CONCEPTUALISATION OF ABNORMAL BEHAVIOUR AMONG RESIDENTS OF KIBERA INFORMAL SETTLEMENT IN NAIROBI COUNTY, KENYA: IMPLICATIONS FOR MENTAL HEALTH INTERVENTIONS

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University or any other award.

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DEDICATION

To my father Nthangi M' Rugwaru and mother Kathure Nthangi for raising me to become the person that I have become. God bless you abundantly.

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OPERATIONAL DEFINITIONS OF TERMS

Abnormal behaviour: Behaviour that departs from some norm and that harms the affected individual or others; behaviour symptomatic of mental disorder/illness; also mental disorder/mental illness.

Conceptualisation: The act of forming an idea on a given concept out of observation or experience; or how a given concept is understood.

Circular causality: A causal pattern that involves more than one factor

Informal settlement: A district of a city or town which is characterised by inferior living conditions and usually by overcrowding.

Misconception/ Misconceptualisation: A false or mistaken view, opinion or attitude about a concept.

Mental disorder/illness: Arrested or incomplete development of the mind or disability of the mind; a recognisable pattern of abnormal behaviour.

Mental health: Absence of a mental disorder/ illness/abnormal behaviour.

Nature of abnormal behaviour: Diagnostic symptoms of mental illness/disorder

Non-Scientific Causes: Supernatural causes based on the supernatural model of abnormal behaviour.

Normal behaviour: Behaviour that is not indicative of mental disorder/illness.

Psychotic Behaviour: Behaviour that indicates an individual is not in touch with reality

Scientific causes: These are biological, psychological and sociological causes of abnormal behaviour.

ABBREVIATIONS AND ACRONYMS

APA:	American Psychiatric Association
AB:	Abnormal Behaviour
ANOVA:	Analyses of Variance
BPS:	Biopsychosocial
CDD:	Child Developmental Disorders
DSM:	Diagnostic and Statistical Manual of Mental Disorders
DSM-IV-TR:	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revised.
ECT:	Electo-Convulsive Therapy.
FGDs:	Focus Group Discussions.
GAD:	Generalized Anxiety Disorder.
HICs:	High Income Countries.
LMICs:	Low and Middle Income Countries.
MDD:	Major Depressive Disorder.
SPSS:	Statistical Package for Social Sciences.
UN	United Nations.
UN-HABITAT:	United Nations Human Settlement Programme.
WHO:	World Health Organisation.

ABSTRACT

Abnormal behaviour is on the increase globally, with one in every four persons in the world expected to be afflicted by one form of a mental or neurological disorder at some point in their lives. Although great advancements have been made in its understanding and treatment, abnormal behaviour is still misconceptualised by many individuals, sub-cultures and cultures world-wide. The purpose of this study was to investigate how abnormal behaviour is conceptualised by residents of Kibera informal settlement in Nairobi County, Kenya; and how this conceptualisation influences the mental health interventions sought by the residents. The Biopsychosocial (BPS) model of abnormal behaviour and the Fourth Edition (revised text) of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) informed the formulation of research objectives and instruments. A cross-sectional survey design employing a mixed concurrent triangulation method of data collection was adopted for the study. Quantitative data was gathered via a researcher-generated questionnaire while qualitative data was generated via a focus group discussion (FGD) guide. Purposive, stratified, simple random and snowball sampling techniques were used to select 433 study participants. The Statistical Package for Social Sciences (SPSS) aided in the analysis of quantitative data from the questionnaire; which were subjected to descriptive analysis using percentages, frequencies and mean scores; and inferential statistical analysis using Independent T-tests, one way Analysis of Variance (ANOVA) test and subsequent Post-Hoc test; and Pearson Correlation Coefficient (r) test. Textual thematic analysis was done for qualitative data from FGDs. The study established a substantial misconception of the nature of abnormal behaviour (Mean=29.36); an average support for scientific psychosocial causes (Mean=54.39) and a causal misconception (Mean=74.07). Gender variable significantly influenced how the nature of child developmental disorders was conceptualised ($t=2.639, df=382, p=0.009$). Gender, age, and level of education variables significantly influenced how scientific causes of abnormal behaviour were conceptualised ($t=-3.983, df=383, p<0.001$), ($F(3,381)=5.547, p=0.001$), $F(3,381)=4.240, p=0.006$); while age variable significantly influenced how non-scientific causes of abnormal behaviour were conceptualised ($F(3,381)=3.551, p=0.015$). A treatment intervention misconception (Mean=59.78) was also established. A correlation was found between support for scientific/non-scientific causes and use of scientific/non-scientific treatment interventions ($r=0.258; p<0.001; r=0.178, p<0.001$); and between support for scientific/non scientific causes and use of non-scientific/scientific treatment interventions ($r=0.199, p<0.001$; $r=0.125, p=0.014$). The two most highly supported measures to mitigate abnormal behaviour were 'building of mental hospital' and 'educating residents on issues of mental health.' The study concluded that there is a misconception of abnormal behaviour among residents of Kibera informal settlement especially in relation to its psychosocial causes which is likely to lead to delayed or improper interventions. Moreover, there is a possibility that residents of Kibera do not use an integrated approach in treatment of abnormal behaviour due to this misconception. The study recommends structured educational programmes on mental health for residents of Kibera informal settlement aimed at correcting the established misconception.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Across history and cultures, people have attempted for years to explain and treat abnormal behaviour (Berrios, 1996; Lefley, 1998; Roy, 2002; Sue & Sue 2004). This natural trend has resulted to multifaceted culture-based beliefs and assumptions about what abnormal behaviour is, what causes abnormal behaviour and what treatment interventions should be adopted for abnormal behaviour (Berrios, 1996; Lefley, 1998; Roy, 2002; Sue & Sue 2004). For example, behaviours predominantly conceptualised as abnormal by ancient Egyptians included hysteria, disordered attention and melancholia, which they attributed to demon possession. Treatment interventions adopted included drugs, applying of bodily fluid, therapeutic retreats, music and exorcism (Mohit, 2001; Millon, 2004). On the other hand, behaviours predominantly conceptualised as abnormal by ancient Greeks included aimless wondering, delusions and violence which they attributed to gods, imbalanced humors or circumstances. Treatment interventions adopted included drugs, talking therapy, blood-letting, incubation, exorcism and torture methods such as stoning, starvation and beatings (Mohit, 2001; Millon, 2004). While these culture-based views and assumptions on the nature, causes and interventions for abnormal behaviour were and are still important in helping societies to deal with the problem of mental illness (Roy, 2002), they do not capture the holistic scientific essence of abnormal behaviour due their contextualised nature (Berrios, 1996; Roy, 2002; Sue & Sue, 2004) hence they amount to misconception.

Though abnormal behaviour still remains a contentious issue even in modern abnormal psychology (Bennett, 2003; Comer, 2006; David & Vincent, 2004; Davidson, 2008; Hansell

& Lisa 2005; Sue & Sue 2004), great scientific advancements have been made in understanding of the concept. Modern science has defined, explained and highlighted treatment interventions for abnormal behaviour; and huge success in its diagnosis and treatment based on the scientific criterion continue to be recorded (Bennett, 2003; Comer, 2006; Davison, 2008; Hansell & Lisa 2005; Sue & Sue, 2004). Proper conceptualisation of abnormal behaviour therefore entails an understanding of the nature and causes of abnormal behaviour on the basis of the established scientific criterion; while misconception means an understanding of the nature and causes of abnormal behaviour that deviates from the established scientific criterion (Bennett, 2003; Comer, 2006; David & Vincent, 2004; Davidson, 2008; Hansell & Lisa 2005; Sue & Sue, 2004). The World Health Organisation (WHO, 2005) observed that mostly due to lack of knowledge on the scientific basis of abnormal behaviour and deeply-rooted cultural beliefs, misconception of abnormal behaviour is common in many cultures of the world especially in the low and middle income countries (LMICs). Regrettably, misconception of the concept is associated with seeking of improper treatment interventions, belated scientific intervention and non-intervention for mental illness (Aino, 2004; Deribew & Tamirat, 2005; Martin, Andreoli, Pinto, Hourneaux, Barreira, 2011; Nsereko, Kizza, Kigozi, Ssebunnya, Flisher, Cooper, 2011; Sorsdahl, Flisher, Wilson &Stein, 2000) which heightens the suffering for victims of mental illness.

Abnormal psychologists recognise some definitions of abnormal behaviour that enjoy widespread use by mental health professionals across the world (Sue & Sue, 2004). These include the conceptual definition which views abnormal behaviour as deviations from what is considered normal or most prevalent in a sociocultural context; the practical definition which conceptualises abnormal behaviour on the basis of discomfort, deviance (bizarreness) or dysfunction (inefficiency in behavioural, affective and/or cognitive domains); and the

integrated definition which views abnormal behaviour from three vintage points: that of the individual, that of the society and that of the mental health professional (Sue & Sue, 2004). Abnormal psychologists however agree that though each of these definitions give an insight on what constitutes abnormal behaviour, none of them can provide a holistic basis for conceptualising the nature of abnormal behaviour as none is complete in itself (Sue & Sue, 2004; Comer, 2006; Davidson, 2008). Yet, a holistic conceptualisation of the nature of abnormal behaviour is essential in curbing non-intervention for mental illness (de Boer et al., 2008; WHO, 2008).

In view of the above limitations, abnormal psychologists recommend a definition that encompasses the various criteria for abnormal behaviour as a basis for proper conceptualisation of its nature (Bennett, 2003; Sue & Sue, 2004). Consequently, they support the definition that conceptualises abnormal behaviour as 'a behaviour that departs from some norm and that harms the affected individual or others,' (Sue & Sue, 2004, p. 11). This definition tallies with that of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* which defines abnormal behaviour as "a clinically significant behavioural or psychological syndrome or pattern that occurs in an individual that is associated with present distress (for example, a painful symptom) or a disability (that is, impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain or disability, or an important loss of freedom" (4th ed., text rev.; *DSM–IV–TR*; American Psychiatric Association (APA), 2000).

Abnormal psychologists opine that the definition by the American Psychiatric Association as defined in the *Diagnostic and Statistical Manual of Mental Disorders* is the most inclusive scientific definition on whose criteria the nature of abnormal behaviour should be

conceptualised (Bennett, 2003; Comer, 2006; Davidson, 2008; David & Vincent; Hansell & Lisa 2005; Sue & Sue, 2004). Thus, misconception of the nature of abnormal behaviour occurs when single culture specific criteria, rather than the *DSM*criterion, are used to conceptualise abnormal behaviour (Roy, 2002; Sue & Sue, 2004). Roy (2002) and Sue & Sue (2004) observed that the use of single culture-based criteria in conceptualising abnormal behaviour is common in many cultures; implying that misconception of the nature of abnormal behaviour is still prevalent in many cultures worldwide. Yet, proper and timely treatment interventions for mental illness can only be sought if proper holistic conceptualisation of the nature of abnormal behaviour is achieved by individuals and cultures.

The *DSM* presents abnormal behaviours as diagnostic symptoms of various mental disorders and goes ahead to list all abnormal behaviours symptomatic of each specific mental disorder. For example, according to the current *DSM*, key abnormal behaviours symptomatic of schizophrenia disorder include: delusions, hallucinations, disorganised speech and grossly disorganised (catatonic) behaviour; while key abnormal behaviours symptomatic of Major Depressive Disorder (MDD) include: depressed mood, insomnia, significant weight loss or gain, feelings of worthlessness and suicidal ideation (4th ed., text rev.; *DSM–IV–TR*; APA, 2000). Appropriate conceptualisation of the nature of abnormal behaviour entails understanding behaviours symptomatic of various mental disorders, listed in the *DSM-IV-TR* as abnormal. However, many cultures do not view all diagnostic symptoms listed in the *DSM-IV-TR* as abnormal (Roy, 2002; Sue & Sue, 2004). For example, in many traditional cultures, only psychotic behaviours (where an individual is out of touch with reality) were viewed as abnormal (Berrios, 1996; Lefley, 1998; Sue & Sue, 1990; Roy, 2002). This

misconception still persists as evidenced by current studies. For example, Sorsdahl et al. (2000) established that only psychotic behaviours were viewed as abnormalby traditional healers in Mpumulanga, South Africa. Similar findings were also established by Aino (2004) in West Africa, Deribew & Tamirat (2005) in Ethiopia, Gureje, Lasebikan, Ephraim, Olley & Kola (2005) in Nigeria and Mburu, (2007) in Karatina Kenya. In these studies, no treatment intervention was sought for people manifesting non-psychotic behaviours. These findings raise a pertinent concern that there could be many individuals across cultures manifesting non-psychotic symptoms of mental illness; yet these individuals are not helped to access any form of mental health intervention because they are not perceived to be mentally ill. Moreover, abnormal psychologists observe that non-psychotic symptoms if left unattended may develop into full blown psychotic disorder (Ndetei, 2008; Smith, Weston, Lieberman, 2010). WHO (2008) observed that misconception of abnormal behaviour is one factor accounting for the high treatment gap for mental illness which is currently estimated at 76-85% for Low and Middle Income Countries (LMICs) and 35-50% for High-Income Countries (HICs). Yet proper conceptualisation of the nature of abnormal behaviour could enhance proper intervention and help avert the ever increasing disastrous outcomes associated with non-intervention for mental illness which include disabilities, homicide, death and huge economic burdens to families and nations (de Boer et al., 2008; WHO, 2008, 2010).

The causes of abnormal behaviour can also be scientifically explained just like the nature of abnormal behaviour. The modern scientific field of abnormal psychology attributes abnormal behaviour to a scientific biopsychosocial etiology: biological etiology (brain disease, genetics & developmental abnormality) and psychosocial etiology (effects of social context & faulty psychological development) (Davidson, 2008; David & Vincent, 2004; Rosenthal, 1970; Sue

& Sue, 2004). Recommended treatment interventions include drug therapy within conventional medical facilities or psychotherapy within clinical settings or more effectively, a combination of the two interventions (Engel, 1970; Rosenthal, 1970; Slade, 2002; Smyth,1999; Sue & Sue, 2004). Proper conceptualisation of the causes of abnormal behaviour entails an understanding that abnormal behaviour results from both scientific biological causes and scientific psychosocial causes. Consequently, unholistic conceptualisation of causes occurs when only when one category of factors (either biological or psychosocial) is understood to cause abnormal behaviour (Engel, 1977, 1980; Slade, 2002; Smyth,1999; Sue & Sue, 2004). Engel (1977, 1980) observed that holistic intervention for mental illness can only be sought if abnormal behaviour is conceptualised on the basis of a holistic biopsychosocial etiology.

Causal misconception occurs when abnormal behaviour is understood on the basis of the supernatural model rather than the above scientific criterion (Bennett, 2003; Comer, 2006; Davidson, 2008; David & Vincent, 2004; Hansell & Lisa 2005; Roy, 2002; Sue & Sue, 2004). Traditionally, in pre-historic societies, across Dark Ages and up to Renaissance (15^{th} C. to 17^{th} C.), abnormal behaviour was predominantly attributed to supernatural causes (demons, gods, spirits & witchcraft) and treatment was mostly sought from religious leaders and traditional healers (Berrios, 1996; Krasner & Ullman, 1969; Sue & Sue, 2004; Taylor, 1966). Treatment interventions adopted included exorcism (prayers, adjurations & religious rituals), trephining (cutting a hole in the skull of the victim to expel the evil spirits) and other extreme methods such as confinement, flogging, immersion in hot or ice cold water, hanging upside down, imprisonment, abandonment and exiling of the victims from society (Krasner & Ullman, 1969; Millon, 2004; Roy, 2002; Sue & Sue, 2004; Taylor, 1966). Some of these

extreme treatment interventions resulted to immense physical and emotional suffering, disability and even death of the victims (de Boer et al., 2008; Sue & Sue, 2004; WHO, 2008). Studies indicate that this form of causal misconception (where abnormal behaviour is attributed to supernatural causes) still persists in many cultures (Aino, 2004; Gureje, et al., 2005; Kapungwe, et.al., 2010; Mburu, 2007; Nsereko, et al., 2011; Teferra&Shibre, 2012); implying that victims of mental illness in many cultures still continue to be subjected to the aforementioned debilitating treatment interventions. Yet, proper conceptualisation of what causes abnormal behaviour by individuals and cultures can arrest this unfortunate trend.

Statistics indicate that a huge number of urban population worldwide is currently residing in informal settlements. For example, United Nations Human Settlements Programme (UN-Habitat, 2008), estimates thatabout a third of the world's estimated 6 billion people are urban residents who reside in informal settlements. Out of Nairobi's estimated population of 3.5 million, more than 1.8 million (over 50% of the population) reside in informal settlements (Davis, 2006; UN-Habitat, 2006). Kibera informal settlement, where this study was conducted is the largestinformal settlement in Kenya and one of the largest in Africa housing between 600,000 to 1.2 million people (Davis, 2006; UN-Habitat, 2006). The population, scattered across thirteen villages, is highly multi-ethnic with over 42 tribes residing therein (UN-Habitat, 2006; Umande Trust, 2007). Like any other informal settlement, Kibera manifests the common characteristics of informal settlementsacross the world which include overt poverty among residents; insecurity of tenure; poor structural housing conditions; deficient access to safe drinking water and sanitation; inaccessible, unavailable and unaffordable health care services; inadequate nutrition and severe overcrowding (Davis, 2006; Mutisya & Yarime, 2010; UN-Habitat, 2008; WHO, 2005, 2008). It is widely

conjectured that this adverse characterlogy of informal settlements influences how residents of informal settlements conceptualise abnormal behaviour. However, littleinformationis available to support or dispute this claim which further rouses the curiosity for this study. Moreover, WHO (2008) observed that the adverse characterlogy of informal settlements makes residents of informal settlements more vulnerable to abnormal behaviour compared to other populations as these adverse conditions act as precipitating causes of abnormal behaviour. This observation is supported by studies on prevalence of abnormal behaviour in informal settlements which record a high prevalence of abnormal behaviour in informal settlements across the world. For example, Ezpeleta, Guillamón, Granero, de la Osa, María &Moya (2007), Martin, Andreoli, Pinto, Hourneaux, & Barreira (2011) and Puertas, Ríos &del Valle (2006) established a high prevalence of abnormal behaviour among residents of informal settlements in Columbia (27%), Brazil (44%) and Spain (30%) respectively. Moreover, Ndetei & Aillon (2010) found out that more than 50% of patients attending Ruaraka Uhai Neema Hospital (a hospital integrating psychiatric basic care and attending to residents of informal settlements in Nairobi, Kenya) had abnormal behaviour. In view of this high prevalence of abnormal behaviour in informal settlements, the need for proper conceptualisation of the concept by residents of informal settlements cannot be overemphasized; hence the choice of Kibera informal settlement as the site for this study.

As earlier noted, only when individuals and cultures have a proper conceptualisation of nature and causes of abnormal behaviour can proper and timely mental health interventions be sought. Consequently, this raises a pertinent concern as to how residents of Kibera informal settlement conceptualise abnormal behaviour; and the effect this has on the mental

health interventions sought by the residents. This study is thus an endeavour by the researcher to investigate this pertinent concern.

1.2 Statement of the Problem

Despite the high prevalence of abnormal behaviour in informal settlements across the world (Martin et al., 2006; Ezpeleta et al., 2007;Puertas et al., 2006); and in the Kenyan informal settlements in particular (Ndetei and Aillon, 2010), there is a dearth of empirical data on how residents of informal settlements in Kenya conceptualise abnormal behaviour. If detected early and proper and timely interventions sought, most abnormal behaviours can be successfully treated through scientific interventions. Yet, early detection and proper, timely intervention for abnormal behaviour is only possible if people have proper understanding of its nature and causes and this can only be informed by empirical data. Substantial data exists on how abnormal behaviour is conceptualised by informal and non-informal cultures and sub-cultures in other parts of the world including Asia, America and a number of African countries. However, studies that have been conducted in Kenya have focused on other aspects of abnormal behaviour such as stigmatisation (Mburu, 2007) and prevalence (Ndetei and Aillon, 2010). Consequently, little empirical data is available on how abnormal behaviour is conceptualised by various sub-cultures in Kenya; and especially by the informal settlement sub-culture where a high prevalence of abnormal behaviour has been established. This study, whose aim was to establish how abnormal behaviour is conceptualised by residents of Kibera informal settlement in Nairobi County, Kenya, is an effort by the researcher to fill this knowledge gap.

1.3 Purpose of the Study

The purpose of this study was to investigate how abnormal behaviour is conceptualised by residents of Kibera informal settlements of Nairobi County, Kenya; and to establish how this conceptualisation influences the mental health interventions sought by the residents.

1.4 Objectives of the Study

The study was guided by the following objectives:

i) To establish how residents of Kibera informal settlement conceptualise the nature of abnormal behaviour.

ii) To find out how residents of Kibera informal settlements conceptualise the causes of abnormal behaviour.

iii) To investigate if there is any significant statistical difference in how residents of Kibera informal settlement of different sociodemographic characteristics conceptualise abnormal behaviour.

iv) To find out how residents of Kibera informal settlement conceptualise the treatment interventions for abnormal behaviour.

v) To establish if there is any relationship between how residents of Kibera informal settlement conceptualise the causes of abnormal behaviour and the treatment interventions that they seek.

vi) To identify measures that residents of Kibera informal settlement think should be put in place to mitigate abnormal behaviour.

1.5 Research Questions

i) How do residents of Kibera informal settlement conceptualise the nature of abnormal behaviour?

ii) How do residents of Kibera informal settlement conceptualise the causes of abnormal behaviour?

iii) How do residents of Kibera informal settlement conceptualise treatment interventions for abnormal behaviour?

iv) What measures do residents of Kibera informal settlement think should be put in place to mitigate abnormal behaviour?

1.6 Hypotheses of the Study

H_{01}: There no significant difference in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different sociodemographic variables.

H_{02}: There is no significant relationship between how residents of Kibera informal settlement conceptualise the causes of abnormal behaviour and the treatment interventions that they seek.

1.7 Justification and Significance of the Study

Mental ill-health is a problem that has serious implications for individuals, families and the society at large. Yet it is widespread within communities and especially among residents of informal settlements consequently posing a serious implication for societal development. However, with modern scientific breakthrough in the conceptualisation of mental illness, this problem can be adequately addressed. Appropriate treatment of mental illness is however dependent on proper and early identification of the problem as manifested by behaviour. Regrettably, proper and early identification of the problem behaviours is often distorted by social-cultural factors that do not take into consideration the scientific factors that would if

taken into consideration, facilitate proper prognosis of the problem. Understanding how residents of informal settlements conceptualise abnormal behaviour and how this conceptualisation informs the interventions sought for mental illness is crucial in informing appropriate mental health interventions within informal settlements. Yet this can only be achieved through an empirical study such as this study. It is for this reason that I find this study justified.

Previous studies have established a high prevalence of abnormal behaviour among residents of informal settlements across the world and Kenya in particular. Yet, despite being a vulnerable group, there is little empirical data that can help to shed light on how residents of informal settlement here in Kenya conceptualise abnormal behaviour so that appropriate mental health interventions can be put in place to assist them. This study has thus generated a timely body of knowledge that can be used to guide mental health professionals (medics, psychologists and social workers) in developing preventive and curative mental health programmes in informal settlements. WHO underscores the need for clear research based mental health policies in guiding intervention. Currently (Ndetei & Jenkins, 2009) many middle and low income countries across the lack clear mental health policies. The findings of this study could thus inform formulation of the ongoing mental health policy in Kenya and in other countries of the world. WHO also opines that donor funding directed to mental health care in many countries is currently limited by lack of evidence-based data in the area of mental health. It is hoped that the findings of this study will provide the much needed evidence-based data that could facilitate donor funding which can assist in the institution of treatment interventions for abnormal behaviour in informal settlements. The findings of this study will also have a theoretical significance. They will validate the theory guiding the study

(biopsychosocial theory), facilitate its modification or lead to the development of a new model altogether. Finally, it is hoped that the study will stimulate interest for further research in the domain of abnormal psychology.

1.8 Scope and Limitations of the Study

i) The study was confined to Kibera informal settlement in Nairobi County of Kenya. The findings will therefore only be generalised to informal settlements within Nairobi County since informal settlements outside Nairobi may have features unique to themselves that may influence how residents conceptualise abnormal behaviour.

ii) The study focused only on conceptualisation of abnormal behaviour (that is on how residents of Kibera informal settlement conceptualise the nature, causes and interventions for abnormal behaviour) as opposed to any other facet of abnormal psychology.

iii) Some respondents, especially those with basic class 8 education, experienced difficulties in interpreting the questionnaire items. The researcher mitigated this limitation by using duly trained research assistants, who were all students of psychology to interpret the items and questions where difficulties arose.

iv) Occupation, an extraneous variable that was not being tested in this study could have had an influence on how 'abnormal behaviour' was conceptualised by residents of Kibera informal settlement. Literature indicates that people in mental health field (medics, psychologists and social workers) are likely to conceptualise abnormal behaviour more appropriately than people of other occupational backgrounds. This limitation was mitigated by gathering data on occupation

sociodemographic variable with the aim of controlling its effects statistically. Results of analysis of the variable however revealed that only a small number of the respondents 23 (5.3%) had any form of training in the domain ofmental health. Consequently, effects of occupation sociodemographic variable on the outcome were assumed to be insignificant and consequently ignored.

v) Results of the focus group discussion could be limited by 'researcher effect,' where the respondents may tell the researcher what he/she wants to hear. This limitation was mitigated by the moderator asking questions in a neutral manner as much as possible in order to avoid influencing the responses of the respondents.

1.9 Assumptions of the Study

The study was based on the following assumptions:

i) Participants would cooperate and give truthful responses on questionnaire items and focus group discussion questions.

ii) A variety of abnormal behaviours were present in informal settlements.

iii) Residents of Kibera informal settlement were familiar with the concept of 'abnormal behaviour'. This means that they had an idea of the nature, causes and treatment interventions for mental illness.

iv) Sociodemographic variables had an influence on how residents of informal settlements conceptualise abnormal behaviour.

v) Residents of Kibera informal settlement had an idea of what measures could be put in place to mitigate abnormal behaviour.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The purpose of this study was to investigate how abnormal behaviour is conceptualised by residents of informal settlements of Nairobi County, Kenya; and to establish how this conceptualisation influences the mental health interventions sought by the residents. This chapter contains a review of literature related to the study in four sections which include: theoretical framework, review of related studies according to the research objectives, a summary of literature review and the conceptual framework.

2.2 Theoretical Framework

Due to circular causality (a causal pattern that involves multiple factors) attributed to abnormal behaviour (Michael & Anestis, 2009; Zuckerman, 1999), the concept 'abnormal behaviour' is best explained on the basis of several theories. Mental health professionals throughout the world use biomedical model and some key psychosocial modelsto explain abnormal behaviour (Comer, 2008; Hansell & Lisa, 2005; Sue & Sue, 2004). All these models can be positioned within the scientific biopsychosocial (BPS) model of abnormal behaviour theorised by Engel (1977). Consequently, the scientific BPS model of abnormal behaviour (Engel, 1977) was used to guide this study.

2.2.1 Biopsychosocial Model of Abnormal Behaviour

The scientific BPS modelwas theorised by Engel (1977) who advanced the model as a holistic alternative to the prevailing biomedical model that had dominated industrialised societies since themid-20th century. Engel (1977, 1980) argued that the biomedical model

was limited in explaining health and illness due to its dualistic nature (separating mind and body); materialistic and reductionisticorientation (that everything must be objectively explainedat cellular and molecular level); and its exclusion of the human dimensionof the physician and the patient as an area of focus for scientificstudy. The BPS model is a holistic model that posits that biological, psychological and sociological factors all play a significant role in human functioning in the context of health and illness (Engel, 1977, 1980). Consequently, the BPS model of abnormal behaviour posits that abnormal behaviour is best conceptualised on the basis of biological, psychological and sociological causal factors (Smyth,Stone, Hurewitz & Kaell, 1999) as shown in the figure below.

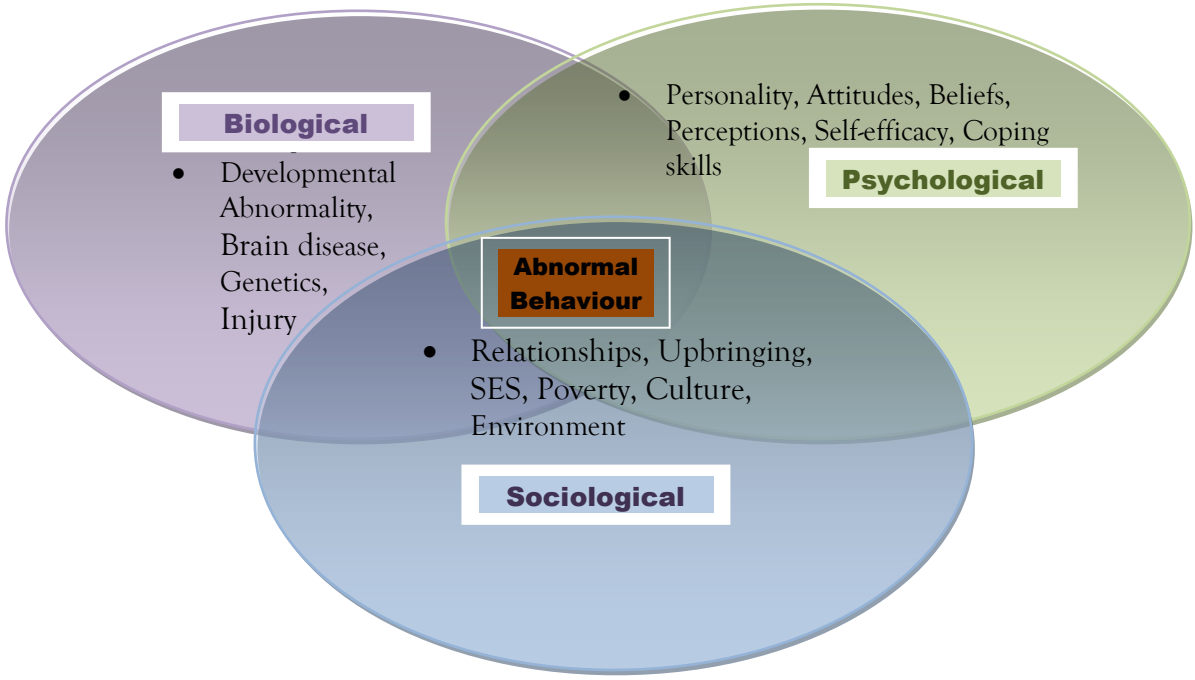

Figure 2.1: An illustration of the core causes of abnormal behaviour in view of the BPS model

Source: Engel (1977).

