: High school (28.3%), Some university (33.3%), and Degree/Post-Graduate (26.2%). A large proportion of the sample also indicated that they knew of someone who suffered of a mental illness (68.8%). Note that

personal monthly income was excluded as many respondents declined to answer this item (n = 71).

Age and self-rated knowledge were reported on Table 3.2. The mean age of the sample was 32.45 years (SD = 15.24), which ranged from 18 to 82 years of age. Self-rated knowledge of mental illness had a mean of 2.55 (SD = 0.87).

Table 3.2

Descriptive statistics for Age and Knowledge of Mental illness

	N	Mean	SD	Minimum	Maximum
Age	278	32.45	15.24	18	82
Self-rated knowledge of mental illness	277	2.55	0.87	1	5

Additional demographic values were also reported on. From table 3.3 it is evident that 68.8% indicated that they do in fact know someone who suffers from a mental illness (n = 192). In terms of self-rated knowledge of mental illness (Table 3.4), the obtained mean for this sample was 2.55 (SD = 0.86) which indicates, on average, a lack of sufficient knowledge. Considering the frequency view of the item (Table 3.5) and its scores, it is evident that most people did not feel that they had sufficient knowledge of mental illness as the combined ratings of 1 and 2 led to a cumulative percentage of 54.9. Only 11.2% of the sample indicated a score of 4 or a 5 which was considered more than sufficient to extensive knowledge.

Table 3.3

Descriptive statistics for knowing anyone with a mental illness

Variable		Frequency	%
Know anyone who suffers from a mental illness	No	87	31.2
	Yes	192	68.8

Table 3.4

Descriptive statistics for knowledge of mental illness

Variable	N	Mean	SD	Minimum	Maximum
Mental illness knowledge (self-rated)	277	2.55	0.865	1	5

Table 3.5

Frequency view of self-rated mental illness knowledge

Variable		Frequency	%
Knowledge of mental illness	1	16	5.7
	2	136	48.7
	3	94	33.7
	4	20	7.2
	5	11	3.9
	Missing	2	0.7

In terms of the familiarity items, the seven items were combined. Higher scores indicated greater familiarity while lower scores would indicate a lack thereof. The obtained mean for this sample was 2.40 (SD = 1.49). Scores were skewed to the right as 56 % of the values fell between 0 to 2 on this 0 to 7 combined item. Familiarity items that had on average the lowest "yes" responses were items 1 (i.e. job involves providing services and or treatment to the mentally ill), 4 (i.e. having worked with a person with a mental illness at their place of employment) and 7 (i.e. living with a person who has a mental illness).

Table 3.6

Descriptive statistics for familiarity of mental illness

Variable	N	Mean	SD	Min	Max
My job involves providing services/treatment for persons with mental illness.	275	0.07	0.254	0	1
I have observed, in passing, a person I believe may have had a mental illness.	273	0.85	0.361	0	1
I have observed person with a mental illness on a frequent basis.	276	0.45	0.498	0	1

I have worked with a person who had a mental illness at my place of employment.	274	0.18	0.387	0	1
A friend of the family has a mental illness.	275	0.37	0.483	0	1
I have a relative who has a mental illness.	275	0.41	0.492	0	1
I live with a person who has a mental illness.	276	0.08	0.277	0	1
Familiarity*	273	2.4	1.489	0	7

Note. *Familiarity is the combination of the 7 dichotomous items

Table 3.7

Frequency view of familiarity (combined)

Variable		Frequency	%
Familiarity	0	21	7.5
	1	66	23.7
	2	66	23.7
	3	59	21.1
	4	34	12.2
	5	20	7.2
	6	6	2.2
	7	1	0.4
	Missing	6	2.2

3.5 Instruments

The questionnaire consisted of four main sections. The sections in order were: 1) demographic information, knowledge and familiarity of mental illness, 2) beliefs toward mental illness (BMI), 3) public perceptions of mental illness questionnaire (PPMIQ), 4) vignettes with personal responsibility beliefs, emotional responses, and helping behaviour. All sections are described below.

3.5.1 Demographics and knowledge of mental illness

The Demographic section consisted of 11 questions (see Appendix C). This section inquired about age, gender, home language, ethnicity, religious affiliation, levels of schooling, years of education, income bracket, if the participant knew someone who has been

diagnosed with a mental illness, if the participant has ever been diagnosed with a mental illness, and rating their own perceived knowledge on mental illnesses. Most of the variables within this section were primarily used for descriptive purposes and were at the nominal and ordinal level of measurement.

3.5.2 Familiarity with mental illness

Familiarity with mental illness sought to determine a participant's prior exposure to mental illness (see Appendix C). It is a small scale that consisted of seven nominal dichotomous variables ("yes" or "no" format) as adapted by Corrigan et al. (2003).

The *familiarity with mental illness* is based on the *level-of-contact report* measure (Holmes, Corrigan, Williams, Canar, & Kubiak, 1999) that consisted originally of 12 items that were also scored in a similar fashion as *familiarity with mental illness*. These items were adapted from other research related to stigma (Link, Cullen, Frank, & Wozniak, 1987) and Penn et al. (1994) as considered by Holmes et al. (1999).

The seven items were used within the study and a final score was calculated based on combining all items into a single measure that ranged from 0 to 7. Thus, higher scores indicated greater familiarity while low scores indicated lack of familiarity. Corrigan et al. (2003) reported an alpha reliability of 0.62 for these items while the researcher obtained a Cronbach alpha coefficient of 0.565 in this study.

3.5.3 Beliefs toward Mental Illness (BMI)

The BMI scale consisted of 21 items and was primarily developed in measuring beliefs toward mental illness (see Appendix C). The scale was designed to measure cross-cultural differences while also predicting treatment seeking behaviour among different cultural groups (Hirai & Clum, 2000). This was considered ideal for the utilisation in South African context.

Originally, the BMI was based on the constructs in the studies of Enrique (1993), Fujii et al., (1993), Gaw (1993), Fabrega (1997), Johnson and Orrell (1995), Kim (1993), Ng (1991) and Raguram et al. (1996). Hirai and Clum (2000) found that there was not adequate integration between these sources into a standardised assessment instrument and conceptualised the BMI as a scale to assess negative stereotypical views of mental illness.

BMI measures three main constructs within beliefs toward mental illness: *dangerousness*, *poor interpersonal and social skills*, and *incurability* (Hirai & Clum, 2000). *Dangerousness* was operationalised to measure the perceived dangerousness towards people who suffer from mental illness. *Poor interpersonal and social skills* was used to measure the perceived extent to the lack of social skills those with mental illness have while *incurability* measured to what extent mental illness was perceived as treatable and curable (Hirai & Clum, 2000).

In terms of the scale's properties, a high reliability estimate was reported (Cronbach's Alpha = 0.82) (Hirai & Clum, 2000). Similarly, they reported on measures of validity – specifically construct and concurrent validity. Construct validity was assessed primarily through exploratory factor analyses (EFA) based on principal components analysis with varimax rotation and Kaiser normalisation (Hirai & Clum, 2000). The initial solutions consisted of four factors, but after meticulous analysis and consideration it was reduced to three (Hirai & Clum, 2000). Evidence for strong construct validity was obtained by notable factor loadings and conducting the EFA on more than a single population group (Hirai & Clum, 2000). Similarly, concurrent validity was also assessed by the researchers which also showed moderate evidence for this claim (Hirai & Clum, 2000). Overall, the scale was deemed to show a satisfactory array of psychometric properties by Hirai and Clum (2000). In addition, a psychometric validation study of the BMI was also recently conducted by Royal and Thompson (2013) that considered dimensionality, reliability, rating scale quality, item

measure quality, item hierarchy, person measure quality, and validity. The researchers used an item response theory technique by which to evaluate the instrument's properties and found high levels of validity (rasch-based principal component analysis which indicated substantive aspects of validity – 42.2% of the Rasch dimension was explained) and reliability (worst-case estimate for Cronbach's alpha = 0.87) and conclude that it had sound psychometric properties capable of producing quality measures (Royal & Thompson, 2013).

In terms of the researcher's results for the BMI, the final EFA can be seen in Table 3.8. When comparing the obtained factor solution to other researchers' work it is evident that there were some disagreement between factors and factor solutions (Hirai & Clum, 2000; Royal & Thompson, 2013). In short, there was far more overlap in the researcher's results for the *dangerousness* (component 1) and *poor interpersonal and social skills* (component 2) factors than in previous research. In terms of the *incurability* (component 3), it was only the second last item that deviated from this factor.

Table 3.8

Three factor solution for Beliefs toward Mental illness

	Component		
	1	2	3
A mentally ill person is more likely to harm others than a normal person.	0.747		
Mental illness would require a much longer period of time to be cured than would other general diseases.	0.594		
It may be a good idea to stay away from people who have mental illnesses because their behaviour is dangerous.	0.526		
Mentally-ill people are more likely to be criminals.		0.578	
I am afraid of people who are suffering from mental illness because they may harm me.		0.562	
The term ‘‘Mental illness’’ makes me feel embarrassed.		0.868	
A person with mental illness should have a job with minor responsibilities.	0.535		
I am afraid of what my boss, friends, and others would think if I were diagnosed as having a mental illness.		0.587	
It might be difficult for mentally-ill people to follow social rules such as being punctual or keeping promises.	0.593		
I would be embarrassed if people knew that I dated a person who once received psychological treatment.		0.536	
A person with mental illness is less likely to function well as a parent.	0.476		
I would be embarrassed if a person in my family became mentally ill.		0.842	

Mentally-ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities.	0.737		
Most people would not knowingly be friends with a mentally-ill person.	0.649		
I would not trust the work of a mentally-ill person assigned to my work team.	0.576		
Mental illness is recurrent.			0.524
Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life.			0.836
People who have once received psychological treatment are likely to need further treatment in the future.			0.515
I do not believe that mental illness is ever completely cured.			0.839
The behaviour of people who have a mental illness is unpredictable.	0.569		
Mental illness is unlikely to be cured regardless of treatment.			0.612

Note. Extraction Method: Principal Component

Analysis. Rotation Method: Promax with Kaiser Normalisation

Rotation converged in 5 iterations

Small coefficients suppressed below .4

In terms of explaining the differences in results, a variety of reasons could potentially explain it. At least from the researcher's obtained results it should be noted that: 1) there was no multicollinearity between factors, 2) Kaiser-Meyer-Olkin Measure of Sampling Adequacy was sufficient (.854), 3) Barlett's Test of Sphericity was statistically significant ($p < 0.0001$), 4) communalities were sufficient and typically ranged from 0.4 and up with no values exceeding 0.7, 5) the total percent of variance explained by the model was 46.65%, 6) the rotated factor solution did not show evidence of cross loadings, 7) high reliability ratings (i.e. Cronbach's alpha) were also achieved for all three factors: 0.825, 0.775, 0.732[4].

3.5.4 Public Perceptions of Mental Illness Questionnaire (PPMIQ)

This scale consists of 33 items and is specifically focused on the public perceptions of mental illness (see Appendix C). Its main sections consisted of: *causes of mental illness, knowledge of people with mental illness, attitude toward people with mental illness,* and *care and management of people with mental illness*. *Causes of mental illness* consisted of 6 items

[4] It should be noted that these reliability estimates were based on grouping items as specified by the factor solution obtained by the researcher and not the original combination of scale items.

that ranged from genetic inheritance to personal weakness (Sadik, Bradley, Al-Hasoon, & Jenkins, 2010). *Knowledge of people with mental illness* consisted of 6 items which included question items that ask if one can tell a mentally ill person easily apart or if a mental ill person can work (Sadik et al., 2010). It should be noted that five additional statements were added to *knowledge of people with mental illness. Attitudes toward people with mental illness* consisted of 12 items which included negative and positive phrased items. To provide an example of some of the negative items, they inquired if people with a mental illness should be able to make decisions or if they should be prevented from having children. Examples of the positive items asked if a person could marry someone with a mental illness or if they should have the same rights as other people (Sadik et al., 2010). The last subscale of the questionnaire was *care and management of people with mental illness* that consisted of 9 items and asked about the curability of mental illness, available information and treatment service for mental illness within their community (Sadik et al., 2010). Additional items were added for *care and management of people with mental illness.*

There were no prior reported validity or reliability for the PPMIQ (Sadik et al., 2010). Similarly, Sadik et al. (2010) did not report in any adequate means on the psychometric properties on the PPMIQ and this acted as one of its immediate limitations. Citations were traced with reference to Sadik et al.'s paper (2010). Unfortunately, the online search yielded no positive matches and was unsuccessful[5]. The inclusion of this scale was primarily based on three motivating factors: 1) The majority of mental health literacy surveys have been based and conducted on western populations, this was one that specifically focused on a developing country context. 2) The full inclusion and format of the questionnaire was available to the researcher. 3) Items held face validity by both the researcher and supervisor. It should be noted that additional items (15) were added to *causes of mental illness* as the

[5] This point will be discussed at length within the results section.

original list was not exhaustive for the study nor necessarily sufficient for the South African context. Similarly, additional items were added to the care and management of mental illness.

The findings for these scale items can be seen in the tables below. Both scale items related to *knowledge of people with mental illness* and *attitude toward people with mental illness* were subjugated to EFA. Even though the EFA produced adequate values on necessary assumptions (i.e. Barlett's Test of Sphericity etc.), the factor solution did not show clear distinction between the two factors. Instead, it produced evidence of a single factor which can be seen in figure 3.1.

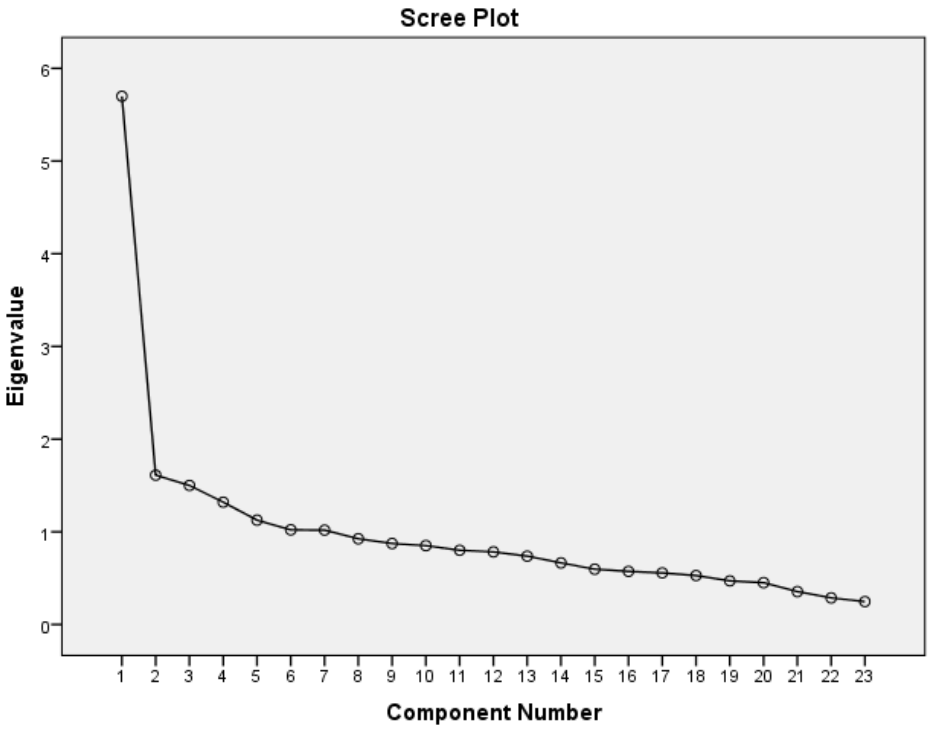

Figure 3.1 *Scree plot for PPMIQ showing evidence for a single factor*

Additional evidence for a single factor understanding was evident from the reliability testing. Adding all 23 items to reliability testing produced a Cronbach's Alpha of 0.833 with no evidence to improve reliability estimates. Similarly, the corrected item total correlation also did not show problematic values. Thus, the items were combined into a single total item

that was conceptualised as a stigma component. Higher scores were treated as more indicative of stigma and lower scores less so.

For *causes of mental illness,* items were also assessed with EFA. The final factor solution can be seen in Table 3.9. Of all the items that were originally included, three were finally excluded based on poor loading and poor reliability estimates ("chemical imbalance", "brain dysfunction" and "personal weakness"). The final EFA solution showed adequate adherence to assumptions and was able to explain 69.16% of variance of the model. Component 1 was indicative of a spiritual aetiology, component 2 of a stress aetiology, component 3 of a religious aetiology, and component 4 of a genetic aetiology.

Table 3.9

Four factor solution for aetiology items

	Component			
	1	2	3	4
genetic inheritance.				0.859
substance abuse.				0.733
bad things happening to you.				0.517
God's punishment.			0.891	
a test from God.			0.871	
a lack of religious involvement.			0.831	
jealousy.			0.607	
supernatural beings like djinn or takaloshe.	0.857			
spirit possession.	0.893			
ancestral possession.	0.933			
ancestors who may not be happy with you.	0.9			
witchcraft and/or sorcery.	0.981			
family stress.		0.842		
past karma.	0.443			
my own stress.		0.868		

external stress (e.g. crime).		0.881
the evil eye being cast upon you.	0.586	
financial stress.		0.865

Note. Extraction Method: Principal Component
Analysis. Rotation Method: Promax with Kaiser Normalisation
Rotation converged in 6 iterations
Small coefficients supressed below .4

Similarly, *care and management of people with mental illness* also was also assessed with EFA. Seven items were excluded based on factor loadings and reliability estimations as can be seen in Table 3.10. The final factor solution can be seen in Table 3.11 which produced a 4-factor solution. There was sufficient adherence to assumptions and the model was able to explain 59.4% of variance in the model. Items were finally combined into their respective factors with the following reliability estimates for each factor in order: 0.731, 0.759, 0.706, and 0.598.

Table 3.10

Items removed from care and management of people with mental illness

Items	
45	One should hide his/her mental illness from his/her family.
47	Mental illness cannot be cured.
48	Mentally ill people should be in an institution where they are under supervision and control.
49	Mental illness can be treated outside a hospital.
51	The majority of people with mental illness recover.
54	It is very important for the mentally ill person to seek help from a professional from the same religion/culture.
62	A mentally ill person should: pray to God.

Table 3.11

Four factor solution for care and management of people with mental illness

	Component			
	1	2	3	4

There are mental health services available in my community that can assist with treating individuals with mental illnesses.				0.69
Information about mental illness is available at my local clinic.				0.73
Local clinics can provide good care for mental illnesses.				0.71
If I was concerned about a mental health issue with a member of my family or myself, I would feel comfortable discussing it with someone at my local clinic.				0.50
consult with physicians (GP).			0.71	
talk to his/her family.			0.67	
reconnect with his/her friends.			0.71	
consult with a priest.	0.68			
consult with an elder member of the family.	0.68		0.47	
consult with an elder member in the community.	0.69			
consult with a traditional healer.	0.73			
seek the help of a counsellor/ psychologist.		0.81		
consult with a psychiatrist.		0.75		
take medication.		0.83		
use holistic treatments.	0.59			

Note. Extraction Method: Principal Component

Analysis. Rotation Method: Varimax with Kaiser Normalisation

Rotation converged in 7 iterations

Small coefficients supressed below .4

3.5.5 Vignettes

Vignettes from Hugo et al. (2003) were included in conjunction with the scale items from Corrigan et al. (2003). Respectively, the three vignettes portrayed substance use disorder (135 words), depression (99 words), and schizophrenia (128 words) (see Appendix C). These three vignettes were part of eight vignettes that were originally utilised by Hugo et al. (2003) for their study on the South African public's attitudes and knowledge toward mental illness (specifically in the Cape region). The vignettes were not published as part of

Hugo et al.'s (2003) original publication, but they could be acquired upon request[6]. The inclusion of these vignettes was based on the appropriateness of the language for the context and that the vignettes had adequate symptomatic and diagnostic representation of the respective mental illnesses based on DSM-IV criteria (Hugo et al., 2003).

3.5.6 Personal responsibility beliefs, emotional responses, and helping

The scale items from Corrigan et al. (2003) were considered for the vignettes as these components were demonstratively related to public stigma towards persons with mental illness along with attribution components (Corrigan et al., 2003). The scale items consisted of four sections: *perceived controllability*, *responsibility attributions*, *emotional reactions*, and *helping* (see Appendix C). The *personal responsibility beliefs* consisted of 3 items that ask about the accountability of the person in the vignette. Similarly, *emotional responses* consisted of 3 sections that measured to what extent they felt *pity* (3 questions), *fear* (4 questions) or *anger* (3 questions) towards the person in the vignette. *Helping* inquired to what extent they would be willing to aid the person in the vignette (4 items). In terms of the psychometric properties associated with the scale items there was no reported validity, but there was high reported reliability (alpha coefficients) for each of the scales (*personal responsibility beliefs* = 0.70, *helping* = 0.88, *fear* = 0.96, *anger* = 0.89, and *pity* = 0.74) (Corrigan et al., 2003).

The researcher's reliability results for these scale items can be seen in Table 3.12. All items were kept for the emotional measures, but alterations were made to *personal responsibility beliefs* and *helping behaviour*. From helping behaviour, "I feel certain that I would be able to help [name]" was excluded from all vignettes as it lowered overall reliability. For personal responsibility beliefs, "How controllable, do you think, is the cause of [name]'s present condition?" was excluded from vignette 2 (schizophrenia) and vignette 3

[6] I would like to extend my sincerest thanks to Prof. Dan J. Stein from the University of Cape Town who made the vignettes available for the use of this study.

(depression), while “How responsible, do you think, is [name] for his present condition?” was excluded from vignette 3 (depression). In the event of low reliability estimates, the subscales were not used as is but instead the individual items were used.

Table 3.12

Reliability estimates for the vignettes and their respective items

	Pity	Anger	Fear	Personal responsibility beliefs	Helping behaviour
Substance use disorder (SUD)	0.755	0.849	0.872	0.391	0.693
Schizophrenia (S)	0.822	0.794	0.906	0.59	0.78
Depression (D)	0.819	0.808	0.907	0.663	0.818

3.6 Procedure

After the research proposal was finalised and approved, ethical clearance was obtained from the Human Research Ethics Committee (HREC Non-Medical) from the University of the Witwatersrand before any research was conducted (Protocol number: MPSYC/16/012 IH). Thereafter, questionnaires were printed and bound. Simultaneously, the researcher sought permission to approach the first-year students at a given time in the lecture setting to brief them on the study. Those students who wanted to participate and help with the study could take a questionnaire. The questionnaire package contained an additional attached form (i.e. participant information sheet) that outlined the parameters of the study in terms of expectations and other relevant information related to the study. The addendum made it evident that any participation in this study was entirely voluntary and that there was no consequence to either participate or refuse to participate in the study.

Data collection took place over five months from May to September 2016. In order to bolster response rates, two reminders were e-mailed during data collection to students. Completed questionnaires were returned to the collection office in the department where the researcher could collect them.

Thereafter, questionnaires were manually captured by the researcher. After capturing the questionnaires, random entry checking was conducted to confirm that results were captured with high accuracy. Of the 6000 items checked, only 2 mistakes were found in the imputation of the data (i.e. 0.03%). Additional, entry checking took place afterwards to guarantee the accuracy of data captured.

After the data capturing was finalised, data was coded and reversed scored where appropriate. Thereafter, data analysis took place for each given research question as outlined. Lastly, the results and data were written up for this report.

3.7 Ethical Considerations

Ethical standards remain paramount to the quality and integrity of research. Even more so with research that involves human subjects. To maintain a high-level of ethical consideration, the study was explained in sufficient detail to the students while the required ethics was also obtained for the study (see Appendix A). The questionnaire also contained this information in the form of the participation information sheet (see Appendix B). The sheet contained all the key necessities to ensure that participants: 1) had the right to refuse to participate in the study, 2) had the right to withdraw at any time, 3) had the knowledge to know that participation or lack thereof will not hold any positive or negative consequence. The participant information sheet also contained information regarding the confidentiality and anonymity of participating in the study.

The participation information sheet also defined what was seen or considered as consent for this study. Quite plainly, consent was understood when the questionnaire was returned to the faculty office. All responses were above the legal age of consent (i.e. 18 years) and thus adheres to legal consent as defined within the National Health Act that individuals of 18 years of age or above can provide full and legal consent to participate within a study.

Complete confidentiality and anonymity could be reasonably guaranteed to participants. Even though a filled in questionnaire was received by the researcher along with a filled in participation sheet, there was no way for the researcher to determine if the response on the questionnaire was in fact the same person who completed the participation sheet. Storage of data was also considered. Questionnaires and data has been stored securely with only the researcher and supervisor having access to either.

In the event where participants felt exposed after or during the completion of the questionnaire, two professional organisations' numbers were provided that could help: SADAG (the South African Depression and Anxiety Group) and Lifeline South Africa (see Appendix B). The researcher's and supervisor's details were also provided in the event that there were any other queries or concerns related to the study. In terms of feedback to participants, it was made clear that no individual feedback would be provided. However, a summary of the results could be requested by the participants by means of contacting the researcher.

3.8 Data Analysis

Data analysis was primarily determined by the type of research questioned asked, level of measurement, and adherence to assumptions for a given variable or a set of variables before the appropriate technique was ran. All analyses were performed with IBM SPSS (Statistical Package for the Social Sciences) versions 23 and 24.

Several of the research questions could be sufficiently answered with descriptive statistics (specifically questions 1 to 4 and 8). Means, median, standard deviations, and frequencies are reported on. Descriptive statistics were also utilised to assess and consider the overview of demographic variables.

Beyond the descriptive statistics, the research investigated skewness and kurtosis for all items and other relevant assumptions prior to inferential statistics and analysis (Field,

2013; Huck, 2012). Similarly, reliability and validity were also assessed for all scale items that were used by the researcher. For reliability specifically, internal consistency reliability was assessed for the scale items used to determine to what extent scores on items of scales were scored similarly (Stangor, 2014). To assess construct validity, exploratory factor analysis (EFA) with principal component analysis as the specific extraction method were used. Both varimax and promax rotation methods were used depending on the factors and if they were treated as independent or not. Iterations were kept standard and only factor loadings of 0.4 or larger or -.4 or less were considered (Field, 2013).

Univariate association seemed to be the most appropriate statistical technique for some of the research questions (specifically question 5 and 6). When there was sufficient adherence to statistical assumptions, parametric techniques were utilised, specifically the Pearson product-moment correlation coefficient otherwise Spearman's correlation coefficient for non-parametric situations (Field, 2013). In the event of significant associations, the coefficient of determination was also calculated to assess the percentage of variance explained.

For some of the other research questions (specifically questions 7 and 10), prediction with multivariate considerations seemed to be the ideal approach in order to answer the research questions. One of the most well-known techniques to consider the impact of several independent variables on a single dependent variable is multiple regression (Stangor, 2014). Thus, multiple regressions were utilised by the researcher as the main method in predicting these relationships. Sufficient investigation took place to guarantee that other related assumptions of multiple regressions were adhered to: 1) no multicollinearity between independent variables, 2) linear relationship between the dependent and independent variables, and 3) homoscedasticity – error terms have the same variance (Field, 2013; Huck, 2014).

There are also several types of multiple regression to consider, each with its own advantages and shortcomings. For this study, the researcher made use of backwards multiple regressions. In terms of stepwise methods, the backward method is better able to deal with suppressor effects and it also does not suffer from the same risks associated with increasing type II errors as found with the forward method (Field, 2013). Overall, hierarchical regressions are preferable to stepwise methods as stepwise methods rely far more on mathematical criteria and other statistical assumptions (Field, 2013). Hierarchical or blockwise entry was not utilised by the researcher as it did require the researcher to have sufficient estimates from past work on which to build the predictor model. As it was uncertain how variables would load and what the expected relationships were between variables, the stepwise method was taken as it one of the recommended techniques in aiding exploratory model building (Field, 2013).

3.9 Conclusion

The chapter provided an overview of the procedures, considerations, and ultimately research methods utilised by the researcher. Fair detail was provided where necessary on the instruments, procedures, and other sections of concern. The next chapter presents the results of this study.

Chapter Four: Results

4.1 Introduction

The results obtained from the analysis are presented in the order of the research questions posed earlier within this work. Descriptive statistics are presented first as the questions were primarily descriptive in nature. Thereafter, the inferential statics are presented ranging from association, to mean differences, and finally multiple regressions. After the initial analysis and questions have been answered for most of the general items, further analysis and results are reported on specifically for the three included vignettes and their respective items.

4.2 What are the attitudes of mental illness among South Africans in Gauteng?

4.2.1 Beliefs toward mental illness

To consider attitudes, the beliefs towards mental illness (BMI) items were used. Items which participants demonstrated the highest level of agreement with were: “The behaviour of people who have a mental illness is unpredictable.” ($\bar{x}$ = 3.58, SD = 0.972), “Mental illness would require a much longer period of time to be cured than would other general diseases.” ($\bar{x}$ = 3.49, SD = 0.95), “People who have once received psychological treatment are likely to need further treatment in the future.” ($\bar{x}$ = 3.31, SD = 0.95). Hence, people generally agreed with items related to perceived dangerousness and incurability.

In contrast, items which had the lowest mean scores and thus the largest on average disagreement were: “The term ‘‘Mental illness’’ makes me feel embarrassed.” ($\bar{x}$ = 2.03, SD = 1.035), “Mentally-ill people are more likely to be criminals.” ($\bar{x}$ = 1.9, SD = 0.921), “I would be embarrassed if a person in my family became mentally ill.” ($\bar{x}$ = 1.89, SD = 0.916). Thus, there was general disagreement with these items that were more to poor interpersonal and social skills.

