DESCRIBING THE INCIDENCE OF DEPRESSIVE SYMPTOMS AND ASSOCIATED PERSON'S VARIABLES AMONG EMERGING ADULTS WITHIN A SELECTED GENERAL HOSPITAL OUTPATIENT DEPARTMENT IN KENYA

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Course work Masters in Nursing (Mental health)

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DECLARATION

I, J.G. NTEERE, declare that this dissertation titled **"Describing the incidence of depressive symptoms and associated person's variables among emerging adults in a selected general outpatient department hospital in Kenya";** cross sectional survey relational research" is my original work. It has never been submitted before for any other degree or examination in any other university. I also declare that the sources for information used in this work have been acknowledged by means of reference.

This research project has been read and approved for submission by my supervisor, Ms A.A.H. Smith

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Ms J.G. Nteere Date
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…… ……

Ms Amanda Smith Date
(Research supervisor)

DEDICATION

This dissertation is dedicated to my dear parents, Rose and Henry Nteere for their unconditional love and continual support during my study.

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ABSTRACT

Introduction: Suicide is a global health concern, specifically among the youth. Bio-psychosocial factors, specifically depression, are associated with suicide behaviour and viewed as potential risk indicators. Depression is under detected in health care settings and argued to add to the increasing incidence of suicide behaviour.

Aim: To describe the incidence of physiological symptoms, and other person's variables, and their association with depressive symptoms within the emerging adult, 18-24 age group, attending a general health care outpatient facility in Kenya.

Method: A quantitative design utilized an interview assisted physiological symptom checklist, and a self-reported questionnaire obtained demographic data and participant responses to Becks Depression Inventory Scale vs. II (BDI 11). Data was collected for a two week period.

Results: Of the potential participant sample (N=101) that accessed services 83.1% (n=84) indicated having one or more of the targeted physiological symptoms. BDI II scores for this group indicated that; 60.8 % (n=51) experienced the normal ups and downs of daily life, 20.2 % (n=17) scored for mild depression, 7.1 % (n=6) had borderline clinical depression and 11.9% (n=10) achieved a score indicating moderate depression. Common physiological symptoms reported included; headache (54.8%, n=46), general fatigue, cough (31%, n=26) and changes in appetite (26%, n=22).There was a medium positive correlation between total physiological symptoms and depression. Despite this, total physiological symptoms were not as strongly predictive of depression as the single physiological symptom of pain, specifically headache. Trends were suggested between depressive symptoms and; aged 20/21, cohabiting with partner, university educated, and employed.

Conclusion and recommendation: Screening for depression within general health care facilities is relevant and recommended. Specific physiological symptoms, such as pain, should be recognised as potential indicators of depression, or risk for development of depression. General

health care workers need to be trained to use screening instruments and mhGAP interventional guidelines for prompt identification and management of depression in general health care facilities. It is recommended that all health care programmes include a mental health care module that includes screening for depression and suicide risk in order to build capacity within the general health care worker population.

Key words: depression, general health care settings, physiological symptoms, suicide, youth.

ABBREVIATIONS

APA	American Psychiatric Association
BDI- II	Beck Depression Inventory scale, second edition
BREC	Biomedical Research Ethics Committee
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CDC	Centre for Disease Control
CO	Clinical Officer
DSM-V	Diagnostic and Statistical Manual of Mental Disorders, fifth edition
LMIC	Low and middle income countries
MEDLINE	Medical Literature Analysis and Retrieval System Online
mhGap	Mental Health Guideline approach
MMS & MPHS	Ministry of medical services and Ministry of public health and sanitation
MO	Medical Officer
NZ-MOH	New Zealand Ministry Of Health
OPD	Out Patient Department
PHC	Primary Health Care
SA	South Africa
SADAG	South African Depression and Anxiety Group
SPSS	Statistical Package for the Social Sciences
UNESCO	United Nations Educational Scientific and Cultural Organization
UKZN	University of KwaZulu-Natal
USA	United States of America
U.S- HHS	United States Department of Health and Human Services
WHO	World Health Organization
WHO &Wonca	World Health Organization and World organization of family doctors

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1. Introduction and background

Suicide has become a global mental health concern (Crosby, Han, Ortega, Parks & Gfroerer, 2011; Mekonnen & Kebede, 2011; World Health Organization, 2014). Focus is increasingly being placed not only on fatalities, but also on potential indicators of suicidal behaviour that can be used to facilitate the implementation of prevention strategies (Khasakhala, Ndetei, Mathai & Harder, 2013; World Health Organization, 2014). To clarify the terminology used within this research study, Crosby and colleagues (2011:21) distinguish between suicide and suicide related behaviours, definingsuicide as "death that is caused by direct injurious behaviour with intent to die as a result of the behaviour"; suicide attempt as "a non-fatal self-directed potentially injurious behaviour with intent to die as a result of the behaviour" and lastly, suicide ideation as "thinking about, considering or planning for suicide". References to suicidal behaviour within the study can encompass any or all of these.

Global statistics suggest that suicidal behaviour results in over one million fatalities each year, with an estimated suicide every forty seconds and one suicide attempt every three seconds (Mekonnen & Kebede, 2011; World Health Organization, 2014). Various authors, however, argue that these figures underrepresent the actual numbers of suicide and suicide attempts, citing non-detection and non-reporting as reasons (Bossarte & Swahn, 2011; Fisher, Cabral, Izutsu, Vijayakumar, Belfer & Omigbodun, 2011; Kiarie, 2014a).