Research done on the model reveals that the all three factors indicated in figure 2.1 interact in the context of abnormal behaviour (Bruns & Disorbio, 2006; Gilbert, 2009; Halligan & Aylward, 2006; Smyth et al., 1999; Slade, 2002; Tugade et al., 2004; Zuckerman, 1999).

The biologicalcomponent of the BPS model (Engel, 1977, 1980) is attuned to the biomedical theory which is concerned with the biological or somatic (bodily) basis of abnormal behaviour. The theory makes a basic assumption that the brain, neuroanatomy and related biochemical are all physical entities and work together to mediate psychological processes; hence abnormal behaviour is due to some form of biological malfunctioning resulting from brain disease, genetics, developmental abnormality or injury (Engel, 1977, 1980; Rosenthal, 1970).

The psychological component of the BPS model on the other hand looks at potential psychological causes of abnormal behaviour including personality, thoughts, belief patterns, perceptions, emotions and behaviours (Engel, 1977, 1980). In view of this model, negative thoughts, irrational beliefs patterns, low self-efficacy, distorted perceptions and people's negative cognitive and emotional response to daily stressors accruing from environmental demands cause abnormal behaviour (Engel, 1977, 1980; Halligan & Aylward, 2006).

Finally, the sociological component of the BPS model is concerned with how social interactions cause abnormal behaviour. In view of this component, abnormal behaviour can be caused by different sociocultural factors such as discrimination improper upbringing, pathogenic family relationships, culture, poverty, socioeconomic status, unemployment, physical environment, inadequate social support and religion (Engel, 1977, 1980; Halligan & Aylward, 2006).

Like circular causality, the BPS model also recommends a holistic treatment intervention for abnormal behaviour that combines biological treatment (drug therapy, Electro-Convulsive Therapy (ECT), surgery, diet or some variations of somatic therapy) and psychosocial treatment interventions (counselling & psychotherapy and modification of certain social contexts). A treatment intervention combining the two has been found to be the most appropriate for abnormal behaviour (Gilbert, 1995; Slade, 2002).

Moreover, theholistic nature of abnormal behaviour can be understood on the basis of the BPS model. For example abnormal behaviours such as fainting, pouring saliva and memory loss are predominantly biological in nature; while behaviours such as suicidal ideation, continuous crying, depressed mood and social withdrawal are predominantly psychosocial in nature. This implies that the holistic nature of abnormal behaviouris best understood on the basis of the BPS model.

In view of this, the BPS model is the most inclusive, relevant and appropriate model for this study. The model is aligned to the *DSM* diagnostic criteria and it provides a basis for conceptualising all the variables under study which includenature, causes and treatment interventions. First, the model recognises the holistic nature of abnormal behaviour as the BPS diagnostic symptoms of various mental disorders. Secondly, it supports the holistic BPS causes of abnormal behaviour; and thirdly, it supports a holistic integrative treatment intervention that addresses the BPS causes of abnormal behaviour. Scientific research done on the model (Bruns & Disorbio, 2006; Halligan & Aylward, 2006; Smyth et al., 1999; Tugade et al., 2004) highly supports the model's circular causality and integrative treatment proposition for abnormal behaviour. Consequently, the BPS model provides a proper

scientific basis on which the appropriateness of the responses on the variables under study can be tested.

2.3 Review of Related Studies

This section reviews literature on how abnormal behaviour is conceptualised. The literature reviewedis organised in different subtopics informed by research objectives. The subtopics include: nature of abnormal behaviour; causes of abnormal behaviour; treatment interventions for abnormal behaviour; sociodemographic variables and abnormal behaviour and measures to mitigate abnormal behaviour.

2.3.1. Nature of Abnormal Behaviour

As noted in the background of the study "abnormal behaviour" is a subjectively understood concept that still remains a contentious issue even in modern abnormal psychology (Comer, 2006; Davidson, 2008; Hansell & Lisa, 2005; Sue & Sue, 2004). Thus, a multi-definition approach to the understanding of the concept is still adopted (Sue & Sue, 2004). The field of abnormal psychology recognises four key definitions of abnormal behaviour that have been widely embraced by mental health professionals to date. These are conceptual; practical; integrated and the *DSM* definitions (Comer, 2006; Davidson, 2008; David. & Vincent,2004; Hansell & Lisa, 2005; Sue & Sue, 2004).

Conceptual definitions understand abnormal behaviour as ‘deviations from what is considered normal or prevalent in a sociocultural context.’ The criteria for judging normality and abnormality is threefold: a statistical average (that equates abnormality to behaviours that occur least frequently in society); concept of ideal mental health (that stresses the importance of achieving some positive goal such as self-actualisation, competence and autonomy); or a

multicultural perspective (that focuses on culture and on how abnormal behaviour is manifested within the culture) (Sue & Sue, 2004).

Practical definitions of abnormal behaviour are based on pragmatic or clinical criteria concerning the effect of the behaviour on the person exhibiting it or on others. The criteria for judging normality and abnormality is also threefold: discomfort (based on report of physical or psychological discomforts e.g. ulcers and asthma); deviance (that stresses bizarre or unusual e.g. anti-social act or a false perception of reality (disorientation, hallucinations and delusions); or dnysfunction (inability or loss of efficiency in fulfilling duties and responsibilities as required by the person's roles) (Sue & Sue, 2004).

Integrated definitions propose a multiple perspective approach to understanding of abnormal behaviour (Sue & Sue, 2004). According to this approach, abnormal behaviour can be judged from three vantage points: (1) that of the society (2) that of the individual and (3) that of the mental health professional. Each "judge" operates from a different perspective, perhaps even using different criteria. Only if the three "judges" taking these viewpoints agree, is a person categorised as either mentally healthy or mentally disturbed.

As earlier observed, abnormal psychologists observe that none of the above three definitions is complete in itself. Rather each has its strengths and limitations but none can articulate the full essence of the nature of abnormal behaviour (Comer, 2006; Davidson, 2008; Sue & Sue, 2004). Consequently, conceptualising the nature of abnormal behaviour on the basis of any of the above single definitions or any other sociocultural criterion amounts to misconception.Yet, most of studies undertaken isolate specific definitions as a basis for conceptualising the nature of abnormal behaviour which means that they are limited in

providing a holistic explanationon the concept. Consequently, abnormal psychologists and psychiatrist recommend the *DSM* definition as the most holistic scientific definition on whose basis abnormal behaviour should be coceptualised. *DSM-IV-TR* (APA, 2000)defines abnormal behaviour as 'a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual that is associated with present distress (for example,. a painful symptom) or a disability (that is, impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain or disability, or an important loss of freedom,' (4th ed., text rev.; *DSM–IV–TR*; APA, 2000). This definition allows for proper and holistic conceptualisation of the nature of abnormal behaviour.Unlike previous studies, this study adopted a theoretical model which is aligned to the DMS–IV-TR, hence the nature of abnormal behaviour is holistically conceptualised. Abnormal psychologists observe that abnormal behaviours are diagnostic symptoms of various mental disorders such as schizophrenia, mood and personality disorders among others (Comer, 2006; Hansell & Lisa, 2004; Sue & Sue, 2004). *DSM-IV-TR* (APA, 2000) presents a detailed exposition of mental disorders and gives a pattern of abnormal behaviours that characterise each of these disorders. The figure below illustrates these key categories of mental disorders.

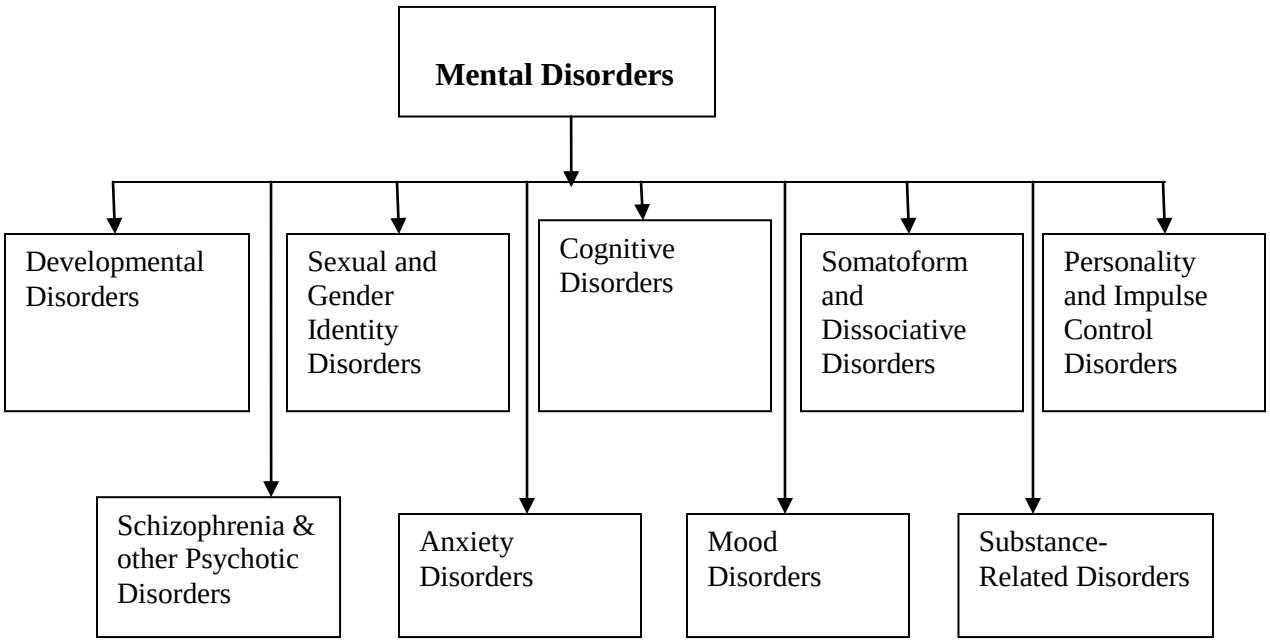

Figure 2.2: A diagrammatic illustration of the key categories of mental disorders

Source: *DSM-IV-TR* (APA, 2000).

Each mental disorder in each of the above categories is manifested through some recognisable pattern of abnormal behaviours. For example, key abnormal behaviours that characterise schizophrenia/psychosis disorders include delusions, hallucinations, disorganised speech and grossly disorganised behaviour; while key abnormal behaviours that characterise Major Depressive Disorder (MDD) include depressed mood, diminished pleasure, insomnia, fatigue, feelings of worthlessness, diminished concentration and suicidal ideation (4th ed., text rev.; *DSM–IV–TR*; APA, 2000). Like schizophrenia/psychosis and MDD, all the other mental disorders in the above categories are characterised by some recognisable pattern of abnormal behaviours. Individuals and cultures conceptualise the nature of abnormal behaviour appropriately if they support the *DSM-IV-TR*diagnostic criterionfor abnormal behaviour. As earlier observed, misconception of the nature of abnormal behaviour occurs when some abnormal behaviours listed in the *DSM-IV-TR* are

conceptualised as normal. However, most of the studies conducted do not take into consideration the holistic *DSM*criterion in conceptualising the nature ofabnormal behaviour.

Roy (2002) observed that only psychotic behaviours were predominantly conceptualised as abnormal in most traditional cultures; hence misconception of the non-psychotic nature of abnormal behaviour was predominant in the traditional cultures. This could be attributed to use of single culture based criterion in conceptualisation of the nature of abnormal behaviour as opposed to the holistic criterion articulated by the DSM. This misconception still persists in many cultures to date as revealed by current studies.For example Aino (2004) conducted a study entitled 'Mental illness and cultural issues in West African films: implications for orthodox psychiatric practice' where he reviewed 163 West African films (films produced in West Africa for a West African audience). He found out that in the films that manifested characters as mentally ill (n=25) the symptomatic manifestations in majority of these films (n=24) were of psychotic states such as hysterical laughter, talking to self, picking refuse from the dumps, unprovoked verbal/physical aggression, unkempt physical appearance and roaming behaviour. Only one film (n=1) showed a non-psychotic behaviour 'deliberate self harm' as being symptomatic of mental illness. These findings reveal a misconception of non-psychotic nature of abnormal behaviour among people of West Africa. However, it is not clear from the study if the film producers in West Africa were familiar with other non-psychotic diagnostic symptoms of mental illness as stipulated by the *DSM.*Deribew & Tamirat (2005) conducted a community based cross-sectional survey on awareness and attitude of the public towards mental health problems in Agaro town of Ethiopia where theyused a structured questionnaire to gather data from a randomly selected sample (n=728). Theyfound out that only psychotic behaviours were predominantly conceptualised as

abnormal by majority of the respondents (74%). Only a few respondents (15%) conceptualised non-psychotic behaviours symptomatic of depressive disorder as normal. Similar to the findings established by Aino (2000) above, these finding too reveal a misconception of non-psychotic nature of abnormal behaviour among the people of Agaro town of Ethiopia. However, the study did not use a holistic theoretical model hence the holistic nature of abnormal behaviour as stipulated by the *DSM* was not investigated. Sorsdahl et al. (2000) conducted a study on 'Explanatory models of mental disorders and treatment practices among traditional healers in Mpumulanga, South Africa.' He collected data from fifty traditional healers (n=50) using FGDs and in-depth interviews. His findings revealed that only psychotic behaviours were perceived as key exemplars of mental illness by traditional healers in Mpumulanga South Africa; non-psychotic behaviours symptomatic of depressive, panic and somatisation disorders were not viewed as abnormal at all. However, similar to the studies above, this study also failed to use a holistic theoretical model; consequently, only a few non-psychotic behaviours were investigated. Mburu (2007) conducted a study on stigma towards mental illness and the mentally ill among residents of Kamburu-sub location in Central Province, Kenya aged 18 to 74 years (n=384). He found out that the behaviours cited as abnormal by the respondents were all psychotic in nature and they included violent behaviour, dirty physical appearance and incoherent speech. This study too revealsa misconception of the non-psychotic nature of abnormal behaviour among peopleof Kamburu sub-location in Central Province, Kenya. However, this study too did not use a holistic theoretical model to conceptualise the nature of abnormal behaviour. Overall, the focus in these studiesis on specific issues such as stigma (Mburu, 2007), models of mental illness (Sorsdahl et al. (2000) and cultural factors (Aino, 2004). Although these are important, a combined biopsychosocial approach in studying how abnormal behaviour is

conceptualised would yield more holistic results. Moreover, all these studies were conducted in non-informal settlement cultures and sub-cultures; yet as observed earlier, it is conjectured that residents of informal settlements may view abnormal behaviour differently due their unique sub-culture. The studies reviewed above found that little treatment intervention was sought for people manifesting non-psychotic abnormal behaviours; implying that many mentally ill people manifesting abnormal non-psychotic behaviours remain untreated in many cultures across the world. This was a pertinent concern which this study sought to investigate.

2.3.2 Causes of Abnormal Behaviour

The term "cause" has many meanings in abnormal behaviour. It may mean etiology, which means the causes of abnormal behaviour. It may also mean a condition that must exist for the abnormal behaviour to occur (primary or necessary cause). It could also be a condition which is enough to produce abnormal behaviour (a sufficientcause). Cause can also be a factor that paves the way thus making abnormal behaviour more likely (a predisposingcause). It can also be atrigger for abnormal behaviour (aprecipitating cause); a condition that increases the probability of abnormal behaviour (contributory cause); or afactor that maintains abnormal behaviour but only after it is present (a reinforcing or maintaining cause)(Michael & Anestis, 2009).

Traditionally, in pre-historic societies, across Dark Ages up to Renaissance (15^{th} to 17^{th} C.), abnormal behaviour was predominantly attributed to supernatural causes such as demons, spirits and witchcraft or to the influences of celestial bodies such as moon, planets, and stars, (Krasner & Ullman, 1969; Roy, 2002; Sue & Sue, 2004; Taylor, 1966). Modern scientific field of abnormal psychology rejects the supernatural basis of abnormal behaviour and terms

it a causal misconception (Bennett, 2003; Comer, 2006; Hansel & Lisa, 2004; Sue & Sue, 2004). Abnormal psychologists acknowledge that the causes of abnormal behaviour are complex and it is not always possible to isolate and evaluate the multiple causal factors involved; a situation thatSue & Sue (2004) observed can be attributed to many difficulties: (1).The classes of mental disorders are many and each specific clinical type included in these broad classifications has its own independent etiology. (2). Mental disorders are usually due to the interaction of two or more agents (circular causality) which often makes it difficult to ascertain the relative importance of each contributory factor. (3).The same symptom patterns may arise from a variety of different causes. (4). The symptoms are not always tailored to fit standard disease entities. These observations are supported by other abnormal psychologists including Bennett (2003), Comer (2006), Davidson (2008), Hansel & Lisa (2005) and Michael & Anestis (2009). Despite these difficulties, abnormal psychologists have come up with a scientific criterion based on intensive research, on which the causes of abnormal behaviour should beunderstood. Their findings reveal that abnormal behaviour is best conceptualised on the basis of a scientific biopsychosocial etiology; implying that the scientific causes of abnormal behaviour are biological, psychological and sociological (Berrios & Hugh, 1991; Comer, 2006; Davidson, 2008; Hansel & Lisa, 2005; Michael & Anestis, 2009; Sue & Sue, 2004; Zuckerman, 1999).

Biological causes of abnormal behaviour are pegged on the biomedical model which stipulates that abnormal behaviours are medical conditions produced by physical abnormalities (Engel 1988; Rosenthal, 1970; Sue & Sue, 2004). Research reveals biological causal factors to include brain sickness, brain injury, genetic defects such as chromosome abnormalities, dietary deficiencies, use of psychoactive drugs, sleep deprivation, lack of

stimulation and activity for the developing embryo and deprivation of basic survival needs such as food, shelter and water. These factors interfere with the normal, adequate, functioning of the neurotransmitters (chemical messengers) in the brain. Because the neurotransmitters regulate level of mood, anxiety and cognitive functioning in individuals, interference with their normal functioning results to a myriad of abnormal behaviours ranging from mild such as sweating, to severe such as delusions & hallucinations (Comer, 2006; Davidson, 2008; Hansel & Lisa, 2005; Rosenthal, 1970; Sue & Sue, 2004).

Psychosocial causes of abnormal behaviour on the other hand are pegged on the key psychosocial theories of abnormal behaviour and they include: early deprivation or trauma during early childhood (Erikson, 1950; Freud, 1920); arrested or frustrated individual goals (Maslow, 1954; Rogers, 1995); rewarding of inappropriate behaviours (Skinner, 1976); imitating of disturbed social role models (Bandura, 1962); irrational or negative interpretation of life's events and situations (Beck, 1976; Ellis, 1994); family dynamics and unique sociocultural stressors such as poverty, unemployment, unhygienic physical environment, illiteracy and discrimination (Sue & Sue, 1990; 2004). Empirical studies on psychosocial factors and mental wellbeing have associated psychosocial causal factors with various forms of abnormal behaviours including psychotic, anti-social, depressive, alcoholism and chronic anxiety (Sue & Sue, 1990; 2004). For example, in a study of Newzealand adults (n=84), Ward & Kennedy (1992) found out that an internal locus of control (indicative of a positive interpretation of life's events) predicted mental well-being while an external locus of control (indicative of a negative interpretation of life's events) predicted mental un-wellbeing. Klebanov, Gunn & Duncan (1994) in an eight-site study of 3-year-olds and their mothers (n=895) in USA, found out that neighbourhood and family poverty was associated with maternal depression. Scott & Lewis (1998) in a study of

residents of England, Wales, andScotland (n=7726) established that poverty and unemployment caused chronic anxiety in individuals. In a study involving mothers and one child from 231 Arizona families, Sharlene & Sandler (1999) found out that divorce was associated with withdrawal from social interactions and depression in children. Dwairy, Achoui, Abouserie & Farah (2006) in a study of Arab adolescents in Saudi Arabia (n=431), established that permissive parenting style among boys was associated with increased anxiety, phobia, depressive and conduct disorders; while Gruebner et al. (2012) in a study of residents of nine slums of Dhaka Senegal (n=1,938) established that mental well-being was significantly associated with various factors such as physical environment, flood risk, sanitation and housing quality, sufficiency and durability.Apart from the study by Gruebner et al. (2012) all these studies were conducted in non-informal settlement. It would be interesting to find out how residents of informal settlement in Kenya conceptualise psychosocial the causes of abnormal behaviour.

Current studies on perceivedcauses of abnormal behaviour indicate that the causes are properly conceptualised in some cultures but misconceptualised in others. For example, Sadik, Bradley, Al-Hasoon & Jenkins (2010) found out that community opinion about the etiology of abnormal behaviour in Iraq was broadly compatible with scientificBPS causal model. Key scientific biological causes attributed to abnormal behaviour by Iraq community included genetic factors, brain disease and substance abuse while the key scientific psychosocialcauses cited was negative life events. Similar findings were established by de Toledo et.al. (2004) in his study on community opinion of mental illness in Latin America and Lombo (2010) in a study of mental health care practitioners' perceptions on mental illness within the isiXhosa cultural context in South Africa.In these studies however, scientific psychosocial causes were cited less than scientific biological causes; implying that

scientific psychosocialcauses werenot well understood by people in these settings. Other studieshowever reveal a causal misconception in which abnormal behaviouris still predominantly attributed to non-scientific (supernatural) causes in many culturesand sub-cultures especially in Africa. For example, in a three year study on mental illness and cultural issues in West African films (n=163), Aino (2004) found out that in the films depicting symptomatic manifestations of mental illness (n=25), the apparent causes were supernatural factors such as spiritual attacks from sorcery, witchcraft, enchantment and curses from enemies, gods or deities; implying that a misconception of the causes of abnormal behaviour existed among people of west Africa. Ewhrudjakpor (2009) found out that despite their impressive medical knowledge, Health Care Providers in Delta State, Nigeria still harboured deeply rooted cultural beliefs and traditions as a result of inappropriately associating mental illness to supernatural causes such as witchcraft and curses, which caused them to dislike the mentally ill. In a study by Nsereko, et.al. (2011) on Stakeholder's perceptions of help-seeking behaviour among people with mental health problems in Uganda (n=116), 65% of the respondents inappropriately attributed abnormal behaviour to witchcraft, curses and evil spirits.Similar findings were established by Kapungwe et al. (2010) & Ssebunnya et al.**(**2009) in their studies of mental health stigma in Uganda and Zambia respectively where abnormal behaviour was inappropriately attributed to evil spirits and witchcraft. Teferra&Shibre (2012) in their qualitative study onperceived causes of severe mental disturbance and preferred interventions by the Borana semi-nomadic population in southern Ethiopia found that abnormal behaviour was inappropriately attributed to supernatural causes such as possession by evil spirits, curses, witchcraft, bewitchment, ‘exposure to wind’ and subsequent attack by evil spirit in postnatal women.In a study on stigma towards mental illness and the mentally ill among residents of Kamburu-sub location in Central Province,

Kenya (n=384), Mburu (2007) established that 48% of the respondents inappropriately attributed mental illnesstodemonic attack. All these studies reveal that a causal misconception for abnormal behaviourwithin the communities where they were conducted. This means that causal misconception still exists in many cultures and sub-cultures across the world and especially in Africa. In all these studies, a positive relationship between causal perceptions and treatment interventions sought was found. Treatment interventionssought by people in these cultures and sub-cultures were inappropriate (reflecting the established causal misconception); and they predominantly included consulting of indigenous/traditional healers and prayers. These findings imply that many victims of mental illness across the world are still being subjected to improper treatment intervention arising from a causal misconception for abnormal behaviour.However, none of the additional studies reviewed in this sub-section measured the strength of the relationship between causal perceptions and the treatment interventions sought. This could be attributed majorly to the qualitative design used in most of the studies. This study used a mixed concurrent triangulation design in data collection; hence it was possible to test hypotheses using data from the questionnaires. Moreover, none of the study was conducted in an informal settlement sub-culture, yet as noted earlier, this sub-culture is characterized by factors that could make residents vulnerable to abnormal behaviour. Moreover, the reviewed studies did not use the holisticBPS model as a basis for conceptualising the causes of abnormal behaviour, meaning that some causes may not have been investigated.

2.3.3 Treatment Interventions for Abnormal Behaviour

Extraordinary scientific advances have been made in the treatment of abnormal behaviour and most mental illnesses can now be treated as successfully as physical illnesses (Sue &

Sue, 2004). Abnormal psychologists recommend two scientific treatment interventions for abnormal behaviour which include either biological (drug therapy) or psychosocial (individual, group & family psychotherapy) (Abramowitz, 1997; Antony & Barlow, 2001; Comer, 2006; David & Vincent, 2004; Davison, 2008; Sue & Sue, 2004); and they acknowledge that these interventions record best results when used in combination. Holistic conceptualisation of treatment interventions for abnormal behaviour occurs when people acknowledge both biological and psychosocial interventions for the abnormal behaviour (Engel, 1980; Bennett, 2003; Sue & Sue, 2004). Consequently, unholistic conceptualisationof treatment intervention occurs when one form of treatment intervention, either biological or psychosocial, is exclusively acknowledged as the only intervention for abnormal behaviour. Like causal misconception, abnormal psychologists also opine that treatment intervention misconception for abnormal behaviour occurs when people acknowledge other forms of interventions apart from the acknowledged scientific BPStreatment interventions (Bennett, 2003; Sue& Sue, 2004). As established above, abnormal behaviour was inappropriately attributed to supernatural causes in many traditional cultures. Consequently, treatment interventions adopted were inappropriate as they reflected these cultural beliefs. Such interventions included trephining (chipping away part of the skull to provide an opening for the evil spirits to escape), exorcism (elaborate prayers and noises to cast out evil spirits) and other extreme torture methods such as flogging, confinement, immersion in hot or ice cold water and starvation all aimed at making the body uninhabitable by the evil spirits (Krasner & Ullman, 1969; Sue & Sue, 2004; Taylor, 1966).Consequently, treatment intervention misconception just like causal misconception was also common in traditional cultures.

Empirical studies indicate that intervention misconception is still present in many cultures; and it predominantly goes hand in hand with causal misconception. Thus, individuals and cultures that conceptualise the causes of abnormal behaviour properly on the basis of the scientific model are likely to recommend appropriate, scientific treatment interventions for it; while those who conceptualise abnormal behaviour inappropriately on the basis of the supernatural model are likely to recommend improper, treatment interventions for it. For example these studies reviewed earlier:de Toledo et al. (2004), Sadik et al. (2010) and Lombo (2010) found out that cultures that that attributed abnormal behaviour to scientific causes, recommended scientific treatment interventions with mental health care providers; while Aino (2004), Ewhrudjakpor (2009), Nsereko et.al (2011), Teferra &Shibre (2012) and Mburu (2007) established that cultures that attributed abnormal behaviour to supernatural causes, predominantly recommended supernatural treatment interventions. Studies reviewed did not however study the relationship between causal perception and treatment interventions sought which is a pertinent concern in the current study. As observed earlier, abnormal psychologists term support for supernatural treatment interventions for abnormal behaviour a treatment misconception (Bennett, 2003; Sue & Sue, 2004). Consequently, all these findings reveal that a treatment intervention misconception for abnormal behaviour exists in many cultures across the word. However, these studies did not use a holistic treatment intervention model to investigate how the treatment interventions were conceptualised. As observed earlier, seeking of improper treatment intervention for abnormal behaviour is associated with intense suffering and even death for the victims of mental illness (de Boer et.al 2008; Ssebunnya et.al2009; WHO, 2008).

In addition to facilitating improper treatment interventions, misconception of the nature and causes of abnormal behaviour was found to facilitate belated scientific intervention and non-intervention for mental illness.For example, in these studies reviewed earlier, Deribew & Tamirat (2005) in their study of people Agaro town of Ethiopia and Sorsdahl et al. (2000) in his study of the traditional healers of Mpumulanga, South Africa found out that when the nature of abnormal behaviour was misconceptualised,no treatment intervention was sought for the victims of mental illness in these communities. In addition, Martin, Andreoli, Pinto, Hourneaux & Barreira (2011) found out that no treatment intervention was sought for persons with abnormal behaviours by residents of Santos informal settlement in Brazil mostly because they were ignorant of the nature and causes of abnormal behaviour; while Kapungwe et al. (2010) and Ssebunnya et al.**(**2009) in their studies of mental health stigma in Uganda and Zambia respectively found out that when cultures attributed abnormal behaviour to supernatural causes, partial blame was apportioned to the victim and this resulted to unorthodox interventions, belated scientific intervention or to non-intervention for mental illness altogether. These studies however did not investigate the strength of the correlation between conceptualisation of the causes of abnormal behaviour and the treatment interventions sought. As noted earlier, these negative mental health outcomes are also associated with intense suffering and even death for victims of mental illness (de Boer et.al 2008; Ssebunnya et.al2009; WHO, 2008).

Apart from the study by Martin et al. (2011) other studies reviewed in this sub-section are similar to those reviewed above under the sub-sections on conceptualisation ofnature and causes of abnormal behaviour. Thus, as observed earlier, the studies did not usethe holistic BPS model of abnormal behaviour as a basis for conceptualising the treatment interventions

for abnormal behaviour. Moreover, apart from the additional study by Martin et al. (2011), none of the other studies were conducted in an informal settlement setting.