Considering the three factors for the BMI specifically and their scores, they were also reported on in Table 4.1. *Dangerousness* had a mean of 30.10 (SD = 6.50). The minimum reported score was 11 and the maximum score reported was 50. There was low skewness (−0.268) and kurtosis (0.250). Thus, from this result it is evident that participants had a slight agreement with the dangerousness factor. When the median is considered for them items that constitute dangerousness, it is evident that most people did in fact use the middle of the scale (score = 3). Hence attitudes in terms of perceived dangerousness of mentally ill individuals were more neutral.

Poor interpersonal and social skills had a mean of 13.17 (SD = 4.18). The minimum reported score was 6 and the maximum obtained score was 26. Overall, this factor was not normally distributed and there was a slight positive skew with more values at the bottom end. The results indicate that, on average, there were disagreement with the poor interpersonal component perceived with those who suffer from mental illness.

Incurability had a mean of 15.41 (SD = 3.25). The minimum reported score was 5 and the maximum reported score was 25. Factor 3 was almost normally distributed with light deviation from normality (skewness = 0.254 and kurtosis = 0.167). Similar to dangerousness, there was overall slight agreement with incurability, but it was not a strong agreement. Incurability's items showed similar obtained median values that was observed in dangerousness's items. All 5 items' reported median values were 3 which was once again the "neutral" option on the scale.

Table 4.1

Descriptive statistics of Beliefs toward mental illness and final combined factors

Variable	Mean	SD	Min	Max	Skewness	Kurtosis
A mentally ill person is more likely to harm others than a normal person.	3.18	1.06	1	5	-0.25	-0.63
Mental illness would require a much longer period of time to be cured than would other general diseases.	3.49	0.95	1	5	-0.36	-0.4
It may be a good idea to stay away from people who have mental illnesses	2.54	0.97	1	5	0.47	-0.17

because their behavior is dangerous.						
Mentally-ill people are more likely to be criminals.	1.9	0.92	1	5	1.11	1.22
I am afraid of people who are suffering from mental illness because they may harm me.	2.4	1.01	1	5	0.36	-0.45
The term ‘‘Mental illness’’ makes me feel embarrassed.	2.03	1.04	1	5	1.05	0.67
A person with mental illness should have a job with minor responsibilities.	2.97	1.13	1	5	-0.09	-0.8
I am afraid of what my boss, friends, and others would think if I were diagnosed as having a mental illness.	2.86	1.18	1	5	-0.06	-1.11
It might be difficult for mentally-ill people to follow social rules such as being punctual or keeping promises.	3.1	1.11	1	5	-0.28	-0.74
I would be embarrassed if people knew that I dated a person who once received psychological treatment.	2.14	1.02	1	5	0.89	0.41
A person with mental illness is less likely to function well as a parent.	2.77	1.05	1	5	0.14	-0.59
I would be embarrassed if a person in my family became mentally ill.	1.89	0.92	1	5	1.11	1.12
Mentally-ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities.	2.82	1.1	1	5	0.09	-0.81
Most people would not knowingly be friends with a mentally-ill person.	3.12	1.11	1	5	-0.19	-0.88
I would not trust the work of a mentally-ill person assigned to my work team.	2.56	1.01	1	5	0.46	-0.27
Mental illness is recurrent.	3.23	0.81	1	5	-0.14	0.3
Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life.	3.01	0.91	1	5	0.04	-0.52
People who have once received psychological treatment are likely to need further treatment in the future.	3.33	0.95	1	5	-0.22	-0.33
I do not believe that mental illness is ever completely cured.	3.18	1.02	1	5	-0.06	-0.55
The behaviour of people who have a mental illness is unpredictable.	3.58	0.97	1	5	-0.51	-0.13
Mental illness is unlikely to be cured regardless of treatment.	2.66	0.96	1	5	0.27	-0.19
Dangerousness*	30.1	6.5	10	50	-0.27	0.25
Poor interpersonal and social skills*	13.17	4.18	6	30	0.5	0.16
Incurability*	15.41	3.25	5	25	0.27	0.2

Note. *: represents combined items

4.3 Do South Africans demonstrate public stigma towards individuals with mental illness?

In terms of the results for public stigma, the final calculated score can be seen in Table 4.2. The minimum score for the combined item was 23 and the maximum possible score was 115. The minimum obtained value for the sample was 25 and the maximum obtained value for the sample was 85. The true middle point of the combined items would be the middle value of each scale (i.e. 3) multiplied by the total amount of items (i.e. 23). Thus, this would mean that the midpoint of the scale was 69.

Table 4.2

Descriptive statistics of the Stigma scale score

Variable	Mean	SD	Skewness	Kurtosis
Stigma scale score	52.41	11.256	0.375	0.041

In terms of the average, the mean was 52.41 (SD = 11.26) with no significant skewness or kurtosis (skewness = 0.375 and kurtosis = 0.041). Overall, there was indication that people from the sample were, on average, more likely to disagree with the stigmatising statements than to agree with them.

To get a better sense of the items and their contribution, the researcher considered the items separately. The following items had the highest mean scores: “I could [not] marry someone with a mental illness” ($\bar{x}$ = 3.3, SD = 1.17) and “People with mental illness [do not] experience aches and pains in their body” ($\bar{x}$ = 3.11, SD = 0.99). Higher scores overall indicated that there was higher stigma as higher agreement on the 5-point scale indicated that people were, for instance, more unwilling to marry someone with a mental illness.

Items with the lowest mean scores were: “One should avoid all contact with the mentally ill” ($\bar{x}$ = 1.44, SD = 0.73) and “People with mental health problems are largely to

blame for their own condition" ($\bar{x}$ = 1.77, SD = 1.03). Similarly, with the lower scoring items, lower scores indicated larger disagreement and for instance, disagreed on average that mentally ill people should be avoided. All items and their contributions to the stigma item can be seen in Table 4.3.

Table 4.3

Descriptive statistics for the kept statements of the PPMIQ

Variable	Mean	SD	Min	Max	Skewness	Kurtosis
Mentally ill persons can[not] work.	2.43	1.06	1	5	0.73	0.09
[Not] Anyone can suffer from a mental illness.	1.77	0.99	1	5	1.69	2.81
Mental illness is [not] like any other illness.	2.86	1.25	1	5	0.04	-1.22
People with mental illness [do not] experience aches and pains in their body.	3.11	1	1	5	0.01	-0.24
People with mental health problems are largely to blame for their own condition.	1.75	1	1	5	1.42	1.61
Spiritual illnesses are better than mental illnesses.	2.36	1.03	1	5	0.28	-0.36
One can always tell a mentally ill person by his or her physical appearance.	1.98	1.03	1	5	1	0.43
Mentally ill persons are not capable of true friendships.	1.9	1.05	1	5	1.12	0.6
Its better to have a physical illness rather than a mental illness.	2.82	1.2	1	5	0.02	-0.83
Mentally ill persons are usually dangerous.	2.7	1.11	1	5	0.17	-0.75
Suffering from a mental illness is shameful.	1.79	1.02	1	5	1.37	1.27
The mentally ill should be prevented from having children.	2.45	1.15	1	5	0.38	-0.66
The mentally ill should not get married.	2.1	1.04	1	5	0.72	-0.12
One should avoid all contact with the mentally ill.	1.44	0.73	1	5	2	4.55
The mentally ill should not be allowed to make decisions, even those concerning routine events.	2.12	1.04	1	5	0.88	0.38
I could [not] maintain a friendship with someone with a mental illness.	2.17	0.93	1	5	0.73	0.41
I could [not] marry someone with a mental illness.	3.3	1.17	1	5	-0.1	-0.81
I would be afraid to have a conversation with a mentally ill person.	1.96	0.97	1	5	1.2	1.42
People with mental health illnesses should [not] have the same rights as anyone else.	1.9	1.18	1	5	1.36	0.99
I would be upset or disturbed about working on the same job as a mentally ill person.	2.11	1.04	1	5	0.73	-0.02
I would be ashamed if people knew that someone in my family had been diagnosed with a mental illness.	1.79	0.98	1	5	1.44	1.91

If I was suffering from a mental health illness, I wouldn't want people to know about it.	2.72	1.22	1	5	0.1	-1.05
People are generally caring and sympathetic towards people with mental illness.	2.89	1.03	1	5	0.16	-0.56

4.4 What do South Africans in Gauteng perceive as the causes of mental illness?

The researcher proceeded in combining the relevant items as based on the final solution discussed in Table 3.9. The biological/genetic factor were the combination of three items. The mean statistic was 10.16 (SD = 2.42). It is evident that there is, overall, an agreement with the genetic items in being perceived as an aetiology item.

The religious factor consisted of four combined items. It had a minimum obtained score of 4 and a maximum obtained score of 20. The mean value for this factor was 6.62 (SD = 3.31). Both the skewness and kurtosis levels were extreme (i.e. larger than 1), with the kurtosis value equal to 1.840 and the skewness value 1.402. It is clear that there is extreme positive skewness and that this translated into a strong disagreement, on average, that the religious factor was perceived as a cause of mental illness.

For the spiritual factor, seven items were combined which made the minimum obtained score 7 and the maximum score 35. The obtained range was respectively 7 and 35. The mean statistics was 14.71 (SD = 7.15). Kurtosis (−0.676) and skewness (0.550) were closer to acceptable ranges. Overall, there was also disagreement, on average, that the spiritual factor is a cause for mental illness.

For the stress factor, four items were combined which made the minimum score 4 and the maximum score 20. The obtained range was between 4 and 20. The mean statistic was 13.96 (SD = 3.66). There was low reported kurtosis (0.182) and low reported skewness (−0.643). Overall, there was slight agreement that stress is a factor that causes mental illness.

In order to get a better understanding of which factor had the highest and or lowest level of agreement, the researcher took each factor and controlled on the number of items per

factor. Thus, the mean average for each component was divided by the number of factors it consisted of.

Table 4.4

Descriptive statistics of perceived aetiological factors for mental illness (divided by number of items per factor)

Factors	Mean	SD	Min	Max	Skewness	Kurtosis
Genetic	3.3869	0.80771	1	5	-0.421	-0.133
Religious	1.654	0.82782	1	5	1.402	1.84
Spiritual	2.1016	1.02089	1	5	0.55	-0.676
Stress	3.4908	0.9151	1	5	-0.643	0.182

From Table 4.4, the new calculated values can be seen for each respective aetiology factor. The aetiology with the lowest level of agreement, on average, was the religious component with a mean of 1.65 (SD = 0.83). Thus, there was moderate disagreement overall that the religious items caused mental illness. This is also affirmed by the strong grouping of scores on the “strongly disagree” or “1” on the scale as seen by the extremely high values in skewness (1.402) and kurtosis (1.840).

On average, the third highest aetiology component was the spiritual component with a mean of 2.10 (SD = 1.02). Thus, on average people disagreed that these items were the cause of mental illness.

The second highest aetiology component, on average, was the genetic component with a mean of 3.39 (SD = 0.81). The on average response was closer to 3 than 4, which shows that there is overall a divide between neutral to agreeing that a genetic component could be the cause of mental illness.

The highest, on average, aetiology component was stress with a mean of 3.49 (SD = 0.92). Similar to the genetic component, there would seem to be stronger push to agreement, but there is still a strong indication of neutral and thus a divide between neutral to agree.

4.5 Among the South African community in Gauteng, what are the care, management and treatment choices for individuals with mental illness?

As with previous section, factors were identified and finalised for care and management specifically based on factor solution shown in Table 3.11. Items were subsequently combined into their relevant factors and the researcher divided each factor by the number of items it constituted of. The following descriptive statistics were obtained and can be seen in Table 4.5.

Table 4.5

Descriptive statistics of care and management options (divided by number of items per factor)

Factors	Mean	SD	Min	Max	Skewness	Kurtosis
Traditional community help	3.06	0.75	1	5	-0.12	0.533
Psychiatric/Psychological	4.27	0.76	1	5	-1.469	3.149
Family support	3.90	0.74	1	5	-0.478	0.568
Clinic	3.14	0.73	1	5	-0.425	0.243

There was by far the strongest agreement with the *psychiatric/psychological* factor with a mean of 4.27 (SD = 0.76). Thereafter, it was the *family support* with a mean of 3.90 (SD = 0.74). Thereafter, our *clinic* factor had the highest level of agreement, with a mean of 3.14 (SD = 0.73). Lastly, the *traditional community help* item followed with a mean of 3.06 (SD = 0.75)

Psychiatric/psychological factor, very likely had the highest scores as it constitutes one of the more obvious ways in seeking help (e.g. taking medication, going to a psychology, consult with a psychiatrist). Family support scored second highest as it tends to be the next obvious route to consult for help. Similarly, many would rather try family before other more public alternatives.

Both traditional community help and clinic factor had scores quite closer to the middle point of our scale, which can indicate that these are not seen as good alternatives to address mental illness.

Clinic factor obtained mean score should be of some concern. This factor specifically related to items about your (local) clinic and there would not seem to be strong agreement, which very likely indicated that people are not aware to what extent their local clinics could assist. This is also clearly seen at the individual level of each item: “There are mental health services available in my community that can assist with treating individuals with mental illnesses.” ($\bar{x}$ = 3.29, SD = 1.15), “Information about mental illness is available at my local clinic.” ($\bar{x}$ = 3.18, SD = 1.04), “Local clinics can provide good care for mental illnesses.” ($\bar{x}$ = 2.81, SD = 0.98), and “If I was concerned about a mental health issue with a member of my family or myself, I would feel comfortable discussing it with someone at my local clinic.” ($\bar{x}$ = 3.3, SD = 1.16). Lower scores could also be potentially due to lower reliability rating for this factor. Potentially, with differently phrased items, the output could have been different.

4.6 How are the perceptions of mental illness among the South Africans in Gauteng, influenced by their knowledge of mental illness?

As it was already established that not all variables are normally distributed, the researcher proceeded to make use of non-parametric bivariate correlations to assess the relationships. Spearman’s rho was selected as the ideal non-parametric technique above Kendaul’s tau, as sizeable samples were used for comparison purposes (Field, 2013).

Four correlations were conducted to assess the relationship between perceptions of mental illness and knowledge of mental illness. The values are reported in tables 4.6 and 4.7.

Table 4.6

Spearman's rho correlations with mental illness knowledge

Measure	1. Mental illness knowledge	p	N
1. Mental illness knowledge	-	-	-
2. Stigma scale score	-.279**	.000	258
3. Dangerousness	-.178**	.003	270
4. Poor interpersonal and social skills	-.268**	.000	272
5. Incurability	.067	.270	270

**. Correlation is significant at the 0.01 level (2-tailed).

It is evident that three of the four were statistically significant when correlated with people's self-rated mental illness knowledge. Mental illness knowledge correlated with the overall stigma item producing a significant but weak negative correlation ($r_s(258) = -0.279$, $p < 0.01$). The relationship can be described as weak and that higher stigma is associated with lower knowledge.

Similarly, the results with poor interpersonal and social skills also produced a weak negative correlation that was significant ($r_s(272) = -0.268$, $p < 0.01$). Thus, indicating that higher scores of poor and interpersonal social skills was also associated with lower mental illness knowledge.

The weakest negative correlation was with dangerousness ($r_s(270) = -0.178$, $p = 0.003$). Higher perceived dangerousness was also associated with lower levels of knowledge. There was a non-significant relationship between mental illness knowledge and incurability. ($r_s(270) = 0.067$, $p = 0.270$, $p > 0.05$) which indicates a lack of association.

Overall, negative correlations were expected as higher levels of knowledge of mental illness, to some extent, should lead to lower associated levels of overall stigma, perceived dangerousness and poor interpersonal abilities of those who suffer of mental illness as people are able to more readily gauge their perceptions.

4.7 How are the perceptions of mental illness among the South Africans in Gauteng, influenced by their familiarity with mental illness?

Similar to the previous question, bivariate correlations were performed and Spearman's rho was selected as the most ideal statistical technique to evaluate the relationship between the variables. Four correlations were conducted as per the previous question.

Table 4.7

Spearman's rho correlations with familiarity

Measure	1. Familiarity	p	N
1. Familiarity	-	-	-
2. Stigma scale score	-.169**	.007	256
3. Dangerousness	-.074	.23	266
4. Poor interpersonal and social skills	-.153*	.012	268
5. Incurability	.113	.064	267

**. Correlation is significant at the 0.01 level (2-tailed).

Two of the four correlations were statistically significant. The significant negative comparisons were for the combined stigma scale ($r_s(256) = -0.169$, $p < 0.01$) and the poor interpersonal and social skills ($r_s(268) = -0.153$, $p < 0.05$). Both were weak associations and indicated that higher stigma or greater lack of interpersonal and social skills were associated with lower levels familiarity. Dangerousness ($r_s(266) = -0.074$, $p = 0.230$) and incurability ($r_s(267) = 0.113$, $p = 0.064$)) were not significantly related to familiarity.

4.8 Can knowledge, familiarity, attitudes and causal beliefs predict care, management and treatment choices for individuals with mental illness?

In order to answer this question, more than one multiple regression analyses were performed for this question as multiple independent variables were included to predict the various identified care and management sections. Four multiple regressions were conducted as at least one multiple regression per care and management and treatment factor had to be

conducted as that would act as the dependent variable. The parametric assumptions were checked for all the multiple regression analyses. Overall, independent variables were within acceptable limits for normality assumptions. Likewise, the dependent variables were also within acceptable limits for normality. Homoscedasticity was also considered for each comparison in order to check that the assumption was met. This was primarily checked by inspecting the scatterplot of the residuals and was met.

Outliers were also checked by inspection of the box plots and histograms. Little evidence existed to remove of any cases. Lastly, multicollinearity was also checked by the variance inflation factor (VIF) for each factor within each multiple regression. Values larger than 10 are considered problematic and indicate multicollinearity between the independent variables (Meyers, Gamst, & Guarino, 2013). Largest values obtained for any of the models were 1.9 which indicated no reason for concern. Thus, all the necessary assumptions were met for the multiple regression and analysis was conducted.

For clarity, the following independent variables were added into the backwards multiple regression outputs that are discussed below: levels of schooling, age, gender, self-rated mental illness knowledge, familiarity with mental illness (combined variable from the seven questions) and the aetiology factors related to the identified genetic, stress, religious, and spiritual factors. The four care and management factors (i.e. traditional community help, psychiatric/psychological, family support, clinic) were entered as the dependent variables and were each entered into their own independent multiple regression analysis. The results and the level of prediction for each care and management factor is discussed below.

4.8.1 Traditional community help factor

The overall model for the traditional community help factor was statistically significant ($F(10, 229) = 5.18$, $p = 0.000$, $R^2 = 0.18$). The final model was reached in 9 steps and explained 15% of variance ($F(1, 236) = 3.55$, $p = 0.061$, $R^2 = 0.15$).

Table 4.8

Multiple regression results exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting traditional community help factor

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.43	0.18	0.15	3.34	0.18	5.18	10	229	0.000	
9	0.39	0.15	0.14	3.35	-0.01	3.55	1	236	0.061	1.8201

Table 4.9

Multiple regression analysis exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting traditional community help factor

		Unstandardized Coefficients		Standardized Coefficients		
Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	13.30	2.06		6.46	0.000
	Levels of schooling	-0.01	0.21	0.00	-0.05	0.960
	Age	0.02	0.02	0.07	1.13	0.258
	Gender	-1.68	0.48	-0.21	-3.51	0.001
	Mental illness knowledge	0.01	0.27	0.00	0.05	0.960
	Familiarity	0.11	0.16	0.05	0.72	0.474
	stigma scale score	0.02	0.03	0.05	0.63	0.526
	aetiology - stress	0.14	0.07	0.14	2.16	0.032
	aetiology - spiritual	0.13	0.04	0.24	3.12	0.002
	aetiology - religious	0.08	0.08	0.07	0.97	0.332
	aetiology - genetic	-0.11	0.10	-0.07	-1.12	0.265
9	(Constant)	15.88	0.98		16.13	0.000
	Gender	-1.65	0.47	-0.21	-3.52	0.001
	aetiology - spiritual	0.16	0.03	0.30	5.04	0.000

From table 4.9, it is evident that gender (B = −1.65 and a p = 0.001) and the aetiology factor for spiritual cause (B = 0.16 and p = 0.000) were the only significant contributors in the final model in predicting traditional community help factor (see Appendix D for complete output).

In terms of effect sizes, the spiritual aetiology factor had the largest effect size of .30 while the gender factor had a value of −0.21. These values would suggest that, for this sample, participants who were more so convinced that the aetiology of mental illness was related to spiritual causes were more inclined to see the traditional community help factor as an effective way to treat mental illness. For this sample, it was also evident that male participants more likely saw the traditional community help factor as a viable care and management option. This difference can also be viewed when a simple independent t-test comparison is performed to observe the difference between males and females for scores on the Traditional community help factor ($t(271) = 3.450$, $p = 0.001$).

Table 4.10

Descriptive statistics for traditional community help factor (standardised by number of items) by gender

Variable	Gender	Mean	SD	N
Traditional community help	Male	3.2881	0.75433	84
	Female	2.9545	0.72979	189

Table 4.11

Independent samples T-test comparison between male and females for the traditional community help factor (standardised by number of items)

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% CI of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Traditional community help	Equal variances assumed	0.07	0.783	3.45	271	0.001	0.3336	0.0967	0.14323	0.52397
	Equal variances Not assumed			3.406	154.608	0.001	0.3336	0.09794	0.14013	0.52707

4.8.2 Psychiatry/psychology factor

The overall model for this care and management factor was significant (F (10, 230) = 2.24, p = 0.02, R^2 = 0.09). The final model was reached in 8 steps and it was able to explain 7% of the variance (F (1, 236) = 2.55, p = 0.11, R^2 = 0.07).

Table 4.12

Multiple regression results exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting psychology/psychiatry factor

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.30	0.09	0.05	2.30	0.09	2.24	10	230	0.02	
8	0.26	0.07	0.06	2.29	-0.01	2.55	1	236	0.11147	2.2689

Looking at the specific factors in Table 4.13, three were statistically significant for the final model (see Appendix D for complete output). All three were aetiology factors: spiritual aetiology (B = 0.06, p = 0.03), religious aetiology (B = −0.17, p = 0.00), and genetic aetiology (B = 0.16, p = 0.01). In terms of effect sizes, the largest effect size was the religious aetiology factor (−0.24). Thereafter, the spiritual aetiological factor (0.16) and the genetic aetiology factor (0.16). In terms of understanding the result for the sample, it would seem that if the aetiology of a mental illness was perceived as religious, there is less inclination to make use of psychiatry or psychology as a care and management solution. Surprisingly enough when looking at the other significant factors, it would seem suggestive that the opposite is true with the spiritual aetiological factor. If the cause of the mental illness is perceived as part of a spiritual aetiology, it would seem to suggest that participants would be more likely make use of psychology or psychiatry as a care and management option. The same would seem to be true for the sample when the cause of a mental illness was perceived as genetic. However, for the sample, the result was weaker than the result obtained for spiritual aetiology factor.

Table 4.13

Multiple regression analysis exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting psychology/psychiatry factor

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	9.81	1.40		6.99	0.00
	Levels of schooling	0.10	0.14	0.05	0.68	0.50
	Age	-0.01	0.01	-0.04	-0.59	0.55
	Gender	0.47	0.33	0.09	1.44	0.15
	Mental illness knowledge	0.24	0.19	0.09	1.28	0.20
	Familiarity	-0.02	0.11	-0.01	-0.16	0.87
	stigma scale score	0.00	0.02	0.01	0.08	0.94
	aetiology - stress	0.01	0.05	0.01	0.11	0.91
	aetiology - spiritual	0.06	0.03	0.19	2.26	0.02
	aetiology - religious	-0.17	0.06	-0.23	-2.98	0.00
	aetiology - genetic	0.14	0.07	0.14	2.06	0.04
8	(Constant)	11.39	0.72		15.81	0.00
	aetiology - spiritual	0.06	0.03	0.16	2.19	0.03
	aetiology - religious	-0.17	0.05	-0.24	-3.20	0.00
	aetiology - genetic	0.16	0.06	0.16	2.60	0.01

4.8.3 Family support help factor

For the family support and help factor, there was also an overall model that was statistically significant (F (10, 230) = 3.83, R^2 = 0.14). The final model was reached in 8 steps and explained 11% of variance (F (1, 236) = 2.91, R^2 = 0.11).

Table 4.14

Multiple regression results exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting family support help factor

Model	R	R Square	Adjusted R Square	Std. Error	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.38	0.14	0.11	2.02	0.14	3.83	10	230	0.00	
8	0.34	0.11	0.10	2.03	-0.01	2.91	1	236	0.08946	2.1152

Table 4.15

Multiple regression analysis exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting family support help factor

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.84	1.24		8.77	0.00
	Levels of schooling	0.19	0.12	0.10	1.51	0.13
	Age	0.01	0.01	0.05	0.70	0.48
	Gender	-0.30	0.29	-0.07	-1.04	0.30
	Mental illness knowledge	0.35	0.17	0.14	2.13	0.03
	Familiarity	0.07	0.09	0.05	0.79	0.43
	stigma scale score	-0.02	0.02	-0.11	-1.31	0.19
	aetiology - stress	0.11	0.04	0.18	2.64	0.01
	aetiology - spiritual	-0.01	0.02	-0.04	-0.52	0.60
	aetiology - religious	-0.05	0.05	-0.07	-0.98	0.33
	aetiology - genetic	-0.05	0.06	-0.06	-0.88	0.38
8	(Constant)	11.03	0.99		11.13	0.00
	Mental illness knowledge	0.40	0.16	0.16	2.56	0.01
	stigma scale score	-0.03	0.01	-0.17	-2.73	0.01
	aetiology - stress	0.09	0.04	0.16	2.54	0.01

As seen from the table, three independent variables were able to make a significant contribution to the model (see Appendix D for complete output). The aetiology stress factor ($B = 0.09$, $p = 0.01$) along with the mental illness knowledge ($B = 0.40$, $p = 0.01$) and the stigma scale score ($B = -0.03$, $p = 0.01$) were significant. In terms of effect sizes, the stigma scale score had the largest effect size of -0.17 while mental illness knowledge and the stress aetiology factor were similar with an effect size of 0.16.

It would seem that for the sample, if the cause of a mental illness was perceived to be stress related, approaching one's family for support was seen as one of the most likely care and management options for stress. Similarly, higher mental illness knowledge was also seen as more readily making use of the family support while higher scores on the stigma factor showed the opposite result.

4.8.4 Clinic factor

Looking at the overall model that was obtained, it was significant (F(10, 229) = 3.41, R^2 = 0.13). The final model was reached in 8 steps and explained 10% of variance (F(1, 235) = 2.67, R^2 = 0.10).

Table 4.16

Multiple regression results exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting clinic factor

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.36	0.13	0.09	2.80	0.13	3.41	10	229	0.00	
8	0.32	0.10	0.09	2.81	-0.01	2.67	1	235	0.10348	2.0407

It is evident from the final model that the stigma component (B = −0.04, p = 0.05), aetiology genetic factor (B = 0.18, p = 0.02), and the aetiology spiritual factor (B = −0.08, p = 0.01) were all significant predictors of the clinic factor (see Appendix D for complete output). When considering the effect sizes, the spiritual aetiology was the largest with an effect size of −0.18 while stigma component had −0.14 and the genetic aetiology factor had 0.14.

Table 4.17

Multiple regression analysis exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting clinic factor

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	13.23	1.72		7.70	0.00
	Levels of schooling	0.03	0.17	0.01	0.16	0.87
	Age	0.01	0.01	0.07	1.12	0.26
	Gender	-0.16	0.40	-0.02	-0.39	0.69
	Mental illness knowledge	0.15	0.23	0.04	0.64	0.53
	Familiarity	0.18	0.13	0.09	1.38	0.17
	stigma scale score	-0.05	0.02	-0.17	-2.14	0.03
	aetiology - stress	-0.05	0.06	-0.06	-0.83	0.41
	aetiology - spiritual	-0.10	0.03	-0.23	-2.84	0.00

	aetiology - religious	0.12	0.07	0.13	1.78	0.08
	aetiology - genetic	0.19	0.08	0.15	2.26	0.02
8	(Constant)	13.95	1.17		11.96	0.00
	stigma scale score	-0.04	0.02	-0.14	-1.98	0.05
	aetiology - spiritual	-0.08	0.03	-0.18	-2.51	0.01
	aetiology - genetic	0.18	0.08	0.14	2.31	0.02

Considering the independent variables and the achieved effect sizes, it would seem to suggest for this sample, that participants who showcased higher scores on the stigma factor were less likely to score high on the clinic factor which indicated that they knew little about their local clinics and in which ways they could be utilised or provide help. Similarly, if the perceived cause of the mental illness was perceived as spiritual, participants were less likely to score high on the clinic factor. In contrast, the genetic aetiology factor showed the opposite result. Thus, if the perceived cause of mental illness was seen as genetic, participants were more likely to score high on the clinic factor which indicated greater knowledge of clinics and their utilisation.

4.9 What were the perceptions and attitudes that people had towards the differing vignettes?

In order to answer this question, descriptive statistics were reported on, per question, for all three vignettes. The comparison for personal responsibility is not reported on as differing factors were kept for each vignette and low reliability was showcased for this factor across the vignette. Aside from this, all other factors were reported on and compared.