2.3.4 Sociodemographic Variables and Abnormal Behaviour

Past studies established thatsome sociodemographic variables significantly influencedhow abnormal behaviour was conceptualised in some cultures and sub-cultures across the world. For example, deToledo et al. (2004) established that level of education and socioeconomic status significantly influenced how abnormal behaviour was conceptualised by people of Latin America. Their finding established that people of Latin Americanwith a higher educational or socioeconomic status predominantly perceived mental illness as any other sickness. They also attributedmental illness to scientific causes and recommended treatment with mental health professionals.These findings reveal that people with higher education or socioeconomic status are likely to support the scientific model of abnormal behaviour more than people with lower levels of education and socioeconomic status. Deribew & Tamirat (2005)tested the effect of education in conceptualisation of abnormal behaviour among people in Agaro town of Ethiopia. Their study established that education had a significant influence in conceptualisation of abnormal behaviour; with more educated peoplepreferring modern medicine for the treatment of abnormal behaviour more often than their less educated counterparts. Sadik et al. (2010) measured the effect of sociodemographic variables of education, gender, age, residence, marital status and income on perceptions of abnormal behaviour and social distance among the people of Iraq. From the findings, gender, age, marital status, residence and income had no significant influence on how abnormal behaviour was perceived by people of Iraq. Only education was found to have a significant influence onhow abnormal behaviour was conceptualised;with less social distance being associated

with a higher education level. More educated people felt it was okay to relate closely with people manifesting abnormal behaviour compared to the less educated people who felt it was not okay. Teferra&Shibre (2012) investigated the effect of gender on conceptualisation of abnormal behaviour. They found that gender had no significant influenceon what the Borana semi-nomadic population in southern Ethiopia perceived as causes of abnormal behaviour and preferred treatment interventions. Mburu (2007) tested the effect of age and education on conceptualisation of abnormal behaviour among people of Kamburu sub-location in Central Province of Kenya. He found out that there was no significant statistical difference among people of various age groups in their attitude that people with abnormal behaviour are dangerous. In relation to treatment interventions, he established that people aged 60 years and above were more likely to seek religious or traditional treatment interventions compared to younger respondents, though the difference was not statistically significant. He however established that education significantly influenced how abnormal behaviour was conceptualised with persons having post primary level education being less likely to believe that persons with abnormal behaviour are dangerous. These studies reveal that somesociodemographic variablescan indeed influence how abnormal behaviour is conceptualised within a given sociocultural context. Education especially has been found to have a huge influence on conceptualisation of abnormal behaviour as it registered a significance influence in all the reviewed studies where its effect was measured (deToledo et al. 2004; Deribew & Tamirat, 2005; Mburu, 2007); Sadik et al., 2010). Contrary to this current study however, none of the study reviewed above measured the effect of religion and ethnicity sociodemographic variables; yetmulticultural psychiatrists (Marsella & Kameoka, 1989) opine that ethnicity is a strong predictor of culture-and culture strongly influences peoples' perceptions and beliefs on many constructs such as 'abnormal behaviour' the

construct under study.Moreover, allreviewed studies measured the effect of sociodemographic variables on abnormal behaviour within non-informal settingsas opposed to this current study which measured their effects within an informal settlement setting.

2.4 Measures to Mitigate Abnormal Behaviour

A number of studies reviewed above gave various measures and recommendations that in view of their findings could be put in place to mitigate abnormal behaviour in the communities where the studies were conducted. Sadik et al. (2010) recommended a well coordinated public education and for increased accessibility of effective mental health care through sustained primary care training, support and mental health supervision as ways of improving mental health in the community of Iraq. Sorsdahl et al. (2000) recommended measures aimed at increasing mental health literacy of traditional healers in Mpumulanga, South Africa. In a study by Lombo (2010), mental health practitioners from Komani Hospital, within the isiXhosa cultural context in Queenstown South Africa suggested a number of measures that could be put in place to reduce abnormal behaviour within their cultural context. These included need to work hand in hand with the traditional healers officially; need for public education on mental illness; need for government to build half-way houses where persons with abnormal behaviour can be assisted; and need for appropriate legislation that promotes the welfare of persons with mental illness. Aino (2004) recommended censorship of the film industry in West African countries in order to curb the existing erroneous portrayal of the nature and causes of abnormal behaviour; and provision of education on mental health to the populace to correct the misconceptions associated with mental illness. Ewhrudjakpor (2009) recommended robust enlightenment campaigns and workshops targeting the health workers in Delta State of Nigeria aimed at changing their negative attitude towards the mentally ill; while Gruebner et al. (2012) implied that

improvement ofsanitation and housing quality, sufficiency and durability and reduction of flood risks could significantly improve the mental well-being of residents of informal settlement in Dhaka Senegal.

Overall, the measures proposed for reduction of abnormal behaviour in these studies reflect support for scientific biopsychosocial model approach; albeit with more supportfor scientific psychosocial measures as opposed to scientific biological measures. For example, Lombo (2010) proposed building of half-way houses for persons with abnormal behaviour as a way of mitigating abnormal behaviour within the isiXhosa cultural context in Queenstown South Africa. This is a scientific biopsychosocial measure because both medical and psychosocial care is often extended to persons in such community based recovery centres. In almost all the studies reviewed-Lombo et al. (2010), Sadik et al. (2010), Ewhrudjakpor (2009), Aino (2004) & Sorsdahl et al. (2000)-provision of education on mental illness, a psychosocial intervention,is recommended to enhance accessibility to medical care and to change erroneous sociocultural beliefs and attitudes regarding mental illness. Moreover, Gruebner et al. (2012) implied that improvement ofsanitation and housing quality, sufficiency and durability and reduction of flood risks, all psychosocial measures, weremeasures that could improve mental well-being of residents of informal settlements in Dhaka Senegal.Although the findings reflect support for scientific biopsychosocial measures however, the reviewedstudies did not use the holistic BPS model as a framework for conceptualising the measures for mitigatingabnormal behaviour; hence their findings were not holistic as was the case in the current study. Moreover, apart from the study by Gruebner et al. (2012), all the measures proposed above were linked to the results of studies conducted in non-informal settingsas opposed to informal settlement settings. As earlier noted, informal settlements across the world are characterised by various psychosocial stressors including overt poverty,

poor housing, inaccessibility to safe drinking water, sanitation, inaccessible and unaffordable health care services, inadequate nutrition and overcrowding (Mutisya & Yarime, 2010; UN-Habitat, 2008; WHO, 2005); which according to WHO (2008), make residents of informal settlement more susceptible to mental illness. This study,which was conducted in Kibera informal settlement allowed the researcher to find out if the residents would perceive reduction of some of these psychosocial stressors as measures that should be put in place to mitigate abnormal behaviour.

2.5 Summary of the Literature Review

This chapter has reviewed the theoretical framework and related studies on the nature, causes and treatment interventions for abnormal behaviour. It has emerged that the scientific bipsychosocial model of abnormal behaviour is the proper, scientific and holistic model for conceptualising abnormal behaviour as its basic tenets are aligned to that of the *DSM-IV*-TR (APA, 2000). Studies reviewed indicate that the nature of abnormal behaviour as conceptualised by the *DSM-IV-TR* (APA, 2000) and thescientific BPS model is not holistically understood; an outcome that is associated with non-intervention for various forms of mental illnesses (Deribew & Tamirat, 2005; Sorsdahl et al., 2000). Studies further reveal that while some cultures conceptualise the causes of abnormal behaviour appropriately on the basis of the scientific BPS model resulting predominantly to seeking of proper, scientific treatment interventions (de Toledo et al., 2004; Lombo, 2010); other cultures inappropriately conceptualise the causes of abnormal behaviour on the basis of non-scientific supernatural model resulting predominantly to seeking of improper culture based treatment interventions (Aino, 2004; Mburu, 2007; Nsereko et al., 2011; Teferra&Shibre, 2012).Some of the studies reviewed indicate that people within the same sociocultural setting can conceptualise abnormal behaviour differently based on some sociodemographic characteristics such as

socioeconomic status andlevel of education (deToledo et al., 2004; Deribew & Tamirat, 2005; Mburu, 2007; Sadik et al., 2010); which consequently influences the treatment interventions sought by these cultural groupings. Overall however, the studies reviewed did not use the holistic BPSmodel as a basis for conceptualising abnormal behaviour; hence their findings were not holistic.Moreover, while some studies were cross-sectional, most of them adopted a qualitative study design. This study will adopt a concurrent mixed(triangulation) designwhich will allow for gathering of both quantitative and qualitative data; and subsequent hypotheses testing. Though some studies measured the effects of various sociodemographic variables on conceptualisation of abnormal behaviour, none of them measured the effect of ethnicity (tribe of affiliation); yet in view of Marsella & Kameoka, (1989) ethnicity is a strong predictor of culture. Moreover, most of the studies only implied a positive relationship between perceived causes of abnormal behaviour and treatment interventions sought without measuring the strength of the relationship. In addition, apart from the study by Gruebner (2012) all studies reviewed were conducted within non-informal settlement settings as opposed to the current study whose setting is aninformal settlement.

The interrelationships among the various variables under study is presented diagrammatically in the conceptual framework that follows.

2.6 Conceptual Framework

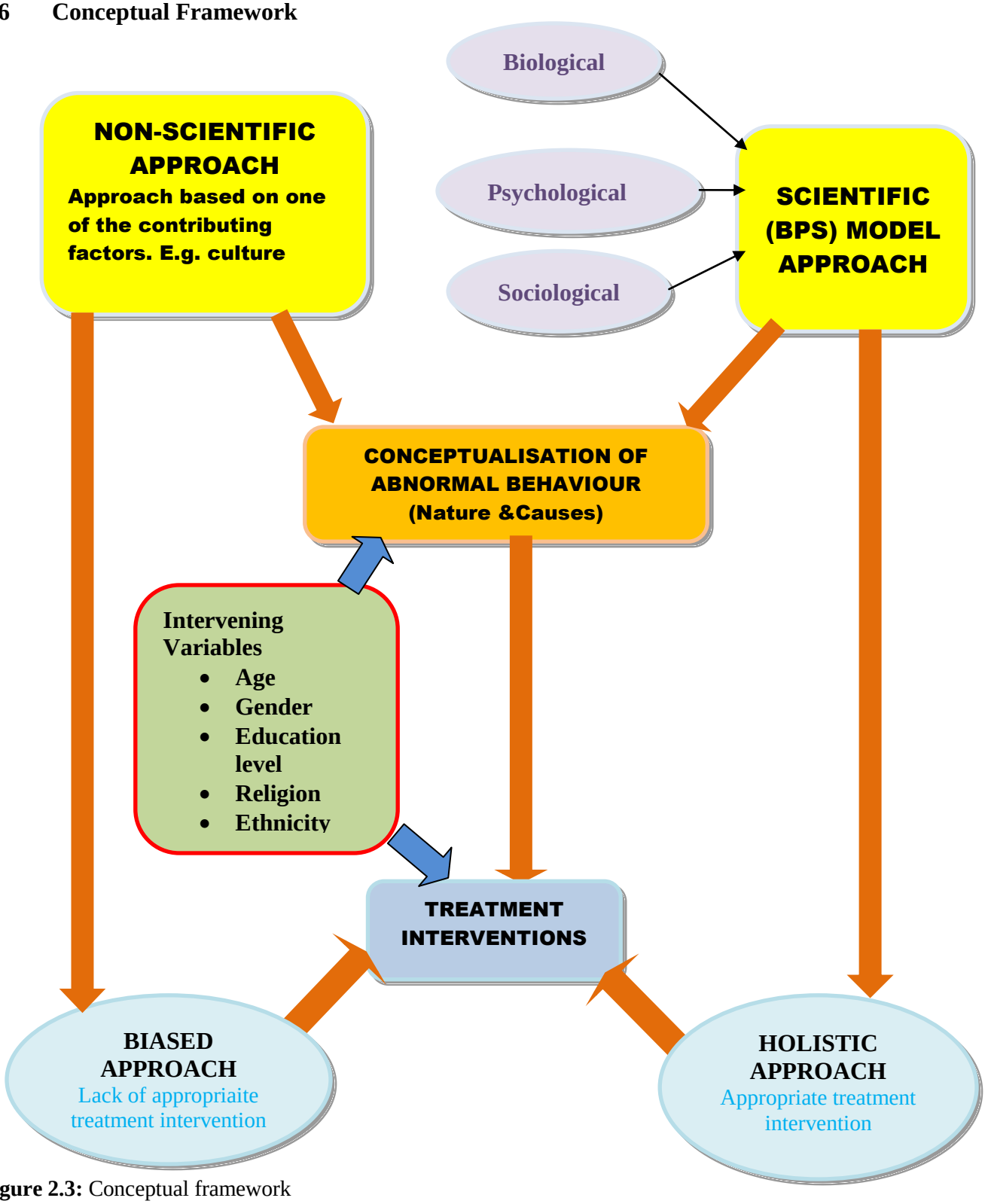

Figure 2.3: Conceptual framework

Source: Self-generated

The conceptual framework above presents conceptualisation of abnormal behaviour as the independent variable and treatment interventions as the dependent variable. The concept 'abnormal behaviour' has two operational variables: nature and causes. It is hypothesised that how abnormal behaviour is conceptualised (i.e. what is perceived as the nature and causes of abnormal behaviour) could influence the treatment interventions that people seek. It is further hypothesised that some sociodemographic characteristics (intervening variables) such as gender, age, education, religion and ethnicity could influence how abnormal behaviour is conceptualised. The resultant treatment outcomes for abnormal behaviour can either be holistic (scientific biopsychosocial) interventions resulting from appropriate knowledge of the scientific biopsychosocial model of abnormal behaviour, which amounts to appropriate intervention, or inappropriate (non-scientific) interventions resulting from support forbiased non-scientific culture specific models of abnormal behaviour, which amounts to lack of appropriate intervention.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this study was to investigate how residents of Kibera informal settlements conceptualise abnormal behaviour and how this conceptualisation influences the mental health interventions sought by the residents. This chapter discusses a set of methods that were adopted in the study. These methods include research design; study variables; study location; target population; sample size and sampling techniques; research instruments; validity and reliability of instruments; pilot study; data collection procedures; data analysis and presentation and data management and ethical considerations.

3.2 Research Design

The study adopted a community based cross-sectional survey design employing a concurrent mixed (triangulation) method of data collection. According to Kothari (2004) a cross sectional design allows a researcher to gather data at one point in time. This design was suitable as it allowed the researcher to gather data from subjects of different demographic characteristics at one point in time. For triangulation purpose, two instruments were administered concurrentlyas proposed by Creswell & Clark (2011); one to collect quantitative data (Appendix 1) and the other to collect qualitative data (Appendix 2). Creswell & Clark (2011) and Johnson& Christensen (2010) observed that a concurrent mixed method approach is advantageous because the two methods concurrently inform each other; allow for gathering of overlapping and different facets of the concept under study; and also add scope and breadth to the study. This study enjoyed these associated advantages

because the FGDs allowed the researcher to gather more in depth information about abnormal behaviour that complimented the information gathered through questionnaires.

3.3 Study Variables

The independent variable for this study was 'conceptualisation of abnormal behaviour' while the dependent variable was 'treatment interventions'. The concept 'abnormal behaviour' was a latent variable which according to Borsboom, Mellenbergh & van Heerden, (2003) is a variable that cannot be directly observed but is rather inferred from other variables that can be directly measured. Consequently, the operational variables that described the concept 'abnormal behaviour' were: (i) nature of abnormal behaviour and (ii) causes of abnormal behaviour. For this study therefore, the operationalised independent variable was 'conceptualisation of the nature and causes of abnormal behaviour.' It was hypothesised that how residents of Kibera informal settlement conceptualised abnormal behaviour (independent variable) would influence the treatment interventions sought (dependent variable). The intervening variables were sociodemographic characteristics of gender, age, level of education, religion and ethnicity. It was hypothesised that these characteristics would have an effect on how abnormal behaviour was conceptualised and the treatment interventions sought.

3.4 Study Location

The study was conducted in Kibera informal settlement. Kibera is situated in Nairobi's South-Western Peri-urban zone approximately 7 kilometers from the Nairobi City Centre. Kibera as a whole is an informal settlement comprising thirteen villages covering approximately 250 hectares of land. Kibera informal settlement was purposively chosen based on its high population and a diverse multi-ethnic composition. Umande Trust (2007)

established that Kibera houses over 42 ethnic groups; the major ones being: Luo, approximated at 30%; kikuyu at 20%; Kamba at 19%; Luhya at 14%; Kalenjin at 6% and others at 11%. These varied sociodemographic characteristics made Kibera a suitable site for this study as it allowed the researcher to generate a sample that was representative of other informal settlements in Nairobi County. (Refer to Appendix 3 for more details).

3.5 Target Population

The target population for this study was all male and female residents of Kibera informal settlement of Nairobi County, Kenya aged between 13 and 65 years; and who had completed a minimum of class 8 education. The lower age limit of 13 years was guided by Kohlberg (1981) and Piaget (2001) who argued that persons of that age had attained the cognitive ability to understand abstract concepts and to respond critically to life issues. The age upper limit (65 years) was guided by the assumption that the researcher may find it a challenge to get elderly persons of above 65 years in the Kibera informal settlement who had a basic class 8 education. Choice of class 8 as the minimal education level for the respondents was pegged on the assumption that persons with basic class 8 education would be able to respond to the questionnaire items and participate in FGDs with minimal need for assistance in interpreting the items presented in the tools.

3.6 Sample Size and Sampling Techniques

The sample comprised 433 respondents: 385 being respondents for the questionnaire and 48 being respondents for the FGDs (6 groups x 8 participants). The questionnaire sample of 385 was based on Kathuri &Pals (1993) formula of sample determination.

$$n = \frac{\chi^2 NP\,(1-P)}{\sigma^2\,(N-1) + \chi^2\,P\,(1-P)}$$

Where:

n = required sample size

N = the given population size from the sampling frame which was assumed to be more than 100,000

P = Population proportion, assumed to be 0.50 (because researcher was not sure of the variability of the population on the given study variables)

σ^2 = the degree of accuracy whose value is 0.05

χ^2 = Table value of chi-square for one degree of freedom, which is 3.841

The choice of the FGD sample was guided by proposals of Creswell (2003) who proposed 3 to 6 FGDs to complement quantitative data in a mixed research design. He further observed that FGDs comprising of members ranging from 6-12 have been found by most researchers to be the most appropriate in facilitating maximum participation for each member. This guided the researcher's choice of 6 FGDs each comprising 8 participants.

Purposive, stratified, simple random and snowball sampling techniques were used to choose the study respondents. Kibera informal settlement was purposively selected because it was the most highly populous and multi-ethnic informal settlement in Nairobi, Kenya at the time of this study; hence it allowed the researcher to generate the most representative sample. Stratification and simple random sampling were suitable as they are probability sampling techniques that enabled the researcher to obtain a sample that was representative of Kibera informal settlement (Kothari, 2004; Mugenda & Mugenda, 1999) which the researcher used to draw inferences about the whole population. Moreover, dividing the population into distinct, independent strataenabled the researcher to draw inferences about specific subgroups that may have been lost in a more generalised random sample **(**Kothari, 2004; Kerlinger, 2004).

Stratification was done based on the various sociodemographic variables under study (gender, age, level of education, religion and ethnicity). The researcher identified the number of respondents that were to be included in each stratum. The respondents were then randomly selected from across the 13 villages that constitute Kibera informal settlement; taking into consideration the pre-identified numbers per each stratum. Snowball sampling technique was used to identify university students as they were few in number and difficult to trace.

The researcher conducted five homogeneous FGDs based on ethnic homogeneity and one heterogeneous FGD based on mixed ethnicity. The participants of the homogenous ethnic groups were: Luo; kikuyu; Kamba; Luhya and Kalenjin. The groups were identified based on the statistics of Umande Trust (2007) which listed them as the major ethnic groups in Kibera. The heterogeneous group was drawn from other ethnic groups apart from those comprising the homogeneous groups. The ethnic groups represented were Maasai, Taita, Teso, Meru and Kisii. Again the sociodemographic variables of gender, age, level of education and religion were taken into consideration in selecting FGD respondents. Presented on the tables below are the sample distributions of questionnaire and FGDs respondents.

Table 3.1: Questionnaire Sample Distribution by Level of Education and Gender

CLASS 8		**FORM 4**		**COLLEGE**		**UNIVERSITY**		**Gender Sub-Totals**	
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
75	86	57	64	23	28	37	15	193	192
Sub-total		Sub-total		Sub-total		Sub-total		Grand Total	
161		**121**		**51**		**52**		**385**	

Table 3.2: FGDs Sample Distribution by Ethnicity and Gender

Group 1 Luo		**Group 2 Kikuyu**		**Group 3 Luhya**		**Group 4 Kamba**		**Group 5 Kalenjin**		**Group 6 Mixed**		**Gender Sub-Totals**	
M	F	M	F	M	F	M	F	M	F	M	F	M	F
4	4	4	4	4	4	4	4	3	5	5	3	24	24
Sub-total		Sub-total		Sub-total		Sub-total		Sub-total		Sub-total		Grand Total	
8		**8**		**8**		**8**		**8**		**8**		**48**	

3.7 Research Instruments

Data was collected using a researcher-generated questionnaire and a focus group discussion guide. Questions in the questionnaire generated descriptive data on sociodemographic variables and on the various themes of the concept under study 'abnormal behaviour.' Section A of the questionnaire gathered descriptive data on the respondents' sociodemographic variables of gender, age, level of education, religion, ethnicity, residential village and occupation.

Section B of the questionnaire gathered the respondents' views on the nature of abnormal behaviour. Construction of this section was guided by the *DSM-IV-TR* (APA, 2000); whichguided the researcher in identifying the nature of abnormal behaviour (that is, the diagnostic symptoms of various mental disorders under study) which the researcher used as questionnaire items in this section.

Section C of the questionnaire gathered views on the causes of abnormal behaviour. Construction of this section was guided by the scientific,BPS model of abnormal behaviour. The BPS model guided the researcher in identifying the scientific, biological and the

scientific, psychosocial causes of abnormal behaviour that were presented as questionnaire items in this section.

Section D of the questionnaire gathered views on treatment interventions for abnormal behaviour. The BPS model again guided the researcher in identifying the various scientific (BPS) interventions which guided the researcher in constructing of the questionnaire items that were tested in this section.

Finally, section E of the questionnaire gathered views on measures that respondents felt could be put in place to mitigate abnormal behaviour in Kibera informal settlement. Construction of the test items for this section was also informed by the scientific (BPS) model of abnormal behaviour.

Further, a FGD guide was used to gather in-depth qualitative data of group members views on the various themes under study which included the nature, causes, interventions and measures to mitigate abnormal behaviour. The two instruments concurrently informed each other and helped the researcher to compare perspectives (Creswell, 2003; Howitt, 2010).

3.8 Validity and Reliability of Instruments

3.8.1 Validity

To enhance validity, the research objectives, the BPS model of abnormal behaviour (Engel, 1977, 1980) and the *DSM-IV-TR* (APA, 2000) informed the formulation of the research instruments. In addition, the peersexamined the instruments to establish if they were measuring the concept under study. The researcher then incorporated some of their recommendations in the construction of the final instruments.

To further enhance the validity of the findings, the researcher sorted out the answered questionnaires to establish item non-response. The questionnaires with high item non-response were replaced. Sorting also enabled the researcher ensure that the pre-identified strata had a substantial number of questionnaires per category in order to ensure viability of the statistical analysis. Moreover, concurrent mixed triangulationdesign adopted in this study enabled the researcher to validate the findings by comparing responses from the two instruments used in the study. The findings were also compared to the results of other past studies. To enhance the validity of the FGD findings, the researcher, who acted as the moderator in FGDs, presented the questions in a neutral, non-leading format across all the six focus groups.

3.8.2 Reliability

Internal consistency technique was used to establish reliability. Cronbach's Coefficient Alpha was used to determine how items that measured the concept under study correlated among themselves in the rating scale. For an instrument to be construed as internally consistent, hence reliable, a reliability statistical score of 0.70 or higher is required (Cronbach & Shavelson, 2004; Mugenda& Mugenda, 1999).

Internal consistency was tested for items in section B and C of the questionnaire. Section B of the questionnaire presented items in 5 sub-sections that respondents were expected to give their views regarding whether the items were abnormal (they were diagnostic symptoms of mental disorder) or normal (they were not diagnostic symptoms of mental disorder). The grouped items presented in the 5 sub-sections predicted various mental disorders which included i) schizophrenia/psychosis disorders ii) alcohol use disorder iii) anxiety disorders iv) mood disorders and v) child developmental disorders. Cronbach's coefficient alpha was used to assess internal consistency of the items in each of the 5 sub-sections that predicted

each of these disorders. Internal consistency was also assessed for the items in sections C that sought to find out the respondents' views of the causes of abnormal behaviour.

A correlation coefficient of above 0.70 was established for all the group of items in each of the 5 sub-sections of section B; and for the group of items in section C, with the lowest being 0.764 and the highest being 0.871 as reflected on Table 3.3.

Table 3.3: Cronbach's Alpha Reliability Statistics

THEMES	CRONBACH'S ALPHA	N OF ITEMS
Schizophrenia/Psychosis Disorder Index	.764	11
Alcohol Use Disorder Index	.767	3
Anxiety Disorders Index	.854	9
Mood Disorders Index	.870	12
Developmental Disorders Index	.814	8
Causes of Abnormal Behaviour Index	. 871	22

These results implied that the instrument used (questionnaire) was internally consistent and therefore reliable. To further enhance reliability of the findings, respondents who found it difficult to interpret some items in the questionnaire were assisted by the researcher and duly trained research assistants. To enhance the reliability of findings from FGD, data was transcribed by two different people and the results were duly compared.

3.9 Pilot study

The researcher carried out a pilot study in Mathare informal settlement of Nairobi County. Mathare informal settlement was purposively selected because it is the second most populous and multi-ethnic informal settlement in Nairobi County; hence comparable to Kibera informal settlement where this study was conducted. The questionnaire was administered to 10% of the sample (n=385); hence 40 respondents (n=40) participated in the pilot study.

Sociodemographic variables of gender, age, level of education, religion, ethnicity and residential village were taken into consideration when choosing the respondents of the pilot study. The respondents came from four villages in Mathare informal settlement namely: Kiamutisya, Kwa kariuki, Mabatini and Kosovo. One Focus Group Discussion comprising 8 respondents, 4males and 4 females was used to pilot the Focus Group Discussion guide.

The pilot study assisted the researcher to identify and modify the items in the research instruments that were difficult, ambiguous and unclear; thus facilitating generation of relevant and consistent data. It alsoallowed for a pre-run of the descriptive, inferential and qualitative analytical procedures which helped the researcher to determine whether the tools would generate the data that was expected. The researcher used the findings of the pilot study to make the necessary adjustments, which further enhanced the validity and reliability of the instruments. Moreover, the pilot study also helped the researcher to determine the average amount of time needed to administer each of the two instruments, which assisted greatly during the data collection exercise.

3.10 Data Collection Procedures

Data was collected through questionnaires and FGDs. The researcher self-administered a total of 385 questionnaires with the help of six duly trained research assistants. Self-administration enabled the researcher to achieve a 100% return rate which is a key advantage articulated by Lynn (2008). Questionnaires were administered from a pre-identified central facility, which in this case was a private school within Kibera informal settlement. The researcher made prior arrangement with some village elders from the chief's office to help in securing the school and in mobilising the respondents from different villages within Kibera. Mobilisation of the respondents was done systematically using a pre-prepared sampling

criterion which took into consideration the various variables under study and which the research assistants and elders were helped to understand in advance. The main challenge encountered by the researcher in the questionnaire data collection exercise was thatsomeresidents who failed to be sampled in their appropriate stratum gave incorrect information in relation to their demographic characteristics so that they could be included in other strata that were lacking enough respondents at the time. The resultant effect was that the researcher was forced to destroy and replace some inappropriate questionnaires in every stratum after sorting them out. This behaviour was motivated by the residents' desire to get the small token of appreciation that the researcher was giving the study participants.

Another challenge was that though the study of Umande Trust (2007) showed the Kikuyu ethnic group as the second largest group in Kibera, the researcher found it difficult to get the pre-identified number of respondents fromthe Kikuyu ethnic group; consequently forcing the researcher to adjust the number downwards in the sampling frame. The researcher learnt that many Kikuyu had apparently left the informal settlement after the post-election violence of 2007/2008.

Data from the FGDs was also gathered by the researcher with the help of two research assistants. The researcher, who acted as the moderator in all the 6 focus groups, guided the respondents through the FGD questions. One research assistant wrote down the responses emerging from the discussions in summary form; while the other recorded the discussions on tape. The written and the recorded data were later transcribed, interpreted and thematically presented. The main challenge encountered in the FGD data collection exercise was that despite being informed that they cannot participate twice, someresidents who had

participated as questionnaire respondents wanted to participate in the FGD discussions so that they could get the aforementioned token for the second time. The chief's elders came in handy in helping the researcher to identify such residents.

3.11 Data Analysis and Presentation

The study generated two types of data: Quantitative data from the questionnaire and qualitative data from the FGD. Quantitative data was analysed with the aid the Statistical Package for Social Sciences (SPSS) version 20.0. The coding process was informed by study questions and hypotheses. Data for the four research questions were coded as dichotomous variables as follows: for research question one on conceptualisation of nature of abnormal behaviour, the variables were 'abnormal' which was coded as 1 and 'Normal' which was coded as 0; for research questions two, three and four on conceptualisation of causes, treatment interventions and mitigating measures, the variables were 'Yes' which was coded as 1 and 'No' which was coded as 0. Descriptive data in form of percentages and frequencies were generated for each of the items constituting the four research questions. Mean scores were generated for research question one in order to establish how abnormal behaviours symptomatic of the various of mental disorder categories (schizophrenia/psychotic, alcohol use, anxiety, mood and child developmental disorders) were conceptualised on average: and also for research objective two in order to establish the average conceptualisation mean scores for the three causal categories of abnormal behaviour that were investigated (biological, psychosocial and supernatural causal categories). Research objectives were used to organise the descriptive data gathered from the four research questions. Descriptive data were presented in tabular form.

Sociodemographic variables (gender, age, level of education, religion and ethnicity) were entered in distinct categories in order to measure their effect on conceptualisation of abnormal behaviour. Independent Samples T-test was used to establish if any significant statistical difference existed between male and female respondents in conceptualisation of abnormal behaviour. One way ANOVA test was used to establish if any significant statistical difference existed among respondents of different age, level of education, religion and ethnicity in conceptualisation of abnormal behaviour. Subsequent Post-Hoc test was conducted on the mean scores of the various groups of the variables that registered a significance difference with the ANOVA test in order to establish the groups that differed significantly. Pearson Correlation Coefficient(r) testwas performed to establish if there was any relationship between how respondents conceptualised the causes of abnormal behaviour and the treatment interventions that they sought. Testing for significance of hypotheses was done at $\alpha \leq 0.05$ alpha level.

Thematic analysis which emphasises pinpointing, examining and recording patterns or themes (Mc leod, 2003; Norman & Yvonna, 2005) was done for qualitative data from FGDs. Data were collected by writing down on sheets of paper and recording on tape. The FGD transcripts, both written and taped were organised separately for each focus group, on different sheets of paper and different cassettes as proposed by Krueger and Casey (2000). Open coding-deductive category application (Saldana, 2009) was done to organise data into pre-determined themes. Both sets of data were transcribed by typing in the computer in summary form under four pre-determined themes that were informed by the study questions. The themes captured views on nature, causes, treatment interventions and measures to mitigate abnormal behaviour. New insights that emerged due to probing or individual

inspirations were transcribed in summary as sub-themes under four pre-identified themes. Moreover, some pertinent quotes responding to the four themes were identified from the tape recorder and transcribed verbatim. The summative and verbatim transcriptions were done separately for each of the six focus groups. Both sets of the transcribed data were then collated in order to establish points of agreement and disagreement, emerging patterns and new insights. The analysed data were then presented textually (concurrently with the quantitative data) in line with the research objectives. Some pertinent quotes were presented verbatim for each of the four themes to support the descriptive findings.

3.12 Data Management and Ethical Considerations

The researcher obtained a research permit from the National Commission for Science Technology and Innovation (NACOSTI) to carry out the research. The permit was then presented to the Kibera division head office so that permission to collect data could be granted.A cover letter was attached to each questionnaire to provide information necessary for informed consent, including the voluntary nature of participation and assurance of anonymity. Informed consent was also sought from the respondents participating in FGDs after informing them about the nature and purpose of FGDs as a research tool; the necessity to record data on tape and the confidentiality measures to be observed with the recorded data. Data collected through questionnaires and FGDs was treated confidentially by the researcher and was only used for the purpose of this study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The purpose of this study was to investigate how abnormal behaviour is conceptualised by residents of Kibera informal settlements of Nairobi County, Kenya; and to critically analyse how this conceptualisation influences the mental health interventions sought by the residents. In this chapter, demographic data is first presented. The findings of the study are then presented, analysed and discussed guided by the following study objectives:

i) To investigate how residents of Kibera informal settlement conceptualise the nature of abnormal behaviour.

ii) To find out how residents of Kibera informal settlement conceptualise the causes of abnormal behaviour.

iii) To establish if there is any significant statistical difference in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different sociodemographic characteristics.

iv) To find out how the residents of Kibera informal settlement conceptualise treatment interventions for abnormal behaviour.

v) To establish if there is any relationship between how residents of Kibera informal settlement conceptualise the causes of abnormal behaviour and the treatment interventions that they seek.

vi) To identify measures that residents of Kibera informal settlement think should be put in place to reduce abnormal behaviour.

4.2 Demographic Characteristics of Respondents

A total of 385 respondents participated in this study by filling questionnaires while 48 respondents participated in 6 Focus Group Discussions (6x8). Thus, a total of 433 respondents participated in this study. Data was gathered on the following sociodemographic variables: gender, age, level of education, religion, ethnicity, occupation and residential villages. Presented below is the analysis of the sociodemographic data of the respondents.

4.2.1 Gender of the Respondents

Both male and female respondents participated in this study. The following table summarises the distribution of the study respondents by gender.

Table 4.1:Distribution of Respondents by Gender

Gender	Frequency	Percent
Male	217	50.1
Female	216	49.9
Total	**433**	**100.0**

Results of Table 4.1 above indicate that 217 (50.1%) of the respondents who participated in this study were male; while 216 (49.9%) were female. The gender variation in one respondent (male) arose due to the uneven sample size (385). The researcher had no valid reason for choosing a male respondent over a female respondent.

4.2.2 Age of the Respondents

Participants in this study ranged from 13 years to 65 years. The following table summarises the distribution of respondents by various age categories.

Table 4.2: Distribution of Respondents by Age

Age Category	Frequency	Percent
19 to 35 yrs	211	48.7
36 to 50 yrs	149	34.4
13 to 18 yrs	56	13.0
51 to 65 yrs	17	3.9
Total	**433**	**100.0**

Table 4.2 above shows that majority of the respondents 211 (48.7%) who participated in this study were aged 19-35 years; followed by those aged 36-50 years at 149 (34.4%). Only 17 (3.9%) of the respondents were aged 51-65 years. Statistics indicate that majority of the residents of informal settlements across the world are young people searching for jobs (Mutisya and Yarime, 2010; UN-Habitat, 2008) which explains the age distribution in this study.

4.2.3 Level of Education of the Respondents

The study participants were drawn from different levels of education ranging from class 8 to University level. The table below summarises the distribution of respondents by level of education.

Table 4.3: Distribution of Respondents by Level of Education

Level of education	Frequency	Percent
Class 8 level	186	43.0
Form four level	133	30.7
College level	58	13.4
University level	56	12.9
Total	**433**	**100.0**

The results on Table 4.3 above indicate that majority of the respondents 186 (43.0%) who participated in this study had class eight level education; followed by those with form four

level education 133 (30.7%). Only 58 (13.4%) and 56 (12.9%) of the participants had college and university level education respectively. Literature on informal settlements identifies low levels of education as a key characteristic of residents of informal settlements across the world (UN-Habitat, 2008; WHO, 2010). This explains the high number of respondents with class 8 level education in this study.

4.2.4 Ethnicity of the Respondents

The researcher intended to investigate if ethnicity, which is a predictor of culture, (Millon, 2004; Roy, 2002) had any influence on how residents of Kibera informal settlement conceptualised abnormal behaviour. Majority of the study participants were purposively drawn from five ethnic groups (Luo, Luhya, Kikuyu, Kamba, Kalenjin). This distribution was informed by the findings of Umande Trust (2007) which established that majority of the residents from Kibera informal settlement came from these five ethnic groups; with the Luo ethnic group having the highest number of residents. However, a few respondents were also drawn from other ethnic groups. The table below shows the distribution of respondents by various ethnic groups.

Table 4.4: Distribution of Respondents by Ethnicity

Ethnic Group	Frequency	Percent
Luo	162	37.4
Luhya	97	22.4
Kikuyu	53	12.2
Kamba	51	12.0
Kalenjin	26	6.0
Nubian	21	4.8
Kisi	13	3.0
Mijikenda	8	1.8
Somali	1	0.2
Meru	1	0.2
Total	**433**	**100.0**

Results of Table 4.4 show that the ethnic group with the highest number of participants was the Luo ethnic group with 162 (37.4%); followed in the second position by the Luhya ethnic group with 97 (22.4%); Kikuyu ethnic group with 53 (12.2%); Kamba ethnic group with 51 (12.0%); and finally Kalenjin ethnic group with 26 (6.0%) respondents. This corroborates findings of Umande Trust (2007) which established that majority of the residents from Kibera informal settlement came from these five ethnic groups; with the Luo ethnic group having the highest number of residents.

4.2.5 Religion of Respondents

The study respondents came from different religious backgrounds. The table below shows the distribution of respondents by religion.

Table 4.5: Distribution of Respondents by Religion

Religion	Frequency	Percent
Catholic	183	42.3
Pentecostal protestant	114	26.3
Mainstream protestant (Anglican, PCEA, Methodist)	71	16.4
Muslim	35	8.1
Non-religious	18	4.1
Other	12	2.8
Total	**433**	**100.0**

The results presented on Table 4.5 above indicate that majority of the participants 183 (42.3%) were Catholics; followed by Pentecostal Protestants 114 (26.3%); mainstream Protestants 71 (16.4%); and Muslim 35 (8.1%). A few participants 18 (4.1. %) indicated that they were non-religious; while 12 (2.8%) were grouped under 'other' category. In most sub-cultures where Christianity has taken root, Catholic adherents are often the majority followed by Protestants and then adherent of other religions. Consequently, the distribution of respondents by religion reflected above is anormal trend in other cultures with where Christianityhas been established.

4.2.6 Occupation of the Respondents

The study participants came from different occupations. The table below summarises the distribution of the participants by occupation.

Table 4.6: Distribution of Respondents by Occupation

Occupation	Frequency	Percent
Business (Jua kali)	199	45.9
Student	80	18.5
None	76	17.6
Education field	44	10.2
Mental health field (Counsellor, medical, social work)	23	5.3
Other	11	2.5
Total	**433**	**100.0**

Results of Table 4.6 above indicates that majority of the respondents 199 (45.9%) were in informal (Jua-Kali) business; 44 (10.2%) were in education field; while 23 (5.3%) were in mental health field. Other respondents indicated they were either students 75 (19.5%) or they had no occupation 76 (17.6%); while 11 (2.5%) were grouped in the 'other' category. Statistics on methods of sustenance among residents of informal settlements indicate that over 75 % (and up to 95% in some countries) of residents in informal settlements depend on the informal sector (Jua-Kali) for economic sustenance of self and families; while a substantial number is unemployed (Engqvist& Lantz, 2009; UN-Habitat, 2007). The occupational trend reflected in this study is thus characteristic of other informal settlements across the world.

4.2.7 Residential Village of Respondents

Study participants were drawn from 13 residential villages that constitute Kibera informal settlement. Table 4.7 summarises the distribution of the participants by residential villages.

Table 4.7: Distributions of Respondents by Residential Village

Residential Village	Frequency	Percent
Kisumu Ndogo	113	26.1
Lindi	56	12.9
Makina	47	10.8
Kambimuru	41	9.5
Katwekera	34	7.8
Karanja	33	7.6
Linesaba	32	7.4
Mashimoni	19	4.4
Kianda	18	4.2
Olympic	16	3.7
Raila	9	2.1
Soweto	9	2.1
Silanga	6	1.4
Total	**433**	**100.0**

Table 4.7 above indicates that the village that produced the highest number of respondents was Kisumu Ndogo with 113 (26.1%); followed by Lindi with 56 (12.9%); Kambimuru with 41(9.5%); and Makina with 47 (10.8%). Umande Trust (2007) established that of the 13 villages constituting Kibera, Kisumu Ndogo was the most populous village. Thus, the high number of respondent from Kisumu Ndogo can be attributed to these findings.

4.3 Findings of the Study

The study generated both quantitative data from the questionnaire and qualitative data from FGDs). The study found that majority of the residents of Kibera informal settlement conceptualised the nature of abnormal behaviour appropriately (Mean=71.30); however a substantial number of residents misconceptualised the nature of abnormal behaviour (Mean=29.36). Both scientific causes (Mean=65.10) and non-scientific causes (Mean=74.07) of abnormal behaviour were supported; implying a causal misconception.Moreover, while scientific (biological) causes were highly supported (Mean=75.80); scientific (psychosocial) causes were only accorded average support (Mean=54.39); implying that the residents lacked

proper understanding of scientific psychosocial causes of abnormal behaviour and the integrative nature of the holistic (BPS) model. Gender variable significantly influenced how the nature of child developmental disorders was conceptualised ($t=2.639, df=382, p=0.009$); while gender, age and level of education variables significantly influenced how scientific causes of abnormal behaviour were conceptualised $t=3.983, df=383, p<0.001$);$F(3,381)=5.547, p=0.001$);$F(3,381)=4.240, p=0.006$). Age variable also significantly influenced how non-scientific causes of abnormal behaviour were conceptualised ($F(3,381)=3.551, p=0.015$). Both scientific interventions (Mean=89.20) and non-scientific interventions (Mean=59.79) were supported; implying an intervention misconception. A positive relationship was found between support for scientific/non-scientific causes of abnormal behaviour and use of scientific/non-scientific treatment interventions($r=0.258; p<0.001; r=0.178, p<0.001$); and between support for scientific/non-scientific causes of abnormal behaviour and use of non-scientific/scientific interventions treatment interventions ($r=0.199, p<0.001; r=0.125, p=0.014$). The study established support for both scientific (biological) and scientific (psychosocial) measures of reducing abnormal behaviour; albeit with a lower support for scientific (psychosocial) measures. The detailed quantitative and qualitative findings are concurrently presented, analysed and discussed below in line with the research objectives.

4.3.1 Conceptualisation of the Nature of Abnormal Behaviour

Research objective one aimed at establishing how the nature of abnormal is conceptualised by residents of Kibera informal settlement. To meet this objective, respondents were presented with various behaviours (n=43) which were all abnormal (that is they were all diagnostic symptoms of various mental disorders). The abnormal behaviours were distributed

as follows for each mental disorder category: schizophrenia/psychosis disorders (n=11); alcohol use disorder (n=3); anxiety disorders (n=9); mood disorders (n=12); and child developmental disorders (n=8). (See Appendix 1). The respondents were expected to indicate whether in their view, these behaviours were abnormal (they were diagnostic symptoms of mental illness) or normal (they were not diagnostic symptoms of mental illness). To further inform this objective, similar in depth qualitative data were gathered through six focus group discussions. These descriptive and qualitative findings are concurrently presented, analysed and discussed below.

Table 4.8: Conceptualisation of the Nature of Abnormal Behaviour

Behaviour (n=43)	**Abnormal**		**Normal**		**Total**		**Mental Disorder Category**
	F	**%**	**F**	**%**	**F**	**%**	
Removing clothes in public	368	96.1	15	3.9	383	100.0	Schizophrenia/ Psychosis
Talk that does not make any sense at all	332	87.8	46	12.2	378	100.0	Schizophrenia/ Psychosis
Talking to oneself continuously	330	87.8	46	12.2	376	100.0	Schizophrenia/ Psychosis
Physically attacking people for no reason at all	334	87.7	47	12.3	381	100.0	Schizophrenia/ psychosis
A person believing that he/she is a messiah like Jesus or another popular personality (while this is not true)	325	86.7	50	13.3	375	100.0	Schizophrenia/ Psychosis
Having frequent thoughts of killing oneself	326	86.0	53	14.0	379	100.0	Mood Disorder
Loss of awareness of where one is	324	85.5	55	14.5	379	100.0	Schizophrenia/ psychosis
Wondering behaviour (Walking without a specific idea of where one is going)	314	83.5	62	16.5	376	100.0	Schizophrenia/ Psychosis
Hearing/Seeing/smelling things that are not there	313	82.2	68	17.8	381	100.0	Schizophrenia/ Psychosis
Killing oneself	312	81.9	69	18.1	381	100.0	Mood disorder

Table 4.8 presents a summary of ten behaviours out of a possible 43 behaviours which were most highly conceptualised as abnormal by the questionnaire respondents; and the mental

disorder category to which they subscribe. Results indicate that 8 out of 10 (80%) of the behaviours that were most highly conceptualised as abnormal by the respondents were psychotic behaviours (where an individual is out of touch with reality) usually predominantly symptomatic of full blown schizophrenia/psychosis disorders. Only 2 (20%) of the of the behaviours that were highly conceptulised as abnormal were non-psychotic in nature. These were 'having frequent thoughts of killing oneself' and 'killing oneself' symptomatic of mood disorders. Non-psychotic behaviours symptomatic of anxiety, alcohol use and child developmental disorders were not among the 10 highly supported behaviours. (See Appendix 5 for detailed statistics).

These findings reveal a misconception of the non-psychotic nature of abnormal behaviour among residents of Kibera informal settlement. Literature in abnormal psychology indicates that early symptoms of mental illness are often non-psychotic in nature; hence proper conceptualisation of the nature of abnormal behaviour entails the ability to properly conceptualise the early non-psychotic symptoms of mental illness (Harrigan, McGorry & Krstev, 2003; Smith, Weston, Lieberman, 2010). Harrigan, et al. (2003) observed that ability to detect early symptoms of mental illness is associated with early (scientific) intervention for abnormal behaviour; which is further associated with a positive prognosis for most mental illnesses. This literature implies that the above high rating of psychotic behaviours as abnormalreflects proper but belated conceptualisation of the nature of abnormal behaviour. Ndetei, (2008) & Harrigan et al. (2003), observed that when diagnostic symptoms of mental illness are identified late, intervention is also sought late; which is a negative mental health outcome because it is associated with a poor prognosis for mental illness. Past studies established a misconception of non-psychotic nature of abnormal behaviour in other cultures

(Aino, 2003; Deribew & Tamirat, 2005; Mburu, 2007; Nsereko, et al., 2011; Sorsdahl, et al., 2000). Moreover, these findings further established a relationship between misconception of non-psychotic nature of abnormal behaviour with improper intervention, belated (scientific) intervention, and non-intervention for mental illness.

To obtain more inclusive results, the researcher found it necessary to conduct further descriptive analysis based on mean scores for all mental disorder categories using all the abnormal behaviours presented (n=43). These results allowed the researcher to compare the average conceptualisation scores for each mental disorder index and to rank the mental disorder indexes according to average conceptualisation scores. Because all the behaviours presented to the respondents were abnormal, the higher the mean score a mental disorder index recorded, the more the behaviours presented under that mental disorder category were conceptualised as symptoms of mental illness by the respondents. Similarly, the lower the mean score a mental disorder category recorded, the less the behaviours presented under that mental disorder category were conceptualised as abnormal by the respondents. These findings are presented on Table 4.9.

Table 4.9: Conceptualisation of the Nature of A.B. by Mean Scores (n=385)

Disorder Index	Maximum	Normal Index Mean	Maximum	Abnormal Index Mean	Std Deviation
Schizophrenia/Psychosis Disorders	100.00	15.67	100.00	84.33	19.30
Mood Disorders	100.00	30.78	100.00	69.22	28.53
Alcohol Use Disorder	100.00	30.98	100.00	69.02	38.08
Child Developmental Disorders	100.00	34.66	100.00	65.34	30.55
Anxiety Disorders	100.00	34.69	100.00	65.31	31.66
Combined mean scores	**100.00**	**29.36**	**100.00**	**70.64**	**27.60**

Results presented on Table 4.9 above indicate that in a scale of 0-100, schizophrenia/psychosis disorders index got the highest 'abnormal' mean score (Mean=84.33); implying that psychotic behaviours, predominantlysymptomatic of full blown schizophrenia/psychosis disorders were appropriatelyconceptualised as abnormal by majority of the respondents. The results also indicate that behaviours symptomatic of all the other mental disorders (alcohol use, anxiety, mood and child developmental disorders) got above average mean scores; implying that many respondents also appropriately conceptualised non-psychotic behaviours symptomatic of these mental disorders as abnormal. The mental disorder categories that recorded the highest 'normal' mean scores were anxiety disorders (Mean=34.69); child developmental disorders (Mean=34.66); alcohol use disorder (Mean=30.98) and mood disorders (Mean=30.78); implying that non-psychotic behaviours symptomatic of these mental disorders were inappropriately conceptualised as normal by a substantial number of respondents. The results also reveal a worrying trend that a substantial number of respondents (Mean=15.67) did not conceptualise psychotic behaviours as diagnostic symptoms of mental illness. Results further indicate that the average, combined

abnormal categories mean score, indicative of overall appropriate conceptualisation was (Mean=70.64); while the average, combined normal categories mean score, indicative of overall misconception was (Mean=29.36).

These results reveal that though many respondents were able to appropriately conceptualise the natureof the 5 mental disorder categories presented, a substantial number of respondentsnonetheless misconceptualised the nature of these mental disorders and especially the non-psychotic nature. These findings thus corroborate those presented on Table 4.8 above which revealed a misconception of the non-psychotic nature mental illness. As observed above, proper conceptualisation of the nature of abnormal behaviour entails the ability to properly conceptualise the early non-psychotic symptoms of mental illness (Ndetei, 2008; Harrigan et al., 2003; Smith, et al., 2010); implying that the substantial misconception established above is an issue that should raise concern. As noted earlier, past studies for example Aino (2004), Deribew& Tamirat (2005), Mbruru (2007) and Sorsdahl, et al. (2000) also established a misconception of non-psychotic nature of abnormal behaviour in other cultures across the world.

Qualitative findings from the FGDs revealed a trend similar to the one established by the descriptive findings. However, qualitative findings found a higher misconception of non-psychotic nature of abnormal behaviour than that reflected by the descriptive findings. The findings revealed that all the top 10 behaviours cited by the FGD respondents were psychotic behaviours; with 'talking to oneself' being the most frequently cited behaviour followed by 'walking naked' while 'wondering behaviour' took the third position. For example, in response to a question that required respondents to cite behaviours manifested in

Kibera informal settlement that were in their opinion symptomatic of mental illness, one respondent gave the following response that provided only psychotic behaviours:

> 'The behaviours that I see here in Kibera that in my opinion show that a person has a mental problem are [pause]……let me say…walking around aimlessly, walking naked, talking and laughing alone, beating people, eating dirty food…….and sometimes stealing food and running away with it while laughing loudly….on my side those are mostly the behaviours that show that a person has a sick mind.' [Female, 49 years].

Non-psychotic behaviours were very minimally conceptualised as abnormal by FGD respondents. Even when prompted, FGD respondents found it difficult to cite behaviours symptomatic of anxiety, mood, alcohol use and child developmental disorders as being symptomatic of mental illness. For example when prompted to give non-psychotic behaviours symptomatic of mental illness one respondent had this to say:

> 'I will also say that these [psychotic] behaviours that my colleagues have mentioned are the ones that I had in mind. But…eeh….I have seen some people who just sit somewhere looking into space for a long time without moving and without attacking anyone. Many people here in Kibera don't think this is a sign that a person is mentally ill. But in my opinion, I think such people are not okay in the mind. This is the only behaviour I can think of apart from those already mentioned.'[Male, 26 years].

And when prompted to give abnormal behaviours indicative of mental illness in children another respondent had this to say:

> 'You know it's hard to identify those behaviours. On my side it is very hard to identify such behaviour in a young child becausefor example even if a child pours saliva or cries loudly it's not necessarily an indication that the child is mentally ill because children are crying and pouring saliva all the time!' [Male, 40 years].

Quote one, where one respondent cites 7 psychotic behaviours, reveals the ease with which psychotic behaviours were conceptualised as symptoms of mental illness by FGD respondents. Quotes two and three however imply that FGD respondents found it difficult to properly conceptualise non-psychotic behaviours symptomatic of mood, anxiety, alcohol use

and child developmental disorders. This trend was observed across the six FGDs where the respondents cited psychotic behaviours with ease but found it difficult to cite non-psychotic abnormal behaviours. As observed earlier, isolating what constitutes abnormal and normal behaviour is a task that sometimes confounds even mental health professionals (Sue & Sue, 1990, 2004). This implies that in view of the low levels of education and other inhibiting contextual factors associated with informal settlement (Davis, 2006; UN-Habitat 200; WHO, 2010) residents of Kibera informal settlement could indeed find it challenging to isolate non-psychotic diagnostic symptoms of mental illness. Consequently, although questionnaire respondents registered a high appropriate conceptualisation mean score (Mean=70.64) for the nature of abnormal behaviour, these qualitative findings could reflect the true picture on the ground that residents of Kibera informal settlement do indeed lack proper knowledge of early non-psychotic diagnostic symptoms of mental illness.

The findings presented above reveal that overall, majority of Kibera informal settlement residents were able to appropriately conceptualise the nature of the mental disorders presented; with abnormal mean score index being (Mean=70.64). Overall, behaviours symptomatic of schizophrenia/psychosis disorders were the most highly conceptualised as abnormal with an abnormal mean score being (Mean=84.33). However, the findings also reveal that a substantial number of residents misconceptualised the nature of abnormal behaviour (Mean=29.36); with non-psychotic behaviours symptomatic of mood, anxiety, alcohol use and child developmental disorders being the most highly misconceptualised. Abnormal psychologists opine that the ability to conceptualise the nature of abnormal behaviour appropriately is a positive mental health outcome because it implies that the residents can seek treatment intervention for mental illness. However, abnormal

psychologists also observe that the ability to conceptualise psychotic behaviours as abnormal is proper but belated conceptualisation of the nature of abnormal behaviour (Comer, 2006; Davidson, 2008; Hansell & Lisa; 2005; Roy, 2002, Sue & Sue, 2004). Psychotic behaviours are often the most advanced and overt diagnostic symptoms of mental illness that are predominantly symptomatic of schizophrenia/psychosis disorders; but can also be indicative of advanced Major Depressive Disorder (MDD) (Bennett, 2003; Sue & Sue, 2004). This implies that due to their overt nature, literally everyone should be able to conceptualise them as abnormal; which raises a mental health concern that a substantial number of residents of Kibera informal settlement (Mean=15.56) was not able to conceptualise these behaviours as abnormal.

Literature in abnormal psychology further indicates that because symptoms of mental disorders often overlap, most mental disorders including psychosis/schizophrenia disorders are often characterised by non-psychotic symptoms at the onset (Comer, 2006; Davidson, 2008; Hansell & Lisa; 2005;Roy, 2002, Sue & Sue, 2004). Schizophrenia and psychosis disorders for example, are often characterised by non-psychotic symptoms such as social withdrawal, depressed mood, sleep disturbances, anxiety, decline in functioning at school, work or self-care, reduced emotional expression and hostility or suspiciousness at the onset (Harrigan et al., 2003; Smith et al., 2010). According to Ndetei (2008) & Smith et al. (2010) psychotic symptoms more often than not, only manifest at the later stages of progression of these disorders. Thus, because the findings indicate that a substantial number of Kibera residents lack proper conceptualisation of non-psychotic symptoms which could be indicative of schizophrenia/psychosis at the onset; this literature authenticates the observations made earlier that the ability by residents of Kibera to identify psychotic behaviours does not

necessarily mean that they have a proper conceptualisation of diagnostic symptoms of these mental disorders. As noted earlier, proper conceptualisation of mental illness entails a proper understanding of the core symptoms that manifest at the onset of the disorder (Harrigan et al., 2003; Ndetei, 2008; Smith, et al., 2010) because (Ndetei, 2008) this is a prerequisite for early intervention

Research indicates that misconception of the nature of abnormal behaviour could result from lack of scientific knowledge on issues of mental health (Martin et al., 2011; Ndetei et al., 2009) and from negative cultural influence (Kapungwe et al., 2010; Ssebunnya et al.,2009). Moreover, such misconception could also result from normalisation of the nature of abnormal behaviour due to the negative characterlogy of informal settlements stated earlier (Mutisya & Yarime, 2010; UN-Habitat, 2008; WHO, 2008) which predisposes residents to abnormal behaviour. Past studies found a high prevalence of behaviours symptomatic of depression, anxiety and alcohol use disorders among residents of informal settlements across the world (Martin et al., 2011; Chavan, Arun, Bhargava, &Singh, 2007; Puertas et al.,2007). There is thus a possibility that this over exposure to abnormal behaviour could have led to the substantial normalisation of the nature of abnormal behaviour by residents of Kibera informal settlement observed in this study. For example, Martin et al. (2011) found that the people of Santos informal settlement in the central region of Santos, Southeastern Brazildid not treat people who manifested abnormal behaviour any differently from people with normal behaviour as they did not perceive these people as different from themselves; implying that the residents had normalised these behaviours.

Past studies linked misconception of the nature of abnormal behaviour to negative mental health outcomes including improper intervention, belated (scientific) intervention and non-

intervention for mental illness. For example, Deribew & Tamirat (2005), Kapungwe et al. (2010), Martin, et al. (2011), Sorsdahl et al. (2000) &Ssebunnya et al. (2009) found that misconception of the nature of abnormal behaviour was associated with the delayed (scientific) intervention, improper interventions and non-intervention for mental illness among residents of Ethiopia, Zambia, Brazil, South Africa and Uganda respectively. This relationship is further supported by scholars in abnormal behaviour who observe that timely (scientific) intervention for mental illness is linked to how appropriately the people surrounding the victim are able to conceptualise the early diagnostic symptoms of mental illness (Ndetei, 2008; Smith et al., 2010). Moreover, literature on onset, management and prognosis of mental disorders further reveals that belated (scientific) intervention is associated with a negative prognosis for most mental disorders especially schizophrenia and psychosis disorders (Harrigan et al., 2003; Ndetei, 2008; Smith, et al., 2010).

These findings therefore imply that because non-psychotic behaviours were conceptualised as normal by a substantial number of Kibera informal settlement residents, there are high chances that a substantial number of residents manifesting non-psychotic diagnostic symptoms of mental illness could be being subjected to belated (scientific) interventions and non-intervention for mental illness. Literature indicates that when non-psychotic symptoms are subjected to late scientific intervention or non-intervention, psychotic symptoms often result (Corrigan, Mueser, Bond, Drake & Solomon, 2008). Consequently, these findings further imply that there could be many residents of Kibera informal settlement manifesting psychotic symptoms due to these intervention related consequences. Moreover, these consequences have been associated with intense physical and emotional suffering, disability

and even death for victims of mental illness (de Boer et al., 2008; Nsekero et al., 201l; Ssebunnya et al.,2009; WHO 2008).

4.3.2 Conceptualisation of the Causes of Abnormal Behaviour

To establish how residents of Kibera informal settlement conceptualise the causes of abnormal behaviour, questionnaire respondents were presented with various items (n=22) against which they were supposed to indicate if the items presented were in their view causes or not causes of abnormal behaviour. The distribution of these items was as follows: biological causes (n=6); psychosocial causes (n=12); and supernatural causes (n=4). (See Appendix 1). In addition, further inform this objective, similar qualitative data were gathered through six focus group discussions. These descriptive and qualitative findings on this objective are concurrently presented, analysed and discussed below.