Table 4.18

Descriptive statistics of vignette items

Factors	Mean	SD	Min	Max	Mean divided by number of

					items
Helping.(SUD)	6.46	2.36	3	15	2.15
Helping.(S)	7.51	2.43	3	15	2.5
Helping.(D)	10.28	2.42	3	15	3.43
Fear.(SUD)	12.63	3.9	4	20	3.16
Fear.(S)	9.76	4.04	4	20	2.44
Fear.(D)	7.19	3.41	4	20	1.8
Pity.(SUD)	9.44	2.71	3	15	3.15
Pity.(S)	11.44	2.49	3	15	3.81
Pity.(D)	10.25	2.65	3	15	3.42
Anger.(SUD)	9.92	2.9	3	15	3.31
Anger.(S)	6.29	2.52	3	15	2.1
Anger.(D)	5.95	2.36	3	15	1.98
Jeremy's behaviour is a normal response.(SUD)	2.08	1.1	1	5	2.08
Fred's behaviour is a normal response. (S)	1.77	1.01	1	5	1.77
Carl's behaviour is a normal response.(D)	2.37	1.02	1	5	2.37
Jeremy's behaviour is typical of a weak character.(SUD)	2.98	1.18	1	5	2.98
Fred's behaviour is typical of a weak character.(S)	2.18	1.02	1	5	2.18
Carl's behaviour is typical of a weak character.(D)	2.57	1.08	1	5	2.57
Jeremy's behaviour is typical of a mental illness.(SUD)	2.68	1.06	1	5	2.68
Fred's behaviour is typical of a mental illness.(S)	4.05	0.99	1	5	4.05
Carl's behaviour is typical of a mental illness.(D)	3.17	1.07	1	5	3.17
Jeremy's behaviour could be because of a general medical problem (e.g. an infection).(SUD)	2.02	0.87	1	5	2.02
Fred's behaviour could be because of a general medical problem (e.g. an infection).(S)	2.51	1.09	1	5	2.51
Carl's behaviour could be because of a general medical problem (e.g. an infection).(D)	2.44	0.97	1	5	2.44

Note. SUD – Substance Use Disorder, S – Schizophrenia, D - Depression

Looking at the helping factor, there was noticeable differences in mean values between vignettes. Depression vignette had the highest obtained mean with 10.27 (SD = 2.42). Schizophrenia vignette had the second highest mean of 7.51 (SD = 2.43) while SUD vignette had the lowest mean value of 6.46 (SD = 2.36). Higher obtained scores were more indicative that participants agreed that they would be able to help the person in the vignette. Depression vignette had the highest agreement ($\bar{x}$ = 3.426) that can be understood as neutral to agree on average, while both the SUD and schizophrenia vignettes were far closer to disagreement (respectively: $\bar{x}$ = 2.1528 and $\bar{x}$ = 2.5041).

Depression vignette had the lowest levels of fear on average ($\bar{x}$ = 7.19, SD = 1.8) which equated to very little fear. On average, there was higher levels of fear for SUD vignette ($\bar{x}$ = 12.63, SD = 3.90) and schizophrenia ($\bar{x}$ = 9.76, SD = 4.04) which was above "very little" to "some". Levels of pity seemed to differ less on average between each vignette as the other factors have for the vignettes. Overall, pity ranged from having "somewhat" pity to "much". On average, schizophrenia vignette had the highest level of pity ($\bar{x}$ = 11.14, SD = 3.82), depression vignette had the second highest ($\bar{x}$ = 11.44, SD = 2.49) with SUD vignette having the lowest ($\bar{x}$ = 9.44, SD = 2.71). On average, SUD vignette had the highest level of anger ($\bar{x}$ = 9.92, SD = 2.90) that equated to "some", while the schizophrenia vignette ($\bar{x}$ = 6.29, SD = 2.52) and depression ($\bar{x}$ = 5.95, SD = 2.36) had lower levels of anger which was close to "very little".

For the remaining four items, which were the first four questions per vignette, the results follow below. On average, there was moderate disagreement that schizophrenia vignette ($\bar{x}$ = 1.77, SD = 1.01) was indicative of normal behaviour, followed by SUD vignette ($\bar{x}$ = 2.08, SD = 1.10) and lastly the depression vignette ($\bar{x}$ = 2.37, SD = 1.02). Overall, none of the vignettes were seen as indicative of normal behaviour with all scores, on average, scoring below 3.0. There was overall disagreement that the vignettes indicated weak

character: SUD vignette ($\bar{x}$ = 2.98, SD = 1.18), schizophrenia vignette ($\bar{x}$ = 2.179, SD = 1.02), and depression vignette ($\bar{x}$ = 2.57, SD = 1.08). In contrast, there was varying agreement on average that vignettes were indicative of a mental illness. On average, schizophrenia vignette was seen as most indicative of a mental illness ($\bar{x}$ = 4.05, SD = 0.99), while the depression vignette had the second highest level of agreement ($\bar{x}$ = 3.17, SD = 1.07) and the SUD vignette had the lowest level of agreement ($\bar{x}$ = 2.68, SD = 1.06).

For the last item, that inquired if the behaviour could potentially be indicative of a general medical condition, there was disagreement on average. The lowest level of agreement was in SUD vignette ($\bar{x}$= 2.02, SD = 0.87), thereafter depression vignette ($\bar{x}$= 2.44, SD = 0.971) and schizophrenia followed ($\bar{x}$ = 2.51, SD = 0.97).

4.10 Does helping, pity, fear, anger, or other shared statements between the vignettes differ significantly from one another?

In order to see if there were significant differences between the scores obtained per vignette, matched samples t-test were conducted. As the sample size was considerable, effect size calculations were also performed in order to confirm or contradict significant effects. Personal responsibility was excluded from analysis as the same items did not constitute the same factors per vignette.

As seen below, all pairs were statistically significant except when vignette two and three's fourth items were compared against each other. Overall, the results did not showcase much in this form as it did not tell us the size of the effect. Effect size calculations were conducted based on Cohen's d calculation.

Table 4.19

Paired samples t-test comparisons for all items between vignette conditions

Pair	Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)	Cohen's d
	Mean	SD	Std. Error Mean	Lower	Upper				
Fear (SUD - S)	2.92	4.05	0.25	2.43	3.41	11.78	265	0.00	0.73
Fear (SUD - D)	5.44	4.41	0.27	4.9	5.97	20.12	265	0.00	1.48
Fear (S - D)	2.54	4.28	0.26	2.03	3.05	9.77	270	0.00	0.68
Pity (SUD - S)	-2.05	3.14	0.19	-2.43	-1.67	-10.71	268	0.00	-0.79
Pity (SUD - D)	-0.83	3.38	0.21	-1.24	-0.42	-4.02	266	0.00	-0.31
Pity (S - D)	1.18	2.81	0.17	0.84	1.51	6.92	272	0.00	0.46
Anger (SUD - S)	3.61	3.23	0.2	3.22	4	18.37	270	0.00	1.33
Anger (SUD - D)	3.96	3.23	0.2	3.57	4.35	20.21	271	0.00	1.5
Anger (S - D)	0.33	2.42	0.15	0.04	0.62	2.27	274	0.02	0.14
Helping (SUD - S)	-1.06	2.87	0.17	-1.4	-0.72	-6.13	276	0.00	-0.44
Helping (SUD - D)	-3.82	3.03	0.18	-4.18	-3.46	-20.88	274	0.00	-1.59
Helping (S - D)	-2.75	2.9	0.17	-3.1	-2.41	-15.84	276	0.00	-1.13
Normal response (SUD - S)	0.3	1.26	0.08	0.15	0.45	3.99	274	0.00	0.29
Normal response (SUD - D)	-0.3	1.28	0.08	-0.45	-0.15	-3.87	275	0.00	-0.28
Normal response (S - D)	-0.6	1.13	0.07	-0.74	-0.47	-8.88	276	0.00	-0.6
Typical of a weak character (SUD - S)	0.8	1.33	0.08	0.64	0.95	9.98	275	0.00	0.73
Typical of a weak character (SUD - D)	0.41	1.29	0.08	0.26	0.56	5.28	275	0.00	0.36
Typical of a weak character (S - D)	-0.39	1.24	0.07	-0.54	-0.24	-5.26	278	0.00	-0.37
Typical of a mental illness (SUD - S)	-1.38	1.41	0.09	-1.54	-1.21	-16.14	274	0.00	-1.34
Typical of a mental illness (SUD - D)	-0.5	1.27	0.08	-0.65	-0.34	-6.44	272	0.00	-0.46
Typical of a mental illness (S - D)	0.88	1.22	0.07	0.74	1.02	11.98	273	0.00	0.85
General medical condition (SUD - S)	-0.5	1.13	0.07	-0.63	-0.36	-7.28	275	0.00	-0.5
General medical condition (SUD - D)	-0.43	1.04	0.06	-0.55	-0.31	-6.88	274	0.00	-0.46
General medical condition (S - D)	0.07	1.04	0.06	-0.05	0.2	1.16	275	0.25	0.07

Note. SUD – Substance Use Disorder, S – Schizophrenia, D - Depression

In terms of effect sizes, moderate to strong results were obtained for a number of the paired comparisons. The most notable effect sizes can be seen within the anger factor for the vignettes. The weakest effect size in this comparison was 0.68 which is already considered to

be a moderate to strong result. Overall, there is evidence that indicates that fear had a practical significant difference when looking at comparisons against the SUD vignette (d = 0.73 and d = 1.48). Similarly, there were strong effect sizes found when the other vignettes were compared against the SUD vignette on the anger factor too (d = 1.33 and d = 1.50). The comparison between the schizophrenia vignette and depression vignette's anger factors revealed a weak effect size (d = 0.14).

Pity, when compared against each other, also showed varying effect sizes with some moderate (SUD - S, d = 0.79) and others weak to moderate (SUD - D and S - D, d < .45). Helping factor produced two strong effect sizes when SUD vignette and the schizophrenia vignette were compared against the depression vignette (d = 1.59 and d = 1.13). Schizophrenia vignette two also obtained a weak to moderate effect size when compared against SUD vignette (d = 0.44).

Fewer moderate to strong effect sizes were found for the four individual question items. For the normal response statement/question, there was only a moderate effect size between the schizophrenia and depression vignette (d = 0.6). For the typical of a weak character statement, there was only a moderate to strong effect size found between the SUD and schizophrenia (d = 0.73).

For the statement "typical of a mental illness", two strong effect sizes were found when compared against the schizophrenia vignette (d = 1.34 and d = 0.85). While a weak to moderate relationship was also found between depression and SUD vignette (d = 0.46). Overall, there is strong indication from the effect sizes, that the schizophrenia vignette was seen as most indicative of a mental illness, thereafter depression, and least was SUD.

For the last statement comparison ("because of a general medical condition"), schizophrenia and depression were seen as for more likely of a general medical condition

when compared against SUD (d = 0.50 and d = 0.46). While a weak effect size existed between schizophrenia and depression (d = 0.07).

4.11 Does pity, fear, anger, personal responsibility, or other shared statements predict helping behaviour for the specific vignettes?

Personal responsibility was excluded from analysis for the multiple regression as the factor had extremely low reliability in the SUD vignette. Since the reliability estimates were higher for the schizophrenia and depression vignettes, additional multiple regression runs were performed after the initial runs in order to look at the ability of the personal responsibility factor in being a significant predictor of helping behaviour.

4.11.1 Substance use disorder (Vignette one)

Table 4.20

Multiple regression results exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for substance use disorder vignette

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.45	0.20	0.18	2.14	0.20	8.82	7	247	0.000	
4	0.44	0.19	0.18	2.14	-0.01	2.31	1	249	0.130	1.99

For SUD, the overall model was significant (F(7, 247) = 8.82, p < 0.001, R^2 = 0.20. The final model was reached in 4 steps and explained 19% of variance (F(1, 249) = 2.31, R^2 = 0.19) (see Appendix D for complete output).

In terms of strongest statistically significant predictors, there were four variables in the final model: anger (B = −0.11, p = 0.03), fear (B = −0.14, p = 0.00), normal response (B = 0.34, p = 0.01), and indicative of a general medical condition (B = 0.65, p = 0.00). In terms of effect sizes, both if indicative of a normal response (0.16) or general medical condition (0.24) were positive and thus higher values was seen as more indicative of willingness to help.

Respectively, effect sizes for fear was −0.23 and anger −0.14. Fear and anger were inversed in comparison with the previous two items. Thus, the higher levels of experienced fear or anger towards individuals with SUD, the lower the willingness to help.

Table 4.21

Multiple regression analysis exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for substance use disorder vignette

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.41	1.02		7.26	0.00
	Pity	0.03	0.06	0.04	0.60	0.55
	Anger	-0.09	0.06	-0.12	-1.67	0.10
	Fear	-0.14	0.04	-0.23	-3.54	0.00
	Normal response	0.36	0.13	0.17	2.87	0.00
	Weak character	-0.07	0.12	-0.03	-0.58	0.56
	Typical of MI	-0.21	0.13	-0.09	-1.56	0.12
	General Medical problem	0.69	0.16	0.25	4.33	0.00
4	(Constant)	7.31	0.70		10.49	0.00
	Anger	-0.11	0.05	-0.14	-2.25	0.03
	Fear	-0.14	0.04	-0.23	-3.66	0.00
	Normal response	0.34	0.12	0.16	2.73	0.01
	General Medical problem	0.65	0.16	0.24	4.17	0.00

4.11.2 Schizophrenia (Vignette two)

The overall model obtained to explore prediction for behaviour was found to be statistically significant (F(7, 259) = 5.49, p = 0.000, R^2 = 0.13). The final model was reached in 6 steps and explained 12% of variance (F(1, 263) = 2.86, R^2 = 0.12).

Table 4.22

Multiple regression results exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for schizophrenia vignette

Model	R	R Square	Adjusted R	Std. Error	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson

			Square							
1	0.36	0.13	0.11	2.27	0.13	5.49	7	259	0.00	
6	0.34	0.12	0.11	2.27	-0.01	2.86	1	263	0.09	1.96

Similar to the previous coefficients output, the fear factor (B = −0.16, p = 0.000) and if it was indicative of a normal response (B = 0.46 p = 0.00) were statistically significant predictors (see Appendix D for complete output). However, no other factors were. The strongest factor was the fear factor when considering effect sizes (−0.27) and thereafter the other item (0.19). Once again, the fear factor was reversed, where higher scores for fear is likely indicative of less helping behaviour. Surprisingly, if it was seen as a normal response, people were more likely to help instead of the opposite reaction (if it is not normal, then people would help or assist).

Table 4.23

Multiple regression analysis exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for schizophrenia vignette

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	9.96	1.07		9.28	0.00
	Pity	-0.02	0.06	-0.02	-0.38	0.70
	Anger	-0.01	0.07	-0.01	-0.11	0.92
	Fear	-0.14	0.04	-0.24	-3.71	0.00
	Normal response	0.43	0.15	0.18	2.92	0.00
	Weak character	-0.12	0.16	-0.05	-0.78	0.44
	Typical of MI	-0.24	0.15	-0.10	-1.60	0.11
	General Medical problem	-0.10	0.13	-0.04	-0.73	0.47
6	(Constant)	8.30	0.45		18.60	0.00
	Fear	-0.16	0.03	-0.27	-4.69	0.00
	Normal response	0.46	0.14	0.19	3.31	0.00

An additional multiple regression run was performed which included the personal control factor. It was not statistically significant predictor and the same factors identified in

the model above were found to be statistically significant. Similarly, no other factors changed from being non-significant to being significant. Similarly, the change in R square was minor.

4.11.3 Depression (Vignette three)

The overall model obtained for depression was statistically significant (F(7, 256) = 9.188, p = 0.000, R^2 = 0.20). The final model was reached in 5 steps and explained 19% of variance (F(1, 259) = 1.52, R^2 = 0.19) (see Appendix D for complete output).

Table 4.24

Multiple regression results exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for Depression vignette

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.45	0.20	0.18	2.22	0.20	9.19	7	256	0.00	
5	0.44	0.19	0.18	2.21	0.00	1.52	1	259	0.22	1.87

Three variables were seen as significant predictors within the final model: fear (B = −0.22, p = 0.000), anger (B = −0.14, p = 0.04), and if indicative of a normal response (B = 0.37, p = 0.01). In terms of effect size, fear exerted the largest effect size and was the strongest predictor (−0.31) while anger (−0.14) and normal response were weaker (0.16). Similar to the previous vignettes, fear and anger was an inversed relationship while the other item was in a positive relationship state.

Table 4.25

Multiple regression analysis exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for depression vignette

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	12.79	0.98		13.05	0.00
	Pity	-0.04	0.06	-0.04	-0.70	0.48
	Anger	-0.13	0.07	-0.13	-1.93	0.06
	Fear	-0.22	0.05	-0.30	-4.50	0.00
	Normal response	0.36	0.14	0.15	2.52	0.01
	Weak character	-0.16	0.13	-0.07	-1.22	0.22
	Typical of MI	-0.02	0.14	-0.01	-0.13	0.90
	General Medical problem	-0.07	0.15	-0.03	-0.45	0.65
5	(Constant)	11.83	0.52		22.87	0.00
	Anger	-0.14	0.07	-0.14	-2.12	0.04
	Fear	-0.22	0.05	-0.31	-4.77	0.00
	Normal response	0.37	0.13	0.16	2.80	0.01

As with the schizophrenia vignette, an additional run was performed for the depression vignette which added the inclusion of the personal control factor. It was not statically significant and other variables added to the model were not affected (i.e. variables did not move to significance or non-significance). The change in R square between the models were even of a smaller difference in comparison to the previous vignette.

4.12 Conclusion

Based on the extensive comparisons within this chapter it is seems evident that varying results were obtained across the differing main questions. Overall, it is evident that self-rated mental illness knowledge would seem to have a stronger statistically significant negative relationship to our BMI items than familiarity with mental illness. There was varying agreement on the main aetiology factor, along with strong disagreement on some. Similarly, such a pattern emerged for the care and management options though it was less distinct.

Differing factors were able to predict the care and management factors with no immediate predictor being omnipresent throughout comparisons. In contrast, fear was present in all the vignette predictor comparisons as a statically significant predictor for help. The vignettes also showed large effect size differences between the differing components and there was overall larger disparity and differences in results.

These were not all the results, but some of the immediate points that would seem evident. The results will be discussed in greater detail with the next chapter.

Chapter Five: Discussion

5.1 Introduction

The aim of the study was to evaluate general perceptions and beliefs of mental illness and to determine relationships between variables and the predictive power of certain key variables. As noted earlier, several paradigms exist in which the results can be understood but a social cognitive model was favoured specifically with attribution theory. Social cognitive paradigms have their own set of benefits as they tend to provide a broad enough theoretical base, maintain sufficient rigour on research methodology and interpretation, and have interventions that have been empirically tested (Corrigan, 2000).

Since stigma is understood primarily in this approach as the product of human knowledge structures (Corrigan 1998; Krupchanka & Thornicroft, 2017) it was necessary to look at variety of general perceptions and more so at specific perceptions related to causal understandings, controllability, and affective responses as to name a few.

As seen in this work thus far, these interlinked relationships are explored and the results from both sets of multiple regressions will lend insights into the relationships with stigma and helping behaviour while also aiding in the understanding of motivation and factors related to care and management options. Other results are also discussed within the context of a social cognitive paradigm, as will be evident. This chapter follows a similar order of the results chapter and thus public perceptions of mental illness are discussed first followed by its subsections of cause and care and management of mental illness. Thereafter, familiarity and knowledge of mental illness are discussed followed by predicting care, management and treatment choices. Lastly, the results from the vignettes are discussed.

5.2 Public Perceptions of Mental Illness Questionnaire (PPMIQ)

As seen earlier, the PPMIQ items were subjected to more than one EFA and reliability testing. Effectively, three distinct sets of variables were analysed. The *knowledge and attitude*

items toward people with a mental illness formed one part of the analysis, while *cause of mental illne*sses was separated and formed the second analysis. *Care and management* formed the third analysis.

5.2.1 Cause of Mental illness

It was evident that both the biological and stress aetiology factors had the largest values and were identified as the main two causes of mental illness. This would agree to some extent with previous research conducted within the South Africa context as Hugo et al. (2003) found that vignettes were often conceptualised as stress-related and due to a lack of willpower. However, there would seem to be conflicting results too as Hugo et al. (2003) reported that both these causes were often preferred over perceiving mental illnesses as medical disorders and per implication as biological. It very likely has shifted since 2003 as Schomerus and Angermeyer (2017) have shown that biological aetiology models have become more and more prominent within the public's conceptions of mental illness and could potentially explain the difference in results.

Even though biological illness models have become more popular, it does not mean that psychosocial cause have become less important as a consistently greater proportion of people endorse psychosocial, particularly current stress, above the biological (Schomerus & Angermeyer, 2017). This position can be said to be echoed within the researcher's results as both the genetic aetiology (i.e. biological) factor and the stress factor (i.e. psychosocial) were the strongest two aetiological factors with the stress factor also showing the highest value. Even though the stress factor was reported to have the highest mean, the difference from the biological factor is meagre (3.4908 – 3.3869 = 0.1039) and would not be considered to be a statistically significant difference.

If it is beneficial to have a stronger belief in stress as an aetiological factor or in biological, there would not seem to be consensus. Stronger biological illness beliefs may be

potentially beneficial as it has been noted that causal beliefs do in fact have interplay with stigma (Schomerus & Angermeyer, 2017). However, there is still uncertainty and ongoing debate whether biological aetiological beliefs were in fact beneficial for specific and overall mental illness representations (Kvaale et al. 2013; Schomerus et al. 2014). One of the conclusions from a meta-analytic review was that biological aetiology for mental illness reduced the readiness to blame people for the problems they experience, but often at the cost of an increased willingness to perceive them as dangerous and in turn to distance themselves from those who suffer from mental illness (Kvaale et al., 2013). Thus, biological causal explanations could lead to stronger notions of dangerousness, fear, and reactions that generally increase social distance toward people with a mental illness and it was overall averse to those who suffer from mental illness (Kvaale et al., 2013). However, it did depend on the type of biological explanation provided and the type of mental illness at play (Kvaale et al., 2013). Another study, that claimed to be representative of a German population, found that biological causal explanations were associated with lower social acceptance in schizophrenia and depression, but with higher social acceptance for substance use disorder (Schomerus et al. 2014). Thus, other factors would seem to greatly affect preference while specific preference of differing aetiological models will also have differing stigma implications that can both provide negative and positive outcomes (Goldstein & Rosselli, 2003).

5.2.2 Care and Management

From the results, it was evident that the psychiatry/psychology factor and family support help factor had the highest levels of agreement. Thereafter, the clinic factor followed by the traditional community help factor. This result is overall consistent with other larger and more representative studies that have been conducted in South Africa. South Africans, typically in urban settings, were found to make more frequent use of western health

practitioners and practices than alternatives, like traditional healers, for their mental healthcare needs while it was also the preferred option (Sorsdahl et al., 2009). Even though there would seem to be evidence of preferential care and management options, the utilisation of traditional healers cannot be understated as they are often found to play a large and significant role within more rural settings and specifically within poorer communities (Lund, Kleintjes, et al., 2008; Seedat et al., 2009). More than one study has demonstrated the potential necessity and value of alternative practitioners and their importance in addressing mental healthcare needs for South Africa (Freeman, Lee, & Vivian, 1994; Mbanga et al., 2002; Nattrass, 2005). The researcher's results show evidence for this position too. It is evident from the researcher's results that care and management options are in fact not mutually exclusive and people make use of more than one option. Evidence has been found that sizeable groups of respondents made use of both western and alternative practitioners (Lund, Kleintjes, et al., 2008; Seedat et al., 2009; Sorsdahl et al., 2009). Some researchers understand this pattern as way of making use of a variety of health professionals as an attempt in obtaining an effective treatment, irrespective of cost (Appiah-Poku et al., 2004; Ensink & Robertson, 1999; Sorsdahl et al., 2009). Some researchers have argued that diverse care and treatment options might prove to be beneficial, specifically from an evolutionary understanding (Charles, Manoranjitham, & Jacob, 2007). It is not certain if a multimodal care and management repertoire is of any significant benefit or loss, especially in the South African context. In many ways, it also depends to what extent certain care and management options limit or enhance each other.

There would seem to be a relatively well match between the obtained results and existing literature on general care and management understanding. It is worth noting that the obtained results reflect similar values and understandings as found in SASH (Sorsdahl et al., 2009).

5.3 Familiarity and knowledge of mental illness

From research question 5 and 6, it was evident that knowledge was a stronger correlate than familiarity. Both variables tended to produce weak negative correlations except for the familiarity comparison with incurability which was positive but not significant. The strongest negative correlation that was found was when mental illness knowledge was correlated with the stigma item ($rho = -0.279$, $p < 0.01$). This result indicates that, higher levels of knowledge correlated with lower levels of stigma. This would seem to show evidence that by improving knowledge it has the potential to reduce levels of stigma. However, a cognisance of stigma and anti-stigma research should provide warning on making the assumption that dealing effectively with stigma can be reduced to only sorting the deficit of knowledge on mental illnesses. Research showed that having a knowledgeable sample was often not enough to have the acceptance that would reflect low enough levels of stigma (Stuart & Sartorius, 2017). Link and Stuart (2017) discussed this misconception at length, specifically, to dispel inaccurate perceptions and bolstering knowledge mental illness is sufficient in lowering stigma. Mental illness knowledge alone is often not sufficient and as a variable alone it does not provide researchers with sufficient explanations to understand the underlying mechanisms involved in creating and or maintaining certain positions or perceptions pertaining to mental illness (Link & Stuart, 2017). The results of this study also show evidence that high levels of mental illness knowledge are not sufficient to lower stigma, as the strongest results obtained were weak negative correlations at best for mental illness knowledge.

It should not to be taken to mean that knowledge interventions or forms of contact (i.e. familiarity) should not take place. Mediating knowledge structures, for instance, play a distinct role within attribution theory as stigma is understood as the product of human knowledge structures (Corrigan, 1998; Corrigan, 2000; Crocker & Lutsky, 1986) and

familiarity has also been found to impact discriminatory and emotional responses (Corrigan et al., 2003). Researchers have also demonstrated that there are in fact positive effects for both knowledge and familiarity on the short term which should motivate some usage, but researchers and healthcare practitioners should not have the misconception that it will necessarily translate into long term change (Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012).

Researchers have shown, on the population level, that there were often no fundamental changes to any of the key aspects of stigma (e.g. social distance) in both a positive or negative direction for these types of interventions alone (Angermeyer & Matschinger, 2005; Pescoslido et al., 2010). However, in the case of social contact, the specific means matter as direct contact with people who suffer of mental illness have been found to be one of the most effective ways to fight discrimination and stigma especially as seen from a meta-analysis on challenging stigma (Corrigan et al., 2012) and other similar research that have been conducted (Evans-Lacko, Brohan, Mojtabai, & Thornicroft, 2012).

5.4 Predicting care, management and treatment choices

Not only was it important to understand strongest agreements with specific care and management options as discussed in 5.2.2, but it was also important to understand to what extent care and management can be predicted by specific factors. The results of the seventh research question are summarised in the table below which illustrates all the significant predictors across the care and management options.

Table 5.1

Summary of multiple regression analyses of predictors and care and management factors

Predictors	Aetiological factors			
	Traditional community help	Psychiatry/ psychology	Family support help	Clinic
Levels of schooling				
Age				
Gender	x			
Mental illness knowledge			x	
Familiarity				
stigma scale score			x*	x*
aetiology - stress			x	
aetiology - spiritual	x	x		x*
aetiology - religious		x*		
aetiology - genetic		x		x

Note. x: indicates significant predictor *: indicates negative relationship

The results showed that no single aetiology factor consistently predicted each care and management option even with the strong agreement for both the social and biological component overall. This is also confirmed by the low percentages of variation explained by the selected independent variables. In order to understand the predictive relationships, each care and management factor will be discussed below.

5.4.1 Traditional community help factor

The traditional community help factor was predicted by gender and by spiritual aetiology. The predictive ability of a spirituality aetiology on traditional community help factor would seem fairly standard as in many traditional African belief systems the community and its alternative practitioners are consulted when the cause of a qualm or illness is perceived as spiritual (Lund, Kleintjes, et al., 2008; Sorsdahl et al., 2009). One of the more interesting findings of the study was that gender was a significant predictor, specifically with men favouring the traditional community help factor more so than women.

The obtained results differ to some degree from what has been found by Sorsdahl et al. (2009) as they found that older age, race, unemployment, lower education were the key

predictors for use of alternative practitioners and traditional healers. The difference in results can be related to differing operationalisations of the specific care and management options. Another potential difference in results and why age, race, and other factors were not found to be predictive of this specific care and management option is related to sampling. The researcher's sample was not as large or as nationally representative as the sample utilised by Sorsdahl et al. (2009). It should also be noted that sample used by Sorsdahl et al. (2009) was 38.4% rural that also likely contributed to the differences in results (Williams et al., 2008).

5.4.2 Psychiatry/psychology factor

Three differing aetiologies were all predictors for the psychiatry and psychology factor. It should be noted that one was inversed to the others. The religious aetiology factor was a significant predictor of making less use of psychiatry and psychology as a care and management option. This was a problematic result as it would mean that people were less likely to make use of this care and management option if the cause was perceived as religious. The potential implication was that serious mental illness can go untreated by psychology treatment if the cause is perceived as religious. In some instances, religion can be viewed as an obstacle that limits understanding, and affects support and care for people with mental illness (de Montellano, 2017). However, the impact of religion and having a religious understanding of mental illness is not necessarily a negative influence on mental health (Hill & Pargament, 2008; Seybold & Hill, 2001). It was often the understanding in the past, but literature shows a far more complex picture (Hill & Pargament, 2008; Seybold & Hill, 2001). Similarly, the term religion per se, was not sufficient to describe all the differing forms and representations of religion.

In contrast to the religious aetiology factor, spiritual and genetic aetiology understandings were understood as more predictive of making use of the psychiatry/psychology care and management factor. This result would seem to be similar to

Sorsdahl et al.'s (2009) findings on the utilisation of western health practitioners for mental illness concerns by South Africans. However, what was not immediately explained by the researcher's results were why the stress aetiology was not a significant predictor of the psychology/psychiatry factor, especially if considered that it was also seen as one of the most used care and management options.

5.4.3 Family support help factor

The stress aetiology was only a significant predictor in the case of the family support help factor. Potentially, it was understood more so as a common everyday occurrence that can be resolved without the use of more professional means. Results from Hugo et al. (2003) showed that cases were often conceptualised as stress-related with the implication that the most widely advocated treatment was to talk the problem over with family rather than consulting with professionals. This position would seem to be affirmed within the researcher's results when looking at the instances where the psychosocial aetiology factor was indeed a significant predictor.

Aside from aetiological factor that was significant, both mental illness knowledge and the stigma scale score was also significant predictors for the family support factor. The stigma factor acted as a negative predictor where higher instances of stigma lead to less use of family support. Often when families fear stigmatisation and especially the accompanying labels, they may try to keep concerns of mental illness secret and thus avoid seeking help for their family members or themselves (Corrigan, Druss, & Perlick, 2014). Similarly, people who indicate higher levels of stigma, may have larger concerns and fear of stigmatisation and thus avoid seeking help from family members altogether (Corrigan et al., 2014). Often, the greater risk of distancing oneself within the family setting can lead to far greater psychological distress as family often act as a key support mechanism (van der Sanden, Bos, Stutterheim, Pryor, & Kok, 2013). In contrast, mental illness knowledge was a positive

predictor with the family support factor and is very likely due to the fact that knowledge aids in understanding and thus facilitates beneficial action, which is making use of family support in this instance (Krupchanka & Thornicroft, 2017; van der Sanden et al., 2013).

5.4.4 Clinic factor

The obtained results showed that the stigma component and a spiritual aetiology were negative significant predictors which very likely indicated that higher levels of stigma would lead to less knowledge and utilisation of one's local clinic. In contrast, the genetic aetiology was a positive significant predictor which showed that when the cause was perceived as biological, there was greater utilisation of the clinic factor as a care and management factor. One potential explanation for these results could be that if the cause of a factor was seen as biological and per implication seen as unchangeable or incurable in terms of genetic aetiology, the utilisation of clinic was seen as a more adequate care and management option (Lund, Kleintjes, et al., 2008). From earlier studies, it was evident that clinics were often not the most utilised or suggested option, as Hugo et al. (2003) found that only 54% of their sample recommended clinic as a treatment option for their vignette case studies. Underutilisation can be linked to the negative significant predictors within the results, as greater stigma of mental illness tends to lead to less utilisation of treatments as there is overall a lack of acceptability in making use of these services and thus an undertreatment of conditions (Hugo et al., 2003; Williams et al., 2008). The other negative predictor, spiritual aetiology, can be understood that people would more readily seek traditional healers or explore other traditional alternatives before considering clinics, as it is often perceived as a more relevant and widely used option for the treatment of mental illness (Lund, Kleintjes, et al., 2008; Sorsdahl et al., 2009).

5.5 Results from the Vignettes

Previous results of this study attempted to determine general perceptions. The vignettes were utilised to investigate differences between mental illness representations. In the results, it was evident that there were significant differences, and in some instances similarity. This section discussed the main findings from those results.

Overall, none of the vignettes were indicative of a normal response, as the highest obtained mean was 2.37 which can be understood to be on average disagree to neutral sentiment. This result would seem to be comparable to Hugo et al.'s (2003) as half of the respondents within their study did not see the vignettes as indicative of a normal response.

In terms of weak character, there was strongest agreement with this statement for the substance use vignette. This contrasts with results found by Hugo et al. (2003), as schizophrenia was considered most indicative of a weak character and thereafter substance use. The schizophrenia vignette was also seen as most indicative of a medical disorder in the researcher's results which seems comparable to Hugo et al.'s study (2003), as panic disorder and schizophrenia were identified as most indicative of a medical disorder.

The schizophrenia vignette was both seen as most indicative of an abnormal response and indicative of a mental illness. The depression vignette was second most indicative of a mental illness, but it was perceived as the most normal response between all vignettes. In the same extent, the SUD vignette was less indicative of a mental illness but was seen as more abnormal than the depression vignette.

Beyond the descriptive statistics, significant differences were found with moderate to strong effect size between the vignettes. Significant differences between conditions in South Africa were also reported by Hugo et al. (2003). In terms of the emotional responses, moderate to strong effect sizes were specifically found on fear and anger, while less so on pity between the vignettes. SUD had by far the highest reported fear and anger responses with

large effect size differences apparent when compared to the other vignettes. On the other hand, the schizophrenia vignette had less moderate to strong effect size differences when compared to the depression vignette. However, moderate to strong effect sizes existed on fear and pity between the schizophrenia and depression vignette. Overall, these results show that SUD and schizophrenia were feared far more along with SUD showing the strongest indication of anger while schizophrenia showed the strongest levels of pity.

Aside from the emotional responses, it was most important to see if helping behaviour was equal or similar between conditions. There were extreme differences and people were far more likely to assist the person in the depression vignette over the SUD and schizophrenia vignette as there were large effect sizes reported. Even between SUD and schizophrenia there were moderate effect size difference where people were more likely to help the person in the schizophrenia vignette than the SUD vignette.

The obtained results are overall consistent with the general finding that significant differences exist between mental illness conditions (Crisp, Gelder, Goddard, & Meltzer, 2005; Schomerus et al., 2011; Schomerus & Angermeyer, 2017). Furthermore, the type of differences found between mental illness conditions in the researcher's results were also consistent with other studies. Specifically, the results that show large differences when the SUD and schizophrenia vignettes were compared against the depression vignette on measures such as helping, fear, and anger. A variety of studies have found that the public's attitudes toward SUD and schizophrenia are far more negative in comparison to depression and other conditions (Angermeyer & Dietrich, 2006; Henderson, 2017). Similarly, the extreme effect size differences in helping behaviour between conditions can also be said to show evidence that SUD and schizophrenia are often more stigmatised than other disorders like depression, which is also consistent with other research (Crisp et al., 2005; Schomerus et al., 2011; Schomerus & Angermeyer, 2017). These results are also likely in part due to the higher

ratings of dangerousness and unpredictability that are typically associated with conditions such as SUD and schizophrenia (Henderson, 2017).

Knowing that helping behaviour differed largely between the vignettes, it was necessary to determine which factors would predict helping behaviour in the first instance. Consistently, both fear and if the behaviour was seen as indicative of a normal response were significant predictors of helping behaviour. As seen in the results, fear produced sizeable standardised beta coefficients that ranged from −0.31 to −0.23. Corrigan (2003) has found similar beta coefficients for fear in predicting likelihood to help (beta = −0.32) and was also viewed as a particularly strong predictor of support.

Research done by Corrigan (2000) on social attribution has led to a proposed pathway model for fear as an affective response, specifically. Simply put, perceived dangerousness as the signalling event can lead directly to the affective response (e.g. fear) without the necessity of cognitive mediators influencing the attribution which will lead to behaviour reaction of avoidance of lack of providing help (Corrigan, 2000; Corrigan et al., 2003). Other studies have been found to show evidence of this specific relationship as well between perceiving a person with a mental illness as dangerous and consequently fearing them (Angermeyer & Matschinger, 1996; Corrigan et al., 2002; Levey & Howells, 1995; Link & Cullen, 1986; Wolff, Pathare, Craig, & Leff, 1996).

Similarly, fear has been seen to translate into stigma (Bos, Pryor, Reeder, & Stutterheim, 2013; Corrigan, Edwards, et al., 2001; Corrigan et al., 2002). Fear has also been found to maintain stigmatisation, often with the consequence that dispelling misinformation or enhancing knowledge does not lead to improvement (Finzen, 2017).

Aside from fear, anger was also found to be a significant predictor in two of three vignettes. This was specifically the case in substance use disorder and depression. Anger produced weaker coefficients (beta = −0.14) in comparison with fear. Potentially, anger was a

significant predictor in both these two conditions, as there were greater beliefs of controllability which lead to affective responses that warrant anger as generally postulated by social attribution (Corrigan, 2000; Corrigan et al., 2003). It would also explain why it was not a significant predictor in the case of schizophrenia, as schizophrenia is often not viewed as a controllable condition and typically understood as unchanging (Corrigan, 2000; Corrigan et al., 2003; Sheehan et al., 2017). Although anger produced weaker results, it also has the effect of further enabling and adding to unwarranted stigma (Corrigan et al., 2003).

In light of the researcher's results finding similar implications for fear as a predictor in helping behaviour, specifically within all three vignettes even when other noticeable statistically significant differences existed between conditions, it is obvious that the effect of fear and the consequence of this stigmatisation cannot be taken lightly.

5.6 Conclusion

This study explored a variety of general perceptions related to mental illness while specifically considering cause and care of mental illness along with other measures such as knowledge and familiarity. The study also evaluated specific mental illness conditions.

Knowledge was found to show stronger negative correlations with the stigma component than familiarity. In many studies, the opposite is typically found. As discussed, the type of contact with familiarity affects the strength of the relationship with stigma (Corrigan et al., 2012). Additionally, the sample showed preference for both psychosocial and biological aetiologies which has been found in other contexts too (Schomerus & Angermeyer, 2017). It remains largely uncertain if growing biological aetiological understandings are in fact beneficial for mental illness as differences in mental illness conditions were found when varying biological causal explanations were used (Kvaale et al., 2013; Schomerus et al. 2014).

Next, the sample made use of more than one care and management option while western health practices would seem to be preferred over traditional alternatives. Other studies in the context have found similar results (Sorsdahl et al., 2009). Even with some preference for western health practices, the value in traditional alternatives should not be undervalued as many other studies have shown how often alternatives are used (Lund, Kleintjes, et al., 2008; Seedat et al., 2009; Sorsdahl et al., 2009). If more than one care and management option is beneficial to respondents, it is still mostly uncertain although some have argued that it is beneficial (Charles, Manoranjitham, & Jacob, 2007).

In terms of predicting care and management options, a variety of predictors were found across the options with little consistency between care and management options. Some agreement was found with other literature while differences were also found. The traditional community help factor was predicted by gender and the spiritual aetiology factor. The spiritual aetiology factor was expected given the traditional community help factor is situated within the traditional African belief systems (Lund, Kleintjes, et al., 2008; Sorsdahl et al., 2009). The psychiatry/psychology factor was predicted by three aetiological factors and would seem to be similar to Sorsdahl et al.'s results (2009) that greater utilisation of western health practices was used for a variety of aetiological understandings for mental illness. For the family support help factor, the stress aetiology was a significant predictor which seemed to have some support in other studies (Hugo et al., 2003)

Finally, the vignettes seemed to show some change when compared to Hugo et al.'s results (2003), but for the most part consisted results were found that showcased large differences that existed still between vignettes and mental illness conditions. The large differences between vignette conditions were consistent with other studies and findings (Crisp et al., 2005; Schomerus et al., 2011; Schomerus & Angermeyer, 2017). In terms of the attribution items that were utilised within each vignette, there was strong evidence for an

existing pathway model for fear, specifically discussed with attribution theory and research as noted (Corrigan, 2000; Corrigan et al., 2003; Corrigan, Edwards, et al., 2001). Fear was found to be the strongest predictor in helping behaviour and per implication very likely one of the key predictors in propagating and maintaining stigmatisation (Corrigan, Edwards, et al., 2001; Corrigan et al., 2002; Finzen, 2017).

Chapter Six: Limitations and Recommendations for future research

6.1 Introduction

The study was able to produce several significant results on more than a few key measures and comparisons. However, the relationships were not that strong in most instances, nor were the predictors able to explain sizeable portions of the total variance. This was very likely due to the utilisation of specific methods and other constraints faced by the researcher.

Inevitably, all studies tend to have some methodological and conceptual limitations as most studies are constrained by available resources, time, and other known limitations. For this brief chapter, some of the limitations will be discussed along with recommendations for future research.

6.2 Limitations

6.2.1 Conceptual limitations

Several conceptual limitations became evident to the researcher with the analysis of the results. One of the first conceptual limitations to note was related to the exclusion of some measures of attribution models as proposed in the attribution model of public discrimination by Corrigan et al. (2003).

6.2.1.1 Additional variables

Out of the items proposed by Corrigan et al. (2003), only coercion-segregation items were not included. This could potentially have been a worthwhile set of items to measure and have within the questionnaire as it would have functioned not as another measure of helping behaviour, but instead as a dependent variable measuring discriminatory behaviour. Since a worthwhile result was found on fear as a significant predictor of helping behaviour in the vignettes, coercion-segregation could have been significantly predicted by some of the other affective responses or even potentially fear. If consistent with Corrigan's pathways (2000), it

very likely would have been predicted by pity or anger instead of fear. Regardless, the inclusion would have been of value.

Similarly, it would have been worthwhile to measure dangerousness associated with each vignette as another independent variable for the inclusion in the multiple regression analyses. Originally, Corrigan et al. (2003) operationalised their vignettes as having those facets without measuring it overtly. Thus, they used four conditions in their vignette presentations: no danger, danger, danger without controllability of cause, and danger with controllability of cause (Corrigan et al., 2003). If dangerousness does play a key role within the understanding of avoidance, coercion-segregation, or lack of helping behaviour it is necessary to adequately measure this variable.

Thus, the researcher could have included more dependent and independent variables that would have very likely been able to assist in evaluating other possibilities and explaining certain outcomes better. It was also likely that the models would have been able to explain more as they would have been able to account for more of the variance. Unfortunately, to know the number and extent of items to include within a survey beforehand was extremely difficult as it essentially is an iterative process where more research conducted on the topic of interest will be able to inform researchers more readily of items to include that were of greater value, while others should potentially be excluded based on their lack of contribution. Furthermore, this problem was in part exacerbated by the paucity of information available on mental illness in general within South Africa.

6.2.1.2 Item measurement

Related to the previous point was also the consideration that should be given to self-rated knowledge of mental illness in relation to familiarity of mental illness. Within this study, familiarity of mental illness was the combination of seven dichotomous items while knowledge of mental illness was only a single scale item on a five-point scale. The combined

items for familiarity were far more adequate than the single item used for knowledge as a single item is often not sufficient to measure a variable or construct effectively.

Reviewing available research, little comparisons existed on best practices for measuring mental illness knowledge (Wei, McGrath, Hayden, & Kutcher, 2016). Of recent, one group of researchers have attempted to evaluate the available instruments and measures for mental illness knowledge as seen in the systematic review conducted by Wei et al. (2016). Unfortunately, one of the findings of their study was that no one instrument can be currently considered best as instruments had different degrees of acceptable measurement properties altogether (Wei et al., 2016). Thus, the general recommendation was to prioritise instruments based on the importance of measurement properties for a specific study (Wei et al., 2016). Another conclusion of note was that most of studies that were reviewed were in western contexts while only one study attempted to evaluate cultural validity (Wei et al., 2016). Thus, it was evident that more has to be done on this measure altogether in general and specifically for the utilisation in non-western settings.

6.2.1.3 Understandings and representations of mental illness

Another conceptual limitation had to do with how and what the sample understood the term mental illness to represent. As seen earlier in this work, it is unlikely that people have the same conceptualisations and neither do the instruments force a specific conceptualisation of mental illness. Thus, representation and terminology become essential to conceptualisation as they will influence responses and finally results.

To illustrate the difficulty of terminology, if the term mental illness was understood exclusively in a biological connotation, it was then very likely already a less than ideal label as it was not perceived as neutral and lend itself to specific understandings of mental illness already. As seen earlier, if seen as biological it does have the potential to benefit some conditions and vice versa (Schomerus et al., 2014). Another possibility to consider, even if a

specific keyword has been found to be of better use, it was not necessarily to say that it would translate in the same way in the South African context.

Equally, the issue of representation presented similar difficulties. General items inquiring about perceived dangerousness of mental illness might have made use of specific mental illness representations exclusive to those mental illnesses perceived to be already dangerous like schizophrenia or substance use disorder for instance.

In terms of more specific representations, it was likely that some of the results would hold true for other mental illness conditions, but it was not possible to say to which extent another mental illness condition would agree or disagree with either one of the three vignettes. Unfortunately, a wide variety of mental illnesses existed and to sufficiently cover each one in significant detail was not realistically possible. Vignette presentation has also been found to matter with more explicit or subtle presentation affecting respondent's responses to mental illness (Hugo et al., 2003; Link & Stuart, 2017). Most make use of depression, substance use disorder, and schizophrenia as it is understood to encompass a variety and a spectrum of mental illnesses (Link & Stuart, 2017). However, other options should also be considered.

6.2.2 Methodological limitations

6.2.2.1 Sample and statistical comparisons

The most obvious methodological limitations were both the size of the sample and the fact that the sample was not randomly sampled. Random sampling is able to sufficiently deal with the constraints of covariance and to more readily show results that are representative of the total population (Stangor, 2014). For any topic of considerable significance it is necessary for the utilisation of random sampling where resources and methodological constraints allow for it. The researcher was primarily limited by funding and time constraints.

Size of the sample also directly affected the type of statistical comparisons that were possible and thus limited the amount of inferences that can be evaluated. Thus, the size of the sample hindered the ability to look at potential differences across race, cultural, and other key demographic variables. Similarly, the size of sample limited the utilisation of specific statistical techniques as larger samples can be more easily used in the analysis of moderation, mediation, and structural equation models (Field, 2013)

Another issue indirectly related to sample size was missing data. Since the researcher made use of a paper questionnaire in conjunction with this specific method in collecting data from participants in Gauteng, it had the consequence that some participants chose not to answer some questions or questions remained unanswered or participants avoided answering some questions altogether. This is effectively a form of response bias as all questions were not answered with the same ease and likelihood. One potential explanation for this response bias could be related to the discomfort to the topic of investigation. Not all participants are equally comfortable in thinking and answering questions related to mental illness. Even though the questionnaire was not administered by the researcher, this discomfort could still have been present for participants who completed or participated in the questionnaire.

In terms of missing data, there are several known ways in which to compensate for it. Missing values can be estimated based on participants' overall responses or through other statistical techniques (Field, 2013). Another potentially more suitable method is to change the response format to an online platform where submission can only take place after all questions have been answered. Neither method is necessarily ideal and comes with their own set of limitations. Finally, it remains ideal that participants answer all the questions while remaining honest with their responses.

6.2.2.2 Research design

The study utilised by the researcher was a non-experimental research design. Stronger claims and specifically causal claims can be made when experimental research designs are considered that include both manipulation and control groups as part of their research designs (Stangor, 2014). With vignette research, it is highly possible to make use of more experimental research designs which will provide far greater quality in terms of results and to observe differences and effects between and within vignette representations (Link & Stuart, 2017). Similarly, to view differences in representation (e.g. subtle versus overt representations of depression) is for instance far easier accommodated by this type of research design when all other steps and precautions have been taken (Link & Stuart, 2017).

6.2.2.3 Self-report measures

Self-report measures are often critiqued as they are only a proxy for behaviour and do not necessarily represent actual behaviour. In some instances, discrepancies are found between reported behaviour and actual behaviour (Corrigan et al., 2003). Thus, for this study it could mean that participants potentially under reported on items that did try to measure stigma or over reported on the likelihood of helping people with mental illness. In the event of these examples, it could be understood that these response biases are indicative of social desirability, i.e. where participants answer in a way that will benefit them socially.

Related to the issue of response bias and self-reported measures is the possibility for respondents to develop other response sets that can be due to questionnaire fatigue, disinterest or other possibilities. Often when response sets develop due to questionnaire fatigue or disinterest it is understood to be known as *satisficing* (Krosnick, 1991). Satisficing can be understood as response strategy in which participants exert less mental effort to answer questions of varying length and difficulty in order to complete the task (Krosnick, 1991). Differing forms of satisficing also exist that range from weaker to stronger forms of

satisficing depending on the constraints and conditions faced by the respondent (Krosnick, 1991).

In the case of this questionnaire, it can be considered as a long questionnaire as it consisted of 200 items even though participants could complete it within 20 to 25 minutes. In some instances, it would seem likely that satisficing took place from the response patterns evident in the completed questionnaires. Irrespective of the likelihood of satisficing, it is always in the researcher's favour to maintain a concise questionnaire that also provides an ideal capture layout that may limit response sets.

6.2.2.4 Scale utilisation

Another constraint that does require some discussion relates to scale options, specifically, providing neutral options to participants and scale length. In some instances, it was evident that there was an overreliance on the "neutral" midpoint of some scales options. In some ways, it does affect the analysis of data and potentially mask stronger responses of items as often highly ambivalent attitudes are scored on the midpoint of scales (Eaton & Visser, 2008). To consider as well, midpoints can encourage satisficing too depending on the constraints, the purpose, and meaning of the neutral option on the scale (Krosnick & Presser, 2010). Some have opted for the removal of neutral options (Johns, 2005) and as seen earlier in the BMI, Hirari and Clum (2000) made use of a 6-point scale that also excluded a neutral option altogether. However, caution is necessary as there is a potential cost in eliminating the midpoint of a scale as there is a possibility that people are genuinely part of this portion of the scale (Krosnick & Presser, 2010). Unfortunately, no simple answer exists on the inclusion or exclusion of the neutral option and it very likely will come down to specifics of the sample in question.

Related to this discussion, it should be noted that Corrigan et al. (2003) made use of a larger scale than the researcher with a 9-point scale. Scale lengths have been known to affect

reliability and validity where some lengths have been preferable given certain studies and conditions (Krosnick & Presser, 2010). However, if a larger scale, specifically a 9-point scale would have been of noticeable difference or benefit is uncertain (Krosnick & Presser, 2010). Corrigan et al. (2003) do not discuss the scale length specifically, but do note that items had to be scored on the same scale length for all items and this was adhered by the researcher.

6.2.2.5 Instrument quality

Another methodological limitation were the instruments used. As shown earlier, differing factor solutions were obtained by the researcher in comparison to some scales that had some validation while some of the other instruments had little existing validation prior to the study. Overall, instruments were not sufficiently validated before their use within the study. Similarly, their validation for a non-western context was also not sufficiently validated.

To find instruments that are worthwhile is a long and iterative process as certain levels of validation are required over time for instruments. One can make use of the available corpus of literature on mental illness to make use of validated items, but it will not necessarily translate into equally valid instruments for the context as seen earlier in the consideration for mental illness knowledge by Wei et al. (2016). Essentially, far more research is necessary on available instruments to see to what extent they are valid, predictive, and adaptable for the local context.

To conclude this section, it was evident that several limitations existed for this study. It should be noted that this does not necessarily imply that all limitations have been covered by the researcher for this study. However, the cardinal concerns and limitations were covered by the researcher. Considering the limitations of this study and taking other observations into account of available studies, recommendations will be made for future research.

6.3 Recommendations for future research

As first recommendation, it is necessary that more research is conducted on a larger sample size along with more representative sampling of the total population. Larger samples would be advantageous, as it was shown earlier how it would lend to more comparisons and statistical techniques that would potentially expand explanations pertaining to the complex relationships that exist between variables. Similarly, more representative samples would likely lead to more valid inferences and conclusions.

Not only is it necessary that a larger and representative sized studies be conducted, but it is also necessary that clinical and homeless populations be evaluated. Essentially, both these population groups are more vulnerable and very likely face larger confrontation with mental illness. Currently, homeless populations remain an immense problem within the South African context as researchers are uncertain of the absolute number of people who would be deemed homeless (Kriel, 2017). Similarly, it has been shown that available data on homeless people is almost completely absent while figures from Statistics South Africa have been questionable, as it has not been found sufficiently reliable nor suitable for establishing trends within homeless populations (Kriel, 2017; Rule-Groenewald, Timol, Khalema, & Desmond, 2015). Even though this remains an extreme methodological difficulty to deal with as a researcher, it is still vital that work be conducted on homeless samples especially, as no other figures currently exist on these populations for mental illness.

The use of vignettes seemed to provide worthwhile results and further use of vignettes would be recommended by the researcher. Essentially, vignettes provide a relatively easy option in providing the researcher with a scenario of a certain degree of detail and specificity for mental illness representation. There would also seem to be growing international consensus for vignette use as one study found that 30 of 62 population-based attitude surveys conducted made use of vignettes (Angermeyer & Dietrich, 2006). Others have also noted the

staple they have become within stigma research along with their wide use and applicability (Link & Stuart, 2017).

With significant differences existing between vignettes, it is also becoming increasingly important to look at specific mental illnesses. Most commonly included mental illnesses are schizophrenia, depression, and substance use disorder as they represent differing degrees of severity and tend to be some of the most prevalent especially in the case of depression and substance use disorder (Henderson, 2017; Pescosolido et al. 2010). It is necessary to at least consider other conditions for future research before limiting it to only the representation of these three key illnesses as differing attributions take place which also change the attribution paths that can also lead to drastic differences in behavioural reaction (Corrigan et al., 2003).

Along with greater vignette use, it would also be potentially important to see other studies utilising vignettes by making slight changes to existing vignettes and measuring differences and comparing it to the original vignettes. Subtle and overt features have seen to play some role in previous research (Hugo et al., 2003). Potentially, specific symptoms, associated social class, gender, and other key representations in the vignettes could also create noticeable differences in results (Henderson, 2017).

Other recommendations would be to include variables for vignettes specifically related to coercion-segregation and dangerousness. As shown earlier, some were not included and others were assumed in the representation of the vignette (Corrigan et al., 2003). Their inclusion will likely expand and aid explanation.

Similarly, to investigate and study best practice for local measures on the knowledge of mental illness and to identify its measurement properties and to generate items will likely aid general research in understanding mental illness which is currently not sufficient in South Africa as a non-western context (Wei et al., 2016).

Another recommendation would be to make use of a shorter questionnaire. Length is known to affect the likelihood response bias due to questionnaire fatigue (Krosnick, 1991). A variety of methods exist that can be used in shortening a questionnaire.

A final recommendation would be related to research design. There are far more complex research designs available for use that will very likely serve research of this nature better. To uncover the more complex models of attribution involved in stigma and behaviour related to mental illnesses it is necessary to make use of experimental designs to accommodate for these goals as they provide the necessary sophistication and advantages.

6.4 Concluding comments

This study aimed to provide an overview of general perspectives of mental illness currently held. The study also tried to evaluate differences, relationships, and predictors between and for mental illnesses, care and management options, helping behaviour, and other variables such as knowledge and familiarity. Overall, participants did not show strong agreement with the stigma scale and thus showed lower levels of stigma. Participants made use of more than one care and treatment option with a typical favour for the psychiatric/psychology and family support factors. There was slight overlap in predicting care and management, but no single factor was found across as a significant predictor. In terms of helping behaviour, it was evident that two factors consistently acted as significant predictors, specifically if people reported high fear and if the behaviour was not perceived as normal. Also related to the vignettes, significant differences were also found between conditions with large effect sizes reported in some cases. Aside from the results and full discussion, the limitations were also discussed in terms of methodological and conceptual limitations. Thereafter, recommendations were also made specifically based on included items and methodological considerations.

In conclusion, this study provided tentative results to understanding some features of stigma. Far more research is required in order to understand and expand on these results and the complex relationship that mental illness has with stigma. Overall, it is apparent that far more research is required in general for mental illness and stigma as limited amount of work has been done in South Africa specifically.

Reference List

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed). Washington, D.C.: American Psychiatric Association.

Angermeyer, M. C., & Dietrich, S. (2006). Public beliefs about and attitudes towards people with mental illness: a review of population studies. *Acta Psychiatrica Scandinavica*, *113*(3), 163–179. https://doi.org/10.1111/j.1600-0447.2005.00699.x

Angermeyer, M. C., & Matschinger, H. (1996). The effect of personal experience with mental illness on the attitude towards individuals suffering from mental disorders. *Social Psychiatry and Psychiatric Epidemiology*, *31*(6), 321–326.

Angermeyer, M. C., & Matschinger, H. (2005). Causal beliefs and attitudes to people with schizophrenia: Trend analysis based on data from two population surveys in Germany. *The British Journal of Psychiatry*, *186*(4), 331–334. https://doi.org/10.1192/bjp.186.4.331

Angermeyer, M. C., van der Auwera, S., Carta, M. G., & Schomerus, G. (2017). Public attitudes towards psychiatry and psychiatric treatment at the beginning of the 21st century: a systematic review and meta-analysis of population surveys. *World Psychiatry*, *16*(1), 50–61. https://doi.org/10.1002/wps.20383

Appiah-Poku, J., Laugharne, R., Mensah, E., Osei, Y., & Burns, T. (2004). Previous help sought by patients presenting to mental health services in Kumasi, Ghana. *Social Psychiatry and Psychiatric Epidemiology*, *39*(3), 208–211. https://doi.org/10.1007/s00127-004-0725-9

Atwoli, L., Stein, D. J., Williams, D. R., Mclaughlin, K. A., Petukhova, M., Kessler, R. C., & Koenen, K. C. (2013). Trauma and posttraumatic stress disorder in South Africa: analysis from the South African Stress and Health Study. *BMC Psychiatry*, *13*, 182. https://doi.org/10.1186/1471-244X-13-182

Balarajan, R., J. Stein, D., Swartz, L., & Walaza, N. (2000). Mental Health Beyond the Truth and Reconciliation Commission. *Ethnicity & Health*, *5*(3–4), 189–190. https://doi.org/10.1080/713667461

Bateman, C. (2015). Mental health under-budgeting undermining SA's economy. *South African Medical Journal*, *105*(1), 7. https://doi.org/10.7196/SAMJ.9166

Bond, P. (2015). Bretton Woods Institution Narratives about Inequality and Economic Vulnerability on the Eve of South African Austerity. *International Journal of Health Services*, *45*(3), 415–442. https://doi.org/10.1177/0020731415584561

Bond, P. (2016). The harsh realities about South Africa that the World Bank dare not speak [University of Witwatersrand]. Retrieved 28 October 2017, from https://www.wits.ac.za/news/latest-news/in-their-own-words/2016/2016-02/the-harsh-realities-about-south-africa-that-the-world-bank-dare-not-speak.html

Bos, A. E. R., Pryor, J. B., Reeder, G. D., & Stutterheim, S. E. (2013). Stigma: Advances in Theory and Research. *Basic and Applied Social Psychology*, *35*(1), 1–9. https://doi.org/10.1080/01973533.2012.746147

Botha, U. A., Koen, L., & Niehaus, D. J. H. (2006). Perceptions of a South African schizophrenia population with regards to community attitudes towards their illness. *Social Psychiatry and Psychiatric Epidemiology*, *41*(8), 619–623. https://doi.org/10.1007/s00127-006-0071-1

Boutayeb, A. (2006). The double burden of communicable and non-communicable diseases in developing countries. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, *100*(3), 191–199. https://doi.org/10.1016/j.trstmh.2005.07.021

Boyd, J. E., Adler, E. P., Otilingam, P. G., & Peters, T. (2014). Internalized Stigma of Mental Illness (ISMI) Scale: A multinational review. *Comprehensive Psychiatry*, *55*(1), 221–231. https://doi.org/10.1016/j.comppsych.2013.06.005

Bradshaw, D., Norman, R., & Schneider, M. (2007). A clarion call for action based on refined DALY estimates for South Africa. *South African Medical Journal*, *97*(6), 438. https://doi.org/10.7196/SAMJ.830

Bradshaw, D., Schneider, M., Dorrington, R., Bourne, D. E., & Laubscher, R. (2002). South African cause-of-death profile in transition--1996 and future trends. *South African Medical Journal*, *92*(8), 618–623.