Table 4.10: Conceptualisation of the Causes of Abnormal Behaviour

Cause s (n=22)	No		Yes		Total		Causal Category
	F	%	F	%	F	%	
Sickness/disease of the brain	25	6.5	358	93.5	383	100.0	Biological
Injury to the brain	46	12.1	334	87.9	380	100.0	Biological
Abuse of alcohol and other (psychoactive) drugs	57	15.1	320	84.9	377	100.0	Biological
Being attacked by evil spirits and demons	78	20.4	304	79.6	382	100.0	Supernatural
Being cursed	85	22.2	298	77.8	383	100.0	Supernatural
Being bewitched	90	23.6	291	76.4	381	100.0	Supernatural
Traumatic experiences in early childhood (rejection/neglect, sexual abuse, physical abuse)	98	25.9	280	74.1	378	100.0	Psychosocial
Genetics (inheriting abnormal genes from parents/close relatives)	115	30.7	260	69.3	375	100.0	Biological
Physical illness (bodily disease)	129	33.9	252	66.1	381	100.0	Biological
Persistent negative attitude towards life	130	34.4	248	65.6	378	100.0	Psychosocial
Punishment for disobeying God	140	37.4	234	62.6	374	100.0	Supernatural

Table 4.10 above presents a summary of 10 items out of a possible 22 items that were most highly conceptualised as causes of abnormal behaviour. Out of the ten items, 5 (50%) were scientific biological causes with ‘brain sickness’ topping the list;4 (40%) were non-scientific supernatural causes with ‘attack by demons/evil spirits’ taking the lead; while 2 (10%) were scientific psychosocial causes with ‘traumatic experiences’ being on the lead. These results reveal mixed perceptions on the causes of abnormal behaviour. The results reveal support for both scientific biopsychosocialcauses (but with a higher support for biological causes and a low support for psychosocial causes) and support for non-scientific supernatural causes.

In the view of abnormal psychologists (Comer, 2006; Bennett, 2003; Davidson, 2008; David, & Vincent, 2004; Sue & Sue 2004) appropriate conceptualisation of causes of abnormal behaviour entails conceptualising its causes on the basis of the holistic BPS causal model. Therefore in view of the current scientific criteria, support for scientific BPS causes reflected above indicates appropriate conceptualisation of the causes of abnormal behaviour. These findings resonate with those ofpast studies which established support for a scientific BPS etiology of abnormal behaviour. For example, de Toledo et al.(2004), Sadik et al. (2010) and Lombo (2010) established support for a scientific BPS etiology of abnormal behaviour among residents of Latin America and the Caribbean, residents ofIraq and among mental health care practitioners within the Isixhosa cultural context in South Africa respectively.

However, the results also indicate that although the respondents in the current study supported scientific BPS causes, they also supported non-scientific supernatural causes. Abnormal psychologists (Bennett, 2003; Sue & Sue, 2006) termed attribution of abnormal behaviour to supernatural causes such as demons, curses, spirits and witchcraft 'a causal misconception.' This implies that in view of these findings, there is a causal misconception for abnormal behaviour among residents of Kibera informal settlement. Past studies also established a causal misconception for abnormal behaviour in other cultures. For example, Aino (2004), Kapungwe et al. (2010), Mburu (2007), Nsereko et al. (2011), Olubunmi (2009) andTeferra&Shibre (2012)found a causal misconception for abnormal behaviour among people of Western Africa, different communities of Zambia, residents of Kamburu sub-location in Central Province of Kenya, different communities of Uganda, residents of Ekiti community in Nigeria and among the Borana semi-nomadic population in southern Ethiopia. In these studies, abnormal behaviour was predominantly attributed to supernatural causes

such as evil spirits, curses and witchcraft. Moreover, these studies associated causal misconception with negative mental health outcomesespecially seeking of improper treatment interventions with witchdoctors and religious exorcists and belated (scientific) interventions.

To get more inclusive results, the researcher found it necessary to conduct further analysis based on mean scores in order to find out how the causes of abnormal behaviour were conceptualised on average for each causal category (biological, psychosocial and supernatural). These findings are presented on Table 4.11.

Table 4.11 Conceptualisation of Causes of Abnormal Behaviour by Mean Scores (n=385)

Causes	Maximum	Mean	Std Deviation
Scientific (Biological) causes	100.00	**75.80**	23.66
Scientific (Psychosocial) causes	100.00	**54.39**	28.44
Scientific (Biopsychosocial) Causes	100.00	**65.10**	26.16
Non-scientific (Supernatural causes)	100.00	**74.07**	32.31

Results presented on Table 4.11 above indicate that (in a scale of 0-100), the most highly supported treatment interventions were scientific biological causes (Mean=75.80); followed by non-scientific supernatural causes (Mean=74.07); and scientific psychosocialcauses in the third place. Overall, nonscientific supernatural causes received more support (Mean=74.07) than scientific biopsychosocial treatment interventions (Mean=65.10). Similar to the findings presented on Table 4.10, these findings also reflect mixed views on the causes of abnormal behaviour which is reflected by support for both scientific and non-scientific causes.

As observed earlier, support for non-scientific causes is termed ‘a causal misconception’ by abnormal psychologist (Bennett, 2003; Sue & Sue, 2004); while the scientific BPS causal model is perceived as the most holistic model for conceptualising abnormal behaviour. Past studies found a relationship between perceived causesand the treatment interventions sought for abnormal behaviour (Aino, 2004; de Toledo et al., 2004; Mburu, 2007; Sadik, et al., 2010; Teferra&Shibre, 2012); implying that if people support scientific/non-scientific causes, they were likely to seek scientific/non-scientific interventions respectively. Consequently, these findings imply that because the residents supported both scientific causes (Mean=65.10) and non-scientific causes (Mean=74.07), they can comfortably seek both scientific and non-scientific treatment interventions for abnormal behaviour; which underscores the need for a mental health initiative aimed at inclining the residents more towards choice of scientific treatment interventions.

Similar to the findings presented on Table 4.10, the above results also reflect a higher support for scientific biological causes (Mean=75.80) and only an average support for scientific psychosocial causes (Mean=54.39); implying that the residents of Kibera informal settlement did not properly understand the scientific psychosocial causes of abnormal behaviour. As earlier observed, this lack of proper understanding for scientific psychosocial causes could be attributed to normalisation of psychosocial stressors by residents of Kibera informal settlement.This could be because in view of the negative characterlogy of informal settlement across the world (Mutisya & Yarime 2010; UN-Habitat, 2008; WHO, 2005) the residents have interacted with these stressors for years. The average support accorded to scientific psychosocial causes overall implies that the residents of Kibera informal settlement lack proper understanding of interactive nature of the holistic BPS causal model of abnormal behaviour. As observed earlier, biological, psychological and sociological factors interact in

the context of abnormal behaviour (Smyth et al., 1999; Tugadeet al., 2004); implying that lack of proper understanding of the interactive nature of the holistic BPS causal model is thus a negative mental health outcome because the residents may not use the holistic BPSmodel integratively in treatment. In view of abnormal psychologists (Bennett, 2003; Comer, 2006; Davidson, 2008; Sue & Sue, 2004), best treatment outcome for mental illness is achieved when the holistic BPSmodel is used integratively in treatment.

Qualitative findings from the FGDs also established mixed views on the causes of abnormal behaviour similar to that established by descriptive findings from questionnaires. The respondents supported both scientific BPS and non-scientific supernatural causes of abnormal behaviour. Scientific biological causes received high support from FGD respondents with 'abuse of illegal drugs and alcohol' being the most highly supported biological cause; followed in the second position by 'brain injury' while 'heredity' took the third position. Like questionnaire respondents, FGD respondents also gave average support to scientific psychosocialcauseswith 'unemployment' being the most highly supported psychosocial cause followed by 'poverty' and 'traumatic experiences' respectively. Like descriptive findings, these findings reveal that FGD respondents also lacked a proper understanding of scientific psychosocial causes of abnormal behaviour and the interactive nature of the holistic BPS causal model. FGD respondents also conceptualised abnormal behaviour on the basis of the supernatural model etiology; implying that qualitative findings also established a causal misconceptionsimilar to that established by the descriptive findings. The most supported supernatural causes across the six FGDs were 'witchcraft' 'demons and spirits' and 'curses' in that order. The following responses reflect the causes of abnormal

behaviour that received the highest support from FGD respondents in each of the three causal sub-categories:

Respondent one (on a scientific biological cause)

> 'The way I see it myself…[pause]…more often than not…it's these addiction drugs and alcohol….especially changaa and bhang that make people to develop these mental problems here in Kibera. Just the other day there was this young man in Kianda who raped his mother and cut his sister….and people were saying that he was behaving like that because he had taken lots of bhang. And this young man is not the only one…..many young men you see here in Kibera with these abnormal behaviours are drug abusers.' [Female, 52 years].

Respondent two on scientific psychosocial causes:

> '…..On my side, it's unemployment and poverty that mostly causes abnormal behaviour here. Here in Kibera there are so many unemployed youths. These youths move around stealing and sometimes even killing people because they have nothing to do to get money. Like me I finished my form four three years ago and I don't have any job. My parents have no money to help me start a business because they are poor and my two sisters are in school. Sometimes I keep quiet alone and feel as if I am going mad. I need help madam!' [Male, 23 years].

Respondent three on a non-scientific supernatural cause:

> 'Me the way I see it, it is witchcraft. Here in Kibera people steal other people's things and the owners go to witchdoctors to have them bewitched. Such people develop abnormal behaviours like walking naked and crying loudly. Like after the post election violence many people developed these behaviours you are talking about because they stole people's property and they were bewitched.' [Female, 31 years].

The overall quantitative and qualitative findings presented above reveal that residents of Kibera informal settlement have mixed views on causes of abnormal behaviour. The findings indicate that the residents conceptualised the causes of abnormal behaviour on the basis of both the scientific BPS causal model, which was appropriate conceptualisation and the non-scientific supernatural causal model, which was a causal misconception. Overall however, the findings reveal that while scientific biological causes were accorded high support

(Mean=75.84); scientific psychosocial causes were only accorded average support(Mean=54.39). Researchers in abnormal psychology observed that high support for scientific biological causes of mental illness is common as it is reflective of the dominant biomedical model of illness as opposed to the more recent biopsychosocial model of illness (Gilbert, 1995; Halligan & Aylward, 2006; Slade, 2002; Smith et al., 2010). In their view, many people are familiar with the biological model of illness because of its dominance in the medical field for years; hence, many people can easily identify with scientific biological causes of illness as opposed to scientific psychosocial causes. These observations could thus explain the high support for scientific biological causes and the low support for scientific psychosocial causes of abnormal behaviour by residents of Kibera informal settlement reflected in this study. As observed earlier however, it is also possible that low support for scientific psychosocial causes in this study could be attributed to normalisation of psychosocial causes by the residents of Kibera informal settlement. As observed in relation to the misconception of the nature of abnormal behaviour, this outcome could be explained on the basis of literature in characterlogy of informal settlements which revealthat most psychosocial causes of abnormal behaviour such as poverty, unemployment, illiteracy and overcrowding define the 'normal' conditions under which these residents have lived for years (Mutisya & Yarime, 2010; UN-Habitat, 2008; WHO, 2005).

Engel (1977) founded the scientific biopsychosocial model of illness as an alternative to the biomedical model which was the dominant model in conceptualising health and illness at the time. Engel (1977, 1980) opined that all forms of illness are best understood on the basis of the holistic BPS model. Accordingly, although a biological factor may be a sufficient cause for a mental disorder (for example genetics for schizophrenia disorder), psychological and

social factors (for example negative cognitions and trauma) may trigger or maintain that disorder. For example, Major Depressive Disorder can be attributed to three causal factors. First, are the biological factors such as disturbed functioning of endocrine hormone, immune and neurotransmitter systems, an individual's genetic vulnerability or physical illness. Secondly, are the psychological factors such as characteristic negative patterns of thinking, deficits in coping skills, judgment problems, and impaired emotional intelligence. Thirdly are the sociological factors such as experiencing traumatic situations, early separation, lack of social support or harassment (American Psychiatric Association, 2000b). Moreover, research (APA, 2000b) has shown that stressful social events are capable of serving as triggers for turning genes on and off and causing changes in brain functioning; hence a social stressor can trigger a physical cause of depression. In view of Engel (1977, 1980), only proper conceptualisation of such a holistic etiology as the above can facilitate development of a holistic treatment intervention that integrates medical examination and appropriate psychosocial interventions.This stance by Engel (1977, 1980) has been supported by researchers in biopsychosocial model for years. These researchers have established that the three causal factors interact in the context of illness with biological factors predominantly acting as primary and sufficient causes; while psychosocial factors predominantly act as predisposing, precipitating, contributory or maintaining causes (Castes, Hagel, Palenque, Canelones, Corao, Lynch, 1999; Halligan & Aylward, 2006; Gilbert, 1995; Smyth et al., 1999; Slade, 2002; Tugade et al., 2004; Zuckerman, 1999). Overall, a positive prognosis has been reported for most mental disorders when holistic BPS treatment interventions such as medication, proper nutrition, positive cognitions, exercises and social support are used in combination (Bennett, 2003; Comer, 2006; Davidson 2008; Sue & Sue, 2004).

The current study reveals that while scientific biological causes of abnormal behaviour were highly supported by the residents of Kibera informal settlement (Mean=75.84); scientific psychosocial causes were only accorded average support (Mean=54.39). As observed earlier, the low support for psychosocial causes implies that residents of Kibera lack proper understanding of the integrative nature of the holistic scientific BPS model. In view of the past findings and the findings of the current study, this implies that residents of Kibera could be using unholistic treatment interventions for abnormal behaviour: that is psychiatric medication without any accompanying psychosocial interventions which has been associated with an overall poor prognosis for mental illness (Antony& Barlow, 2001; McGorry & Killackey, 2002; Michael & Anestis, 2009).

The overall implication of the above exposition is that there could be many victims of mental illness in Kibera who are either receiving or have in the past received psychiatric medication yet their conditions remain the same due to untreated psychosocial stressors. This negative mental health outcome further implies that residents of Kibera should take responsibility to improve their social and psychological environments in order to facilitate healing for their mentally ill. However in view of the current findings, there is high possibility that residents of Kibera lack knowledge that psychosocial factors can cause, trigger and maintain mental illness; which could explain why residents of informal settlements do little to improve their psychosocial environment as a measure ofimproving their mental health status. This implies that there is need for a mental health intervention programme aimed at helping residents of Kibera informal settlement to acquire proper knowledge on the interactive nature of the holistic BPS causal model of abnormal behaviour.

As noted earlier, biological and psychological and sociological factors interact in the context of abnormal behaviour,with biological factors predominantly acting as primary or sufficient causes and psychosocial factors predominantly acting as maintaining, predisposing precipitating or contributory causes of abnormal behaviour. Moreover, many psychosocial stressors associated with key psychosocial theories such as deprivation, trauma and unhealthy family structures (Freud, 1920; Erikson, 1950); irrational or negative interpretation of life events and situations (Ellis, 1994; Beck, 1976); frustrated or arrested personal goals (Maslow, 1954; Rogers, 1995); imitating of disturbed social role models (Bandura, 1962) and unique sociocultural stressors such as poverty, unemployment, unhygienic physical environment, illiteracy & discrimination (Sue & Sue, 2004) can if left untreated become sufficient causes of abnormal behaviour in themselves often resulting to various mental disorders. Empirical studies have established that some of the above psychosocial stressors such as poverty, unemployment, pathologenic family relationships and external locus of controlare indeed sufficient causes of mental disorders such as depression, anxiety and personality disorders (Dwairy et al., 2006; Klebanov et al., 1994; Scott & Lewis, 1998; Sharlene & Sandler, 1999). It is thus important that the residents of Kibera informal settlement are educated on different ways in which conditions such as these can affect their mental health. Moreover, considering that these are some of the psychosocial stressors that characterise informal settlement across the world (WHO, 2005), there is need for residents of Kibera informal settlement to take an active role in preventive initiatives aimed at mitigating these psychosocial stressors

As noted earlier, the possibility that many residents of informal settlements across the world may notperceive psychosocial stressors as causes of abnormal behaviour due to normalising

them because they constitute part of their everyday experience is high. Consequently, the residentswill most likely not seek any psychosocial treatment interventions to mitigate the effect of these psychosocial stressors. Moreover, as stated earlier, they may not take psychosocial precaution to maintain good mental health. This leaves residents of informal settlement and other groups that live under similar condition more vulnerable to mental illness than the rest of the population. What this implies is that there could be many residents of Kibera informal settlement manifesting mental disorders that could be associated with untreated psychosocial stressors that ultimately become sufficient causes.Moreover, due to this normalisation, the residents may conceptualise the early abnormal behaviours as resulting from these psychosocial stressors as normal acceptable coping mechanisms. Consequently, they may not seek any intervention for these early abnormal behaviours; yet seeking intervention for early abnormal behaviours has been associated with a positive prognosis for mental mostdisorders (Corrigan et al, 2008; Ndetei, 2008; McGorry & Killackey, 2002; Smith et al., 2010). As stated earlier, untreated early diagnostic symptoms of mental illness can progress into full blown psychotic disorder (Corrigan et al, 2008). This further implies that there could be many residents of Kibera informal settlement manifesting full blown psychotic symptoms due to delayed treatment intervention or non-intervention for mental illness as a result of normalisation of psychosocial stressors.

In addition to misconception of psychosocial causes of abnormal behaviour, the study also established ‘causal misconception’ (Mean=74.07).Attributing abnormal behaviour to supernatural causes is a negative mental health outcome because as observed earlier, past studies found a positive relationship between causal misconception and intervention misconception. What this implies in view of this current study where a causal misconception

is revealed is that there could be many victims of mental illness in Kibera informal settlement who are being inappropriately subjected to various supernatural forms of treatment interventions. In view of abnormal psychologists, these forms of interventions cannot cure abnormal behaviour due to its scientific, biopsychosocial etiology (Comer, 2006; Davidson, 2008; David & Vincent, 2004; Sue & Sue, 2004); rather, their use only serves to make the abnormal behaviour to progress from mild non-psychotic forms to severe psychotic forms (Corrigan et al., 2008). This implies that there could be victims of abnormal behaviour in Kibera informal settlement manifesting full blown psychotic behaviours as a result of being subjected to protracted non-scientific treatment interventions. Moreover, Kapungwe et al. (2010) and Ssebunnyaet al. (2009) found that causal misconception was also associated with high chances of victim blame and subsequent victim stigmatisation; which was further associated with non-intervention or inhuman treatment aimed at punishing the victims. The current study also established a similar association as illustrated by the following quote from a FGD respondent:

> 'Many people here in Kibera think that these people with abnormal behaviours are bewitched…..or….cursed because they did something wrong so people blame them for their conditions. For example there is a man here in Kibera…. in line saba who stays at one spot next to the road. People here say that the man developed these behaviours after post election violence because he stole some property belonging to a business man from a certain tribe…..who then had him bewitched. When people get close to this man they often abuse him, telling him to return what he stole….some push him…..and some even beat him up. However, the man keeps on coming back to the same spot so he's often abused, pushed and beaten up almost every day…and nobody cares.' [Female, 30 years].

This quote illustrates that causal misconception could result to stigmatisation which can further result to inhuman treatment for victims of mental illness. Moreover, stigmatisation resulting from causal misconception is associated with fear of seeking treatment intervention.

According to Corrigan et al. (2008) people with mental illness often internalise society's beliefs about them. For example, if a community believes that an individuals' abnormal behaviour accrues from a curse or punishment for disobeying God-hence he/she is bad-the individual will internalise these beliefs that he/she is a bad person. Consequently, such an individual tend to shy away from any form treatment or social support; a course of action that often increases the severity of diagnostic symptoms leading to heightened suffering for such a victim. As observed earlier, this implies that there is need for mental health initiatives aimed at correcting the causal misconceptions established by these findings.

4.3.3 Sociodemographic Variables and Conceptualisation of Abnormal Behaviour

This research objective aimed at investigating if any significant statistical differences existed in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different gender, age, level of education, religion and ethnicity. The research objective was guided by the following hypothesis:

H_{01}: There is no significant difference in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different sociodemographic variables.

Descriptive data from the questionnaire was subjected to hypothesis testing to establish if any significant statistical differences existed in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different gender, age, level of education, religion and ethnicity. These findings are presented below.

4.3.3.1 Gender and Conceptualisation of Abnormal Behaviour

Independent Samples T-test was conducted to find out if any significant statistical differences existed in conceptualisation of the nature of abnormal behaviour between male and female residents of Kibera informal settlement. The tests revealed that no significant statistical differences existed between male and female respondents in conceptualisation of the nature of 4out 5 mental disorders presented (that is schizophrenia/psychosis, alcohol use, anxiety and mood disorder). (See Appendix 7 for detailed statistics).

These findings imply that (in view of the findings established earlier in objective one where a substantial misconception of the nature of abnormal behaviour was established) both male and female residents of Kibera informal settlement demonstrated a substantial misconception of the nature of 4 out of 5 of the mental disorders presented. Consequently, in view of past studies(Deribew & Tamirat, 2005; Kapungwe et al., 2010; Sorsdahl et al., 2000; Ssebunnya et al.,2009) both male and female residents of Kibera informal settlement are substantially prone to subjecting victims of mental illness to negative mental health outcomes associated with misconception of the nature of abnormal behaviour includinglate scientific interventionand non-intervention. These results could imply existence of a Kibera informal settlement sub-culture that could have influenced male and female residents to have a similar way of conceptualising the nature of abnormal behaviour.

Independent Samples T-test however established a significant statistical difference between male and female respondents in conceptualisation of the nature of child developmental disorders as shown on Table 4.12.

Table 4.12: T-Test Results on Gender and Conceptualisation of the Nature of Child Developmental Disorders

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	T	Df.	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Child Developmental Disorders Index	Equal variances assumed	.036	.849	2.639	382	.009	8.16448	3.09421	2.08066	14.24830
	Equal variances not assumed			2.639	382.000	.009	8.16448	3.09405	2.08097	14.24799

Results of Independent T-Test presented on Table 4.18 indicate that there is a significant statistical difference between male and female respondents in conceptualisation of the nature of child developmental disorders (t=2.639,df=382,p=0.009). The mean scores were: males (Mean=69.3992) and females (Mean=61.2347); implying that male respondents conceptualised the nature of child developmental disorders more appropriately than female respondents. Past studies did not find gender to have any significant statistical influence in conceptualisation of abnormal behaviour (Sadik et al., 2010; Teferra&Shibre, 2012). Moreover, FGD findings established that both genders found it equally difficult to cite behaviours symptomatic of child developmental disorders.

These findings could be attributed to normalisation of abnormal behaviour symptomatic of child developmental disorders by females due to the over familiarity that they have with children as a result of spending more time with them. In view of critical theory (Jim, 1993) men could have conceptualised these diagnostic symptoms more appropriately due to the substantive distance they have with children which could have allowed them to have a more reflective critical assessment of the behaviours. These findings imply a negative mental

health outcome that female residents of Kibera informal settlement, who are the core care givers, were likely to seek belated scientific intervention for abnormal behaviour symptomatic of child developmental disorders.

Independent Samples T-test was conducted to find out if any significant statistical difference existed between male and female residents of Kibera informal settlement in conceptualisation of the causes of abnormal behaviour. The findings are presented on Table 4.13.

Table 4.13: T-test results on Gender and Conceptualisation of Causes of Abnormal Behaviour

Independent Samples Test		**Levene's Test for Equality of Variances**		**t-test for Equality of Means**			
		F	Sig.	T	Df.	Sig. (2-tailed)	Mean Difference
Scientific Causes	Equal variances assumed	.551	.458	-3.983	383	.000	-10.00341
	Equal variances not assumed			-3.983	382.931	.000	-10.00341
Non-Scientific Causes	Equal variances assumed	.069	.792	-1.093	383	.275	-3.59793
	Equal variances not assumed			-1.093	382.396	.275	-3.59793

Results presented on Table 4.13 above indicate that there is a significant statistical difference between male and female respondents in conceptualisation of scientific causes of abnormal behaviour ($t=-3.983, df=383, p<0.001$); but there is no significant difference between male and female respondents in conceptualisation of non-scientific causes of abnormal behaviour ($t=-1.093, df=383, p=0.275$). The mean scores were males (Mean=65.3994) and females (Mean=55.3960); implying that males supported scientific causes of abnormal behaviour more than females. A similar trend was observed in the focus group discussions where overall, males across all the 6 FGDs supported scientific psychosocial causes of abnormal

behaviour especially poverty, unemployment and lack of money more than female respondents. As observed earlier, past studies (Sadik et al., 2010; Teferra&Shibre 2012) did not find gender to have any significant statistical influence on conceptualisation of abnormal behaviour.

One possible explanation for the significant gender difference in conceptualisation of scientific psychosocial causes of abnormal behaviour could be because female residents may have normalised scientific psychosocial causes of abnormal behaviour more than male residents considering that they interact with many of these psychosocial stressors such as single parenthood, poverty/unemployment and dysfunctional families more intensely than males. Gender disparity in defining perceptions could also have contributed to this outcome; where women having been subjected to prolonged social prejudice become tolerant of poor social conditions resulting to their normalisation. Males could also have given scientific psychosocial causes of abnormal behaviour such as poverty, unemployment and lack of money higher ratings perhaps due to their socially constructed roles as head of families and bread winners which these psychosocial stressors inhibit them from fulfilling. In view of past studies (de Toledo et al., 2004 Sadik et al., 2010), these findings imply that male residents of Kibera informal settlement were more likely to seek scientific treatment interventions for abnormal behaviour compared to female residents.

As noted above in relation to the non-significant results on gender and conceptualisation of the nature of abnormal behaviour, the non-significant gender difference in conceptualisation of non-scientific causes established above could be attributed to a Kibera informal settlement sub-culture that could have socialised residents of both gender to have similar ways of perceiving supernatural causes. In view of the causal misconception established earlier in

objective two, these findings imply that both male and female residents of Kibera informal settlement misconceptualised the causes of abnormal behaviour; implying that both genders were equally less likely to use scientific psychosocial interventions and more likely to use non-scientific supernatural treatment interventions for abnormal behaviour.

4.3.3.2 Age and Conceptualisation of Abnormal Behaviour

One way Analysis of Variance (ANOVA) test was conducted to find out how residents of Kibera informal settlement of different ages conceptualised the nature of abnormal behaviour. The age groups subjected to hypothesis testing were (13-18, 19-35, 35-50 and 51-65 years). Results of one way ANOVA test revealed that no significant statistical differences existed among residents of Kibera informal settlement of different ages in conceptualisation of the nature of all the 5 mental disorders presented (i.e. schizophrenia/psychosis, alcohol use, anxiety, mood and child developmental disorders). (See Appendix 8 for detailed statistics).

In view of the descriptive findings presented earlier in objective one where the nature of abnormal behaviour was substantially misconceptualised, these findings imply that residents of Kibera informal settlement of all ages manifested a substantial misconception forthe diagnostic symptoms of all the 5 mental disorders presented. This implies that residents of Kibera informal settlement of all ages were substantially prone to subjecting victims of mental illness to belated scientific intervention or to non-intervention altogether. These findings yet again imply existence of a sub-culture that could have influenced the residents of Kibera informal settlement of all ages to conceptualise the nature of abnormal behaviour in a similar way.

One way ANOVA test was conducted to establish if there was any significant statistical difference in conceptualisation of the causes of abnormal behaviour among residents of Kibera informal settlement of different ages. Results of ANOVA test revealed that a significant statistical difference existed in conceptualisation of the causes of abnormal behaviour among residents of Kibera informal settlement of different ages as shown on Table 4.14.

Table 4.14: ANOVA Results on Age and Conceptualisation of Causes of Abnormal Behaviour

	ANOVA	Sum of Squares	Df	Mean Square	F	Sig
Scientific Causes	Between Groups	10131.955	3	3377.318	5.547	**.001**
	Within Groups	231976.176	381	608.861		
	Total	242108.132	384			
Non-Scientific Causes	Between Groups	10902.751	3	3634.250	3.551	**.015**
	Within Groups	389944.291	381	1023.476		
	Total	400847.042	384			

Results presented on Table 4.14 above indicate that there is a significant difference among respondents of different ages in conceptualisation of scientific causes ($F(3,381)=5.547, p=0.001$) and non-scientific causes ($F(3,381)=3.551, p=0.015$) of abnormal behaviour. The mean scores for scientific causes were: 13-18 years (Mean=49.8873); 19-35 years (Mean=59.2153); 36-50 years (Mean=65.5579); 51-65 years (Mean=69.3083); while the mean scores for non-scientific causes were: 13-18 years(mean=82.8333); 19-35 years (Mean=73.8946); 36-50 years (Mean=73.1627); 51-65 years (Mean=50.00).

ANOVA test did not reveal the age groups which significantly differed in conceptualisation of both scientific and non-scientific causes. Consequently, it was necessary to conduct a Post-Hoc test on the mean scores of the various age groups in order to establish the groups

that recorded significant statistical differences. Scheffe's Post-Hoc analysis established that a significant statistical difference existed among some groups in conceptualisation of scientific and non scientific causes of abnormal behaviour as shown on Tables 4.15 and 4.16.

Table 4.15: Scheffe's Post Hoc Analysis on Age and Conceptualisation of Scientific Causes

		Subset for alpha = 0.05	
Age	**N**	**1**	**2**
13 to 18 yrs	50	**49.8873**	
19 to 35 yrs	196	59.2153	59.2153
36 to 50 yrs	127	65.5579	65.5579
51 to 65 yrs	12		**69.3083**
Sig.		**.076**	**.412**

Post-Hoc results presented on Table 4.15 above show that respondents aged 51-65 years supported scientific causes of abnormal behaviour more (Mean=69.3083) than respondents aged 13-18 years (Mean=49.8873). A similar trend was witnessed in FGDs where overall, older respondents cited more scientific causes especially of a psychosocial nature compared to younger respondents.

These results could be attributed to the exposure and experience that older residents have over the younger residents. By the virtue of their age and in view of the negative characterlogy of informal settlements explained earlier, older residents are likely to have personally experienced more scientific psychosocial stressors or witnessed them affecting the behaviour of other people compared to the younger residents; hence their ability to conceptualise such causes better. On the other hand, younger respondents aged 13-18 years

have less exposure to psychosocial stressors; hence their ability to conceptualise them as causes of abnormal behaviour is limited. Moreover, these results could also imply that the younger generation may have become more tolerant of unconventional conditions and behaviourssuch as dirty environment, pathologenic family structures, abuse and neglect and drinking of illicit brew which are the realities that many psychosocial causes of mental illness represent. These results imply that younger people were less likely to seek scientific treatment intervention (especially of psychosocial nature) for abnormal behaviour compared to older respondents. This is a negative mental health outcome considering that young people aged 13-18 years have many developmental challenges that require a lot of psychosocial support.