Charles, H., Manoranjitham, S. D., & Jacob, K. S. (2007). Stigma and explanatory models among people with schizophrenia and their relatives in Vellore, south India. *The International Journal of Social Psychiatry*, *53*(4), 325–332. https://doi.org/10.1177/0020764006074538

Choe, J. Y., Teplin, L. A., & Abram, K. M. (2008). Perpetration of Violence, Violent Victimization, and Severe Mental Illness: Balancing Public Health Concerns. *Psychiatric Services (Washington, D.C.)*, *59*(2), 153–164. https://doi.org/10.1176/appi.ps.59.2.153

Corrigan, P. W. (1998). The impact of stigma on severe mental illness. *Cognitive and Behavioral Practice*, *5*(2), 201–222. https://doi.org/10.1016/S1077-7229(98)80006-0

Corrigan, P. W. (2000). Mental Health Stigma as Social Attribution: Implications for Research Methods and Attitude Change. *Clinical Psychology: Science and Practice*, *7*(1), 48–67. https://doi.org/10.1093/clipsy/7.1.48

Corrigan, P. W., Druss, B. G., & Perlick, D. A. (2014). The Impact of Mental Illness Stigma on Seeking and Participating in Mental Health Care. *Psychological Science in the Public Interest*, *15*(2), 37–70. https://doi.org/10.1177/1529100614531398

Corrigan, P. W., Edwards, A. B., Green, A., Diwan, S. L., & Penn, D. L. (2001). Prejudice, social distance, and familiarity with mental illness. *Schizophrenia Bulletin*, *27*(2), 219–225.

Corrigan, P. W., Markowitz, F. E., Watson, A., Rowan, D., & Kubiak, M. A. (2003). An Attribution Model of Public Discrimination Towards Persons with Mental Illness. *Journal of Health and Social Behavior*, *44*(2), 162–179. https://doi.org/10.2307/1519806

Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsch, N. (2012). Challenging the public stigma of mental illness: a meta-analysis of outcome studies. *Psychiatric Services (Washington, D.C.)*, *63*(10), 963–973. https://doi.org/10.1176/appi.ps.201100529

Corrigan, P. W., River, L. P., Lundin, R. K., Penn, D. L., Uphoff-Wasowski, K., Campion, J., … Kubiak, M. A. (2001). Three strategies for changing attributions about severe mental illness. *Schizophrenia Bulletin*, *27*(2), 187–195.

Corrigan, P. W., Rowan, D., Green, A., Lundin, R., River, P., Uphoff-Wasowski, K., … Kubiak, M. A. (2002). Challenging two mental illness stigmas: personal responsibility and dangerousness. *Schizophrenia Bulletin*, *28*(2), 293–309.

Crisp, A., Gelder, M., Goddard, E., & Meltzer, H. (2005). Stigmatization of people with mental illnesses: a follow-up study within the Changing Minds campaign of the Royal College of Psychiatrists. *World Psychiatry : Official Journal of the World Psychiatric Association (WPA)*, *4*, 106–113.

Crocker, J., & Lutsky, N. (1986). Stigma and the Dynamics of Social Cognition. In S. C. Ainlay, G. Becker, & L. M. Coleman (Eds.), *The Dilemma of Difference* (pp. 95–121). Boston, MA: Springer US. https://doi.org/10.1007/978-1-4684-7568-5_6

de Montellano, P. M. O. (2017). The Viewpoint of GAMIAN*-Europe. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 173–189). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_10

Desmarais, S. L., Van Dorn, R. A., Johnson, K. L., Grimm, K. J., Douglas, K. S., & Swartz, M. S. (2014). Community Violence Perpetration and Victimization Among Adults With Mental Illnesses. *American Journal of Public Health*, *104*(12), 2342–2349. https://doi.org/10.2105/AJPH.2013.301680

Draine, J., Salzer, M. S., Culhane, D. P., & Hadley, T. R. (2002). Role of Social Disadvantage in Crime, Joblessness, and Homelessness Among Persons With Serious Mental Illness. *Psychiatric Services*, *53*(5), 565–573. https://doi.org/10.1176/appi.ps.53.5.565

Dunkle, K. L., Jewkes, R. K., Brown, H. C., Gray, G. E., McIntryre, J. A., & Harlow, S. D. (2004). Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa. *The Lancet*, *363*(9419), 1415–1421. https://doi.org/10.1016/S0140-6736(04)16098-4

Eaton, A. A., & Visser, P. S. (2008). Attitude Importance: Understanding the Causes and Consequences of Passionately Held Views. *Social and Personality Psychology Compass*, *2*(4), 1719–1736. https://doi.org/10.1111/j.1751-9004.2008.00125.x

Enrique, G. A. (1993). Psychiatric care of Filipino Americans. In A. Gaw (Ed.), *Culture, Ethnicity, and Mental Illness*. Washington, DC: American Psychiatric Press.

Ensink, K., & Robertson, B. (1999). Patient and Family Experiences of Psychiatric Services and African Indigenous Healers. *Transcultural Psychiatry*, *36*(1), 23–43. https://doi.org/10.1177/136346159903600102

Evans-Lacko, S., Brohan, E., Mojtabai, R., & Thornicroft, G. (2012). Association between public views of mental illness and self-stigma among individuals with mental illness in 14 European countries. *Psychological Medicine*, *42*(8), 1741–1752. https://doi.org/10.1017/S0033291711002558

Fabrega, H. (1991). Psychiatric stigma in non-Western societies. *Comprehensive Psychiatry, 32*(6), 534–551.

Field, A. P. (2013). *Discovering statistics using IBM SPSS statistics: and sex and drugs and rock 'n' roll* (4th edition). Los Angeles: Sage.

Finzen, A. (2017). Stigma and Stigmatization Within and Beyond Psychiatry. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 29–42). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_2

Flisher, A. J., Lund, C., Funk, M., Banda, M., Bhana, A., Doku, V., … Green, A. (2007). Mental health policy development and implementation in four African countries. *Journal of Health Psychology, 12*(3), 505–516. https://doi.org/10.1177/1359105307076237

Freeman, M., Lee, T., & Vivian, W. (1994). *Evaluation of mental health services in the Orange Free State*. Johannesburg, South Africa: Centre for Health Policy.

Freeman, M., Nkomo, N., Kafaar, Z., & Kelly, K. (2008). Mental Disorder in People Living with HIV/Aids in South Africa. *South African Journal of Psychology*, *38*(3), 489–500. https://doi.org/10.1177/008124630803800304

Fujii, J. S., Fukushima, S. N., & Yamamoto, J. (1993). Psychiatric care of Filipino Americans. In A. Gaw (Ed.), *Culture, Ethnicity, and Mental Illness*. Washington, DC: American Psychiatric Press.

Gaebel, W., Rössler, W., & Sartorius, N. (Eds.). (2017). *The Stigma of Mental Illness - End of the Story?* New York, NY: Springer International Publishing.

Gaw, A. (1993). Psychiatric care of Chinese Americans. In A. Gaw (Ed.), *Culture, Ethnicity, and Mental Illness*. Washington, DC: American Psychiatric Press.

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. London, UK: Penguin.

Goldstein, B., & Rosselli, F. (2003). Etiological paradigms of depression: The relationship between perceived causes, empowerment, treatment preferences, and stigma. *Journal of Mental Health*, *12*(6), 551–563. https://doi.org/10.1080/09638230310001627919

Graham, S., Weiner, B., & Zucker, G. S. (1997). An Attributional Analysis of Punishment Goals and Public Reactions to O. J. Simpson. *Personality and Social Psychology Bulletin*, *23*(4), 331–346. https://doi.org/10.1177/0146167297234001

Henderson, C. (2017). Disorder-specific Differences. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 83–109). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_5

Herman, A. A., Stein, D. J., Seedat, S., Heeringa, S. G., Moomal, H., & Williams, D. R. (2009). The South African Stress and Health (SASH) study: 12-month and lifetime prevalence of common mental disorders. *South African Medical Journal = Suid-Afrikaanse Tydskrif Vir Geneeskunde*, *99*(5 Pt 2), 339–344.

Hill, P. C., & Pargament, K. I. (2008). Advances in the conceptualization and measurement of religion and spirituality: Implications for physical and mental health research. *Psychology of Religion and Spirituality*, *S*(1), 3–17. https://doi.org/10.1037/1941-1022.S.1.3

Hirai, M., & Clum, G. A. (2000). Development, Reliability, and Validity of the Beliefs Toward Mental Illness Scale. *Journal of Psychopathology and Behavioral Assessment*, *22*(3), 221–236. https://doi.org/10.1023/A:1007548432472

Hirschowitz, R., & Orkin, M. (1997). Trauma and Mental Health in South Africa. *Social Indicators Research*, *41*(1/3), 169–182.

Holmes, E. P., Corrigan, P. W., Williams, P., Canar, J., & Kubiak, M. A. (1999). Changing attitudes about schizophrenia. *Schizophrenia Bulletin*, *25*(3), 447–456.

Huck, S. W. (2012). *Reading statistics and research* (6th ed). Boston: Pearson.

Hugo, C. J., Boshoff, D. E. L., Traut, A., Zungu-Dirwayi, N., & Stein, D. J. (2003). Community attitudes toward and knowledge of mental illness in South Africa. *Social Psychiatry and Psychiatric Epidemiology*, *38*(12), 715–719. https://doi.org/10.1007/s00127-003-0695-3

Johns, R. (2005). One Size Doesn't Fit All: Selecting Response Scales For Attitude Items. *Journal of Elections, Public Opinion and Parties*, *15*(2), 237–264. https://doi.org/10.1080/13689880500178849

Johnson, S., & Orrell, M. (1995). Insight and psychosis: a social perspective. *Psychological Medicine*, *25*(03), 515. https://doi.org/10.1017/S0033291700033432

Kagee, A., & Martin, L. (2010). Symptoms of depression and anxiety among a sample of South African patients living with HIV. *AIDS Care*, *22*(2), 159–165. https://doi.org/10.1080/09540120903111445

Kakuma, R., Kleintjes, S., Lund, C., Drew, N., Green, A., Flisher, A. J., & MHAPP Research Programme Consortium. (2010). Mental health stigma: what is being done to raise awareness and reduce stigma in South Africa? *African Journal of Psychiatry*, *13*(2), 116–124.

Kaminer, D., Stein, D. J., Mbanga, I., & Zungu-Dirwayi, N. (2001). The Truth and Reconciliation Commission in South Africa: relation to psychiatric status and forgiveness among survivors of human rights abuses. *The British Journal of Psychiatry: The Journal of Mental Science*, *178*, 373–377.

Karim, S. S. A., Churchyard, G. J., Karim, Q. A., & Lawn, S. D. (2009). HIV infection and tuberculosis in South Africa: an urgent need to escalate the public health response. *The Lancet*, *374*(9693), 921–933. https://doi.org/10.1016/S0140-6736(09)60916-8

Kendell, R. E. (1986). What are mental disorders? In *Issues in psychiatric classification: Science, practice and social policy.* (pp. 23–45). New York, NY: Human Sciences Press.

Kendell, R. E. (2002). The distinction between personality disorder and mental illness. *The British Journal of Psychiatry*, *180*(2), 110–115. https://doi.org/10.1192/bjp.180.2.110

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Chatterji, S., Lee, S., Ormel, J., … Wang, P. S. (2009). The global burden of mental disorders: An update from the WHO World Mental Health (WMH) Surveys. *Epidemiologia e Psichiatria Sociale*, *18*(01), 23–33. https://doi.org/10.1017/S1121189X00001421

Kim, L. I. C. (1993). Psychiatric care of Korean Americans. In A. Gaw (Ed.), *Culture, Ethnicity, and Mental Illness*. Washington, DC: American Psychiatric Press.

Kleintjes, S., Flisher, A., Fick, M., Railoun, A., Lund, C., Molteno, C., & Robertson, B. (2006). The prevalence of mental disorders among children, adolescents and adults in the Western Cape, South Africa. *African Journal of Psychiatry*, *9*(3). https://doi.org/10.4314/ajpsy.v9i3.30217

Koch, J. L. A. (2010). *Die Psychopathischen Minderwertigkeiten (1891)*. Kessinger Publishing.

Kriel, J. D. (2017). International responses to homelessness: Lessons for the City of Tshwane. *Development Southern Africa*, *34*(4), 399–413. https://doi.org/10.1080/0376835X.2017.1310027

Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. *Applied Cognitive Psychology*, *5*(3), 213–236. https://doi.org/10.1002/acp.2350050305

Krosnick, J. A., & Presser, S. (2010). Chapter 9: Question and Questionnaire Design. In P. V. Marsden & J. D. Wright (Eds.), *Handbook of survey research* (Second edition, pp. 263–313). Bingley: Emerald.

Krupchanka, D., & Thornicroft, G. (2017). Discrimination and Stigma. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 123–139). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_7

Kvaale, E. P., Gottdiener, W. H., & Haslam, N. (2013). Biogenetic explanations and stigma: a meta-analytic review of associations among laypeople. *Social Science & Medicine (1982)*, *96*, 95–103. https://doi.org/10.1016/j.socscimed.2013.07.017

Laher, S., & Botha, A. (2012). Methods of sampling. In C. Wagner, B. Kawulich, & M. Garner (Eds.), *Doing social research: a global context*. London, UK: McGraw-Hill.

Levey, S., & Howells, K. (1995). Dangerousness, unpredictability and the fear of people with schizophrenia. *The Journal of Forensic Psychiatry*, *6*(1), 19–39. https://doi.org/10.1080/09585189508409874

Lin, Z. (1993). An exploratory study of the social judgements of Chinese college students from the perspectives of attributional theory. *Acta Psychologica Sinica*, *25*, 155–163.

Link, B. G., & Cullen, F. T. (1986). Contact with the Mentally Ill and Perceptions of How Dangerous They Are. *Journal of Health and Social Behavior*, *27*(4), 289–302. https://doi.org/10.2307/2136945

Link, B. G., Cullen, F. T., Frank, J., & Wozniak, J. F. (1987). The Social Rejection of Former Mental Patients: Understanding Why Labels Matter. *American Journal of Sociology*, *92*(6), 1461–1500. https://doi.org/10.1086/228672

Link, B. G., & Phelan, J. C. (2001). Conceptualizing Stigma. *Annual Review of Sociology*, *27*(1), 363–385. https://doi.org/10.1146/annurev.soc.27.1.363

Link, B. G., & Phelan, J. C. (2014). Stigma power. *Social Science & Medicine*, *103*, 24–32. https://doi.org/10.1016/j.socscimed.2013.07.035

Link, B. G., & Stuart, H. (2017). On Revisiting Some Origins of the Stigma Concept as It Applies to Mental Illnesses. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 3–28). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_1

Link, B. G., Yang, L. H., Phelan, J. C., & Collins, P. Y. (2004). Measuring mental illness stigma. *Schizophrenia Bulletin*, *30*(3), 511–541.

Lund, C., Alem, A., Schneider, M., Hanlon, C., Ahrens, J., Bandawe, C., … Susser, E. (2015). Generating evidence to narrow the treatment gap for mental disorders in sub-Saharan Africa: rationale, overview and methods of AFFIRM. *Epidemiology and Psychiatric Sciences*, *24*(3), 233–240. https://doi.org/10.1017/S2045796015000281

Lund, C., Breen, A., Flisher, A. J., Kakuma, R., Swartz, L., Joska, J., … Consortium, M. R. P. (2008). Mental health and poverty: A systematic review of the research in low- and middle-income countries. *The South African Journal of Psychiatry*, *14*(3), 104–+.

Lund, C., Kleintjes, S., Campbell-Hall, V., Sithembile, M., Petersen, I., Bhana, A., … Flisher, A. (2008). Mental health policy development and implementation in South Africa: a situation analysis. Phase 1: Country report. Mental Health and Poverty Project.

Lund, C., Kleintjes, S., Kakuma, R., Flisher, A. J., & MHaPP Research Programme Consortium. (2010). Public sector mental health systems in South Africa: inter-

provincial comparisons and policy implications. *Social Psychiatry and Psychiatric Epidemiology*, *45*(3), 393–404. https://doi.org/10.1007/s00127-009-0078-5

Lund, C., Silva, M. D., Plagerson, S., Cooper, S., Chisholm, D., Das, J., … Patel, V. (2011). Poverty and mental disorders: breaking the cycle in low-income and middle-income countries. *The Lancet*, *378*(9801), 1502–1514. https://doi.org/10.1016/S0140-6736(11)60754-X

Lupuwana, D., Wendy, B., Simbayi, & Elkonin, L. C. &. (1999). Psychological services in the black community of Port Elizabeth in South Africa: assessment of awareness, attitudes, practices and needs. *Journal of Psychology in Africa*, *9*(1), 25–57.

Mbanga, N. I., Niehaus, D. J. H., Mzamo, N. C., Wessels, C. J., Allen, A., Emsley, R. A., & Stein, D. J. (2002). Attitudes towards and beliefs about schizophrenia in Xhosa families with affected probands. *Curationis*, *25*(1), 69–73. https://doi.org/10.4102/curationis.v25i1.718

Meade, C. S., Graff, F. S., Griffin, M. L., & Weiss, R. D. (2008). HIV risk behavior among patients with co-occurring bipolar and substance use disorders: Associations with mania and drug abuse. *Drug and Alcohol Dependence*, *92*(1–3), 296–300. https://doi.org/10.1016/j.drugalcdep.2007.07.013

Meade, C. S., & Sikkema, K. J. (2005). HIV risk behavior among adults with severe mental illness: a systematic review. *Clinical Psychology Review*, *25*(4), 433–457. https://doi.org/10.1016/j.cpr.2005.02.001

Menec, V. H., & Perry, R. P. (1998). Reactions to Stigmas Among Canadian Students: Testing an Attribution-Affect-Help Judgment Model. *The Journal of Social Psychology*, *138*(4), 443–453. https://doi.org/10.1080/00224549809600399

Meyers, L. S., Gamst, G., & Guarino, A. J. (2013). *Applied multivariate research: design and interpretation* (2nd ed). Los Angeles: SAGE.

Mkize, L. P., & Uys, L. R. (2004). Pathways to mental health care in KwaZulu - Natal. *Curationis*, *27*(3), 62–71. https://doi.org/10.4102/curationis.v27i3.1001

Nakimuli-Mpungu, E., Bass, J. K., Alexandre, P., Mills, E. J., Musisi, S., Ram, M., … Nachega, J. B. (2012). Depression, alcohol use and adherence to antiretroviral therapy in sub-Saharan Africa: a systematic review. *AIDS and Behavior*, *16*(8), 2101–2118. https://doi.org/10.1007/s10461-011-0087-8

Nattrass, N. (2005). Who Consults Sangomas in Khayelitsha? An Exploratory Quantitative Analysis. *Social Dynamics*, *31*(2), 161–182. https://doi.org/10.1080/02533950508628712

Ng, C. H. (1997). The stigma of mental illness in Asian cultures. *The Australian and New Zealand Journal of Psychiatry*, *31*(3), 382–390. https://doi.org/10.3109/00048679709073848

Norman, R., Bradshaw, D., Schneider, M., Jewkes, R., Mathews, S., Abrahams, N., … Group, and the S. A. C. R. A. C. (2007). Estimating the burden of disease attributable to interpersonal violence in South Africa in 2000. *South African Medical Journal*, *97*(8), 653. https://doi.org/10.7196/SAMJ.656

Norman, R., Matzopoulos, R., Groenewald, P., & Bradshaw, D. (2007). The high burden of injuries in South Africa. *Bulletin of the World Health Organization*, *85*(9), 695–702. https://doi.org/10.2471/BLT.06.037184

Patel, V. (1995). Explanatory models of mental illness in sub-Saharan Africa. *Social Science & Medicine (1982)*, *40*(9), 1291–1298.

Patel, V. (2001). Poverty, inequality, and mental health in developing countries. In D. A. Leon & G. Walt (Eds.), *Poverty, inequality and health: An international perspective* (pp. 247–262). Oxford: Oxford University Press.

Patel, V., & Kleinman, A. (2003). Poverty and common mental disorders in developing countries. *Bulletin of the World Health Organization*, *81*(8), 609–615.

Peltzer, K., Louw, J., Mchunu, G., Naidoo, P., Matseke, G., & Tutshana, B. (2012). Hazardous and Harmful Alcohol Use and Associated Factors in Tuberculosis Public Primary Care Patients in South Africa. *International Journal of Environmental Research and Public Health*, *9*(9), 3245–3257. https://doi.org/10.3390/ijerph9093245

Peltzer, K., Naidoo, P., Matseke, G., Louw, J., Mchunu, G., & Tutshana, B. (2012). Prevalence of psychological distress and associated factors in tuberculosis patients in public primary care clinics in South Africa. *BMC Psychiatry*, *12*, 89. https://doi.org/10.1186/1471-244X-12-89

Penn, D. L., Guynan, K., Daily, T., Spaulding, W. D., Garbin, C. P., & Sullivan, M. (1994). Dispelling the stigma of schizophrenia: what sort of information is best? *Schizophrenia Bulletin*, *20*(3), 567–578.

Pescosolido, B. A., Martin, J. K., Long, J. S., Medina, T. R., Phelan, J. C., & Link, B. G. (2010). 'A disease like any other'? A decade of change in public reactions to schizophrenia, depression, and alcohol dependence. *The American Journal of Psychiatry*, *167*(11), 1321–1330. https://doi.org/10.1176/appi.ajp.2010.09121743

Petersen, I., & Lund, C. (2011). Mental health service delivery in South Africa from 2000 to 2010: One step forward, one step back. *South African Medical Journal*, *101*(10), 751–757.

Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M. R., & Rahman, A. (2007). No health without mental health. *Lancet (London, England)*, *370*(9590), 859–877. https://doi.org/10.1016/S0140-6736(07)61238-0

Raguram, R., Weiss, M. G., Channabasavanna, S. M., & Devins, G. M. (1996). Stigma, depression, and somatization in South India. *The American Journal of Psychiatry*, *153*(8), 1043–1049. https://doi.org/10.1176/ajp.153.8.1043

Reisenzein, R. (1986). A structural equation analysis of Weiner's attribution-affect model of helping behavior. *Journal of Personality and Social Psychology*, *50*, 1123–1133. https://doi.org/10.1037/0022-3514.50.6.1123

Rosenberg, S. D., Goodman, L. A., Osher, F. C., Swartz, M. S., Essock, S. M., Butterfield, M. I., … Salyers, M. P. (2001). Prevalence of HIV, hepatitis B, and hepatitis C in people with severe mental illness. *American Journal of Public Health*, *91*(1), 31–37.

Royal, K. D., & Thompson, J. M. (2013). A Psychometric Validation of the Beliefs Toward Mental Illness Scale. *Journal of Nursing Measurement*, *21*(3), 516–524. https://doi.org/10.1891/1061-3749.21.3.516

Rule-Groenewald, C., Timol, F., Khalema, E., & Desmond, C. (2015). More than just a roof: unpacking homelessness. Retrieved from http://repository.hsrc.ac.za/handle/20.500.11910/1997

Rüsch, N., Angermeyer, M. C., & Corrigan, P. W. (2005). Mental illness stigma: Concepts, consequences, and initiatives to reduce stigma. *European Psychiatry*, *20*(8), 529–539. https://doi.org/10.1016/j.eurpsy.2005.04.004

Sadik, S., Bradley, M., Al-Hasoon, S., & Jenkins, R. (2010). Public perception of mental health in Iraq. *International Journal of Mental Health Systems*, *4*(1), 26. https://doi.org/10.1186/1752-4458-4-26

Saraceno, B., Levav, I., & Kohn, R. (2005). The public mental health significance of research on socio-economic factors in schizophrenia and major depression. *World Psychiatry*, *4*(3), 181–185.

Sartorius, N. (2007). Stigma and mental health. *The Lancet*, *370*(9590), 810–811. https://doi.org/10.1016/S0140-6736(07)61245-8

Saxena, S., Funk, M., & Chisholm, D. (2013). World Health Assembly adopts Comprehensive Mental Health Action Plan 2013-2020. *Lancet (London, England)*, *381*(9882), 1970–1971. https://doi.org/10.1016/S0140-6736(13)61139-3

Schneider, M., Baron, E., Breuer, E., Docrat, S., Honikman, S., Onah, M., … Tomlinson, M. (2016). Integrating mental health into South Africa's health system : current status and way forward. *South African Health Review*, *2016*(1), 153–163.

Schomerus, G., & Angermeyer, M. C. (2017). Changes of Stigma over Time. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 157–172). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_9

Schomerus, G., Lucht, M., Holzinger, A., Matschinger, H., Carta, M. G., & Angermeyer, M. C. (2011). The stigma of alcohol dependence compared with other mental disorders: a review of population studies. *Alcohol and Alcoholism (Oxford, Oxfordshire)*, *46*(2), 105–112. https://doi.org/10.1093/alcalc/agq089

Schomerus, G., Matschinger, H., & Angermeyer, M. C. (2014). Causal beliefs of the public and social acceptance of persons with mental illness: a comparative analysis of schizophrenia, depression and alcohol dependence. *Psychological Medicine*, *44*(2), 303–314. https://doi.org/10.1017/S003329171300072X

Seedat, S., Stein, D., Herman, A., Kessler, R., Sonnega, J., Heeringa, S., … Williams, D. (2008). Twelve-month treatment of psychiatric disorders in the south african stress and health survey (world mental health survey initiative). *Social Psychiatry and Psychiatric Epidemiology*, *43*(11), 889–897. https://doi.org/10.1007/s00127-008-0399-9

Seedat, S., Williams, D. R., Herman, A. A., Moomal, H., Williams, S. L., Jackson, P. B., … Stein, D. J. (2009). Mental health service use among South Africans for mood, anxiety and substance use disorders. *South African Medical Journal*, *99*(5 Pt 2), 346–352.

Seybold, K. S., & Hill, P. C. (2001). The Role of Religion and Spirituality in Mental and Physical Health. *Current Directions in Psychological Science*, *10*(1), 21–24. https://doi.org/10.1111/1467-8721.00106

Sheehan, L., Nieweglowski, K., & Corrigan, P. W. (2017). Structures and Types of Stigma. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 43–66). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_3

Sorsdahl, K., Stein, D. J., Grimsrud, A., Seedat, S., Flisher, A. J., Williams, D. R., & Myer, L. (2009). Traditional Healers in the Treatment of Common Mental Disorders in South Africa. *The Journal of Nervous and Mental Disease*, *197*(6), 434–441. https://doi.org/10.1097/NMD.0b013e3181a61dbc

Sorsdahl, K., Stein, D., & Lund, C. (2012). Mental Health Services in South Africa: Scaling up and future directions. *African Journal of Psychiatry*, *15*(3). https://doi.org/10.4314/ajpsy.v15i3.21

South African National Department of Health. (2013). *National Mental Health Policy Framework and Strategic Plan 2013-2020* (pp. 1–60). Pretoria, SA.

Stangor, C. (2014). *Research methods for the behavioral sciences* (5th Ed). Belmont, CA: Cengage Leaning.

Statistics South Africa. (2017). *Poverty trends in South Africa: An examination of absolute poverty between 2006 and 2015* (No. 03-10-06). Pretoria, SA: Statistics South Africa.

Stein, D. J. (1998). Psychiatric aspects of the Truth and Reconciliation Commission in South Africa. *The British Journal of Psychiatry*, *173*(6), 455–457. https://doi.org/10.1192/bjp.173.6.455

Stein, D. J. (2014). A new mental health policy for South Africa. *South African Medical Journal*, *104*(2), 115. https://doi.org/10.7196/samj.7938

Stein, D. J., Seedat, S., Herman, A., Moomal, H., Heeringa, S. G., Kessler, R. C., & Williams, D. R. (2008). Lifetime prevalence of psychiatric disorders in South Africa. *The British Journal of Psychiatry: The Journal of Mental Science*, *192*(2), 112–117. https://doi.org/10.1192/bjp.bp.106.029280

Stuart, H., & Sartorius, N. (2017). Opening Doors: The Global Programme to Fight Stigma and Discrimination Because of Schizophrenia. In W. Gaebel, W. Rössler, & N. Sartorius (Eds.), *The Stigma of Mental Illness - End of the Story?* (pp. 227–235). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-27839-1_13

Szasz, T. S. (1974). *The myth of mental illness: foundations of a theory of personal conduct*. New York: Harper & Row.

Teplin, L. A., McClelland, G. M., Abram, K. M., & Weiner, D. A. (2005). Crime Victimization in Adults With Severe Mental Illness. *Archives of General Psychiatry*, *62*(8), 911–921. https://doi.org/10.1001/archpsyc.62.8.911

Thom, R. (2000). *Mental health services: a review of Southern African literature, 1967-1999*. Johannesburg, South Africa: Centre for Health Policy, University of the Witwatersrand. Retrieved from //catalog.hathitrust.org/Record/004209724

Thornicroft, G. (2006). *Shunned: discrimination against people with mental illness*. Oxford ; New York: Oxford University Press.

Thornicroft, G., Rose, D., Kassam, A., & Sartorius, N. (2007). Stigma: ignorance, prejudice or discrimination? *The British Journal of Psychiatry: The Journal of Mental Science*, *190*, 192–193. https://doi.org/10.1192/bjp.bp.106.025791

Tibebe, A., & Tesfay, K. (2015). Public Knowledge and Beliefs about Mental Disorders in Developing Countries: A Review. *Journal of Depression and Anxiety*, *s3*. https://doi.org/10.4172/2167-1044.S3-004

Topor, A., Andersson, G., Denhov, A., Holmqvist, S., Mattsson, M., Stefansson, C.-G., & Bülow, P. (2014). Psychosis and poverty: Coping with poverty and severe mental illness in everyday life. *Psychosis*, *6*(2), 117–127. https://doi.org/10.1080/17522439.2013.790070

Torrey, E. F. (2011). Stigma and Violence: Isn't It Time to Connect the Dots? *Schizophrenia Bulletin*, *37*(5), 892–896. https://doi.org/10.1093/schbul/sbr057

Truth and Reconciliation Commission. (2000). *Truth and Reconciliation Commission of South Africa report*. London: Macmillan Reference. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=2411

Uthman, O. A., Magidson, J. F., Safren, S. A., & Nachega, J. B. (2014). Depression and adherence to antiretroviral therapy in low-, middle- and high-income countries: a systematic review and meta-analysis. *Current HIV/AIDS Reports*, *11*(3), 291–307. https://doi.org/10.1007/s11904-014-0220-1

van der Sanden, R. L. M., Bos, A. E. R., Stutterheim, S. E., Pryor, J. B., & Kok, G. (2013). Experiences of stigma by association among family members of people with mental illness. *Rehabilitation Psychology*, *58*(1), 73–80. https://doi.org/10.1037/a0031752

Visser, C., & du Plessis, L. (2009). Chapter 11: Dissociative disorders, somatoform disorders, and illness-endorsing behaviours. In T. L. Austin & A. Burke (Eds.), *Abnormal*

psychology: a South African perspective (pp. 336–419). South Africa: Oxford University Press.

Wakefield, J. C. (1992). The concept of mental disorder. On the boundary between biological facts and social values. *The American Psychologist*, *47*(3), 373–388.

Wei, Y., McGrath, P. J., Hayden, J., & Kutcher, S. (2016). Measurement properties of tools measuring mental health knowledge: a systematic review. *BMC Psychiatry*, *16*, 297. https://doi.org/10.1186/s12888-016-1012-5

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, *92*(4), 548–573. https://doi.org/10.1037/0033-295X.92.4.548

Weiner, B. (1988). Attribution theory and attributional therapy: Some theoretical observations and suggestions. *British Journal of Clinical Psychology*, *27*(1), 99–104. https://doi.org/10.1111/j.2044-8260.1988.tb00757.x

Weiner, B. (1995). *Judgments of responsibility: a foundation for a theory of social conduct*. New York: Guilford Press.

Weiner, B., Perry, R. P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology*, *55*(5), 738–748.

Williams, D. R., Herman, A., Stein, D. J., Heeringa, S. G., Jackson, P. B., Moomal, H., & Kessler, R. C. (2008). Twelve-month mental disorders in South Africa: prevalence, service use and demographic correlates in the population-based South African Stress and Health Study. *Psychological Medicine*, *38*(02). https://doi.org/10.1017/S0033291707001420

Wolff, G., Pathare, S., Craig, T., & Leff, J. (1996). Community attitudes to mental illness. *The British Journal of Psychiatry*, *168*(2), 183–190. https://doi.org/10.1192/bjp.168.2.183

World Health Organization (Ed.). (1992). *International statistical classification of diseases and related health problems* (10th revision). Geneva: World Health Organization.

World Health Organization. (2007). *WHO-AIMS Report on Mental Health System in South Africa*.

World Health Organization. (2008). *HIV/AIDS and mental health (EB124/6)* (No. EB124/6). Retrieved from http://www.who.int/gb/ebwha/pdf_files/EB124/B124_6-en.pdf

Appendices

Appendix A: Ethical clearance

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (SCHOOL OF HUMAN & COMMUNITY DEVELOPMENT

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: MPSYC/16/012 IH**
PROJECT TITLE:	The Impact of mental illness stigma: Exploring perceptions of mental illness within Gauteng.
INVESTIGATORS	Van Heerden Francoi
DEPARTMENT	Psychology
DATE CONSIDERED	29/07/16
DECISION OF COMMITTEE*	Approved

This ethical clearance is valid for 2 years and may be renewed upon application

DATE: 29 July 2016

CHAIRPERSON
(Professor Brett Bowman)

cc Supervisor: Prof. Sumaya Laher
Psychology

DECLARATION OF INVESTIGATOR (S)

To be completed in duplicate and **one copy** returned to the Secretary, Room 100015, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure, as approved, I/we undertake to submit a revised protocol to the Committee.

This ethical clearance will expire on 31 December 2018

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix B: Participant Information sheet

Psychology
School of Human & Community Development
University of the Witwatersrand
Private Bag 3, Wits, 2050
Tel: 011 717 4503 Fax: 011 717 4559

Dear Student

Good day! We are a team of researchers currently studying towards a postgraduate Psychology degree at the University of the Witwatersrand. Part of the degree involves the completion of a research project. We are working on a project that is evaluating perceptions of mental illness. We would like to invite you to participate in this study.
Participation will require you to administer this questionnaire to someone over the age of 18 in your community. Once you have administered the questionnaire, return it to the sealed box marked 'Perceptions of Mental illness study' at the Psychology First year Office.

The Participant Information Sheet attached to this questionnaire must be left with the community member who completed the questionnaire. You must return the questionnaire with this sheet attached with your name and student number completed below for you to be able to gain your 1% course credit.

Student name and surname: _____

Student number: _____

Thank you for assisting with data collection for this study.

Francois van Heerden
francoisvanheerden333@gmail.com

Keegan Bell
606872@students.wits.ac.za

Lara Erdmann
lerdmann24@gmail.com

Prof Sumaya Laher (Supervisor)
Sumaya.laher@wits.ac.za / 011 717 4532/4503

Psychology
School of Human & Community Development
University of the Witwatersrand
Private Bag 3, Wits, 2050
Tel: 011 717 4503 Fax: 011 717 4559

Dear Sir/Madam

Good day! We are a team of researchers currently studying towards a postgraduate Psychology degree at the University of the Witwatersrand. Part of the degree involves the completion of a research project. We are working on a project that is evaluating perceptions of mental illness. We would like to invite you to participate in this study.

Participation in this study is voluntary. Participation will require you to complete the attached questionnaire that will take approximately 30 minutes to complete. Furthermore, your responses will remain confidential and anonymity is assured as the questionnaire requires no identifying information. Any participation would be extremely helpful and highly appreciated. However, should you choose not to participate, this will not be held against you in any way. There are no risks or benefits associated with participation in this study.

The findings of the study will be reported in a research report. It may also be used in conference presentations and journal articles. The questionnaires from this study will be kept in a safe place at the university. Reports will be focused on group trends. Since the questionnaire is anonymous, no individual feedback can be provided. A summary of the results of the study can be requested by contacting me telephonically or sending me an email about 6 months after completion of this questionnaire.

Thinking about mental illness can be difficult, if you feel vulnerable or stressed after answering this questionnaire or if you know of a friend who may need assistance please call any of the free counselling service listed below:

- The South African Depression and Anxiety Group - 0800 567 567 or 011 262 6396
- Lifeline Southern Africa – 0861 322 322

If additional information is required please do not hesitate to contact us or our supervisor (Prof Sumaya Laher – Sumaya.laher@wits.ac.za). Contact details are provided below. Return of the completed questionnaire will be taken as consent to use your response in my study. Please detach and keep this sheet for future reference.

Thank you for taking the time to read this.

Francois van Heerden
francoisvanheerden333@gmail.com

Keegan Bell
606872@students.wits.ac.za

Lara Erdmann
lerdmann24@gmail.com

Prof Sumaya Laher (Supervisor)
Sumaya.laher@wits.ac.za / 011 717 4532/4

Appendix C: Questionnaire

All responses are confidential. Please answer all questions as truthfully as possible.

1. **Age (years)**_____

2. **Gender** ☐ Male ☐ Female

3. **What is your home language*? (please choose one)**

☐ Afrikaans ☐ English ☐ IsiNdebele ☐ IsiXhosa
☐ IsiZulu ☐ Sepedi (North Sotho) ☐ Sesotho ☐ Setswana
☐ SiSwati ☐ Tshivenda ☐ Xitsonga
Other(s) _____

4. **Ethnicity*:**

African ☐ Coloured ☐ White ☐ Indian ☐ Other: ☐ Please Specify _____

***Required for research purposes only. This is not intended to offend or discriminate.**

5. **Religious Affiliation:**

No religion☐ Christianity☐ Hinduism☐ Islam☐ Judaism ☐

Traditional African Religion ☐ Other: ☐ Please Specify _____

6. **Levels of schooling (mark most appropriate)**

Primary school ☐ High School ☐ Some University ☐ Diploma☐ Degree Post-graduate ☐

7. **Indicate the number of years of education**

Years of schooling _____

8. **Income bracket - I make more than or equal to (mark most appropriate):**

☐ R30 000 per month ☐ R25 000 per month ☐ R20 000 per month ☐ R15 000 per month

☐ R10 000 per month ☐ R5 000 per month

9. **Do you know anyone who has suffered from a mental illness?**

Yes: ☐ No: ☐

10. Have you been diagnosed with a mental illness in your life at any time?

Yes: ☐ No: ☐

11. How would you rate your knowledge of mental illnesses? (mark most appropriate)

1: No knowledge ☐ 2: Some knowledge ☐ 3: Sufficient knowledge ☐

4: More than sufficient knowledge ☐ 5: Extensive knowledge ☐

Familiarity of mental illness

- **My job involves providing services/treatment for persons with mental illness**.

Yes: ☐ No: ☐

- **I have observed, in passing, a person I believe may have had a mental illness.**

Yes: ☐ No: ☐

- **I have observed person with a mental illness on a frequent basis.**

Yes: ☐ No: ☐

- **I have worked with a person who had a mental illness at my place of employment.**

Yes: ☐ No: ☐

- **A friend of the family has a mental illness.**

Yes: ☐ No: ☐

- **I have a relative who has a mental illness.**

Yes: ☐ No: ☐

- **I live with a person who has a mental illness.**

Yes: ☐ No: ☐

(PPMIQ - PUBLIC PERCEPTIONS OF MENTAL ILLNESS QUESTIONNAIRE) **There are no right or wrong answers to the following questions. We are interested in your perceptions and opinions. Please place a cross (X) on the response that best indicates your level of agreement.**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Mentally ill persons can work. (K – Knowledge)	1	2	3	4	5
Anyone can suffer from a mental illness. (K)	1	2	3	4	5
Mental illness is like any other illness. (+ – Added)	1	2	3	4	5
People with mental illness experience aches and pains in their body. (+)	1	2	3	4	5
People with mental health problems are largely to blame for their own condition. (K)	1	2	3	4	5
Spiritual illnesses are better than mental illnesses (+)	1	2	3	4	5
One can always tell a mentally ill person by his or her physical appearance. (K)	1	2	3	4	5
Mentally ill persons are not capable of true friendships (K)	1	2	3	4	5
Its better to have a physical illness rather than a mental illness (+)	1	2	3	4	5
Mentally ill persons are usually dangerous. (K)	1	2	3	4	5
Suffering from a mental illness is shameful (+)	1	2	3	4	5
The mentally ill should be prevented from having children. (A - Attitude)	1	2	3	4	5
The mentally ill should not get married (A)	1	2	3	4	5
One should avoid all contact with the mentally ill. (A)	1	2	3	4	5
The mentally ill should not be allowed to make decisions, even those concerning routine events (A)	1	2	3	4	5
I could maintain a friendship with someone with a mental illness. (A)	1	2	3	4	5
I could marry someone with a mental illness. (A)	1	2	3	4	5
I would be afraid to have a conversation with a mentally ill person. (A)	1	2	3	4	5
People with mental health illnesses should have the same rights as anyone else. (A)	1	2	3	4	5
I would be upset or disturbed about working on the same job as a mentally ill person. (A)	1	2	3	4	5
I would be ashamed if people knew that someone in my family had been diagnosed with a mental illness. (A)	1	2	3	4	5
If I was suffering from a mental health illness, I wouldn't want people to know about it. (A)	1	2	3	4	5

People are generally caring and sympathetic towards people with mental illness. (A)	1 2 3 4 5
Mental illness is caused by:	
genetic inheritance. (C - Cause)	1 2 3 4 5
substance abuse. (C)	1 2 3 4 5
bad things happening to you. (C)	1 2 3 4 5
God's punishment. (C)	1 2 3 4 5
a test from God. (+ – Added)	1 2 3 4 5
a lack of religious involvement. (+)	1 2 3 4 5
jealousy. (+)	1 2 3 4 5
supernatural beings like djinn or takaloshe. (+)	1 2 3 4 5
spirit possession. (+)	1 2 3 4 5
ancestral possession. (+)	1 2 3 4 5
ancestors who may not be happy with you. (+)	1 2 3 4 5
witchcraft and/or sorcery. (+)	1 2 3 4 5
brain dysfunction. (C)	1 2 3 4 5
personal weakness. (C)	1 2 3 4 5
family stress. (+)	1 2 3 4 5
chemical imbalance. (+)	1 2 3 4 5
past karma. (+)	1 2 3 4 5
my own stress. (+)	1 2 3 4 5
external stress (e.g. crime). (+)	1 2 3 4 5
the evil eye being cast upon you. (+)	1 2 3 4 5
financial stress. (+)	1 2 3 4 5
One should hide his/her mental illness from his/her community. (CM - Care and Management)	1 2 3 4 5
There are mental health services available in my community that can assist with treating individuals with mental illnesses. (CM)	1 2 3 4 5
Mental illness cannot be cured. (CM)	1 2 3 4 5

Mentally ill people should be in an institution where they are under supervision and control. (CM)	1 2 3 4 5
Mental illness can be treated outside a hospital. (CM)	1 2 3 4 5
Information about mental illness is available at my local clinic. (CM)	1 2 3 4 5
The majority of people with mental illnesses recover. (CM)	1 2 3 4 5
Local clinics can provide good care for mental illnesses. (CM)	1 2 3 4 5
If I was concerned about a mental health issue with a member of my family or myself, I would feel comfortable discussing it with someone at my local clinic. (CM)	1 2 3 4 5
It is very important for the mentally ill person to seek help from a professional from the same religion/culture. (+ – Added)	1 2 3 4 5
A mentally ill person should:	
consult with physicians (GP). (+)	1 2 3 4 5
talk to his/her family. (+)	1 2 3 4 5
reconnect with his/her friends. (+)	1 2 3 4 5
consult with a priest. (+)	1 2 3 4 5
consult with an elder member of the family. (+)	1 2 3 4 5
consult with an elder member in the community. (+)	1 2 3 4 5
consult with a traditional healer. (+)	1 2 3 4 5
pray to God. (+)	1 2 3 4 5
seek the help of a counsellor/ psychologist. (+)	1 2 3 4 5
consult with a psychiatrist. (+)	1 2 3 4 5
take medication. (+)	1 2 3 4 5
use holistic treatments. (+)	1 2 3 4 5
be admitted to a psychiatric hospital. (+)	1 2 3 4 5

	(BMI - BELIEFS TOWARD MENTAL ILLNESS) **There are no right or wrong answers to the following questions. We are interested in your perceptions and opinions. Please place a cross (X) on the response that best indicates your level of agreement.**	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	A mentally ill person is more likely to harm others than a normal person. (D) - Dangerousness	1	2	3	4	5
	Mental illness would require a much longer period of time to be cured than would other general diseases. (D)	1	2	3	4	5
	It may be a good idea to stay away from people who have mental illnesses because their behavior is dangerous. (D)	1	2	3	4	5
	Mentally-ill people are more likely to be criminals. (D)	1	2	3	4	5
	I am afraid of people who are suffering from mental illness because they may harm me. (D)	1	2	3	4	5
	The term ‘‘Mental illness’’ makes me feel embarrassed. (P) - Poor interpersonal and social skills	1	2	3	4	5
	A person with mental illness should have a job with minor responsibilities. (P)	1	2	3	4	5
	I am afraid of what my boss, friends, and others would think if I were diagnosed as having a mental illness. (P)	1	2	3	4	5
	It might be difficult for mentally-ill people to follow social rules such as being punctual or keeping promises. (P)	1	2	3	4	5
	I would be embarrassed if people knew that I dated a person who once received psychological treatment. (P)	1	2	3	4	5
	A person with mental illness is less likely to function well as a parent. (P)	1	2	3	4	5
	I would be embarrassed if a person in my family became mentally ill. (P)	1	2	3	4	5
	Mentally-ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities. (P)	1	2	3	4	5
	Most people would not knowingly be friends with a mentally-ill person. (P)	1	2	3	4	5
	I would not trust the work of a mentally-ill person assigned to my work team. (P)	1	2	3	4	5
	Mental illness is recurrent. (I) - Incurability	1	2	3	4	5
	Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life. (I)	1	2	3	4	5
	People who have once received psychological treatment are likely to need further treatment in the future. (I)	1	2	3	4	5
	I do not believe that mental illness is ever completely cured. (I)	1	2	3	4	5
	The behaviour of people who have a mental illness is unpredictable. (I)	1	2	3	4	5
	Mental illness is unlikely to be cured regardless of treatment. (I)	1	2	3	4	5

Case Study 1: Jeremy starting drinking heavily each weekend during his student days, when he was the life and soul of many parties. By the time he had graduated and married he was drinking on a daily basis. Although his wife insisted that he drank too much, Jeremy argued that he remained in control. Nevertheless, his work and appearance gradually deteriorated to the point that his supervisor at work began to suspect that he might be drinking on the job. A few months later he was involved in a serious car accident, where he wrote off two cars. The police who arrived at the scene of the accident insisted that his blood be taken for alcohol analysis. In view of the fact that his alcohol level far exceeded recommended levels, Jeremy was found negligent and his license repealed.

	PLEASE READ THE ABOVE CASE STUDY AND THEN INDICATE ON THE SCALE BELOW YOUR VIEW OF JEREMY'S BEHAVIOUR AS DESCRIBED IN THE CASE STUDY.	**Strongly Disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**
	Jeremy's behaviour is a normal response. (+ – Added)	1 2 3 4 5
	Jeremy's behaviour is typical of a weak character. (+)	1 2 3 4 5
	Jeremy's behaviour is typical of a mental illness. (+)	1 2 3 4 5
	Jeremy's behaviour could be because of a general medical problem (e.g. an infection). (+)	1 2 3 4 5
	I would think that it were Jeremy's own fault that he is in the present condition. (PRB - personal responsibility beliefs)	1 2 3 4 5
	If I were an employer, I would interview Jeremy for a job. (H - helping)	1 2 3 4 5
	I would share a car pool with Jeremy each day. (H)	1 2 3 4 5
	If I were a landlord, I probably would rent an apartment to Jeremy. (H)	1 2 3 4 5
	I feel certain that I would be able to help Jeremy (H)	1 2 3 4 5
		None at all **Very little** **Some** **Much** **Very much**
	How controllable, do you think, is the cause of Jeremy's present condition? (PRB)	1 2 3 4 5
	How responsible, do you think, is Jeremy for his present condition? (PRB)	1 2 3 4 5
	I would feel pity for Jeremy. (P - pity)	1 2 3 4 5
	How much sympathy would you feel for Jeremy? (P)	1 2 3 4 5
	How much concern would you feel for Jeremy? (P)	1 2 3 4 5
	I would feel aggravated by Jeremy. (A - anger)	1 2 3 4 5
	How angry would you feel at Jeremy? (A)	1 2 3 4 5
	How irritated would you feel by Jeremy? (A)	1 2 3 4 5
	How dangerous would you feel Jeremy is? (F - fear)	1 2 3 4 5
	I would feel threatened by Jeremy. (F)	1 2 3 4 5
	How scared of Jeremy would you feel? (F)	1 2 3 4 5
	How frightened of Jeremy would you feel? (F)	1 2 3 4 5
	If you were to diagnose Jeremy, what illness would you say he was suffering from:	

Case Study 2: Fred was a 21 year old sales representative, who had seemed to be making steady progress in his career for several years. After the past several months, however, management had noted a substantial decrease in his performance. When confronted about this, he admitted that his mind was no longer fully on his work. In particular, he felt that he had begun to enter a more spiritual realm. In fact, he even stated that he could hear and see beings from "beyond the other side". He was therefore aware of an important plot by aliens to destroy the world.Fred was referred to the company's counsellor, who noted that he had difficulty concentrating well, that his logic seemed very unclear, and that he often appeared to lose touch with reality.

	PLEASE READ THE ABOVE CASE STUDY AND THEN INDICATE ON THE SCALE BELOW YOUR VIEW OF FRED'S BEHAVIOUR AS DESCRIBED IN THE CASE STUDY.	**Strongly Disagree 1 / Disagree 2 / Neutral 3 / Agree 4 / Strongly Agree 5**
	Fred's behaviour is a normal response. (+ – Added)	1 2 3 4 5
	Fred's behaviour is typical of a weak character. (+)	1 2 3 4 5
	Fred's behaviour is typical of a mental illness. (+)	1 2 3 4 5
	Fred's behaviour could be because of a general medical problem (e.g. an infection).(+)	1 2 3 4 5
	I would think that it were Fred's own fault that he is in the present condition. (PRB - personal responsibility beliefs)	1 2 3 4 5
	If I were an employer, I would interview Fred for a job. (H - helping)	1 2 3 4 5
	I would share a car pool with Fred each day. (H)	1 2 3 4 5
	If I were a landlord, I probably would rent an apartment to Fred. (H)	1 2 3 4 5
	I feel certain that I would be able to help Fred (H)	1 2 3 4 5
		None at all 1 / Very little 2 / Some 3 / Much 4 / Very much 5
	How controllable, do you think, is the cause of Fred's present condition? (PRB)	1 2 3 4 5
	How responsible, do you think, is Fred for his present condition? (PRB)	1 2 3 4 5
	I would feel pity for Fred. (P - pity)	1 2 3 4 5
	How much sympathy would you feel for Fred? (P)	1 2 3 4 5
	How much concern would you feel for Fred? (P)	1 2 3 4 5
	I would feel aggravated by Fred. (A - anger)	1 2 3 4 5
	How angry would you feel at Fred? (A)	1 2 3 4 5
	How irritated would you feel by Fred? (A)	1 2 3 4 5
	How dangerous would you feel Fred is? (F - fear)	1 2 3 4 5
	I would feel threatened by Fred. (F)	1 2 3 4 5
	How scared of Fred would you feel? (F)	1 2 3 4 5
	How frightened of Fred would you feel? (F)	1 2 3 4 5
	If you were to diagnose Fred, what illness would you say he was suffering from:	_____

Case Study 3: Carl is described by his fellow-workers as someone who doesn't seem to have much fun in life. Although he gets his work done, he usually seems gloomy and irritable. He hardly ever has lunch with his fellow-workers even when invited, saying that he simply doesn't enjoy company. Carl also seems to have a very low self-esteem, and often says that he is incapable of doing even the simplest of tasks, even though others have a high opinion of his work. When a supervisor once asked if something was bothering him, he replied that he has always been this way.

	PLEASE READ THE ABOVE CASE STUDY AND THEN INDICATE ON THE SCALE BELOW YOUR VIEW OF **CARL'S** BEHAVIOUR AS DESCRIBED IN THE CASE STUDY.	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
	Carl's behaviour is a normal response. (+ – Added)	1	2	3	4	5
	Carl's behaviour is typical of a weak character. (+)	1	2	3	4	5
	Carl's behaviour is typical of a mental illness. (+)	1	2	3	4	5
	Carl's behaviour could be because of a general medical problem (e.g. an infection). (+)	1	2	3	4	5
	I would think that it were Carl's own fault that he is in the present condition. (PRB - personal responsibility beliefs)	1	2	3	4	5
	If I were an employer, I would interview Carl for a job. (H - helping)	1	2	3	4	5
	I would share a car pool with Carl each day. (H)	1	2	3	4	5
	If I were a landlord, I probably would rent an apartment to Carl. (H)	1	2	3	4	5
	I feel certain that I would be able to help Carl (H)	1	2	3	4	5
		None at all	**Very little**	**Some**	**Much**	**Very much**
	How controllable, do you think, is the cause of Carl's present condition? (PRB)	1	2	3	4	5
	How responsible, do you think, is Carl for his present condition? (PRB)	1	2	3	4	5
	I would feel pity for Carl. (P - pity)	1	2	3	4	5
	How much sympathy would you feel for Carl? (P)	1	2	3	4	5
	How much concern would you feel for Carl? (P)	1	2	3	4	5
	I would feel aggravated by Carl. (A - anger)	1	2	3	4	5
	How angry would you feel at Carl? (A)	1	2	3	4	5
	How irritated would you feel by Carl? (A)	1	2	3	4	5
	How dangerous would you feel Carl is? (F - fear)	1	2	3	4	5
	I would feel threatened by Carl. (F)	1	2	3	4	5
	How scared of Carl would you feel? (F)	1	2	3	4	5
	How frightened of Carl would you feel? (F)	1	2	3	4	5
	If you were to diagnose Carl, what illness would you say he was suffering from:					

Appendix D: Statistical Tables

Complete multiple regression output predicting traditional community help factor

Multiple regression output exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting traditional community help factor

Model Summary(j)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.429a	0.184	0.149	3.344	0.184	5.175	10	229	0.000	
2	.429b	0.184	0.152	3.337	0.000	0.003	1	229	0.960	
3	.429c	0.184	0.156	3.330	0.000	0.002	1	230	0.966	
4	.428d	0.183	0.158	3.326	-0.002	0.434	1	231	0.511	
5	.426e	0.181	0.160	3.322	-0.002	0.458	1	232	0.499	
6	.421f	0.177	0.159	3.323	-0.004	1.175	1	233	0.279	
7	.416g	0.173	0.159	3.325	-0.004	1.222	1	234	0.270	
8	.405h	0.164	0.154	3.335	-0.009	2.417	1	235	0.121	
9	.389i	0.152	0.145	3.353	-0.013	3.549	1	236	0.061	1.820

a. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Levels of schooling , Age , aetiology - stress, Mental illness knowledge , aetiology - religious, aetiology - spiritual

b. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Age , aetiology - stress, Mental illness knowledge , aetiology - religious, aetiology - spiritual

c. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Age , aetiology - stress, aetiology - religious, aetiology - spiritual

d. Predictors: (Constant), aetiology - genetic, Gender , Familiarity, Age , aetiology - stress, aetiology - religious, aetiology - spiritual

e. Predictors: (Constant), aetiology - genetic, Gender , Age , aetiology - stress, aetiology - religious, aetiology - spiritual

f. Predictors: (Constant), Gender , Age , aetiology - stress, aetiology - religious, aetiology - spiritual

g. Predictors: (Constant), Gender , Age , aetiology - stress, aetiology - spiritual

h. Predictors: (Constant), Gender , aetiology - stress, aetiology - spiritual

i. Predictors: (Constant), Gender , aetiology - spiritual

j. Dependent Variable: traditional community help

ANOVA(a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	578.83	10	57.88	5.18	.000b
	Residual	2561.33	229	11.18		
	Total	3140.16	239			
2	Regression	578.80	9	64.31	5.77	.000c
	Residual	2561.36	230	11.14		
	Total	3140.16	239			
3	Regression	578.78	8	72.35	6.52	.000d
	Residual	2561.38	231	11.09		
	Total	3140.16	239			
4	Regression	573.97	7	82.00	7.41	.000e
	Residual	2566.20	232	11.06		
	Total	3140.16	239			
5	Regression	568.90	6	94.82	8.59	.000f
	Residual	2571.26	233	11.04		
	Total	3140.16	239			
6	Regression	555.93	5	111.19	10.07	.000g
	Residual	2584.24	234	11.04		
	Total	3140.16	239			
7	Regression	542.43	4	135.61	12.27	.000h