Table 4.16: Scheffe's Post Hoc Analysis on Age and conceptualisation of Non-scientific Causes

		Subset for alpha = 0.05	
Age	**N**	**1**	**2**
51 to 65 yrs	12	**50.0000**	
36 to 50 yrs	127		**73.1627**
19 to 35 yrs	196		**73.8946**
13 to 18 yrs	50		**82.8333**
Sig.		**1.000**	**.666**

The above post-Hoc test results indicate that respondents of the younger respondents aged 13-50 years supported non-scientific causes of abnormal behaviour more than older respondents aged 51-65 years. The mean scores were: 13-18 years (Mean=82.8333); 19-35 years (Mean=73.8946); for 36-50 years (Mean=73.1627); and 51-65 years (Mean= 50.00). Again a similar trend was witnessed in FGDs where overall, younger respondents emphasised non-scientific causes compared to older respondents. Past studiesdid not find age

to have any significant statistical influence in conceptualisation of abnormal behaviour (Mburu, 2007; Sadik, et al., 2010).

As observed above, these results could be attributed to the fact that younger respondentsespecially those aged 13-18 years did not appropriately conceptualise scientific psychosocial causes which could have contributed to their higher support for supernatural causes. As earlier noted, older respondents could have given less support to non-scientific supernatural causes due to theirbetter understanding of scientific psychosocial causes. Moreover, younger respondents have more enlarged freedom compared to older respondents which could have made them more tolerant of other perspectives on life issues such as a supernatural causal perspective for abnormal behaviour. These findings imply that the causal misconception established earlier in objective two is highly attributable to younger residents of Kibera informal settlement aged 13-50 years; but especially to those aged 13-18 years who recorded the highest causal misconception mean score (Mean=82.8333). In view of past studies (Aino, 2004; Mburu, 2007; Teferra&Shibre, 2012), these findings imply that younger residents of Kibera informal settlement were more likely to seek supernatural treatment interventions for abnormal behaviour compared to older residents. This could be a worrying trend since the younger generation is expected to be at the forefront of changing unhealthy beliefs based on superstitions as a sign of social development. Moreover, these results could suggest retrogressive mental health development in the region.

4.3.3.3 Level of Education and Conceptualisation of Abnormal Behaviour

One way ANOVA test was conducted to establish if there was any significant statistical difference in conceptualisation of the nature of abnormal behaviour among residents of Kibera informal settlement of different levels of education. Results of ANOVA test revealed

that no significant statistical differences existed among residents of Kibera informal settlement of different levels of education in conceptualisation of the nature of all the 5 mental disorders presented (schizophrenia/psychosis, alcohol use, anxiety, mood and child developmental disorders). (See Appendix 9 for detailed statistics).

Considering that the respondents were drawn from class 8 to University levels of education, these results imply that overall, education had little effect on how residents of Kibera conceptualised the nature abnormal behaviour. This is contrary to past studies which found that education had a significant statistical influence on how abnormal behaviour was conceptualised in other cultures (de Toledo et al., 2004; Deribew & Tamirat, 2005; Mburu, 2007; Sadik et. al., 2010). As noted earlier in relation to gender and age variables which also recorded non-significant differences in conceptualisation of the nature of abnormal behaviour overall, presented, these results could imply existence of a strong Kibera informal settlement sub-culture that could have overridden any positive influence of formal education, to the extent that it influenced residents of all levels of education to conceptualise the nature of abnormal behaviour in a similar manner. The results therefore imply that the substantial misconception of the nature of abnormal behaviour established in objective one earlier was demonstrated by all residents of Kibera their level of education notwithstanding. In view of past studies therefore (Deribew&Tamirat, 2005; Sorsdahl et al., 2000)all residents of Kibera informal settlement, irrespective of their level of education were likely to subject victims of mental illness to the aforementioned negative mental health outcomes which include late scientific intervention and non-intervention for mental illness altogether.

In view of these findings, it is imperative to say that this study has established a strong sub-culture in Kibera informal settlement that could have been responsible for mitigating the

effect of all the sociodemographic variables measured in relation to conceptualisation of the nature of abnormal behaviour. These finding can be given credence by scholars in multiculturalism and cultural psychiatry (Fillion, 2008; Goldberg, 1994; Marsella & Kameoka, 1989) who opined that culture plays a major role in understanding of human behaviour. Marsella & Kameoka (1989) defined culture as 'shared learned behaviour which is transmitted from one generation to another for purposes of individual and societal growth, adjustment and adaptation.' Races and ethnic groups are surrounded by their own cultural context within the greater society as a whole; which may be similar or completely different from that of the wider society. Individuals may completely embrace their cultural heritage or disregard it completely. Culture can be a powerful determinant of world views and it can affect how people define normal and abnormal behaviours as well as how abnormal behaviour istreated within a defined cultural context (Marsella & Kameoka, 1989).

This literature on multiculturalism projects a high possibility that residents of informal settlements across the world often disregard their previous racial/ethnic-based cultural heritages in order to adjust and adapt themselves to the unique challenges (Davis, 2006; Mutisya & Yarime, 2010; WHO, 2005) that characterise informal settlement across the world. This shift then changes their previous world-views consequently resulting to a new informal settlement sub-culture. The findings of this study that show ethnicity to have no significant influence on how abnormal behaviour is conceptualised implies that residents of Kibera informal settlement have disregarded their previous ethnic-specific heritages in order to adapt to the new realities of an urban informal settlement; resulting to a strong unique Kibera informal settlement sub-culture established by this study. Moreover, results posted previously on sociodemographic variables that recorded significant differences in

conceptualisation of the nature of some mental disorders presented reveal that the results were contrary to conventional expectations. For example, it is conventionally expected that females should understand abnormal behaviours relating to children more than males; yet the findings established that male residents conceptualised the nature of child developmental disorders more appropriately than female residents. It is also conventionally expected that older respondents should support supernatural causes of abnormal behaviour more than younger respondents; yet this study found that younger respondents supported supernatural causes of abnormal behaviour more than older respondents. These findings imply that residents of Kibera informal settlement have a world view that is unique to them, which further supports existence of a unique Kibera informal settlement sub-culture.The findings imply a need for mental health interventions that will embrace the entire community of Kibera informal settlement, sociodemographic characteristics notwithstanding.Moreover, the interventions adopted should take into consideration this unique sub-culture of Kibera informal settlement.

One way ANOVA test was further conducted to test whether education has an impact on conceptualisation of the causes of abnormal behaviour. This was important because education is a variable that could have a spiral positive effect on shaping perceptions of the residents of Kibera informal settlement. One way ANOVA test revealed the results presented on table 4.19.

Table 4.17: ANOVA Results on Level of Education and Conceptualisation of Causes of Abnormal Behaviour

ANOVA		Sum of Squares	Df	F	Sig.
Scientific Causes	Between Groups	7821.341	3	4.240	**.006**
	Within Groups	234286.791	381		
	Total	242108.132	384		
Non-Scientific Causes	Between Groups	7997.075	3	2.585	.053
	Within Groups	392849.966	381		
	Total	400847.042	384		

ANOVA test results presented on table 4.17 above indicate that there is a significant difference among respondents of different levels of education in conceptualisation of scientific causes of abnormal behaviour ($F(3,381)=4.240$, $p=0.006$). The group means scores were: class 8 level respondents (Mean=55.3709); form four level respondents (Mean=62.6713); college level respondents (Mean=67.3699); and university level respondents (Mean=63.9290). However, no significant statistical difference was found among respondents of different levels of education in conceptualisation of non-scientific causes ($F(3,381)=2.585$, $p=.053$). The group means scores were: class 8 level respondents (Mean=78.0538); form four level respondents (mean=69.6970); college level respondents (Mean=78.4314); and university level respondents (Mean=67.6282).

It was necessary to conduct a Post-Hoc test on the mean scores of respondents with different levels of education to establish the groups that registered a significant statistical difference in conceptualisation of the scientific causes of abnormal behaviour. Scheffe's Post-Hoc test established that a significant statistical difference in conceptualisation of scientific causes of abnormal behaviour existed among some groups as shown on Table 4.18.

Table 4.18: Scheffe's Post Hoc Analysis on Level of Education and Conceptualisation of Scientific Causes

		Subset for alpha = 0.05	
Level of education	**N**	**1**	**2**
Class 8 level	161	**55.3709**	
Form four level	121	62.6713	62.6713
University level	52	63.9290	63.9290
College level	51		**67.3699**
Sig.		.217	.718

The results presented on Table 4.18 above indicate that there is a significant statistical difference between college level respondents (Mean=67.3699) and class 8 level respondents (Mean=55.3709) in conceptualisation of scientific causes of abnormal behaviour; with college level respondents conceptualising scientific causes more appropriately than class 8 level respondents. The results of FGD also established a similar trend where respondents with a higher level of education cited more scientific causes of abnormal behaviour compared to respondents with lower levels of education. As noted earlier, past studies found that education influenced how abnormal behaviour was conceptualised (De Toledo et al., 2004; Deribew & Tamirat, 2005; Sadik et al., 2010).

Kapungwe et al. (2010) observed that formal education equips people with knowledge which enables them to correct previous misconceptions relating to issues of mental illness. This implies that people with higher levels of education were likely to conceptualise abnormal behaviour more appropriately than people with lower levels of education. This could explain why residents of Kibera informal settlement with college level education supported scientific causes of abnormal behaviour more than residents with class 8 level education. These findings imply that support for scientific causes (Mean=65.10) recorded earlier in objective two were attributable largely to residents of Kibera informal settlement with higher levels of

education. In view of past studies (De Toledo et al., 2004; Sadik et al., 2010) these findings imply that residents of Kibera informal settlement with higher levels of formal education were more likely to seek timelyscientific interventions for abnormal behaviour compared to residents with lower levels of formal education.

Existence of non-significant statistical difference in conceptualisation of non-scientific causes of abnormal behaviour among people of different levels of education noted in the ANOVA test above further imply existence of a strong Kibera informal settlement sub-culture highlighted earlier. These findings imply that the causal misconception established earlier in objective two where the misconception mean score was (Mean=75.04) is attributable to all residents of Kibera informal settlement irrespective of their level of education. It appears that the unique Kibera informal settlement sub-culture mentioned above overshadowed religious and ethnic beliefs in relation to perceptions of abnormal behaviour because results of ANOVA test did not establish any significance difference in conceptualisation of abnormal behaviour on the basis of these variables (See appendices 10, 11 & 12, 13 for detailed statistics). These findings reveal that overall sociodemographic characteristics had very little effect on how residents of Kibera informal settlement conceptualised abnormal behaviour. Literature indicates that while education is a good predictor of behaviour change; ethnicity is a good predictor of culture (Millon, 2004; Roy, 2002). Yet, this study found education to have little influence on conceptualisation of abnormal behaviour; while ethnicity was found to have no influence at all.

In line with the above findings relating to sociodemographic characteristics and conceptualisation of abnormal behaviour, two factors stand out: culture and education. As argued above, the sub-culture in Kibera appears to have surmounted ethnic based heritages

and education in the conceptualisation of abnormal behaviour. Accordingly, the findings show that residents of Kibera informal settlement, irrespective of their ethnicity and level of education predominantly conceptualised abnormal behaviour in a similar way. Although the majority of the residents appropriately conceptualised psychotic behaviors as abnormal, many non-psychotic behaviours were inappropriately conceptualised as normal. From the field of multiculturalism, conceptions of abnormality differ from culture to culture (Fillion, 2008; Goldberg, 1994); which according to cultural psychiatrists Marsella & Kameoka (1989) has enormous influence on diagnosis and treatment of mental disorders. This has the implications that culture has a strong influence on how people conceptualise abnormal behaviour. It will be recalled from previous discussion that the people in informal settlement tend to adapt to a distressful sub-culture in order to survive. This makes them to normalise their living conditions thus foreclosing the possibility of critical analysis of behaviour portrayed. Unfortunately, the misconception of the abnormal behaviour leads to misdiagnosis, belated scientific interventionand to non-intervention for abnormal behaviour; making many informal settlement inhabitants vulnerable to mental illness. Normalising abnormal behaviour has serious implications for mental health and welfare of entire population of residents of informal settlement as they may not take responsibility to act preventively. Moreover, although the Kibera residents may not recognise the behaviour as abnormal, a large number may become mentally sick (Marsella & Kameoka, 1989) which will eventually interfere with their personal life and the lives of other members of the society at large.

Educationon the other hand seems to be an important tool through which the residents of Kibera recognise the causes of abnormal behaviour. This has the implication that with higher

levels of education, the people from different backgrounds can change their frame of reference to be able to correctly identify scientific causes of abnormal behaviour. As highlighted earlier, education equips people with knowledge that helps to them to correct misconceptions (Kapungwe et al. 2010). However, the residents of Kibera appeared to conceptualise scientific biomedical causes more accurately than psychosocial scientific causes. This is perhaps an indication of the biased education which emphasises biomedical causes over psychosocial causes. Previously, pure sciences in which illness was attributed to biomedical factors were seenas superiorto social sciences which recognized the psychosocial basis of health and illness. However, as Engel (1977) noted, the psychosocial factors play a key role in proper diagnosis and treatment of abnormal behaviour hence the biopsychosoial model that informs this study. This implies a need to strengthen curriculum in social sciences so that people can conceptualise factors that affect their health holistically.

4.3.4 Conceptualisation of Treatment Interventions

To establish how residents of Kibera informal settlement conceptualise treatment interventions for abnormal behaviour, the respondents were presented with treatment interventions drawn from the scientific (BPS) model and interventions drawn from non-scientific (supernatural) model. They were expected to indicate their support or lack of support for the interventions presented. To further inform this objective, similar qualitative data were gathered through focus group discussions. These quantitative and qualitative findings are concurrently presented below.

Table 4.19: Respondents' Conceptualisation of Treatment Interventions (n=385)

Interventions	No		Yes		Total		Mean	Max.	Std. Dev.
	(F)	%	(F)	%	(F)	%			
Scientific (Biopsychosocial) Interventions									
Taking victims to mental hospitals	29	7.6	353	92.4	382	100.0	89.20	100.0	20.88
Taking victims to rehabilitation centres	38	9.9	344	90.1	382	100.0			
Taking victims for counselling	55	14.4	327	85.6	382	100.0			
Non-scientific (Supernatural) interventions									
Taking victims to religious leaders for prayers of deliverance	74	19.3	309	80.7	383	100.0	59.79	100.0	34.16
Taking victims to traditional healers/witchdoctors	232	61.1	148	38.9	380	100.0			

Results presented on Table 4.19 indicate that the respondents had mixed views on treatment interventions for abnormal behaviour, as demonstrated by their support for both scientific BPStreatment interventions (Mean=89.20) and non-scientific supernatural interventions (Mean=59.79). The most highly supported intervention was a scientific biomedical intervention 'taking victims to mental hospitals' which was supported by 353 (92.4%) of the respondents; followed by a scientific BPS intervention 'taking victims to rehabilitation centres' which was supported by 344 (90.1%) of the respondents; and finally a scientific psychosocial intervention 'taking victims for counselling,' which was supported by 327 (85.6%) of the respondents. The most supported non-scientific intervention was 'taking victims to religious leaders for prayers of deliverance,' which was supported by 80.7% of the

respondents; followed by ‘taking victims to traditional healers/witchdoctors,’ which was supported by 148 (38.9%) of the respondents. These findings imply that residents of Kibera informal settlementcan seek both scientific and non-scientific treatment interventions for abnormal behaviour.

Abnormal psychologists (Comer, 2006; Davidson, 2008; Sue & Sue, 2004) opined that the scientificBPS intervention model is the appropriate model for conceptualising treatment interventions for abnormal behaviour. Support for the scientific BPS interventions revealed above is therefore a positive mental health outcome because it implies that the residents of Kibera can seek scientific BPS treatment interventions. BPS intervention model (Comer, 2006; Davidson, 2008; Sue & Sue, 2004) has been associated with huge success in treatment of mental illness when applied integratively. Past studies also established support for scientific BPS treatment interventions in other cultures across the world. For example, de Toledo et al., (2004), Haynes (2010) and Sadik, et al. (2010) found support for scientific BPS interventions among people of Latin America and the Caribbean, rural black Americans and community of Iraq respectively. Abnormal psychologists (Bennett, 2003; Sue & Sue, 2004) however term support for non-scientific treatment interventions ‘an intervention misconception.’ Misconception of the treatment interventions is a negative mental health outcome. Corrigan et al. (2008) observed that prolonged exposure of victims of mental illness to non-scientific interventions results to progression of diagnostic symptoms from mild non-psychotic to severe psychotic disorders. Past studies also established ‘an intervention misconception’ for abnormal behaviour in other cultures where respondents predominantly supported witchcraft/traditional healers and prayers as interventions for abnormal behaviour (Aino, 2004; Deribew & Tamirat, 2005; Mburu, 2007;Sorsdahl et.al, 2000; Kapungwe et al., 2010; Ssebunnya et al.,2009).

Like quantitative findings, qualitative findings also established mixed views on treatment interventions for abnormal behaviour. FGD respondents supported both scientific BPSinterventions and non-scientific supernatural interventions; with the most highly supported scientific intervention being 'taking victims to mental hospitals.' However FGD respondents supported 'taking victims for counselling' in the second position followed by 'taking victims to rehabilitation centres' in the third position; contrary to questionnaire respondents who supported the 'rehabilitation intervention' more than the 'counselling intervention'. Qualitative findings established that FGD respondents supported non-scientific supernatural interventions 'taking victims for prayers of deliverance' and 'taking victims to traditional healers/witchdoctors' more than questionnaire respondents. The following are some FGD respondent's views on treatment interventions for abnormal behaviour.

Respondent one (on scientific biopsychosocial interventions)

> 'For me….eh….I would say that these people should be taken to mental hospitals like Mathare. However, others who are not very sick can be taken to counsellors. I believe these measures can help people with these abnormal behaviours to change.' (Male, 21 years).

Respondent twoon a non-scientific traditional intervention:

> '…..For me…what I think is that there are others who can't heal even if they are taken to Mathare hospital or to counsellors because they have been bewitched…which…here in Kibera…is mostly due to stealing. These ones should be taken to traditional healers for treatment because they are the ones (traditional healers) who understand these things of bewitchment.' (Female, 40 years).

Respondent threeon a non-scientific religious intervention:

> 'I believe what can help these people here in Kibera is prayers. Many people with these abnormal behaviours here have evil spirits because of doing bad things like stealing and raping as we said before. These evil spirits can be chased away if they are prayed over by pastors who are anointed.' (Female, 16 years).

The overall quantitative and qualitative findings presented above indicate that residents of Kibera informal settlement conceptualised treatment interventions for abnormal behaviour on the basis of both the scientific BPS treatment model and non-scientific supernatural treatment model; implying that the residents had mixed views on the treatment interventions for abnormal behaviour. In the view of abnormal psychologists (Bennett, 2003; Comer, 2006; Davidson, 2008; David & Vincent, 2004; Hansell & Lisa 2005; Sue & Sue, 2004) proper conceptualisation of treatment interventions for abnormal behaviour entails conceptualising the treatment interventions on the basis of the integrative holistic BPS intervention model. Indeed, research on the BPS model has credited the holistic BPS intervention model with high success in treatment of mental disorders when the model is used integratively*(*Halligan & Aylward, 2006; Gilbert, 1995; Smyth et al., 1999; Tugadeet al., 2004; Slade, 2002; Smith et al., 2010). Consequently, as earlier observed, support for the scientific BPS treatment interventions established in this study is a positive mental health outcome as it implies that if the residents of Kibera could use the BPS intervention model integratively (that is by seeking medical treatment for victims and at the same time according them the relevant psychosocial support), many victims of abnormal behaviour could greatly be assisted to recover.

The high support for scientific BPS interventions reflected in this study (Mean=89.20) implies that some residents of Kibera informal settlement do indeed use some of these scientific BPStreatment interventions (medication, counselling, rehabilitation) for abnormal behaviour; or they would be willing to use them should such a need arise. The critical issue here however is whether the residents are using or would use these interventions should such a need arise integratively. The findings of this study (especially as reflected by the fragmented FGD responses presented above) reveal that overall, residents of Kibera

informal settlement lack the critical understanding that scientific BPS interventions should be used in combination for the best treatment outcome to be achieved. Thus, the high support for scientific BPS interventions reflected in this study, though a positive outcome, does not necessarily predict a positive outcome in the management of abnormal behaviour in Kibera informal settlement.

Moreover, previous studies found a positive relationship between perceived causes and the treatment interventions sought for abnormal behaviour (Aino, 2004; Deribew & Tamirat, 2005; Kapungwe et al., 2010; Mburu, 2007;Sorsdahl et al., 2000; Ssebunnya et al.,2009; Teferra&Shibre, 2012). Findings on how residents of Kibera informal settlement conceptualised the causes of abnormal behaviour indicated that the residents lacked proper conceptualisation of scientific psychosocial causes of abnormal behaviour as they only accorded them average support (Mean=54.39). This implies that though the residents have indicated high support for holistic BPS interventions, they may not necessarily use the holistic BPS intervention model in the treatment of abnormal behaviour due to their lack of appropriate conceptualisation of scientific psychosocial causes.

The findings also reveal an above average support for non-scientific supernatural treatment interventions of abnormal behaviour by residents of Kibera informal settlement (Mean=59.79). The supernatural intervention 'prayers of deliverance' was highly supported by 80.7% of the respondents; while 'traditional healers/witchdoctors' was substantially supported by 38.9% of the respondents. Alexander (2009) observed that poverty and inequality (which as earlier notedare attributes of informal settlements world-wide) are often associated with extreme religiosity which often discourages rational-scientific approach to

problem solving in favour of supernatural solutions. This could perhaps explain the high support for the religious intervention reflected in this study in this study.

Abnormal psychologists (Bennett, 2003; Sue & Sue, 2004) term support for supernatural interventions reflected here 'an intervention misconception' because supernatural interventions are not holistic. As observed earlier the scientific BPS intervention model has been found to the most holistic intervention model for abnormal behaviour (Halligan & Aylward, 2006; Gilbert, 1995; Slade, 2002; Smith et al., 2010). The suitability of this treatment model is based on the premise that first, it establishes any biomedical basis of abnormal behaviour; then proceeds to establish the underlying psychosocial causes of the behaviour; after which an appropriate treatment plan is then developed based on the established findings (Engel, 1977; 1988). Supernatural interventions do not rule out, neither can they treat abnormal behaviour whose basis is biomedical; which is a very serious omission as this can result to eventual death of victims of mental illness should their illness have a medical basis. Moreover, supernatural interventions rarely treat the underlying psychosocial stressors because within the supernatural model, these stressors are not explored and addressed as required. Yet as observed earlier, healing for mental illnesscannot be achieved if psychosocial stressors are not treated because they serve as predisposing, precipitating, maintaining, contributory and sometimes even sufficient causes of abnormal behaviour (Halligan & Aylward, 2006; Gilbert, 1995; Slade, 2002; Smyth et al., 1999; Tugade, et al., 2004; Wild et al., 2004). For example, a supernatural intervention such as prayers if extended to an individual who is operating within a context of sustained pathogenic family relationships cannot facilitate healing for abnormal behaviour. This is because the pathogenic family relationships could be the cause for the abnormal behaviour. The overall

implication in view of these observations is that there could be many victims of mental illness in Kibera informal settlement who are inappropriately being helped to seek supernatural interventions; and who continue to suffer sustained physical and emotional pain as a result of these unholistic interventions. There is therefore need to enlighten residents of Kibera informal settlement on the integrative nature of the holisticBPS model in treatment of abnormal behaviour for holistic healing to be achieved.

4.3.5 Conceptualisation of Causes and Treatment Interventions Sought.

This research objective sought to establish if any correlation existed between how the residents of Kibera informal settlement conceptualise the causes of abnormal behaviour and the treatment interventions that they seek. The research objective was informed by the following hypothesis:

$H_{02:}$ There is no significant relationship between conceptualisation of the causes of abnormal behaviour and the treatment interventions sought.

Pearson Correlation Coefficient (r) test was conducted to establish if there was any relationship between conceptualisation of the causes of abnormal behaviour and the treatment interventions sought by residents of Kibera informal settlement. These results are presented on Table 4.20.

Table 4.20: Results of Pearson Correlation Coefficient (r) Test

		Scientific Interventions	Non-Scientific Interventions
Scientific Causes	Pearson Correlation	.258**	.178**
	Sig. (2-tailed)	**.000**	**.000**
	N	383	383
Non-Scientific Causes	Pearson Correlation	.125*	.199**
	Sig. (2-tailed)	**.014**	**.000**
	N	383	383

Results of Pearson Correlation Coefficient (r) test presented on Table 4.20 above indicate that there is a positive relationship between support for scientific causes and use of scientific interventions ($r=0.258$; $p<0.001$). Moreover, a positive relationship is also revealed between support for scientific causes and use of non-scientific interventions ($r=0.178$, $p<0.001$). The results also reveal a positive relationship between support for non-scientific causes and use of non-scientific interventions ($r=0.199$,$p<0.001$). Moreover, apositive relationship is also revealed between support for non-scientific causes and use of scientific interventions ($r=0.125$, $p=0.014$). Qualitative findings from the FGDs established a similar trend. These findings imply that residents of Kibera informal settlement who supported scientific causes were more likely to seek scientific interventions; while those who supported non-scientific causes were more likely to use non-scientific interventions. Past studies also established a positive relationship between perceived causes and the treatment interventions sought for abnormal behaviour (Aino, 2004; Deribew & Tamirat, 2005; Kapungwe et al., 2010; Mburu, 2007;Sorsdahl et al., 2000; Ssebunnya et al.,2009; Teferra S. &Shibre T. 2012).

However, despite the established positive relationship between perceived causes and the treatment interventions sought, these results also imply that some residents of Kibera can seek either scientific or non-scientific interventions despite their support for either scientific or non-scientific causes. This possibility is backed by the fact that the results reveal a positive relationship between support for scientific/non-scientific causes and use of non-scientific/scientific interventions. This is possible especially in view that the mean scores of the respondents who supported scientific and non scientific causes of abnormal behaviour in objective two were high (scientific causes: Mean=65.10; non-scientific causes: Mean=74.01) implying that the same respondents could have supported both scientific/non-scientific

causes. Moreover, the mean scores of the respondents who supported scientific and non-scientific treatment interventions in objective four were also high (scientific interventions: Mean=89.20; non-scientific interventions: Mean=59.79) which further supports this possibility of the same respondents supporting the two interventions. These findings therefore imply that the treatment interventions sought for abnormal behaviour by some residents of Kibera informal settlement may not necessarilyreflect what they perceive to be the causes

This contrary behaviour could be attributed to the Kibera informal settlement sub-culture established earlier by the results of hypothesis testing in objective three. As observed earlier (Fillion, 2008; Goldberg, 1994; Marsella & Kameoka, 1989), culture is a major predictor of human behaviour. Goldberg (1994) observed that people can conceptualise certain realities appropriately, yet choose contrary behaviours due to the culture they have adapted to. This implies that residents of Kibera informal settlement may conceptualise the causes of abnormal behaviour appropriately but the treatment interventions sought may be influenced by the existing sub-culture. However, in addition to culture, other factors could also influence treatment intervention. For example, from the health belief model (Christopher, 2010), accessibility is one of the factors that could determine if individuals will seek health services. The implication is that if it is the religious pastors or witchdoctors who are more available as opposed to medics and counsellors then it is their service that will most likely be sought. In addition the mixed approach as reflected could also mean that the residents do not approach treatment of abnormal behaviour from integrated and holistic approach, which as earlier observed is a faulty treatment approach.

Every culture has positive and negative elements; and the negative elements of culture can become an obstacle to embracing alternative healthier world views even when current unhealthy world-views are invalidated by objective evidence (Barry, 2002; Fillion, 2008). These findings for example indicate that residents of Kibera informal settlement are aware of the scientific causes of abnormal behaviour (objective evidence); yet they can comfortably use non-scientific treatment interventions for abnormal behaviour despite this awareness. This is a negative mental health outcome which can be attributed to the negative influence of the existing sub-culture; and which illustrates the powerful role that culture plays in shaping peoples' perceptions and behaviours. These findings imply that there could be victims of mental illness in Kibera informal settlement who are being subjected to supernatural interventions especially 'prayers of deliverance,' which could perhaps be an accepted cultural intervention as it was overwhelmingly supported by 80.7% of the respondents. As observed earlier, supernatural treatment interventions are unholistic hence inappropriate as they are associated with prolonged physical and emotional suffering for victims of mental illness. Yet, cultures often propagate supernatural treatmentinterventions for abnormal behaviour if they find such interventions convenient for them (Roy, 2002).

4.3.6 Measures to Mitigate Abnormal Behaviour

To gather data on objective six which sought to find out the measures that residents of Kibera informal settlement thought should be put in place to mitigate abnormal behaviour, the respondents were presented with various items against which they were supposed to indicate whether, in their view, the items represented measures that could be put in place to reduce abnormal behaviour in Kibera informal settlement. The measures presented were drawn from the scientific BPS model hence they were all appropriate. These findings are presented on Table 4.21.