	Residual	2597.73	235	11.05		
	Total	3140.16	239			
8	Regression	515.72	3	171.91	15.46	.000i
	Residual	2624.45	236	11.12		
	Total	3140.16	239			
9	Regression	476.25	2	238.12	21.19	.000j
	Residual	2663.91	237	11.24		
	Total	3140.16	239			

a. Dependent Variable: traditional community help

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13.297	2.060		6.455	0.000	9.238	17.356					
	Levels of schooling	-0.010	0.206	-0.003	-0.050	0.960	-0.415	0.395	0.006	-0.003	-0.003	0.857	1.167
	Age	0.018	0.016	0.073	1.134	0.258	-0.013	0.049	0.099	0.075	0.068	0.853	1.172
	Gender	-1.678	0.478	-0.215	-3.508	0.001	-2.620	-0.735	-0.246	-0.226	-0.209	0.948	1.054
	Mental illness knowledge	0.014	0.273	0.003	0.051	0.960	-0.525	0.553	-0.064	0.003	0.003	0.817	1.223
	Familiarity	0.112	0.156	0.046	0.718	0.474	-0.196	0.421	0.026	0.047	0.043	0.879	1.137
	Stigma scale score	0.016	0.025	0.050	0.635	0.526	-0.034	0.066	0.195	0.042	0.038	0.575	1.738
	aetiology - stress	0.145	0.067	0.142	2.159	0.032	0.013	0.277	0.124	0.141	0.129	0.819	1.221
	aetiology - spiritual	0.128	0.041	0.243	3.122	0.002	0.047	0.208	0.328	0.202	0.186	0.589	1.698
	aetiology - religious	0.079	0.082	0.071	0.973	0.332	-0.081	0.240	0.234	0.064	0.058	0.665	1.504
	aetiology - genetic	-0.113	0.101	-0.074	-1.118	0.265	-0.313	0.086	0.004	-0.074	-0.067	0.815	1.226
2	(Constant)	13.262	1.935		6.853	0.000	9.449	17.075					
	Age	0.018	0.015	0.072	1.165	0.245	-0.012	0.047	0.099	0.077	0.069	0.919	1.088
	Gender	-1.675	0.473	-0.215	-3.539	0.000	-2.607	-0.742	-0.246	-0.227	-0.211	0.964	1.037
	Mental illness knowledge	0.012	0.269	0.003	0.043	0.966	-0.519	0.542	-0.064	0.003	0.003	0.840	1.190

	Familiarity	0.113	0.155	0.046	0.730	0.466	-0.192	0.419	0.026	0.048	0.043	0.891	1.122
	Stigma scale score	0.016	0.025	0.051	0.657	0.512	-0.032	0.065	0.195	0.043	0.039	0.596	1.678
	aetiology - stress	0.145	0.067	0.142	2.166	0.031	0.013	0.277	0.124	0.141	0.129	0.820	1.220
	aetiology - spiritual	0.128	0.041	0.243	3.129	0.002	0.047	0.208	0.328	0.202	0.186	0.589	1.698
	aetiology - religious	0.079	0.081	0.071	0.973	0.331	-0.081	0.240	0.234	0.064	0.058	0.667	1.500
	aetiology - genetic	-0.114	0.100	-0.074	-1.136	0.257	-0.311	0.084	0.004	-0.075	-0.068	0.829	1.207
3	(Constant)	13.286	1.847		7.193	0.000	9.647	16.925					
	Age	0.018	0.015	0.072	1.167	0.244	-0.012	0.047	0.099	0.077	0.069	0.920	1.087
	Gender	-1.672	0.469	-0.214	-3.564	0.000	-2.597	-0.748	-0.246	-0.228	-0.212	0.977	1.024
	Familiarity	0.115	0.150	0.047	0.765	0.445	-0.181	0.411	0.026	0.050	0.045	0.946	1.057
	Stigma scale score	0.016	0.024	0.050	0.659	0.511	-0.032	0.064	0.195	0.043	0.039	0.608	1.645
	aetiology - stress	0.145	0.067	0.143	2.177	0.030	0.014	0.277	0.124	0.142	0.129	0.823	1.216
	aetiology - spiritual	0.128	0.041	0.243	3.135	0.002	0.047	0.208	0.328	0.202	0.186	0.589	1.697
	aetiology - religious	0.079	0.081	0.071	0.975	0.331	-0.081	0.239	0.234	0.064	0.058	0.669	1.495
	aetiology - genetic	-0.113	0.099	-0.074	-1.142	0.255	-0.309	0.082	0.004	-0.075	-0.068	0.840	1.191
4	(Constant)	13.874	1.615		8.588	0.000	10.691	17.057					
	Age	0.020	0.015	0.082	1.377	0.170	-0.009	0.049	0.099	0.090	0.082	0.981	1.019
	Gender	-1.651	0.468	-0.212	-3.531	0.000	-2.572	-0.730	-0.246	-0.226	-0.210	0.982	1.019
	Familiarity	0.100	0.148	0.041	0.677	0.499	-0.192	0.393	0.026	0.044	0.040	0.966	1.035
	aetiology - stress	0.137	0.066	0.135	2.095	0.037	0.008	0.266	0.124	0.136	0.124	0.851	1.176
	aetiology - spiritual	0.138	0.037	0.263	3.693	0.000	0.065	0.212	0.328	0.236	0.219	0.696	1.436
	aetiology - religious	0.091	0.079	0.081	1.151	0.251	-0.065	0.246	0.234	0.075	0.068	0.704	1.421
	aetiology - genetic	-0.108	0.099	-0.070	-1.092	0.276	-0.303	0.087	0.004	-0.072	-0.065	0.846	1.183
5	(Constant)	14.085	1.583		8.896	0.000	10.965	17.204					
	Age	0.021	0.015	0.085	1.426	0.155	-0.008	0.049	0.099	0.093	0.085	0.985	1.015
	Gender	-1.659	0.467	-0.213	-3.555	0.000	-2.579	-0.740	-0.246	-0.227	-0.211	0.982	1.018
	aetiology - stress	0.142	0.065	0.139	2.181	0.030	0.014	0.270	0.124	0.141	0.129	0.860	1.162
	aetiology - spiritual	0.137	0.037	0.260	3.664	0.000	0.063	0.210	0.328	0.233	0.217	0.699	1.431
	aetiology - religious	0.087	0.079	0.078	1.110	0.268	-0.068	0.242	0.234	0.073	0.066	0.707	1.415
	aetiology - genetic	-0.107	0.099	-0.070	-1.084	0.279	-0.302	0.087	0.004	-0.071	-0.064	0.846	1.182

6	(Constant)	13.290	1.404		9.468	0.000	10.524	16.055					
	Age	0.022	0.014	0.092	1.555	0.121	-0.006	0.051	0.099	0.101	0.092	0.998	1.002
	Gender	-1.631	0.466	-0.209	-3.499	0.001	-2.550	-0.713	-0.246	-0.223	-0.207	0.985	1.015
	aetiology - stress	0.116	0.060	0.114	1.915	0.057	-0.003	0.235	0.124	0.124	0.114	0.998	1.002
	aetiology - spiritual	0.135	0.037	0.257	3.624	0.000	0.062	0.209	0.328	0.231	0.215	0.700	1.429
	aetiology - religious	0.087	0.079	0.078	1.105	0.270	-0.068	0.242	0.234	0.072	0.066	0.707	1.415
7	(Constant)	13.541	1.386		9.772	0.000	10.811	16.272					
	Age	0.022	0.014	0.092	1.555	0.121	-0.006	0.051	0.099	0.101	0.092	0.998	1.002
	Gender	-1.633	0.466	-0.209	-3.500	0.001	-2.552	-0.714	-0.246	-0.223	-0.208	0.985	1.015
	aetiology - stress	0.116	0.060	0.114	1.919	0.056	-0.003	0.235	0.124	0.124	0.114	0.998	1.002
	aetiology - spiritual	0.158	0.031	0.299	5.005	0.000	0.096	0.219	0.328	0.310	0.297	0.985	1.015
8	(Constant)	14.216	1.320		10.770	0.000	11.616	16.817					
	Gender	-1.618	0.468	-0.207	-3.459	0.001	-2.540	-0.697	-0.246	-0.220	-0.206	0.986	1.015
	aetiology - stress	0.114	0.061	0.112	1.884	0.061	-0.005	0.234	0.124	0.122	0.112	0.998	1.002
	aetiology - spiritual	0.160	0.032	0.303	5.061	0.000	0.097	0.222	0.328	0.313	0.301	0.987	1.013
9	(Constant)	15.884	0.985		16.132	0.000	13.944	17.823					
	Gender	-1.653	0.470	-0.212	-3.518	0.001	-2.579	-0.727	-0.246	-0.223	-0.210	0.987	1.013
	aetiology - spiritual	0.160	0.032	0.304	5.044	0.000	0.097	0.222	0.328	0.311	0.302	0.987	1.013

a. Dependent Variable: traditional community help

Complete multiple regression output predicting psychology/psychiatry factor

Multiple regression output exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting psychology/psychiatry factor

Model Summary(i)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.298a	0.089	0.049	2.295	0.089	2.242	10	230	0.016	
2	.298b	0.089	0.053	2.291	0.000	0.006	1	230	0.937	
3	.298c	0.089	0.057	2.286	0.000	0.010	1	231	0.920	
4	.298d	0.089	0.061	2.281	0.000	0.027	1	232	0.869	
5	.295e	0.087	0.064	2.278	-0.001	0.379	1	233	0.539	
6	.293f	0.086	0.066	2.275	-0.001	0.335	1	234	0.563	
7	.280g	0.078	0.063	2.279	-0.007	1.921	1	235	0.167	
8	.262h	0.068	0.057	2.287	-0.010	2.552	1	236	0.111	2.269

a. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Levels of schooling , Age , Mental illness knowledge , aetiology - stress, aetiology - religious, aetiology - spiritual

b. Predictors: (Constant), aetiology - genetic, Gender , Familiarity, Levels of schooling , Age , Mental illness knowledge , aetiology - stress, aetiology - religious, aetiology - spiritual

c. Predictors: (Constant), aetiology - genetic, Gender , Familiarity, Levels of schooling , Age , Mental illness knowledge , aetiology - religious, aetiology - spiritual

d. Predictors: (Constant), aetiology - genetic, Gender , Levels of schooling , Age , Mental illness knowledge , aetiology - religious, aetiology - spiritual

e. Predictors: (Constant), aetiology - genetic, Gender , Levels of schooling , Mental illness knowledge , aetiology - religious, aetiology - spiritual

f. Predictors: (Constant), aetiology - genetic, Gender , Mental illness knowledge , aetiology - religious, aetiology - spiritual

g. Predictors: (Constant), aetiology - genetic, Mental illness knowledge , aetiology - religious, aetiology - spiritual

h. Predictors: (Constant), aetiology - genetic, aetiology - religious, aetiology - spiritual

i. Dependent Variable: psychology/psychiatry factor

ANOVA(a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	118.14	10	11.81	2.24	.016b
	Residual	1211.94	230	5.27		
	Total	1330.08	240			
2	Regression	118.11	9	13.12	2.50	.010c
	Residual	1211.98	231	5.25		
	Total	1330.08	240			
3	Regression	118.05	8	14.76	2.82	.005d
	Residual	1212.03	232	5.22		
	Total	1330.08	240			
4	Regression	117.91	7	16.84	3.24	.003e
	Residual	1212.17	233	5.20		
	Total	1330.08	240			
5	Regression	115.94	6	19.32	3.72	.001f
	Residual	1214.14	234	5.19		
	Total	1330.08	240			
6	Regression	114.20	5	22.84	4.41	.001g
	Residual	1215.88	235	5.17		
	Total	1330.08	240			
7	Regression	104.26	4	26.07	5.02	.001h
	Residual	1225.82	236	5.19		
	Total	1330.08	240			
8	Regression	91.01	3	30.34	5.80	.001i
	Residual	1239.08	237	5.23		
	Total	1330.08	240			

a. Dependent Variable: psychology/psychiatry factor

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	9.806	1.404		6.986	0.000	7.040	12.572					
	Levels of schooling	0.096	0.141	0.046	0.679	0.498	-0.182	0.374	0.055	0.045	0.043	0.857	1.167
	Age	-0.006	0.011	-0.040	-0.592	0.555	-0.028	0.015	-0.049	-0.039	-0.037	0.852	1.174
	Gender	0.473	0.328	0.093	1.443	0.150	-0.173	1.119	0.080	0.095	0.091	0.950	1.053
	Mental illness knowledge	0.241	0.187	0.089	1.283	0.201	-0.129	0.610	0.133	0.084	0.081	0.817	1.223
	Familiarity	-0.017	0.107	-0.011	-0.161	0.872	-0.228	0.194	-0.022	-0.011	-0.010	0.877	1.140
	Stigma scale score	0.001	0.017	0.007	0.079	0.937	-0.033	0.035	-0.034	0.005	-0.005	0.575	1.739
	aetiology - stress	0.005	0.046	0.008	0.112	0.911	-0.085	0.095	0.073	0.007	0.007	0.810	1.235
	aetiology - spiritual	0.063	0.028	0.185	2.259	0.025	0.008	0.118	0.043	0.147	0.142	0.589	1.697
	aetiology - religious	-0.167	0.056	-0.230	-2.977	0.003	-0.277	-0.056	-0.144	-0.193	-0.187	0.665	1.503
	aetiology - genetic	0.143	0.069	0.144	2.056	0.041	0.006	0.279	0.164	0.134	0.129	0.808	1.238
2	(Constant)	9.864	1.192		8.278	0.000	7.516	12.212					
	Levels of schooling	0.094	0.138	0.045	0.678	0.499	-0.179	0.366	0.055	0.045	0.043	0.888	1.127
	Age	-0.006	0.010	-0.039	-0.595	0.552	-0.026	0.014	-0.049	-0.039	-0.037	0.926	1.080
	Gender	0.474	0.326	0.093	1.453	0.148	-0.169	1.118	0.080	0.095	0.091	0.953	1.050
	Mental illness knowledge	0.239	0.186	0.089	1.285	0.200	-0.128	0.606	0.133	0.084	0.081	0.826	1.210
	Familiarity	-0.018	0.106	-0.011	-0.172	0.863	-0.227	0.191	0.022	-0.011	-0.011	0.891	1.122
	aetiology - stress	0.005	0.045	0.007	0.100	0.920	-0.084	0.093	0.073	0.007	0.006	0.835	1.198
	aetiology - spiritual	0.064	0.026	0.188	2.480	0.014	0.013	0.115	0.043	0.161	0.156	0.689	1.452
	aetiology - religious	-0.166	0.054	-0.228	-3.040	0.003	-0.273	-0.058	-0.144	-0.196	-0.191	0.699	1.431
	aetiology - genetic	0.143	0.069	0.145	2.085	0.038	0.008	0.279	0.164	0.136	0.131	0.820	1.220

3	(Constant)	9.895	1.148		8.621	0.000	7.634	12.157					
	Levels of schooling	0.094	0.138	0.045	0.679	0.498	-0.178	0.366	0.055	0.045	0.043	0.888	1.127
	Age	-0.006	0.010	-0.039	-0.594	0.553	-0.026	0.014	-0.049	-0.039	-0.037	0.927	1.079
	Gender	0.474	0.326	0.093	1.454	0.147	-0.168	1.115	0.080	0.095	0.091	0.953	1.049
	Mental illness knowledge	0.241	0.185	0.089	1.301	0.195	-0.124	0.605	0.133	0.085	0.082	0.832	1.202
	Familiarity	-0.017	0.105	-0.011	-0.165	0.869	-0.225	0.190	0.022	-0.011	-0.010	0.898	1.114
	aetiology - spiritual	0.064	0.026	0.188	2.486	0.014	0.013	0.115	0.043	0.161	0.156	0.689	1.452
	aetiology - religious	-0.165	0.054	-0.228	-3.045	0.003	-0.273	-0.058	-0.144	-0.196	-0.191	0.699	1.430
	aetiology - genetic	0.146	0.064	0.147	2.281	0.023	0.020	0.272	0.164	0.148	0.143	0.944	1.060
4	(Constant)	9.866	1.131		8.721	0.000	7.637	12.095					
	Levels of schooling	0.096	0.137	0.046	0.700	0.485	-0.174	0.366	0.055	0.046	0.044	0.896	1.116
	Age	-0.006	0.010	-0.040	-0.616	0.539	-0.026	0.014	-0.049	-0.040	-0.039	0.937	1.068
	Gender	0.477	0.324	0.094	1.472	0.142	-0.162	1.116	0.080	0.096	0.092	0.958	1.044
	Mental illness knowledge	0.232	0.177	0.086	1.310	0.192	-0.117	0.581	0.133	0.085	0.082	0.903	1.107
	aetiology - spiritual	0.064	0.026	0.188	2.501	0.013	0.014	0.115	0.043	0.162	0.156	0.690	1.449
	aetiology - religious	-0.165	0.054	-0.228	-3.047	0.003	-0.272	-0.058	-0.144	-0.196	-0.191	0.700	1.428
	aetiology - genetic	0.146	0.064	0.147	2.282	0.023	0.020	0.271	0.164	0.148	0.143	0.945	1.058
5	(Constant)	9.686	1.092		8.874	0.000	7.536	11.836					
	Levels of schooling	0.077	0.134	0.037	0.579	0.563	-0.186	0.340	0.055	0.038	0.036	0.942	1.062
	Gender	0.468	0.324	0.092	1.448	0.149	-0.169	1.106	0.080	0.094	0.090	0.960	1.042
	Mental illness knowledge	0.240	0.176	0.089	1.362	0.175	-0.107	0.588	0.133	0.089	0.085	0.909	1.101
	aetiology - spiritual	0.063	0.026	0.186	2.478	0.014	0.013	0.114	0.043	0.160	0.155	0.692	1.446
	aetiology - religious	-0.165	0.054	-0.228	-3.050	0.003	-0.272	-0.058	-0.144	-0.196	-0.191	0.700	1.428
	aetiology - genetic	0.150	0.063	0.152	2.378	0.018	0.026	0.275	0.164	0.154	0.149	0.959	1.042
6	(Constant)	9.919	1.013		9.790	0.000	7.923	11.915					
	Gender	0.444	0.320	0.087	1.386	0.167	-0.187	1.075	0.080	0.090	0.086	0.976	1.024
	Mental illness knowledge	0.257	0.174	0.095	1.475	0.142	-0.086	0.599	0.133	0.096	0.092	0.932	1.073

	aetiology - spiritual	0.062	0.026	0.183	2.449	0.015	0.012	0.113	0.043	0.158	0.153	0.695	1.440
	aetiology - religious	-0.165	0.054	-0.227	-3.047	0.003	-0.271	-0.058	-0.144	-0.195	-0.190	0.700	1.428
	aetiology - genetic	0.154	0.063	0.155	2.443	0.015	0.030	0.277	0.164	0.157	0.152	0.967	1.034
7	(Constant)	10.724	0.832		12.894	0.000	9.086	12.363					
	Mental illness knowledge	0.277	0.174	0.103	1.598	0.111	-0.065	0.620	0.133	0.103	0.100	0.939	1.065
	aetiology - spiritual	0.060	0.025	0.175	2.344	0.020	0.010	0.110	0.043	0.151	0.146	0.699	1.431
	aetiology - religious	-0.165	0.054	-0.227	-3.038	0.003	-0.271	-0.058	-0.144	-0.194	-0.190	0.700	1.428
	aetiology - genetic	0.147	0.063	0.148	2.336	0.020	0.023	0.270	0.164	0.150	0.146	0.973	1.028
8	(Constant)	11.394	0.720		15.814	0.000	9.975	12.814					
	aetiology - spiritual	0.056	0.025	0.163	2.188	0.030	0.006	0.106	0.043	0.141	0.137	0.706	1.417
	aetiology - religious	-0.173	0.054	-0.239	-3.203	0.002	-0.280	-0.067	-0.144	-0.204	-0.201	0.707	1.414
	aetiology - genetic	0.162	0.062	0.164	2.604	0.010	0.039	0.285	0.164	0.167	0.163	0.997	1.003

a. Dependent Variable: psychology/psychiatry factor

Complete multiple regression output predicting family support help factor

Multiple regression output exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting family support help factor

Model Summary(i)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.378[a]	0.143	0.105	2.023	0.143	3.828	10	230	0.000	
2	.376[b]	0.142	0.108	2.020	-0.001	0.273	1	230	0.602	
3	.374[c]	0.140	0.110	2.018	-0.002	0.541	1	231	0.463	
4	.370[d]	0.137	0.111	2.017	-0.003	0.805	1	232	0.371	
5	.365[e]	0.133	0.111	2.017	-0.004	1.020	1	233	0.314	
6	.360[f]	0.130	0.111	2.017	-0.003	0.901	1	234	0.344	
7	.351[g]	0.123	0.108	2.020	-0.007	1.761	1	235	0.186	
8	.335[h]	0.112	0.101	2.028	-0.011	2.908	1	236	0.089	2.115

a. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Levels of schooling , Age , Mental illness knowledge , aetiology - stress, aetiology - religious, aetiology - spiritual

b. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Levels of schooling , Age , Mental illness knowledge , aetiology - stress, aetiology - religious

c. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Levels of schooling , Mental illness knowledge , aetiology - stress, aetiology - religious

d. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Levels of schooling , Mental illness knowledge , aetiology - stress, aetiology - religious

e. Predictors: (Constant), Stigma scale score, Gender , Levels of schooling , Mental illness knowledge , aetiology - stress, aetiology - religious

f. Predictors: (Constant), Stigma scale score, Levels of schooling , Mental illness knowledge , aetiology - stress, aetiology - religious

g. Predictors: (Constant), Stigma scale score, Levels of schooling , Mental illness knowledge , aetiology - stress

h. Predictors: (Constant), Stigma scale score, Mental illness knowledge , aetiology - stress

i. Dependent Variable: family support help factor

ANOVA(a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156.74	10	15.67	3.83	.000b
	Residual	941.67	230	4.09		
	Total	1098.41	240			
2	Regression	155.63	9	17.29	4.24	.000c
	Residual	942.79	231	4.08		
	Total	1098.41	240			
3	Regression	153.42	8	19.18	4.71	.000d
	Residual	944.99	232	4.07		
	Total	1098.41	240			
4	Regression	150.14	7	21.45	5.27	.000e
	Residual	948.27	233	4.07		
	Total	1098.41	240			
5	Regression	145.99	6	24.33	5.98	.000f
	Residual	952.42	234	4.07		
	Total	1098.41	240			
6	Regression	142.33	5	28.47	7.00	.000g
	Residual	956.09	235	4.07		
	Total	1098.41	240			
7	Regression	135.16	4	33.79	8.28	.000h
	Residual	963.25	236	4.08		
	Total	1098.41	240			
8	Regression	123.29	3	41.10	9.99	.000i
	Residual	975.12	237	4.11		
	Total	1098.41	240			

a. Dependent Variable: family support help factor

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	10.839	1.236		8.766	0.000	8.403	13.275					
	Levels of schooling	0.188	0.124	0.100	1.514	0.131	-0.057	0.433	0.168	0.099	0.092	0.857	1.167
	Age	0.007	0.009	0.046	0.703	0.483	-0.012	0.025	0.037	0.046	0.043	0.853	1.173
	Gender	-0.300	0.289	-0.065	-1.038	0.300	-0.870	0.270	-0.058	-0.068	-0.063	0.947	1.055
	Mental illness knowledge	0.352	0.165	0.144	2.125	0.035	0.026	0.677	0.233	0.139	0.130	0.816	1.225
	Familiarity	0.075	0.094	0.052	0.792	0.429	-0.111	0.260	0.147	0.052	0.048	0.876	1.142
	Stigma scale score	-0.020	0.015	-0.105	-1.307	0.192	-0.050	0.010	-0.238	-0.086	-0.080	0.575	1.738
	aetiology - stress	0.107	0.040	0.179	2.643	0.009	0.027	0.186	0.208	0.172	0.161	0.808	1.237
	aetiology - spiritual	-0.013	0.025	-0.042	-0.522	0.602	-0.062	0.036	-0.164	-0.034	-0.032	0.588	1.701
	aetiology - religious	-0.048	0.049	-0.073	-0.980	0.328	-0.146	0.049	-0.170	-0.064	-0.060	0.664	1.506
	aetiology - genetic	-0.054	0.061	-0.060	-0.879	0.381	-0.174	0.067	0.039	-0.058	-0.054	0.807	1.239
2	(Constant)	10.859	1.234		8.800	0.000	8.427	13.290					
	Levels of schooling	0.188	0.124	0.100	1.517	0.131	-0.056	0.433	0.168	0.099	0.092	0.857	1.167
	Age	0.007	0.009	0.048	0.735	0.463	-0.012	0.026	0.037	0.048	0.045	0.856	1.169
	Gender	-0.284	0.287	-0.061	-0.988	0.324	-0.849	0.282	-0.058	-0.065	-0.060	0.959	1.043
	Mental illness knowledge	0.353	0.165	0.144	2.135	0.034	0.027	0.678	0.233	0.139	0.130	0.816	1.225
	Familiarity	0.074	0.094	0.051	0.790	0.430	-0.111	0.260	0.147	0.052	0.048	0.876	1.142
	Stigma scale score	-0.023	0.014	-0.121	-1.630	0.104	-0.051	0.005	-0.238	-0.107	-0.099	0.672	1.487
	aetiology - stress	0.105	0.040	0.177	2.617	0.009	0.026	0.184	0.208	0.170	0.160	0.812	1.231
	aetiology - religious	-0.058	0.045	-0.089	-1.286	0.200	-0.148	0.031	-0.170	-0.084	-0.078	0.782	1.278
	aetiology -	-0.054	0.061	-0.060	-0.882	0.378	-0.174	0.066	0.039	-0.058	-0.054	0.807	1.239

	genetic												
3	(Constant)	10.887	1.232		8.836	0.000	8.460	13.315					
	Levels of schooling	0.213	0.119	0.113	1.781	0.076	-0.023	0.448	0.168	0.116	0.108	0.924	1.083
	Gender	-0.275	0.286	-0.060	-0.960	0.338	-0.839	0.289	-0.058	-0.063	-0.058	0.961	1.041
	Mental illness knowledge	0.344	0.165	0.141	2.092	0.038	0.020	0.669	0.233	0.136	0.127	0.820	1.220
	Familiarity	0.084	0.093	0.058	0.897	0.371	-0.100	0.267	0.147	0.059	0.055	0.892	1.122
	Stigma scale score	-0.020	0.013	-0.106	-1.485	0.139	-0.047	0.007	-0.238	-0.097	-0.090	0.730	1.370
	aetiology - stress	0.107	0.040	0.181	2.679	0.008	0.028	0.186	0.208	0.173	0.163	0.816	1.225
	aetiology - religious	-0.061	0.045	-0.093	-1.360	0.175	-0.150	0.028	-0.170	-0.089	-0.083	0.789	1.268
	aetiology - genetic	-0.061	0.060	-0.067	-1.006	0.315	-0.180	0.058	0.039	-0.066	-0.061	0.826	1.210
4	(Constant)	11.082	1.212		9.141	0.000	8.694	13.471					
	Levels of schooling	0.204	0.119	0.108	1.713	0.088	-0.031	0.438	0.168	0.112	0.104	0.930	1.075
	Gender	-0.289	0.286	-0.063	-1.012	0.313	-0.853	0.274	-0.058	-0.066	-0.062	0.964	1.038
	Mental illness knowledge	0.381	0.159	0.156	2.393	0.018	0.067	0.695	0.233	0.155	0.146	0.875	1.143
	Stigma scale score	-0.021	0.013	-0.112	-1.582	0.115	-0.048	0.005	-0.238	-0.103	-0.096	0.737	1.356
	aetiology - stress	0.110	0.040	0.185	2.758	0.006	0.031	0.189	0.208	0.178	0.168	0.821	1.218
	aetiology - religious	-0.062	0.045	-0.094	-1.376	0.170	-0.151	0.027	-0.170	-0.090	-0.084	0.789	1.267
	aetiology - genetic	-0.061	0.060	-0.068	-1.010	0.314	-0.180	0.058	0.039	-0.066	-0.061	0.826	1.210
5	(Constant)	10.792	1.178		9.163	0.000	8.472	13.112					
	Levels of schooling	0.193	0.119	0.102	1.628	0.105	-0.041	0.426	0.168	0.106	0.099	0.938	1.066
	Gender	-0.271	0.285	-0.059	-0.949	0.344	-0.833	0.291	-0.058	-0.062	-0.058	0.968	1.033
	Mental illness knowledge	0.364	0.158	0.149	2.298	0.022	0.052	0.676	0.233	0.149	0.140	0.885	1.131
	Stigma scale score	-0.023	0.013	-0.119	-1.684	0.093	-0.049	0.004	-0.238	-0.109	-0.103	0.744	1.344
	aetiology - stress	0.095	0.037	0.160	2.566	0.011	0.022	0.168	0.208	0.165	0.156	0.953	1.049

	aetiology - religious	-0.062	0.045	-0.095	-1.380	0.169	-0.151	0.027	-0.170	-0.090	-0.084	0.789	1.267
6	(Constant)	10.310	1.063		9.703	0.000	8.217	12.404					
	Levels of schooling	0.207	0.118	0.110	1.761	0.080	-0.025	0.439	0.168	0.114	0.107	0.953	1.049
	Mental illness knowledge	0.347	0.157	0.142	2.204	0.028	0.037	0.657	0.233	0.142	0.134	0.896	1.116
	Stigma scale score	-0.023	0.013	-0.121	-1.714	0.088	-0.049	0.003	-0.238	-0.111	-0.104	0.744	1.343
	aetiology - stress	0.097	0.037	0.163	2.618	0.009	0.024	0.170	0.208	0.168	0.159	0.955	1.047
	aetiology - religious	-0.060	0.045	-0.091	-1.327	0.186	-0.149	0.029	-0.170	-0.086	-0.081	0.792	1.263
7	(Constant)	10.354	1.064		9.732	0.000	8.258	12.450					
	Levels of schooling	0.201	0.118	0.106	1.705	0.089	-0.031	0.432	0.168	0.110	0.104	0.955	1.048
	Mental illness knowledge	0.364	0.157	0.149	2.320	0.021	0.055	0.674	0.233	0.149	0.141	0.903	1.108
	Stigma scale score	-0.030	0.012	-0.161	-2.518	0.012	-0.054	-0.007	-0.238	-0.162	-0.153	0.910	1.099
	aetiology - stress	0.092	0.037	0.155	2.498	0.013	0.019	0.165	0.208	0.160	0.152	0.964	1.037
8	(Constant)	11.030	0.991		11.130	0.000	9.078	12.983					
	Mental illness knowledge	0.400	0.156	0.163	2.559	0.011	0.092	0.708	0.233	0.164	0.157	0.919	1.088
	Stigma scale score	-0.033	0.012	-0.174	-2.732	0.007	-0.057	-0.009	-0.238	-0.175	-0.167	0.924	1.083
	aetiology - stress	0.094	0.037	0.158	2.536	0.012	0.021	0.167	0.208	0.163	0.155	0.965	1.036

a. Dependent Variable: family support help factor

Complete multiple regression output predicting clinic factor

Multiple regression output exploring the role of schooling, age, gender, knowledge, familiarity, stigma scale score, and the four aetiological factors of mental illness in predicting clinic factor