Table 4.21: Measures to Mitigate Abnormal Behaviour (n=385)

Measures (n=9)	No		Yes		Total		Nature of Intervention
	(F)	(%)	(F)	(%)	(F)	(%)	
Building hospitals where persons with abnormal behaviour can be treated	13	3.5	363	96.5	376	100.0	Biological
Creating sections for treating abnormal behaviour in the dispensaries and health care centres that already exist in Kibera	33	8.7	346	91.3	379	100.0	Biological
Educating residents on issues of mental health	27	7.1	353	92.9	380	100.0	Psychosocial
Availing more government counsellors to the residents	38	10.0	342	90.0	380	100.0	Psychosocial
Facilitating creation of more social support groups	47	12.4	331	87.6	378	100.0	Psychosocial
Empowering residents economically	69	18.2	310	81.8	379	100.0	Psychosocial
Building of more schools to make education more accessible to the residents	77	20.4	301	79.6	378	100.0	Psychosocial
Improving the general cleanliness of the informal settlement	89	23.4	291	76.6	380	100.0	Psychosocial
Improving the housing condition (provision of more spacious and durable houses)	129	33.9	251	66.1	380	100.0	Psychosocial

Results presented on Table 4.21 above indicate that the residents of Kibera informal settlement supported all the scientific BPS measures presented; albeit with a higher support for scientific biological measures and a lower support for scientific psychosocial measures. The three most highly supported measures overall were: scientific biological measure 'building of hospitals for treating people with abnormal behaviour' which was supported by 363 (96.5%) respondents; followed by scientific psychosocial measure 'starting programmes to educate residents on issues of mental health' which got the support of 353 (92.9%) respondents; while scientific biological measure 'creating sections for treating abnormal behaviour in the dispensaries and health care centres that already exist in Kibera' was supported in the third position by 346 (91.3%) respondents. The three least supported

measures, all scientific psychosocial, were ‘improving the general cleanliness of the informal settlement’ which was supported by 301 (79.6%) respondents; followed by ‘building of more schools to make education more accessible to the residents’ which got the support of 291 (76.6%) respondents; and finally ‘improving the housing conditions’ which was supported by 251 (66.1%) respondents. A similar trend was also reflected in the findings of objective two where scientific psychosocial causes of abnormal behaviour (Mean=75.80) received less support than scientific biological causes (Mean=54.39); implying that scientific psychosocial causes of abnormal behaviour and scientific psychosocial measures of mitigating abnormal behaviour were not well understood by the residents.

The low support for scientific psychosocial measures reflected here could be attributed to the established Kibera informal settlement sub-culture which could have foreclosed the residents from conceptualising scientific psychosocialmeasures as interventions that could be put in place to mitigate abnormal behaviour. The established Kibera informal settlement sub-culture could have influenced the residents to view negative social conditions more as an embraced lifestyle rather than as conditions that need to be improved; hence they may not associate these conditions with mental un-wellbeing. Literature in cultural psychiatry supports the view that lifestyles, cultural values and world views affect the expression and determination of abnormal behaviour (Marsella & Kameoka, 1989). Culture can propagate a deviant lifestyle and worldviews; yet individuals living within that cultural context may not recognise it as a deviant, distressing, dysfunctional and even dangerous lifestyle that could adversely affect their mental wellbeing. Consequently, individuals within such cultural contexts often develop mental illness; an outcome that is detrimental to them as individuals and to the society at large (Marsella & Kameoka, 1989).

Similar to descriptive findings, qualitative findings also revealed support for scientific BPS measures again with a higher support for scientific biological measures and a lower support for scientific psychosocial measures. Similar to the questionnaire respondents, the measure that was highly supported by FGD respondents across the six focus groups was scientific biological measure 'building of mental hospitals.' FGDs respondents reported that there was no mental hospital available in Kibera. Moreover, the community health centres available were inadequate; and they had no sections for treating people with abnormal behaviour. They reported that in their view, if a mental health facility was constructed within the informal settlement, many people with abnormal behaviour would be assisted to seek scientifictreatment interventions. Scientific psychosocial measures that received high support from the FGD respondents included 'educating the public on mental health,' 'government putting measures in place to curb the brewing of illicit brew and selling of illegal drugs' 'availing of government counsellors in the health centres within Kibera' 'building of community rehabilitation centres' and 'putting measures in place to empower the residents economically.' The FGD respondents reported that there were too many dens of brewing local illicit brew (changaa) in Kibera and the government was doing nothing to arrest the culprits. They further reported that there were no community rehabilitation centres in Kibera where people with abnormal behaviour could be taken; and that the government counsellors available in the health centres in Kibera only conducted HIV/AIDS counselling. They also emphasised that many people in Kibera were hopeless because they had no source of livelihood. Similar to descriptive findings, scientific psychosocial measures such as 'building more schools' 'improving housing conditions' and 'improving the cleanliness of the informal settlement' only received minimal support form FGD respondents. As observed above, this could be attributed to the Kibera informal settlement sub-culture established earlier that could

have influenced the residents to view these psychosocial conditions as a normal lifestyle. The following are views of some FGD respondents on measures that should be put in place to reduce abnormal behaviour in Kibera informal settlement. Two quotes reflect measures that received high support while the last quote reflect views on a measure that was minimally supported.

Respondent one on three measures that received high support:

> '……For me…..the first thing the government should do here in Kibera is to build hospitals for us where we can take these people with abnormal behaviour. There is no mental hospital here in Kibera yet people with these behaviours are many here. The second thing is for the government to bring more counsellors in the dispensaries that are here in Kibera so that people can be going for counselling. We have some private counsellors here in Kibera but many people cannot afford to pay them because they charge a lot of money. Here also….everywhere you go there is a joint for selling changaa. The government should come up with ways of stopping brewing of changaa here in Kibera…..and also selling of bhang. In my opinion, these things can help a lot to reduce the number of these people with these abnormal behaviours here.' [Female, 29 years].

Respondent two on a measure that received high support:

> 'Eeh….the way I see it personally, people should be educated on these issues. People here in Kibera—including those of us who are here—[looks round for approval]….don't understand these issues of abnormal behaviour very well. Like me there are some behaviours I may see and think they are normal because everybody else here thinks they are normal. Personally…I would request the government and others who are interested [like you madam] to educate us on these issue of mental illness.' [Male, 41 years].

As noted above, FGD respondents gave only minimal support to scientific psychosocial measures related to 'cleanliness of the physical environment' and 'improvement of housing quality' even when prompted. For example, when prompted to comment on whether improving the quality of houses could in their opinion help to prevent abnormal behaviour in Kibera informal settlement, one respondent had this to say:

> ‘Personally I don’t think improving quality of houses can reduce these behaviours. These behaviours have nothing to do with the houses because people are used to staying in these houses. Like me I have been living in these houses for over 30 years now and I have not developed any of these behaviours. For your information, even most of the people who were moved by the government to better houses recently have rented out the houses and come back here. If you ask my colleagues here….[looks round for approval]…. they will tell you that these people who come back say they are more comfortable here! [Female, 55 years].

The above findings overallreveal that residents of Kibera informal settlement supported the presented scientific BPSinterventions as measures that could be put in place to mitigate abnormal behaviour. This is a positive outcome because as earlier observed, abnormal psychologist support a scientific BPS model approach as the most holistic model in management of abnormal behaviour (Gilbert, 1995; Slade, 2002; Smyth et al., 1999; Smith et al., 2010). The findings revealthat scientific biological measures ‘building of mental hospital’ and ‘creating sections for treating abnormal behaviour in the existing health care centres’ were highly supported by the residents of Kibera. This reflects the findings of objectives two and four that also established high support for scientific biological causes and scientific biological interventions respectively. These findings reflected in these objectives reveal that residents of Kibera lacked proper understanding of the scientific psychosocial component of the holistic BPS model. It is important to note that whilethe highly supported measures‘building of mental hospital,’ and creating sections for treating abnormal behaviour in existing dispensaries and health care centres’ arecredible measures in the overall management of abnormal behaviour; theyare howevernot the most effective measures for mitigating abnormal behaviour because they are attuned to the biomedical model (Engel, 1977) which is a curative rather than preventive model of managing illness. When proposing the holistic BPS model, Engel (1977) appreciated the curative role of the biomedical model. However, he observed that the scientific BPS model was superior to the scientific biomedical

model because due to its psychosocial components, the scientific BPS model was both curative and preventive. As noted previously, this high support for scientific biological measures could be attributed to the dominance of thescientific biomedical model whichmost people are familiar with because it has dominated the field of medicine for years.

The findings also reveal that a number of scientific psychosocial measures received high support. These included 'educating residents on issues of mental health' 'putting measures in place to curb illegal brews and drugs' and 'availing government counsellors in the health care centers within Kibera.' Engel (1980) observed that while psychosocial interventions can be curative at certain times, they are predominantly preventive in nature, which underscores their suitability as measures for mitigating abnormal behaviour. The psychosocial measure 'educating residents on issues of mental health' for example which was accorded high support in this study, was also highly supported as an intervention for mitigating abnormal behaviour in other cultures and sub-cultures across the world (Aino, 2004; Lombo, 2010; Sadik et al., 2011). The high support accorded to this measure implies that there is a dearth of information on issues of mental health in many cultures across the world. Disseminating education on mental health would thus be an appropriateinterventionfor mitigating abnormal behaviour in Kibera informal settlement as it would help the residents tocorrect all the misconceptions relating tonature, causes and treatment interventions for abnormal behaviour that were established in objectives one, two and four. Moreover, education on mental health would assist the residents to appreciate the role of psychosocial interventions in the reduction of abnormal behaviour.

The second highly supported measure 'putting measures in place to curb brewing and sale of illegal brew and bhang' is also a suitable measure in mitigating abnormal behaviour. FGD

respondents who highly supported this measure reported that the prevalence of drug and changaa use was very high in Kibera due to easy accessibility of these drugs. Literature in abnormal psychologyreveals that use of psychoactive drugs eventually results to abnormal behaviour symptomatic of various mental disorders especially psychosis, anxiety and mood disorders (Bennett, 2003; comer 2006; David & Vincent, 2004; Davidson, 2008; Rosenthal, 1970; Hansell & Lisa 2005; Sue & Sue 2004). This implies that curbing the use of illicit drugs can indeed be an appropriate intevention for mitigating abnormal behaviour in Kibera informal settlement.

The third highly supported measure 'availing government counsellors in health care centres' is also an appropriate measure of mitigating abnormal behaviour especially because psychological counsellors give psychoeducation on psychosocial stressors.These findings reveal that many residents of Kibera informal settlement do not pecieve psychosocial stressors as causes of abnormal behaviour. This implies that education disseminated by such counsellors in the exisitng community centres can assist the residents to understand the psychosocial basis of abnormal behaviour; and to consequently work at putting in place psychosocial measures that could assist in the reduction of abnormal behaviour in the informal settement.

The outcome that some psychosocial measures indicated above received little support from the respondents is not surprising because as established earlier in objective two, many residents lacked proper understanding of the scientific psychosocial causes of abnormal behaviour. Consequently, the inability of a substantial number of residents to appropriately perceive some scientific psychosocialmeasures as interventions that could be put in place to mitigate abnormal behaviour could be attributed to the residents' limited knowledge of

scientific psychosocial causes; or as observed previously, it could also result fromthe negative influence of the established informal settlement sub-culture that could have led to normalisation of these psychosocial stressors. The results could also be attributed to a biased education that highly emphasises pure science over social issues. As previously observed, psychosocial stressors act as predisposing, precipitating, maintaining and even sufficient causes of mental illness, implying that their reduction is indeed an appropriate intervention for mitigating abnormal behaviour. Similar views are supported by past studies. For exampleGruebneret al. (2012) established that improvement ofsanitation and housing quality, sufficiency and durability and reduction of flood risks were significantly associated with mental well-being of informal settlement residents of Dhaka Senegal.Moreover, research in scientific BPS model of abnormal behaviour has found reduction of psychosocial stressors to be the most effective way of managing mental illness (Gilbert, 1995; Halligan & Aylward, 2006; Slade, 2002; Smyth et al.,1999; Smith et al., 2010). This implies that the psychosocial measures which were accorded lower support by the respondents in this study could indeed be the most appropriate interventions for mitigating abnormal behaviour in Kibera informal settlement.As observed earlier, this outcome underscores the need for mental health education aimed at assisting residents of Kibera informal settlement to appreciate the positive role that psychosocialinterventive measures such as ‘improvement of housing quality, and ‘keeping the environment clean’play in their overall mental wellbeing.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to investigate how abnormal behaviour is conceptualised by residents of Kibera informal settlement and how this conceptualisaton influences the mental health interventions sought by the residents. To achieve this purpose, a concurrent mixed triangulation design was used. Frequencies, percentages, means sores, T-test, one way ANOVA test and subsequent Post-Hoc test and thematic textual analysis were used to analyse quantitative and qualitative data from 433 residents (385 questionnaire and 48 FGD respondents) of Kibera informal settlement in Nairobi County, Kenya. This chapter presents the summary of the major findings, conclusions, recommendations and suggestions for further research. The discussion is based on research questions and hypothesis that guided the study. The following were the research questions:

i) How do residents of Kibera informal settlement conceptualise the nature of abnormal behaviour?
ii) How do residents of Kibera informal settlement conceptualise the causes of abnormal behaviour?
iii) How do residents of Kibera informal settlement conceptualise the treatment interventions for abnormal behaviour?
iv) What measures do residents of Kibera informal settlement think should be put in place to reduce abnormal behaviour?

The following were the research hypotheses:

H_{01}: There is no significant difference in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different sociodemographic variables

H_{02}: There is no relationship between how residents of Kibera informal settlement conceptualise the causes of behaviour and the treatment interventions that they seek.

5.2 Summary of the Findings

The study established a substantial misconception of the nature of abnormal behaviour among residents of Kibera informal settlement. Some psychotic behaviourspredominantly symptomatic of schizophrenia/drug psychosis and some ofnon-psychotic behaviours symptomatic of anxiety, mood, alcohol use and child developmental disorders were inappropriately conceptualised as normal by a substantial number of residents; albeit with a higher misconception index for non-psychotic behaviours. These findings resonate with past studies which established a misconception of non-psychotic diagnostic symptoms of mental illness in other cultures (Aino, 2003; Deribew & Tamirat, 2005; Mburu, 2007; Sorsdahl, et al., 2000). As argued earlier in chapter four, this misconception of the nature of abnormal behaviour could lead to delayed scientific intervention and to lack of treatment intervention for mental illness altogether.

The study established mixed views on the causes of abnormal behaviour among residents of Kibera informal settlement. First, the residents of Kibera appropriately attributed abnormal behaviour to scientific (BPS) causes. These findings were consistent with past studies which also established support for scientific BPS causes of abnormal behaviour in other cultures

(de Toledo et al., 2004; Ewhrudjakpor, 2009; Lombo, 2010; Sadik et al., 2010). However, the study found that while scientific biological causes were accorded high support(Mean=75.80); scientific psychosocial causes were only accorded average support (Mean=54.39); implying that the residents of Kibera informal settlement lacked proper understanding of scientific psychosocial causes and of the integrative nature of the BPS model. Secondly, residents of Kibera inappropriately attributed abnormal behaviour to non-scientific supernatural causes (Mean=74.07). Past studies established a similar causal misconception for abnormal behaviour in other cultures (Aino, 2004; Kapungwe et al., 2010; Lombo, 2010; Mburu, 2007; Nsereko et al., 2011; Teferra&Shibre, 2012).As observed earlier, attributing abnormal behaviour to non-scientific causes could lead to seeking of improper treatment that only heightens the suffering of victims of mental illness; while failure to recognise scientific psychosocial causes could lead to seeking of unholistic treatment that may not be effective in managing abnormal behaviour. In addition, the residents may not take proactive role in helping to create a healthy psychosocial environment that can prevent mental illness.

The findings established that overall,the sociodemographic variables tested (gender, age, level of education, religion and ethnicity) had little influence on how residents of Kibera informal settlement conceptualised abnormal behaviour. Age, religion, level of education and ethnicity had no significant statistical influence in conceptualisation of the nature of all the mental disorders presented (schizophrenia/psychosis, alcohol use, anxiety, mood and child developmental disorders). Only gender was found to have a significant influence in conceptualisation of the nature of child developmental disorders; with male residents conceptualising behaviours symptomatic of child developmental disorders more appropriately than female residents.

Sociodemographic variables of religion and ethnicity were found to have no significant statistical influence in conceptualisation of the causes of abnormal behaviour. Gender and level of education were found to have a significant statistical influence in conceptualisation of scientific causes of abnormal behaviour but none on the unscientific causes; while age significantly influenced conceptualisation of both scientific and non-scientific causes. It was established that male residents supported scientific causes of abnormal behaviour more than female residents while older residents aged 51-65 years supported scientific causes of abnormal behaviour more appropriately than younger residents aged 13-18 years. Residents ofall other age categories (13-18; 19-35 and 36-50 years) supported non-scientific causes of abnormal behaviour more than older residents aged 51-60 years; while residents with college level education supported scientific causes of abnormal behaviour more than respondents with class 8 level education. Past studies found that education significantly influenced how abnormal behaviour was conceptualised in other cultures (de Toledo et al., 2004; Deribew & Tamirat, 2005; Sadik et al., 2010). However, no such influence was established for gender variable (Sadik et al., 2010) and age variable (Mburu, 2007; Sadik et al., 2010). In view of these findings the null hypothesis 'there is no significance difference in conceptualisation of abnormal behaviour among residents of Kibera informal settlement of different sociodemographic variables' was upheld for religion and ethnicity variables; and rejected for gender, age and level of education variables. In view that the sociodemographic characteristics tested had little overall influence on how abnormal behaviour was conceptualised, it appeared that the established sub-culture in Kibera informal settlement has a strong influenceas it mitigated the effects that these variables could have had on conceptualisation of abnormal. This implies that there is a high possibility that culture

strongly influences how individuals conceptualise abnormal behaviour. These findings reflect the stance upheld by multicultural researchers (Marsella & Kameoka, 1989) who opine thatculture plays a very significant role in shaping people's perceptions and behaviour.

The findings established support for mixed treatment interventions for abnormal behaviour among residents of Kibera informal settlement. First, the residents appropriately supported the scientific biopsychosocial treatment interventions for abnormal behaviour; albeit with a higher support for scientific biological interventions and a lower support for scientific psychosocial treatment interventions; implying that the residents of Kibera informal settlement did not properly understand the integrative nature of the holistic BPS intervention model. Past studies also established support for the scientific BPS treatment intervention model of abnormal behaviour in other cultures (de Toledo et al., 2004; Ewhrudjakpor, 2009; Lombo, 2010; Sadik et al., 2010). Secondly, the residents inappropriately supported non-scientific (supernatural) treatment interventions for abnormal behaviour, which is termed 'an intervention misconception' by abnormal psychologists. Past studies also established support for non-scientific interventions for abnormal behaviour in other cultures (Aino, 2004; Deribew & Tamirat, 2005; Mburu, 2007; Sorsdahl et al., 2000; Teferra&Shibre 2012).

The findings established a positive correlation between support for scientific causes and the use of scientific interventions; and also between support for scientific causes and use of non-scientific interventions. A correlation was also established between support for non-scientific causes and the use of non-scientific interventions; and also between support for non-scientific causes and use of scientific interventions. These findings imply that what the residents of Kibera informal settlement perceive to be the causes of abnormal behaviour influences the treatment interventions that they seek. These findings tally with those of past studies which

found a positive relationship between perceived causes of abnormal behaviour and the type of treatment interventions sought (Aino, 2004; de Toledo, 2004; Ewhrudjakpor, 2009; Haynes, 2010; Lombo 2010; Mburu, 2007; Sadik et al., 2010). However, these findings also further imply that some residents of Kibera informal settlement could use scientific or non-scientific treatment interventions for abnormal behaviour whether they perceive the causes to be scientific or non-scientific. In view of this, the question that begs to be answered is what dynamics would influence the treatment intervention choices made by the residents.

The study established support for scientific BPS measures that could be put in place to mitigate abnormal behaviour in Kibera informal settlement. A scientific biological measure 'building of mental hospital in the area' was supported in the first position by 96.5% of the respondents; a scientific psychosocial measure 'educating residents on the issues of mental health' was supported in the second position by 92.9% of the respondents. The two least supported measures were scientific psychosocial measures 'improving the general cleanliness of the informal settlement' and 'improving the housing condition'which were supported by 76.6% and 66.1% of the respondent respectively. Low support forscientific psychosocial measures implied that residents of Kibera informal settlement lacked proper understanding of scientific psychosocialcauses of abnormal behaviour; and the integrative nature of the scientific BPS model overall. Past studies also found that people in other cultures supported scientific biologicalmeasures more than scientific psychosocialmeasures in the reduction of abnormal behaviour (de Toledo, 2004; Ewhrudjakpor, 2009; Lombo, 2010; Sadik et.al, 2010); implying that a lack of proper understanding of scientific psychosocialcauses of abnormal behaviouris common in many cultures across the world. The findings of this study

addressed satisfactorily all the study questions and hypotheses that the researcher set out to investigate.

5.3 Conclusions of the Study

The study has established that although many residents of Kibera correctly conceptualised the behaviours presented in this study as symptoms of mental illness, a substantial number of residents were not able to correctly conceptualise these behaviours (and especially the non-psychotic ones) as symptomatic of mental illness. Moreover, qualitative findings established an even higher misconception of non-psychotic behaviours; implying there could be an overall higher misconception than that reflected by descriptive findings. This implies that a substantial number of residents of Kibera informal settlement may seek delayed treatment for mental illness or seek no treatment intervention altogether.

The findings have established mixed views on the causes of abnormal behaviour; with both scientific BPS and non-scientific supernatural causes receiving support. However, while scientific biological causes were appropriately conceptualised, scientific psychosocial causes were misunderstood by half of the residents. These results imply a high possibility that residents of Kibera may predominantly use psychiatric medication in treatment of abnormal behaviour without integrating them with psychosocial treatment interventions, which is an unholistic approach to management of mental illness. Moreover, attribution of abnormal behaviour to non-scientific causes leads to the conclusion that residents of Kibera informal settlement are likely to inappropriately seek unholistic non-scientific treatment interventions for mental illness.

The study has found that overall sociodemographic variables have little influence on how residents of Kibera informal settlement conceptualise abnormal behaviour. It can thus be

concluded that a substantial number of residents of Kibera informal settlement, irrespective of their sociodemographic characteristics, lack proper understanding of the nature of abnormal behaviour and may seek delayed scientific treatment for mental illness or seek no treatment intervention at all. Moreover, Kibera residents of all sociodemographic characteristics may predominantly use psychiatric medication without combining them with psychosocial scientific interventions, which is inappropriate. In addition, residents of Kibera informal settlement of all sociodemographic characteristics may seek non-scientific treatment interventions for abnormal behaviour. Moreover, in view of these findings, it can be concluded that there exists a strong Kibera informal settlement sub-culture that is responsible for mitigating the effects of these sociodemographic variables in relation to how abnormal behaviour is conceptualised.

Similar to the causes of abnormal behaviour, these findings have also found mixed views on treatment interventions; with both scientific BPS treatment interventions and non-scientific supernatural treatment interventions being supported by residents of Kibera informal settlement. It is therefore imperative to conclude that residents of Kibera can appropriately seek scientific BPS treatment interventions (psychiatric medication and psychosocial support); and inappropriately seek non-scientific supernatural treatment interventions (prayers of deliverance and traditional healers) for abnormal behaviour.

The study has established a positive relationship between support for scientific causes and the use of scientific interventions; and also between support for scientific causes and use of non-scientific interventions. A positive relationship has also been established between support for non-scientific causes and the use of non-scientific interventions; and also between support for non-scientific causes and use of scientific interventions. It can be thus be

concluded in view of these findingsthat residents of Kibera informal settlement who supported scientific causes of abnormal behaviour were likely to seek scientific interventions; while those who supported non-scientific causes were likely to seek non-scientific interventions. However, the findings also reveal that some residents of Kibera wouldcomfortably seek both scientific and non-scientific treatment intervention for abnormal behaviour irrespective of whether they supported scientific or non-scientific causes.

The findings have established scientific BPS measures that residents of Kibera informal settlement think could be put in place to mitigate abnormal behaviour in the area. The results established higher support for scientific biological measures and a lower support for scientific psychosocial measures. In view of these finding, it is imperative to conclude that residents of Kibera informal settlement lacked proper understanding of the scientific psychosocial causes of abnormal behaviour; and the integrative nature of the scientific BPS model of abnormal behaviour.

5.4 Recommendations of the study

The following recommendations were made based on the findings of the study:

i) The findings established a misconception of abnormal behaviour among residents of Kibera informal settlement. Consequently, structured educational programmes on mental health are recommended for the residents of Kibera informal settlement aimed at correcting this misconception. The educational programmes should address misconceptions relating to the nature, causes, treatment interventions and measures that should be put in place to mitigate abnormal behaviour. Theprogramme should be responsive to gender, age and level of education.

ii) The study found a lack of proper understanding for the holistic biopsychosocial model of abnormal behaviour among residents of Kibera informal settlement as implied by low support for scientific psychosocial causes. The researcher thus recommends a specialised intervention programme aimed at sensitising the residents on the interactive and integrative nature of the holistic BPS model.

iii) The study found a substantial misconception index for child developmental disorders among residents of Kibera. The researcher thus recommends an age and level of education responsive programme specifically tailored for residents of Kibera informal settlement aged 13-65 aimed at sensitising them on the nature of child developmental disorders.

iv) The findings established that some residents of Kibera informal settlement could use either scientific or nonscientific treatment interventions irrespective of whether they supported scientific or non-scientific treatment interventions. The researcher thus recommends availing of mental health facilitiesin Kibera informal settlement in order to ease accessibility and to facilitate choice of scientific treatment interventions among the residents.

v) Though accorded lower support by the residents, the researcher recommends psychosocial measures such as improvement of housing conditions, building of more schools, helping the residents to come up with income generating activities and improving the cleanliness of the physical environment as additional interventions that could be put in place to mitigate abnormal behaviour in Kibera informal settlement.

5.5 Suggestions for Further Research

The researcher recommends further research in the following areas to address the limitations of this study.

i) This study focused only on perceptions of abnormal behaviour among residents of informal settlement. A comparative study could be conducted to investigate perceptions of abnormal behaviour among residents of informal and non-informal settlements.

ii) The findings and conclusions made were based on a sample of 433 respondents drawn only from Kibera informal settlement in Nairobi County. This may therefore limit generalisation of the findings to informal settlements outside Nairobi County as these informal settlements may have other characteristics unique to themselves. Similar studies could thus be replicated in other informal settlements outside Nairobi County.

iii) This study only focused on conceptualisation of abnormal behaviour. Future studies could investigate other aspects of abnormal psychology such as assessment studies to establish prevalence of abnormal behaviour or studies aimed at evaluating the effectiveness of existing intervention programmes for abnormal behaviour in informal settlements.

iv) The study has established that some residents of Kibera informal settlement could comfortably seek both scientific and non-scientific interventions for abnormal behaviour irrespective of whether they supported scientific or non-scientific causes. The researcher is proposing a future study to investigate the inter-play of factors that may influence intervention choices made by the residents.

v) The study has established a substantial support for the traditional model of treating abnormal behaviour. The researcher is proposing research aimed at investigating the traditional treatmentmodel with the aim of establishing points of departure and agreement between this model and the scientific biopsychosocial model.

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APPENDIX 1: QUESTIONNAIRE

Dear Respondent

My name is Agnes Nthangi a Doctor of Philosophy (PhD) student in the department of Psychology of Kenyatta University. I am currently undertaking a study on issues of mental health in informal settlements. The answers you give will help in developing mental health programmes in informal settlements in Kenya and especially in here in Kibera. **Do Not Write Your Name anywhere on this Questionnaire.** Please take time to go through the instructions carefully and to answer each of the questions as **honestly** as you can. Should you experience any difficulty in interpreting any of the questions, please seek the help of the research assistant who has issued the questionnaire to you. There is no **right** or **wrong** answer. All answers are correct. Your answers will be treated **confidentially** and will only be used for the purpose of the study. Please tick **[√]** or **write down** the response that reflects your answer. **Answer All Questions.** Kindly give your questionnaire to one of the research assistants once you are through with answering the questions.

Being a participant in this study is **voluntary.** Please confirm that you have read the above information and accepted to participate in the study voluntarily by putting your signature on the consent form below.

Thank you very much for your cooperation.

Sincerely

Agnes Nthangi

Consent

I have read the above information and understood that this study is voluntary and that confidentiality and anonymity are guaranteed. I do accept to participate in this study.

Participant's signature_____ Date_____

SECTION A: BIOGRAPHIC INFORMATION

(Please indicate the following details by either ticking [√] inside the brackets or by writing down the response on the space provided)

1. Gender: Male [ ] Female [ ]
2. Age: _____
3. Level of education: Class 8 level [ ] Form four level [ ] College level [ ] University level [ ]
4. Ethnic group: Luo [ ] Kikuyu [ ] Kamba [ ] Luhya [ ] Kalenjin [ ] Other (kindly specify) _____
5. Religion: Catholic [ ] Mainstream protestant (Anglican, PCEA, Methodist) [ ] Pentecostal protestant [ ] Muslim [ ] non-religious [ ] Others (kindly specify)_____
6. Occupation: Mental health field (counsellor, medical, social work) [ ] Education field [ ] Business (Jua Kali) [ ] Student [ ] None [ ] Other (kindly specify)_____
7. Residential village within Kibera informal settlement (kindly specify)_____

SECTION B: NATURE OF ABNORMAL BEHAVIOUR

Abnormal behaviours are behaviours which indicate that a person is mentally ill. Please tick [√] inside the boxes to indicate the behaviours that are in your opinion, abnormal (indicative of mental illness in person) or normal (not indicative of mental illness in a person).