Model Summary(i)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.360a	0.130	0.092	2.800	0.130	3.412	10	229	0.000	
2	.360b	0.130	0.096	2.794	0.000	0.026	1	229	0.871	
3	.359c	0.129	0.099	2.789	-0.001	0.176	1	230	0.675	
4	.357d	0.127	0.101	2.785	-0.002	0.402	1	231	0.527	
5	.354e	0.125	0.102	2.783	-0.002	0.640	1	232	0.424	
6	.346f	0.120	0.101	2.785	-0.005	1.340	1	233	0.248	
7	.331g	0.110	0.094	2.795	-0.010	2.765	1	234	0.098	
8	.315h	0.099	0.088	2.805	-0.010	2.672	1	235	0.103	2.041

a. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Levels of schooling , Age , aetiology - stress, Mental illness knowledge , aetiology - religious, aetiology - spiritual

b. Predictors: (Constant), aetiology - genetic, Stigma scale score, Gender , Familiarity, Age , aetiology - stress, Mental illness knowledge , aetiology - religious, aetiology - spiritual

c. Predictors: (Constant), aetiology - genetic, Stigma scale score, Familiarity, Age , aetiology - stress, Mental illness knowledge , aetiology - religious, aetiology - spiritual

d. Predictors: (Constant), aetiology - genetic, Stigma scale score, Familiarity, Age , aetiology - stress, aetiology - religious, aetiology - spiritual

e. Predictors: (Constant), aetiology - genetic, Stigma scale score, Familiarity, Age , aetiology - religious, aetiology - spiritual

f. Predictors: (Constant), aetiology - genetic, Stigma scale score, Familiarity, aetiology - religious, aetiology - spiritual

g. Predictors: (Constant), aetiology - genetic, Stigma scale score, aetiology - religious, aetiology - spiritual

h. Predictors: (Constant), aetiology - genetic, Stigma scale score, aetiology - spiritual

i. Dependent Variable: clinic factor

ANOVA(a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	267.40	10	26.74	3.41	.000b
	Residual	1794.90	229	7.84		
	Total	2062.30	239			
2	Regression	267.19	9	29.69	3.80	.000c
	Residual	1795.10	230	7.80		
	Total	2062.30	239			
3	Regression	265.82	8	33.23	4.27	.000d
	Residual	1796.48	231	7.78		
	Total	2062.30	239			
4	Regression	262.69	7	37.53	4.84	.000e
	Residual	1799.61	232	7.76		
	Total	2062.30	239			
5	Regression	257.72	6	42.95	5.55	.000f
	Residual	1804.57	233	7.74		
	Total	2062.30	239			
6	Regression	247.35	5	49.47	6.38	.000g
	Residual	1814.95	234	7.76		
	Total	2062.30	239			
7	Regression	225.90	4	56.48	7.23	.000h
	Residual	1836.40	235	7.81		
	Total	2062.30	239			
8	Regression	205.02	3	68.34	8.68	.000i
	Residual	1857.27	236	7.87		
	Total	2062.30	239			

a. Dependent Variable: clinic factor

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13.235	1.718		7.703	0.000	9.849	16.620					
	Levels of schooling	0.028	0.173	0.011	0.162	0.871	-0.312	0.369	0.088	0.011	0.010	0.858	1.166
	Age	0.015	0.013	0.075	1.124	0.262	-0.011	0.041	0.019	0.074	0.069	0.857	1.168
	Gender	-0.158	0.400	-0.025	-0.394	0.694	-0.946	0.631	-0.018	-0.026	-0.024	0.948	1.054
	Mental illness knowledge	0.147	0.231	0.044	0.635	0.526	-0.309	0.602	0.141	0.042	0.039	0.809	1.236
	Familiarity	0.181	0.131	0.091	1.381	0.169	-0.077	0.440	0.149	0.091	0.085	0.874	1.144
	Stigma scale score	-0.045	0.021	-0.174	-2.145	0.033	-0.087	-0.004	-0.240	-0.140	-0.132	0.574	1.741
	aetiology - stress	-0.046	0.056	-0.057	-0.829	0.408	-0.156	0.064	0.046	-0.055	-0.051	0.808	1.237
	aetiology - spiritual	-0.097	0.034	-0.228	-2.841	0.005	-0.164	-0.030	-0.251	-0.184	-0.175	0.590	1.695
	aetiology - religious	0.122	0.068	0.134	1.779	0.077	-0.013	0.256	-0.075	0.117	0.110	0.667	1.499
	aetiology - genetic	0.192	0.085	0.155	2.263	0.025	0.025	0.359	0.133	0.148	0.140	0.811	1.232
2	(Constant)	13.327	1.616		8.245	0.000	10.143	16.512					
	Age	0.015	0.013	0.078	1.208	0.228	-0.010	0.041	0.019	0.079	0.074	0.916	1.091
	Gender	-0.166	0.396	-0.026	-0.420	0.675	-0.946	0.614	-0.018	-0.028	-0.026	0.965	1.036
	Mental illness knowledge	0.153	0.227	0.045	0.675	0.500	-0.294	0.601	0.141	0.044	0.042	0.834	1.199
	Familiarity	0.179	0.130	0.090	1.374	0.171	-0.078	0.435	0.149	0.090	0.085	0.888	1.126
	Stigma scale score	-0.046	0.021	-0.177	-2.212	0.028	-0.087	-0.005	-0.240	-0.144	-0.136	0.593	1.687
	aetiology - stress	-0.047	0.056	-0.057	-0.836	0.404	-0.156	0.063	0.046	-0.055	-0.051	0.809	1.236
	aetiology - spiritual	-0.097	0.034	-0.228	-2.847	0.005	-0.164	-0.030	-0.251	-0.185	-0.175	0.590	1.695
	aetiology - religious	0.122	0.068	0.135	1.793	0.074	-0.012	0.257	-0.075	0.117	0.110	0.669	1.495
	aetiology - genetic	0.194	0.084	0.156	2.309	0.022	0.028	0.359	0.133	0.151	0.142	0.826	1.211
3	(Constant)	13.051	1.474		8.854	0.000	10.147	15.956					
	Age	0.015	0.013	0.078	1.213	0.226	-0.010	0.041	0.019	0.080	0.075	0.916	1.091

	Mental illness knowledge	0.143	0.225	0.042	0.634	0.527	-0.301	0.587	0.141	0.042	0.039	0.844	1.185
	Familiarity	0.182	0.130	0.091	1.400	0.163	-0.074	0.437	0.149	0.092	0.086	0.890	1.123
	Stigma scale score	-0.047	0.021	-0.180	-2.260	0.025	-0.088	-0.006	-0.240	-0.147	-0.139	0.597	1.675
	aetiology - stress	-0.046	0.056	-0.057	-0.834	0.405	-0.156	0.063	0.046	-0.055	-0.051	0.809	1.236
	aetiology - spiritual	-0.095	0.034	-0.225	-2.824	0.005	-0.162	-0.029	-0.251	-0.183	-0.173	0.596	1.677
	aetiology - religious	0.123	0.068	0.135	1.805	0.072	-0.011	0.257	-0.075	0.118	0.111	0.669	1.494
	aetiology - genetic	0.196	0.083	0.158	2.348	0.020	0.032	0.360	0.133	0.153	0.144	0.830	1.205
4	(Constant)	13.413	1.358		9.880	0.000	10.738	16.088					
	Age	0.015	0.013	0.078	1.211	0.227	-0.010	0.040	0.019	0.079	0.074	0.916	1.091
	Familiarity	0.202	0.126	0.101	1.604	0.110	-0.046	0.449	0.149	0.105	0.098	0.946	1.057
	Stigma scale score	-0.049	0.020	-0.187	-2.380	0.018	-0.089	-0.008	-0.240	-0.154	-0.146	0.610	1.640
	aetiology - stress	-0.044	0.055	-0.054	-0.800	0.424	-0.154	0.065	0.046	-0.052	-0.049	0.812	1.232
	aetiology - spiritual	-0.096	0.034	-0.226	-2.843	0.005	-0.162	-0.029	-0.251	-0.183	-0.174	0.597	1.676
	aetiology - religious	0.120	0.068	0.132	1.770	0.078	-0.014	0.254	-0.075	0.115	0.109	0.672	1.488
	aetiology - genetic	0.201	0.083	0.163	2.426	0.016	0.038	0.365	0.133	0.157	0.149	0.838	1.193
5	(Constant)	12.980	1.244		10.432	0.000	10.529	15.431					
	Age	0.015	0.013	0.074	1.158	0.248	-0.010	0.040	0.019	0.076	0.071	0.921	1.086
	Familiarity	0.192	0.125	0.097	1.539	0.125	-0.054	0.439	0.149	0.100	0.094	0.954	1.048
	Stigma scale score	-0.046	0.020	-0.175	-2.273	0.024	-0.085	-0.006	-0.240	-0.147	-0.139	0.631	1.584
	aetiology - spiritual	-0.098	0.034	-0.230	-2.909	0.004	-0.164	-0.032	-0.251	-0.187	-0.178	0.600	1.667
	aetiology - religious	0.117	0.068	0.129	1.732	0.085	-0.016	0.250	-0.075	0.113	0.106	0.674	1.484
	aetiology - genetic	0.176	0.077	0.142	2.297	0.023	0.025	0.327	0.133	0.149	0.141	0.983	1.018
6	(Constant)	13.234	1.226		10.797	0.000	10.819	15.649					
	Familiarity	0.207	0.124	0.104	1.663	0.098	-0.038	0.452	0.149	0.108	0.102	0.964	1.038
	Stigma scale score	-0.040	0.019	-0.153	-2.045	0.042	-0.078	-0.001	-0.240	-0.132	-0.125	0.675	1.481
	aetiology - spiritual	-0.100	0.034	-0.236	-2.984	0.003	-0.166	-0.034	-0.251	-0.191	-0.183	0.602	1.661
	aetiology - religious	0.114	0.068	0.126	1.686	0.093	-0.019	0.247	-0.075	0.110	0.103	0.675	1.482
	aetiology - genetic	0.167	0.076	0.135	2.195	0.029	0.017	0.318	0.133	0.142	0.135	0.992	1.009
7	(Constant)	13.903	1.162		11.965	0.000	11.614	16.193					
	Stigma scale score	-0.044	0.019	-0.170	-2.288	0.023	-0.082	-0.006	-0.240	-0.148	-0.141	0.688	1.453
	aetiology - spiritual	-0.100	0.034	-0.235	-2.965	0.003	-0.166	-0.034	-0.251	-0.190	-0.183	0.602	1.661

	aetiology - religious	0.111	0.068	0.122	1.635	0.103	-0.023	0.245	-0.075	0.106	0.101	0.676	1.480
	aetiology - genetic	0.176	0.076	0.142	2.303	0.022	0.025	0.326	0.133	0.149	0.142	0.996	1.004
8	(Constant)	13.946	1.166		11.963	0.000	11.649	16.243					
	Stigma scale score	-0.037	0.019	-0.144	-1.976	0.049	-0.075	0.000	-0.240	-0.128	-0.122	0.722	1.386
	aetiology - spiritual	-0.078	0.031	-0.183	-2.511	0.013	-0.139	-0.017	-0.251	-0.161	-0.155	0.719	1.390
	aetiology - genetic	0.177	0.077	0.143	2.308	0.022	0.026	0.328	0.133	0.149	0.143	0.996	1.004

a. Dependent Variable: clinic factor

Complete multiple regression output predicting helping behaviour for substance use disorder

Multiple regression output exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for substance use disorder vignette

Model Summary(e)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.447a	0.200	0.177	2.136	0.200	8.823	7	247	0.000	
2	.446b	0.199	0.180	2.133	-0.001	0.336	1	247	0.563	
3	.444c	0.197	0.181	2.131	-0.001	0.459	1	248	0.499	
4	.436d	0.190	0.177	2.137	-0.007	2.306	1	249	0.130	1.987

a. Predictors: (Constant), General Medical problem, Weak character, Normal response, Typical of MI, Fear, Pity, Anger

b. Predictors: (Constant), General Medical problem, Normal response, Typical of MI, Fear, Pity, Anger

c. Predictors: (Constant), General Medical problem, Normal response, Typical of MI, Fear, Anger

d. Predictors: (Constant), General Medical problem, Normal response, Fear, Anger

e. Dependent Variable: Helping

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	281.86	7	40.27	8.82	.000b
	Residual	1127.27	247	4.56		
	Total	1409.14	254			
2	Regression	280.33	6	46.72	10.26	.000c
	Residual	1128.81	248	4.55		
	Total	1409.14	254			
3	Regression	278.24	5	55.65	12.25	.000d
	Residual	1130.90	249	4.54		
	Total	1409.14	254			
4	Regression	267.77	4	66.94	14.66	.000e
	Residual	1141.37	250	4.57		
	Total	1409.14	254			

a. Dependent Variable: Helping

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	7.407	1.020		7.264	0.000	5.399	9.416					
	Pity	0.034	0.056	0.039	0.602	0.548	-0.076	0.143	0.142	0.038	0.034	0.768	1.301

	Anger	-0.095	0.057	-0.116	-1.668	0.097	-0.207	0.017	-0.258	-0.106	-0.095	0.672	1.489
	Fear	-0.135	0.038	-0.225	-3.544	0.000	-0.210	-0.060	-0.282	-0.220	-0.202	0.802	1.247
	Normal response	0.359	0.125	0.165	2.871	0.004	0.113	0.605	0.199	0.180	0.163	0.977	1.023
	Weak character	-0.070	0.121	-0.035	-0.580	0.563	-0.309	0.169	-0.113	-0.037	-0.033	0.898	1.113
	Typical of MI	-0.208	0.133	-0.092	-1.561	0.120	-0.470	0.054	-0.034	-0.099	-0.089	0.936	1.068
	General Medical problem	0.691	0.160	0.254	4.330	0.000	0.377	1.005	0.242	0.266	0.246	0.944	1.060
2	(Constant)	7.272	0.991		7.336	0.000	5.319	9.224					
	Pity	0.037	0.055	0.044	0.677	0.499	-0.071	0.146	0.142	0.043	0.039	0.780	1.282
	Anger	-0.099	0.056	-0.121	-1.752	0.081	-0.209	0.012	-0.258	-0.111	-0.100	0.681	1.467
	Fear	-0.139	0.038	-0.231	-3.676	0.000	-0.213	-0.064	-0.282	-0.227	-0.209	0.820	1.220
	Normal response	0.356	0.125	0.164	2.852	0.005	0.110	0.601	0.199	0.178	0.162	0.979	1.021
	Typical of MI	-0.213	0.133	-0.094	-1.605	0.110	-0.474	0.048	-0.034	-0.101	-0.091	0.940	1.064
	General Medical problem	0.687	0.159	0.252	4.313	0.000	0.373	1.000	0.242	0.264	0.245	0.946	1.057
3	(Constant)	7.714	0.745		10.361	0.000	6.248	9.181					
	Anger	-0.115	0.051	-0.140	-2.254	0.025	-0.215	-0.015	-0.258	-0.141	-0.128	0.831	1.203
	Fear	-0.137	0.038	-0.228	-3.643	0.000	-0.211	-0.063	-0.282	-0.225	-0.207	0.823	1.215
	Normal response	0.356	0.125	0.164	2.856	0.005	0.110	0.601	0.199	0.178	0.162	0.979	1.021
	Typical of MI	-0.199	0.131	-0.088	-1.519	0.130	-0.457	0.059	-0.034	-0.096	-0.086	0.964	1.037
	General Medical problem	0.693	0.159	0.254	4.367	0.000	0.381	1.006	0.242	0.267	0.248	0.949	1.054
4	(Constant)	7.310	0.697		10.487	0.000	5.937	8.683					
	Anger	-0.115	0.051	-0.140	-2.248	0.025	-0.215	-0.014	-0.258	-0.141	-0.128	0.831	1.203
	Fear	-0.138	0.038	-0.230	-3.662	0.000	-0.212	-0.064	-0.282	-0.226	-0.208	0.824	1.214
	Normal response	0.340	0.124	0.156	2.730	0.007	0.095	0.585	0.199	0.170	0.155	0.986	1.014
	General Medical problem	0.654	0.157	0.240	4.165	0.000	0.345	0.963	0.242	0.255	0.237	0.975	1.026

a. Dependent Variable: Helping

Complete multiple regression output predicting helping behaviour for schizophrenia

Multiple regression output exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for schizophrenia vignette

Model Summary (g)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.360a	0.129	0.106	2.271	0.129	5.493	7	259	0.000	
2	.359b	0.129	0.109	2.267	0.000	0.011	1	259	0.916	
3	.359c	0.129	0.112	2.263	0.000	0.135	1	260	0.713	
4	.356d	0.127	0.114	2.261	-0.002	0.554	1	261	0.457	
5	.353e	0.125	0.115	2.260	-0.002	0.712	1	262	0.400	
6	.339f	0.115	0.108	2.268	-0.010	2.862	1	263	0.092	1.960

a. Predictors: (Constant), General Medical problem, Pity, Weak character, Typical of MI, Fear, Normal response, Anger

b. Predictors: (Constant), General Medical problem, Pity, Weak character, Typical of MI, Fear, Normal response

c. Predictors: (Constant), General Medical problem, Weak character, Typical of MI, Fear, Normal response

d. Predictors: (Constant), Weak character, Typical of MI, Fear, Normal response

e. Predictors: (Constant), Typical of MI, Fear, Normal response

f. Predictors: (Constant), Fear, Normal response

g. Dependent Variable: Helping

ANOVA (a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	198.34	7	28.33	5.49	.000b
	Residual	1336.13	259	5.16		
	Total	1534.48	266			
2	Regression	198.29	6	33.05	6.43	.000c
	Residual	1336.19	260	5.14		
	Total	1534.48	266			
3	Regression	197.59	5	39.52	7.72	.000d
	Residual	1336.89	261	5.12		
	Total	1534.48	266			
4	Regression	194.76	4	48.69	9.52	.000e
	Residual	1339.72	262	5.11		
	Total	1534.48	266			
5	Regression	191.11	3	63.70	12.47	.000f
	Residual	1343.36	263	5.11		
	Total	1534.48	266			
6	Regression	176.50	2	88.25	17.16	.000g
	Residual	1357.98	264	5.14		
	Total	1534.48	266			

a. Dependent Variable: Helping

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	9.963	1.074		9.280	0.000	7.849	12.078					
	Pity	-0.023	0.060	-0.024	-0.381	0.704	-0.140	0.095	-0.087	-0.024	-0.022	0.877	1.140
	Anger	-0.007	0.071	-0.008	-0.106	0.916	-0.147	0.132	-0.063	-0.007	-0.006	0.611	1.637

	Fear	-0.144	0.039	-0.243	-3.710	0.000	-0.221	-0.068	-0.280	-0.225	-0.215	0.781	1.280
	Normal response	0.434	0.149	0.182	2.916	0.004	0.141	0.728	0.203	0.178	0.169	0.864	1.158
	Weak character	-0.124	0.159	-0.053	-0.780	0.436	-0.438	0.190	-0.065	-0.048	-0.045	0.742	1.347
	Typical of MI	-0.241	0.150	-0.100	-1.603	0.110	-0.537	0.055	-0.156	-0.099	-0.093	0.868	1.151
	General Medical problem	-0.096	0.131	-0.043	-0.729	0.467	-0.354	0.163	-0.063	-0.045	-0.042	0.960	1.042
2	(Constant)	9.926	1.011		9.814	0.000	7.934	11.918					
	Pity	-0.021	0.058	-0.022	-0.368	0.713	-0.136	0.093	-0.087	-0.023	-0.021	0.914	1.094
	Fear	-0.146	0.036	-0.246	-4.023	0.000	-0.217	-0.074	-0.280	-0.242	-0.233	0.897	1.115
	Normal response	0.433	0.148	0.181	2.930	0.004	0.142	0.723	0.203	0.179	0.170	0.877	1.141
	Weak character	-0.131	0.147	-0.055	-0.887	0.376	-0.421	0.160	-0.065	-0.055	-0.051	0.865	1.156
	Typical of MI	-0.238	0.148	-0.099	-1.610	0.109	-0.530	0.053	-0.156	-0.099	-0.093	0.891	1.123
	General Medical problem	-0.097	0.130	-0.044	-0.741	0.460	-0.354	0.160	-0.063	-0.046	-0.043	0.966	1.036
3	(Constant)	9.717	0.836		11.630	0.000	8.072	11.362					
	Fear	-0.147	0.036	-0.248	-4.094	0.000	-0.218	-0.076	-0.280	-0.246	-0.237	0.908	1.102
	Normal response	0.436	0.147	0.183	2.966	0.003	0.147	0.726	0.203	0.181	0.171	0.881	1.136
	Weak character	-0.124	0.146	-0.052	-0.847	0.398	-0.411	0.164	-0.065	-0.052	-0.049	0.881	1.135
	Typical of MI	-0.249	0.145	-0.103	-1.716	0.087	-0.534	0.037	-0.156	-0.106	-0.099	0.925	1.081
	General Medical problem	-0.097	0.130	-0.044	-0.744	0.457	-0.353	0.160	-0.063	-0.046	-0.043	0.966	1.036
4	(Constant)	9.554	0.805		11.862	0.000	7.968	11.139					
	Fear	-0.151	0.036	-0.254	-4.238	0.000	-0.221	-0.081	-0.280	-0.253	-0.245	0.925	1.081
	Normal response	0.423	0.146	0.177	2.899	0.004	0.135	0.710	0.203	0.176	0.167	0.894	1.118
	Weak character	-0.123	0.146	-0.052	-0.844	0.400	-0.410	0.164	-0.065	-0.052	-0.049	0.881	1.135
	Typical of MI	-0.254	0.145	-0.105	-1.755	0.080	-0.539	0.031	-0.156	-0.108	-0.101	0.927	1.079
5	(Constant)	9.369	0.775		12.091	0.000	7.844	10.895					
	Fear	-0.159	0.034	-0.268	-4.638	0.000	-0.227	-0.092	-0.280	-0.275	-0.268	0.997	1.003
	Normal response	0.397	0.143	0.166	2.786	0.006	0.116	0.678	0.203	0.169	0.161	0.934	1.070
	Typical of MI	-0.244	0.144	-0.101	-1.692	0.092	-0.528	0.040	-0.156	-0.104	-0.098	0.934	1.071
6	(Constant)	8.296	0.446		18.604	0.000	7.418	9.173					
	Fear	-0.161	0.034	-0.272	-4.692	0.000	-0.229	-0.094	-0.280	-0.277	-0.272	0.998	1.002
	Normal response	0.458	0.138	0.192	3.311	0.001	0.186	0.731	0.203	0.200	0.192	0.998	1.002

a. Dependent Variable: Helping

Complete multiple regression output predicting helping behaviour for depression

Multiple regression output exploring the role of anger, fear, pity and other factors (normal response, weak character, typical of a mental illness, general medical problem) on helping behaviour for depression vignette

Model Summary (f)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.448a	0.201	0.179	2.218	0.201	9.188	7	256	0.000	
2	.448b	0.201	0.182	2.214	0.000	0.017	1	256	0.895	
3	.447c	0.200	0.185	2.211	-0.001	0.219	1	257	0.640	
4	.445d	0.198	0.186	2.209	-0.002	0.566	1	258	0.453	
5	.440e	0.194	0.184	2.211	-0.005	1.518	1	259	0.219	1.874

a. Predictors: (Constant), General Medical problem, Weak character, Pity, Anger, Normal response, Typical of MI, Fear

b. Predictors: (Constant), General Medical problem, Weak character, Pity, Anger, Normal response, Fear

c. Predictors: (Constant), Weak character, Pity, Anger, Normal response, Fear

d. Predictors: (Constant), Weak character, Anger, Normal response, Fear

e. Predictors: (Constant), Anger, Normal response, Fear

f. Dependent Variable: Helping

ANOVA(a)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	316.467	7	45.210	9.188	.000b
	Residual	1259.655	256	4.921		
	Total	1576.121	263			
2	Regression	316.381	6	52.730	10.758	.000c
	Residual	1259.740	257	4.902		
	Total	1576.121	263			
3	Regression	315.308	5	63.062	12.904	.000d
	Residual	1260.813	258	4.887		

	Total	1576.121	263			
4	Regression	312.544	4	78.136	16.016	.000e
	Residual	1263.578	259	4.879		
	Total	1576.121	263			
5	Regression	305.139	3	101.713	20.807	.000f
	Residual	1270.982	260	4.888		
	Total	1576.121	263			

a. Dependent Variable: Helping

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12.791	0.980		13.050	0.000	10.861	14.721					
	Pity	-0.039	0.056	-0.042	-0.701	0.484	-0.148	0.070	-0.103	-0.044	-0.039	0.866	1.155
	Anger	-0.133	0.069	-0.129	-1.927	0.055	-0.269	0.003	-0.307	-0.120	-0.108	0.699	1.431
	Fear	-0.216	0.048	-0.301	-4.504	0.000	-0.310	-0.122	-0.393	-0.271	-0.252	0.700	1.428
	Normal response	0.358	0.142	0.151	2.523	0.012	0.079	0.638	0.188	0.156	0.141	0.873	1.146
	Weak character	-0.159	0.130	-0.071	-1.223	0.222	-0.416	0.097	-0.101	-0.076	-0.068	0.921	1.085
	Typical of MI	-0.019	0.142	-0.008	-0.132	0.895	-0.299	0.261	-0.104	-0.008	-0.007	0.795	1.258
	General Medical problem	-0.066	0.145	-0.026	-0.451	0.652	-0.352	0.221	-0.088	-0.028	-0.025	0.958	1.043
2	(Constant)	12.742	0.904		14.092	0.000	10.961	14.522					
	Pity	-0.041	0.053	-0.044	-0.763	0.446	-0.146	0.065	-0.103	-0.048	-0.043	0.929	1.077
	Anger	-0.134	0.069	-0.129	-1.940	0.053	-0.269	0.002	-0.307	-0.120	-0.108	0.701	1.426

	Fear	-0.216	0.048	-0.301	-4.523	0.000	-0.310	-0.122	-0.393	-0.272	-0.252	0.701	1.426
	Normal response	0.363	0.137	0.153	2.645	0.009	0.093	0.633	0.188	0.163	0.147	0.931	1.074
	Weak character	-0.156	0.128	-0.070	-1.222	0.223	-0.408	0.095	-0.101	-0.076	-0.068	0.954	1.049
	General Medical problem	-0.068	0.144	-0.027	-0.468	0.640	-0.352	0.217	-0.088	-0.029	-0.026	0.969	1.032
3	(Constant)	12.585	0.838		15.009	0.000	10.934	14.236					
	Pity	-0.040	0.053	-0.043	-0.752	0.453	-0.145	0.065	-0.103	-0.047	-0.042	0.929	1.076
	Anger	-0.132	0.069	-0.128	-1.924	0.055	-0.267	0.003	-0.307	-0.119	-0.107	0.702	1.424
	Fear	-0.220	0.047	-0.306	-4.675	0.000	-0.313	-0.127	-0.393	-0.279	-0.260	0.722	1.385
	Normal response	0.364	0.137	0.153	2.659	0.008	0.095	0.634	0.188	0.163	0.148	0.931	1.074
	Weak character	-0.156	0.128	-0.070	-1.223	0.222	-0.407	0.095	-0.101	-0.076	-0.068	0.954	1.049
4	(Constant)	12.120	0.567		21.390	0.000	11.005	13.236					
	Anger	-0.127	0.068	-0.123	-1.859	0.064	-0.261	0.008	-0.307	-0.115	-0.103	0.710	1.409
	Fear	-0.224	0.047	-0.312	-4.805	0.000	-0.316	-0.132	-0.393	-0.286	-0.267	0.733	1.365
	Normal response	0.388	0.133	0.163	2.915	0.004	0.126	0.651	0.188	0.178	0.162	0.984	1.016
	Weak character	-0.157	0.128	-0.070	-1.232	0.219	-0.408	0.094	-0.101	-0.076	-0.069	0.954	1.049
5	(Constant)	11.835	0.517		22.872	0.000	10.816	12.853					
	Anger	-0.142	0.067	-0.138	-2.118	0.035	-0.274	-0.010	-0.307	-0.130	-0.118	0.734	1.362
	Fear	-0.223	0.047	-0.310	-4.769	0.000	-0.315	-0.131	-0.393	-0.284	-0.266	0.733	1.364
	Normal response	0.372	0.133	0.157	2.805	0.005	0.111	0.634	0.188	0.171	0.156	0.994	1.006

a. Dependent Variable: Helping