S/N	BEHAVIOUR	ABNORMAL	NORMAL
Sub-Section (i)			
8.	Hearing /seeing/smelling things that are not there		
9.	A person believing that he/she is a messiah like Jesus or the president of USA or another big person (while this is not true)		
10.	Inappropriate show of emotions (e.g. interchanging crying & laughter)		
11.	Talking to oneself continuously		
12.	A person concentrating on himself/herself and being completely unaware of anything else happening around them		
13.	Wondering behaviour (Walking without a specific idea of where one is going)		
14.	Talk that does not make any sense at all		
15.	Loss of awareness of where one is		
16.	Physically attacking people for no reason at all		
17.	Unhygienic/dirty personal appearance		
18.	Removing clothes in public		
Sub-Section (ii)			
19.	Daily uncontrollable drinking of large amounts of alcohol		
20.	Uncontrollable shaking of hands which only stops after one has taken some alcohol		
21.	'Blackouts' (sleeping on the roadside unconscious for many hours due to drinking of too much alcohol)		
Sub-Section (iii)			
22.	A lot of fear/worry/over many life situations		
23.	Frequent uncontrollable shaking/trembling of the body		
24.	Frequent fainting		
25.	Prolonged refusal to appear in public		

26.	Sweating too much		
27.	Persistent trouble in falling asleep		
28.	Persistent bad dreams (nightmares)		
29.	Frequent fast heart rate, pounding heart		
30.	Repetitive uncontrollable behaviours (e.g. checking if something is hiding under the bed over and over again every day before sleeping)		
Sub-Section (v)			
31.	Prolonged deep feelings of sadness and emptiness		
32.	Persistent feelings of worthlessness and hopelessness		
33.	Prolonged lack of interest/pleasure in almost all activities		
34.	Increase or decrease in appetite nearly every day		
35.	Prolonged loss of sleep or sleeping too much		
36.	Too much uncontrollable crying		
37.	Prolonged immobility (being in one position for a long time without making any movements at all)		
38.	Refusal to talk though one's talking ability is okay		
39.	Prolonged tiredness/low energy		
40.	Intense mood changes (very happy one moment & very sad the next moment)		
41.	Having frequent thoughts of killing oneself		
42.	Killing oneself		
Sub-Section (vi)			
43.	Child showing no interest in play and in being involved socially		
44.	Child showing significant delay in language development		
45.	Child appearing not to need physical or emotional contact from caregivers		
46.	Child continuously demonstrating repetitive way of doing things		
47.	Child demonstrating total self-absorption (i.e. not showing any interest in what is happening around him/her)		
48.	Child demonstrating very high levels of activity		
49.	Child demonstrating an inability to follow things with his/her eyes		
50.	Child, rolling over, sitting up, crawling or walking late		

SECTION C: CAUSES OF ABNORMAL BEHAVIOUR

Please tick [√] either (**YES)** or (**NO)** to indicate the factors that in your opinion, cause abnormal behaviour (mental illness) among the residents of Kibera informal settlement.

S/N	**FACTOR**	**(YES)**	**(NO)**
51.	Sickness/disease of the brain		
52.	Genetics (inheriting abnormal behaviour from parents or close relatives)		
53.	Injury to the brain		
54.	Physical illness (normal bodily disease)		
55.	Lack of enough and proper, well balanced diet		
56.	Abuse of alcohol and other drugs		
57.	Traumatic experiences in early childhood (for examplerejection/neglect, sexual abuse, and physical abuse)		
58.	Inability to achieve one's personal goals		
59.	Imitating negative role models like parents, peers and people in the neighbourhood		
60.	Praising people and accepting them more when they involve themselves in bad activities (for example stealing and lying)		
61.	Persistent negative attitude towards life		
62.	Poverty/unemployment		

63.	Illiteracy/low education		
64.	Being isolated socially (lacking close people to give any social support)		
65.	Dirty physical environment		
66.	Overcrowding		
67.	Dysfunctional families (Divorced/separated/abusive and violent families)		
68.	Single parenthood		
69.	Being bewitched		
70.	Being attacked by evil spirits and demons		
71.	Being cursed		
72.	Punishment for disobeying God		
Other (please specify below any other factor(s) not mentioned above that you think could cause abnormal behaviour (mental illness) among residents of Kibera informal settlement.			

SECTION E: TREATMENT INTERVENTIONS FOR ABNORMAL BEHAVIOUR

(Please tick [√] either (**YES)** or (**NO)** to indicate the treatment interventions that in your opinion, should be sought for abnormal behaviour (mental illness).

S/N	**INTERVENTION**	**(YES)**	**(NO)**
73.	Taking people with abnormal behaviour to hospital		
74.	Taking people with abnormal behaviour to counselling		
75.	Taking people with abnormal behaviour to rehabilitation centres		
76.	Taking people with abnormal behaviour to pastors for prayers of deliverance		
77.	Taking people with abnormal behaviour to traditional healers/witch doctors		
Other interventions (please specify below any other treatment intervention(s) not mentioned above that in your opinion could be sought for abnormal behaviour (i.e. for mental illness)			

SECTION F: MEASURES TO MITIGATE ABNORMAL BEHAVIOUR

Kindly tick [√] **YES** or **NO** to indicate the measures that in your opinion, should be put in place in to reduce abnormal behaviour (symptoms of mental illness) in Kibera informal settlement

S/N	**MEASURE**	**YES**	**NO**
78.	Building hospitals where persons with abnormal behaviour can be treated		
79.	Creating sections for treating abnormal behaviour in the dispensaries and health care centres that already exist in the informal settlement		
80.	Making more counselling centres available to the residents		
81.	Building of community rehabilitation centres		
82.	Starting programmes to educate residents on issues of mental health		
83.	Putting measures in place to empower residents economically		
84.	Building of more schools to make education more accessible to the residents		
85.	Improving the housing condition (provision of more spacious and durable houses)		
86.	Improving the general cleanliness of the informal settlement		
87.	Facilitating creation of more social support groups		
Other measures (please specify below any other measure(s) not mentioned above that you think can be put in place to reduce abnormal behaviour (i.e. symptoms of mental illness) in this informal settlement)			

APPENDIX 2: FOCUS GROUP DISCUSSION GUIDE

Dear Respondent

My name is Agnes Nthangi a Doctor of Philosophy (PhD) student from the department of psychology of Kenyatta University. I am currently undertaking a study on issues of **mental health** in informal settlements. You will be required to fill some personal details below and to respond to some questions related to this study in a group setting. The proceedings of the group discussion will be written down on a notebook and also recorded on tape. All the information that will be written down and recorded will be treated with **utmost confidentiality** and will only be used for the purpose of this study.

Please respond to the issues under discussion as **honestly** as you can. Note that there is no **right** or **wrong** answer. **ALL** answers are correct.

Being a participant in this study is **voluntary**. Please confirm that you have read the above information and accepted to participate in this study voluntarily by putting your signature on the consent form below.

Thank you very much for your cooperation.

Sincerely

Agnes Nthangi

CONSENT

I have read the above information and understood that this study is voluntary and that the information given will be treated with utmost confidentiality. I accept to be a participant in this study.

Signature_____Date_____

SECTION A: BIOGRAPHIC INFORMATION

(Please indicate the following details by either ticking **[√]** inside the brackets or by **WRITING** down the response on the space provided)

1. Gender: Male [ ] Female [ ]
2. Age: _____
3. Level of education: Elementary: Class 8 level [ ] Secondary: Form four level [ ] Tertiary: College/University level [ ]
4. Ethnic group: Luo [ ] Kikuyu [ ] Kamba [ ] Luhya [ ] Kalenjin [ ] Other (specify) _____
5. Religion: Catholic [ ] Mainstream protestant (Anglican, PCEA, Methodist) [ ] Pentecostal protestant [ ] Muslim [ ] non-religious [ ] Others (kindly specify)_____
6. Occupation: Mental health field (counsellor, medical, social work) [ ] Education field [ ] Business (Jua Kali) [ ] Student [ ] None [ ] Other (specify)_____
7. Residential village within Kibera informal settlement (kindly specify) _____

SECTION B: FGD GUIDE

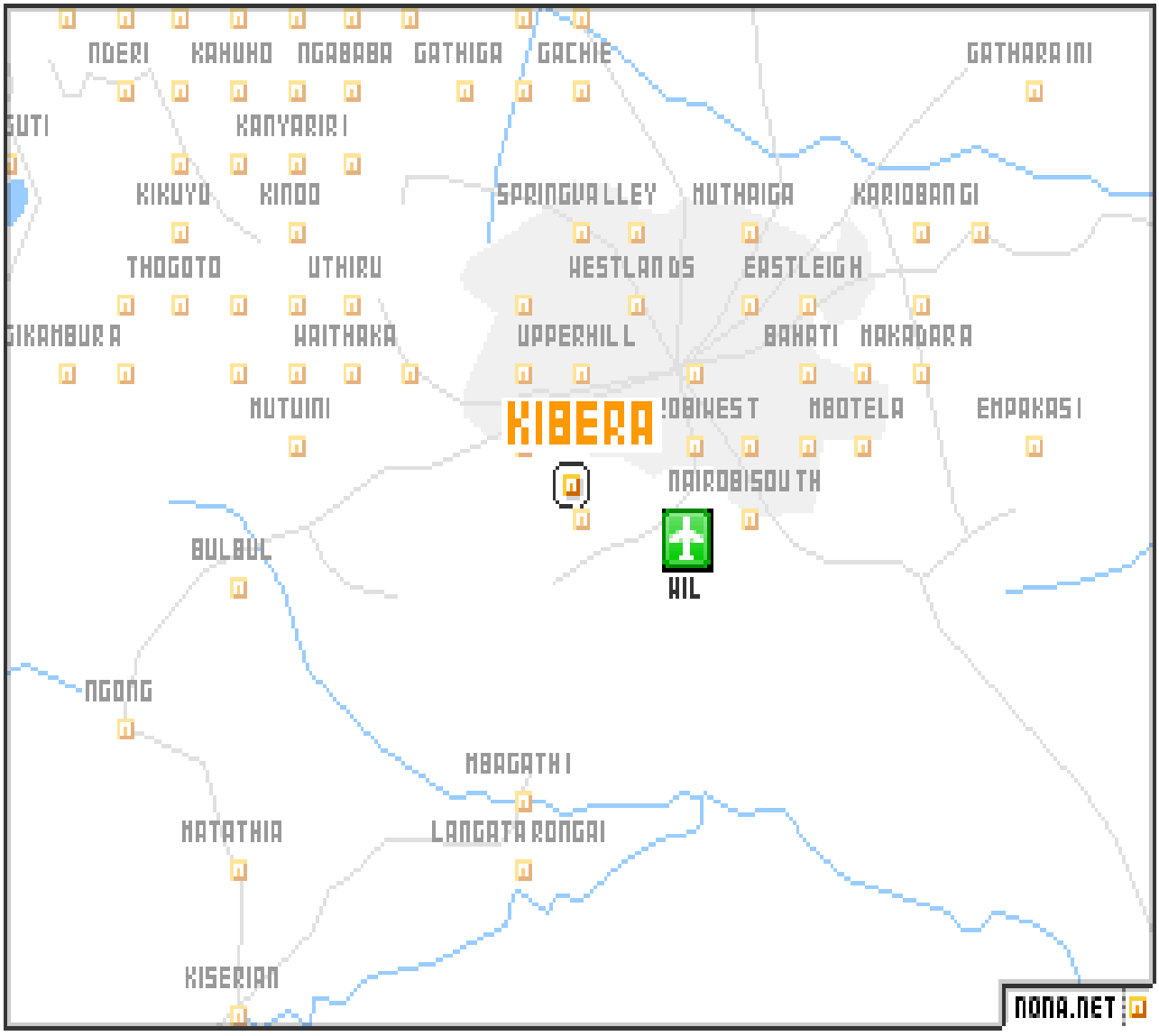
8. Which behaviours manifested by residents of Kibera informal settlement are (in your opinion) abnormal (i.e. indicate that a person is mentally ill)?

9. In your opinion, what causes these abnormal behaviours (i.e. behaviours that are indicative of mental illness) among residents of Kibera informal settlement?

10. In your opinion, what interventions should be used for abnormal behaviour/for mental illness?

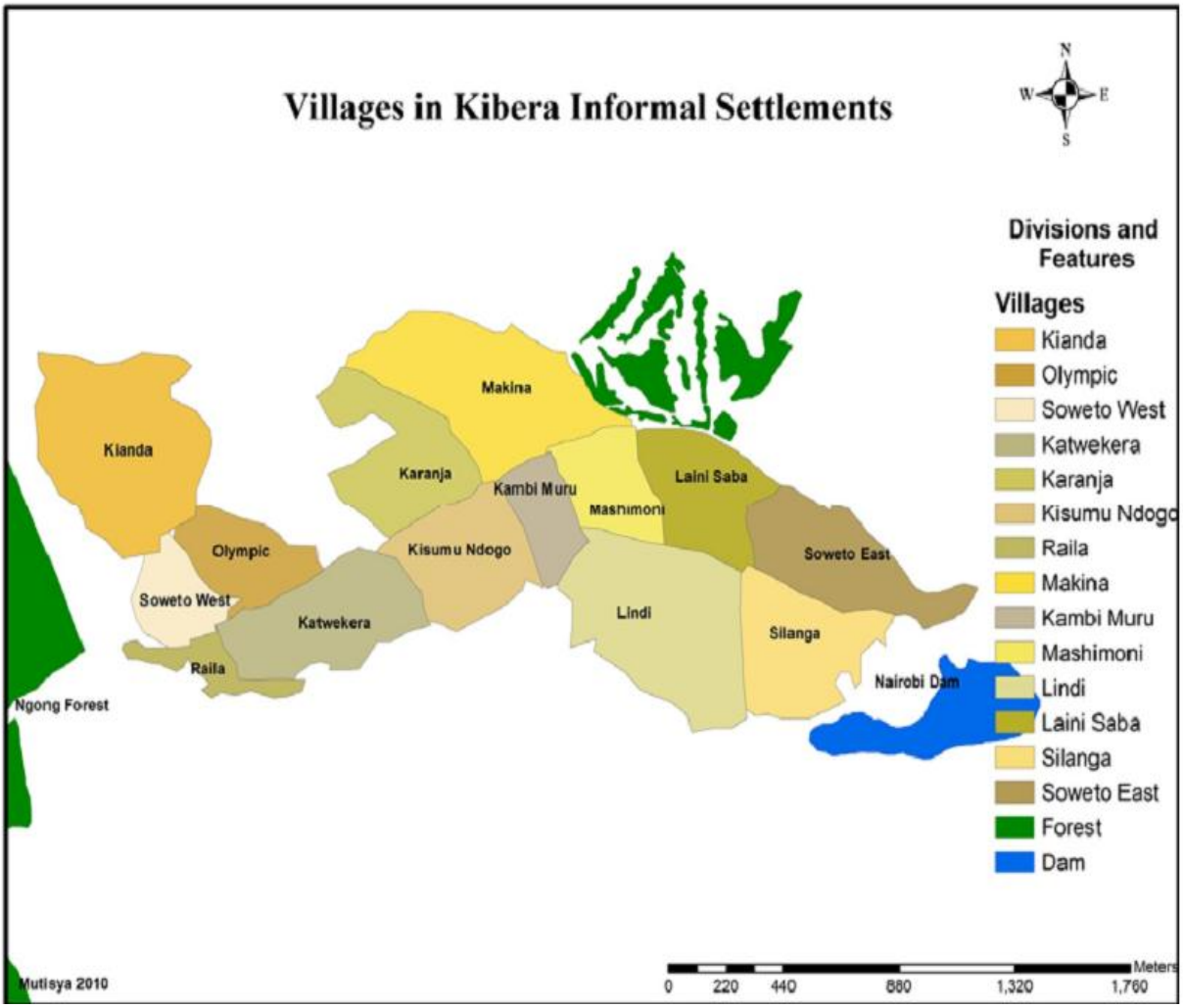
11. In your opinion, what measures should be put in place to reduce abnormal behaviour/mental illness in Kibera informal settlement.

APPENDIX 3: Position of Kibera in Nairobi County



Source: Nona.net

APPENDIX 4: Villages in Kibera Informal Settlement



Source: Mutisya, E. & Yarime (2010)

APPENDIX 5: Detailed Descriptive Results on Respondents' Conceptualisation of the Nature of Abnormal Behaviour.

N=(43)		Abnormal		Normal		Total	
		(F)	%	(F)	%	(F)	%
SUB-SECTION (I): Behaviours Symptomatic of Schizophrenia/Psychosis Disorders							
1	Hearing/Seeing/smelling things that are not there	313	82.2	68	17.8	381	100.0
2	A person believing that he/she is a messiah like Jesus or the president of USA or another big person (while this is not true)	325	86.7	50	13.3	375	100.0
3	Inappropriate show of emotions (e.g. interchanging crying & laughter)	308	81.3	71	18.7	379	100.0
4	Talking to oneself continuously	330	87.8	46	12.2	376	100.0
5	A person concentrating on himself/herself and being completely unaware of anything else happening around them	289	76.3	90	23.7	379	100.0
6	Wondering behaviour (Walking without a specific idea of where one is going)	314	83.5	62	16.5	376	100.0
7	Talk that does not make any sense at all	332	87.8	46	12.2	378	100.0
8	Loss awareness of where one is	324	85.5	55	14.5	379	100.0
9	Physically attacking people for no reason at all	334	87.7	47	12.3	381	100.0
10	Unhygienic/dirty personal appearance	288	75.4	94	24.6	382	100.0
11	Removing clothes in public	368	96.1	15	3.9	383	100.0
SUB-SECTION (ii): Behaviours Symptomatic of Alcohol Use Disorder							
12	Daily uncontrollable drinking of large amounts of alcohol	243	63.8	138	36.2	381	100.0
13	Uncontrollable shaking of hands which only stops after one has taken some alcohol	272	71.2	110	28.8	382	100.0
14	'Blackouts' (sleeping on the roadside unconscious for many hours due to drinking of too much alcohol)	271	71.7	107	28.3	378	100.0
SUB-SECTION (iii) Behaviours Symptomatic of Anxiety Disorders							
15	A lot of fear/worry/over many life situations	202	52.9	180	47.1	382	100.0
16	Frequent uncontrollable shaking/trembling of the body	265	69.2	118	30.8	383	100.0
17	Frequent fainting	277	72.3	106	27.7	383	100.0
18	Prolonged refusal to appear in public	269	70.1	115	29.9	384	100.0
19	Sweating too much	215	56.3	167	43.7	382	100.0
20	Persistent trouble in falling asleep	256	66.8	127	33.2	383	100.0
21	Persistent bad dreams (nightmares)	236	61.9	145	38.1	381	100.0
22	Frequent fast heart rate, pounding heart	244	64.7	133	35.3	377	100.0
23	Repetitive uncontrollable behaviours (e.g. checking if something is hiding under the bed over and over again every day before sleeping)	279	74.0	98	26.0	377	100.0
SUB-SECTION (v) Behaviours Symptomatic of Mood Disorders							
24	Prolonged deep feelings of sadness and emptiness	232	60.4	152	39.6	384	100.0
25	Persistent feelings of worthlessness and hopelessness	240	62.5	144	37.5	384	100.0
26	Prolonged lack of interest/pleasure in almost all activities	254	67.6	122	32.4	376	100.0

27	Increase or decrease in appetite nearly every day	222	58.6	157	41.4	379	100.0
28	Prolonged loss of sleep or sleeping too much	255	68.2	119	31.8	374	100.0
29	Too much uncontrollable crying	305	80.5	74	19.5	379	100.0
30	Prolonged immobility(being in one position for a long time without making any movements at all)	302	79.7	77	20.3	379	100.0
31	Refusal to talk though one's talking ability is okay	264	69.1	118	30.9	382	100.0
32	Prolonged tiredness/low energy	234	61.6	146	38.4	380	100.0
33	Intense mood changes (very happy one moment & very sad the next moment)	209	55.3	169	44.7	378	100.0
34	Having frequent thoughts of killing oneself	326	86.0	53	14.0	379	100.0
35	Killing oneself	312	81.9	69	18.1	381	100.0
SUB-SECTION (viii): Behaviours Symptomatic of Child Developmental Disorders							
36	Child showing no interest in play and being involved socially	274	71.5	109	28.5	383	100.0
37	Child showing significant delay in language development	243	63.6	139	36.4	382	100.0
38	Child appearing not to need physical or emotional contact from caregivers	281	73.6	101	26.4	382	100.0
39	Child continuously demonstrating repetitive way of doing things	252	66.5	127	33.5	379	100.0
40	Child demonstrating total self-absorption (i.e. not showing any interest in what is happening around him/her)	278	74.7	94	25.3	372	100.0
41	Child demonstrating very high levels of activity	159	41.8	221	58.2	380	100.0
42	Child demonstrating an inability to follow things with his/her eyes	273	71.8	107	28.2	380	100.0
43	Child rolling over, sitting up, crawling or walking late	223	58.5	158	41.5	381	100.0

APPENDIX 6: Detailed Descriptive Results on Respondents' Conceptualisation of the Causes of Abnormal Behaviour

n=22	Cause s	No		Yes		Total	
		F	%	F	%	F	%
SUB-SECTION (i): Scientific (Biological) Causes							
1.	Sickness/disease of the brain	25	6.5	358	93.5	383	100.0
2.	Genetics (inheriting abnormal genes from parents/close relatives)	115	30.7	260	69.3	375	100.0
3.	Injury to the brain	46	12.1	334	87.9	380	100.0
4.	Physical illness (bodily disease)	129	33.9	252	66.1	381	100.0
5.	Lack of enough and proper (well balanced) diet	176	46.2	205	53.8	381	100.0
6.	Abuse of alcohol and other (psychoactive) drugs	57	15.1	320	84.9	377	100.0
SUB-SECTION (ii): Scientific (Psychosocial) Causes							
7.	Traumatic experiences in early childhood (rejection/neglect, sexual abuse, physical abuse)	98	25.9	280	74.1	378	100.0
8.	Inability to achieve one's personal goals	190	49.7	192	50.3	382	100.0
9.	Imitating negative role models like parents, peers and people in the neighbourhood	160	42.4	217	57.6	377	100.0
10.	Praising people and accepting them more when they involve themselves in bad activities (e.g. stealing)	176	46.1	206	53.9	382	100.0
11.	Persistent negative attitude towards life	130	34.4	248	65.6	378	100.0
12.	Poverty/unemployment	173	45.3	209	54.7	382	100.0
13.	Illiteracy/low education	227	59.6	154	40.4	381	100.0
14.	Being isolated socially (Lacking close people to give social support)	161	42.7	216	57.3	377	100.0
15.	Dirty physical environment	228	60.0	152	40.0	380	100.0
16.	Overcrowding	242	64.0	136	36.0	378	100.0
17.	Dysfunctional families (divorced/separated/abusive & violent families)	147	38.9	231	61.1	378	100.0
18.	Single parenthood	223	58.4	159	41.6	382	100.0
SUB-SECTION C: Non-scientific (Supernatural)Causes							
19.	Being bewitched	90	23.6	291	76.4	381	100.0
20.	Being attacked by evil spirits and demons	78	20.4	304	79.6	382	100.0
21.	Being cursed	85	22.2	298	77.8	383	100.0
22.	Punishment for disobeying God	140	37.4	234	62.6	374	100.0

APPENDIX 7: T-Test Results on Gender and Conceptualisation of Nature of Abnormal Behaviour

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Schizophrenia /Drug Psychosis Index	Equal variances assumed	.295	.588	-.470	383	.639	-.92490	1.96950	-4.79729	2.94749
	Equal variances not assumed							1.96908	-4.79654	2.94674
Alcohol use disorder Index	Equal variances assumed	1.379	.241	-.137	381	.891	-.53447	3.89684	-8.19647	7.12753
	Equal variances not assumed			-.137	380.814	.891	-.53447	3.89656	-8.19593	7.12700
Anxiety Disorder Index	Equal variances assumed	3.170	.076	-.309	383	.758	-.99793	3.23078	-7.35021	5.35435
	Equal variances not assumed			-.309	380.845	.758	-.99793	3.23010	-7.34900	5.35313
Personality and Impulse Control Disorder Index	Equal variances assumed	.249	.618	.794	383	.428	2.34304	2.95056	-3.45828	8.14435
	Equal variances not assumed			.794	382.969	.428	2.34304	2.95045	-3.45807	8.14414
Mood Disorder Index	Equal variances assumed	.357	.551	1.393	383	.165	4.04517	2.90463	-1.66584	9.75617
	Equal variances not assumed			1.393	382.972	.165	4.04517	2.90465	-1.66589	9.75622
Child Developmental Disorders Index	Equal variances assumed	.036	.849	**2.639**	**382**	.009	8.16448	3.09421	2.08066	14.24830
	Equal variances not assumed			2.639	382.000	**.009**	8.16448	3.09405	2.08097	14.24799

APPENDIX 8: ANOVA Test Results on Age and Conceptualisation of the Nature of Abnormal Behaviour

ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
Schizophrenia /Drug Psychosis Index	Between Groups	1212.426	3	404.142	1.085	.355
	Within Groups	141861.041	381	372.339		
	Total	143073.466	384			
Alcohol Use Disorder Index	Between Groups	2429.500	3	809.833	.556	.644
	Within Groups	551566.729	379	1455.321		
	Total	553996.229	382			
Anxiety Disorder Index	Between Groups	11681.446	3	3893.815	3.975	.008
	Within Groups	373192.756	381	979.509		
	Total	384874.202	384			
Mood Disorder Index	Between Groups	3201.844	3	1067.281	1.314	.269
	Within Groups	309385.011	381	812.034		
	Total	312586.856	384			
	Total	230466.832	384			
Child Developmental Disorder Index	Between Groups	6071.371	3	2023.790	2.188	.089
	Within Groups	351421.675	380	924.794		
	Total	357493.046	383			

APPENDIX 9: ANOVA Test Results on Level of Education and Conceptualisation of the Nature of Abnormal Behaviour

ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
Schizophrenia/Psychosis Index	Between Groups	2658.085	3	886.028	2.404	.067
	Within Groups	140415.382	381	368.544		
	Total	143073.466	384			
Alcohol Use Disorder Index	Between Groups	3218.939	3	1072.980	.738	.530
	Within Groups	550777.290	379	1453.238		
	Total	553996.229	382			
Anxiety Disorder Index	Between Groups	6799.100	3	2266.367	2.284	.079
	Within Groups	378075.102	381	992.323		
	Total	384874.202	384			
Mood Disorder Index	Between Groups	6700.843	3	2233.614	2.782	.041
	Within Groups	305886.012	381	802.850		
	Total	312586.856	384			
Child Developmental Index	Between Groups	378.717	3	126.239	.134	.940
	Within Groups	357114.329	380	939.775		
	Total	357493.046	383			

APPENDIX 10: ANOVA Test Results on Religion and Conceptualisation of the Nature of Abnormal Behaviour

ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
Schizophrenia/Drug Psychosis Index	Between Groups	1675.780	4	418.945	1.183	.318
	Within Groups	129921.621	367	354.010		
	Total	131597.400	371			
Alcohol Use Disorder Index	Between Groups	10005.936	4	2501.484	1.741	.140
	Within Groups	524499.320	365	1436.984		
	Total	534505.255	369			
Anxiety Disorder Index	Between Groups	4579.364	4	1144.841	1.140	.337
	Within Groups	368578.660	367	1004.302		
	Total	373158.024	371			
Mood Disorder Index	Between Groups	3834.673	4	958.668	1.189	.315
	Within Groups	295810.314	367	806.023		
	Total	299644.987	371			
Child Developmental Disorder Index	Between Groups	291.523	4	72.881	.077	.989
	Within Groups	347198.415	366	948.630		
	Total	347489.938	370			

APPENDIX 11: ANOVA Test Results on Religion and Conceptualisation of the Causes of Abnormal Behaviour

Descriptives		N	Mean	Std. Deviation	Std. Error
Scientific Causes	Catholic	164	60.9189	24.81576	1.93779
	Mainstream protestant (Anglican, PCEA, Methodist)	61	66.8445	23.72403	3.03755
	Pentecostal protestant	98	58.3600	26.30325	2.65703
	Muslim	33	56.2162	25.86118	4.50185
	Non-religious	16	56.8702	24.84827	6.21207
	Total	372	60.6251	25.20354	1.30674
Non-Scientific Causes	Catholic	164	72.6626	33.14812	2.58843
	Mainstream protestant (Anglican, PCEA, Methodist)	61	78.6885	29.87337	3.82489
	Pentecostal protestant	98	77.2109	32.54108	3.28715
	Muslim	33	67.6768	31.85236	5.54478
	Non-religious	16	76.5625	30.91487	7.72872
	Total	372	74.5744	32.26044	1.67263

ANOVA		Sum of Squares	Df	Mean Square	F	Sig
Scientific Causes	Between Groups	3743.567	4	935.892	1.481	.207
	Within Groups	231922.390	367	631.941		
	Total	235665.956	371			
Non-Scientific Causes	Between Groups	3946.398	4	986.600	.947	.437
	Within Groups	382166.766	367	1041.326		
	Total	386113.165	371			

APPENDIX 12: ANOVA Test Results on Ethnicity and Conceptualisation of the Nature of Abnormal Behaviour

		Sum of Squares	Df	Mean Square	F	Sig.
Schizophrenia & Drug Psychosis	Between Groups	995.951	4	248.988	.644	.632
	Within Groups	133090.390	344	386.891		
	Total	134086.341	348			
Alcohol Use Disorder Index	Between Groups	8885.437	4	2221.359	1.503	.201
	Within Groups	505294.839	342	1477.470		
	Total	514180.275	346			
Anxiety Disorder Index	Between Groups	3733.756	4	933.439	.905	.461
	Within Groups	354855.716	344	1031.557		
	Total	358589.471	348			
Mood Disorder Index	Between Groups	6488.985	4	1622.246	1.995	.095
	Within Groups	279775.801	344	813.302		
	Total	286264.785	348			
Child Developmental Disorder Index	Between Groups	4127.878	4	1031.970	1.107	.353
	Within Groups	319885.699	343	932.611		
	Total	324013.577	347			

APPENDIX 13: ANOVA Test Results on Ethnicity and Conceptualisation of the Causes of Abnormal Behaviour

Descriptives		N	Mean	Std. Deviation	Std. Error
scientific causes	Luo	154	57.0857	23.04824	1.85728
	Kikuyu	45	67.8431	25.62973	3.82065
	Kamba	43	56.2803	24.69892	3.76655
	Luhya	89	62.7098	26.07986	2.76446
	Kalenjin	18	61.6195	30.02170	7.07618
	Total	349	60.0416	24.93374	1.33467
Non-Scientific Causes	Luo	154	72.8355	31.59701	2.54616
	Kikuyu	45	69.6296	36.76277	5.48027
	Kamba	43	84.8837	22.58551	3.44426
	Luhya	89	72.7528	34.05386	3.60970
	Kalenjin	18	71.7593	34.19701	8.06031
	Total	349	73.8300	32.25049	1.72633

ANOVA		Sum of Squares	Df	Mean Square	F	Sig
Scientific Causes	Between Groups	5371.175	4	1342.794	2.189	**.070**
	Within Groups	210977.439	344	613.307		
	Total	216348.614	348			
Non-Scientific Causes	Between Groups	6380.649	4	1595.162	1.543	**.189**
	Within Groups	355572.153	344	1033.640		