Country specific statistics indicate that global statistics are representative of both upper and lower income countries. In the United States of America (USA), during 2008-2009, 35,045 adults (15.2 per 100,000 population) committed suicide and 197,838 adults (86.0 per 100,000 population) were hospitalized following attempted suicide (Crosby et al., 2011). This high incidence is also reflected in New Zealand (NZ) statistics (Fisher et al., 2011; Ministry of Health New Zealand, 2012). Suicide is rated the ninth leading cause of death in NZ, annual approximations suggesting that 522 (12.2 per 100,000 population) people die from suicide and

over 5000 people (151.7 per 100,000 population) present to emergency units with attempted suicide (Ministry of Health New Zealand, 2012). Current African literature indicates that suicide rates in South Africa (SA) range between 11.5 and 25per 100,000 of the population (Schlebusch, 2012b).

Suicide was not part of the national dialogue in Kenya until recent media focus on suicide behaviour (Kahenda, 2014; Kiarie, 2014a; Oside, 2014). These local research studies reported an increase in suicide statistics, from 203 cases in 2010 to 310 cases in 2011 (Kenya Police, 2011). In Nyandarua County, specifically, three to four cases of attempted suicide are reported weekly (Gitonga, 2012). Literature also reveals that within these global and country specific statistics there are increasing reports of youth being a risk group for suicidal behaviour.

The Centre for Disease Control, CDC (2013) report of 2008-2009 indicates that in the USA, 2.9 million youths aged 18-29 years (5.7% of the youth age group population) had suicide ideation, 821,000 (1.6% of the youth age group) were devising actual suicidal plans and 477,000 (1.0% of the youth age group) had attempted suicide (Crosby et al., 2011). The NZ Ministry of Health (2012) pointed out that among NZ youth, defined as 15- 24 years, suicide is the second leading cause of death. The 2010 NZ statistics report revealed 17.7 per 100,000 suicides and 129.6 per 100,000 cases of attempted suicide (NZ Ministry of Health, 2012). More locally, SA reports a specific rise of attempted suicide within the youth age group (Naidoo & Schlebusch, 2014b; Van Niekerk, Scribante & Raubenheimer, 2012). VanNiekert and colleagues (2012) reported that amongst a sample of SA medical students (N=874), the prevalence of suicide ideation (32.3%) and attempted suicide (6.9%) was three times higher than in the general population. This picture is also emerging in Kenya, where statistics indicate that suicide is reported more often among young men in their twenties. There are also increasing reports of suicide ideation, including a suicide plan, among young people atschool (Gitonga, 2012; Khasakhala, Ndetei, Mathai, Mutiso & Mbwayo, 2012).

Youth is defined by the United Nations Educational Scientific and Cultural Organization (UNESCO) as the 15-24 age category and this developmental period of life is often described as "emerging adulthood" (UNESCO, 2012). This stage of life, identified in Erickson's psychosocial

development phases, includes identity formation and role confusion, and is characterized by identity exploration in areas of work, living and worldviews (Patel, Boyce, Collins, Saxena & Horton, 2011; Séguin, Renaud, Lesage, Robert & Turecki, 2011). Successful progress through this phase and the development of a positive view of the future require the emerging adults to have a sense of purpose, self-efficacy and determination to overcome obstacles. Research from high income (Chen, Wang, Qiu, Yang, Qiao, Yang & Liang, 2013; Crosby et al., 2011; Fisher et al., 2011; Jensen & Arnett, 2012) and low to low middle income (Khasakhala et al., 2012; Kinyanda, Wamala, Musisi & Hjelmeland, 2012; Patel et al., 2011) countries indicate agreement on the importance of emerging adults resolving developmental crisis. These authors indicate that failure to resolve a crisis resulting from encountering negative life experiences such as family conflict, overwhelming disappointment in relationships, chronic illness and failure to secure employment can result in the youth developing a pessimistic view of the future and suggest that the resultant hopelessness and emotional pain can potentially precipitate suicidal behaviour.

Reports of increasing suicidal behaviour among the youth of USA, NZ, SA and Kenya have further been associated with alcohol use and symptoms of depression (Crosby et al., 2011; Fisher et al., 2011; Meel, 2009; Ndetei, Khasakhala & Mbwayo, 2010; Schlebusch, 2012a). Statistics indicate that other demographic variables such as low social economic status, female gender, young age and unmarried/single status are associated with increased risk (Naidoo & Schlebusch, 2014a; Ndetei, Khasakhala, Kuria, Mutiso, Ongecha-Owuor & Kokonya, 2009). In Kenya, researchers suggest that risk factors associated with suicide behaviour within the youth population include unemployment, poverty and stress related peer pressure (Gitonga, 2012; Kiarie, 2014b; Ndetei et al., 2010; Othieno, Okoth, Peltzer, Pengpid & Malla, 2014). Ndetei and colleagues (2010) advocate for timely intervention to reduce distress and prevent the development of depression and increased risk of suicidal behaviour.

The WHO mental health action plan (2013-2020) report suggests that globally, depression is the largest cause of disability (11% of years lived with disability) accounting for 4.3% of the disease burden (World health Organization, 2013). Depression has a particularly high incidence among the youth, with studies indicating that 43.7% of the youth exhibit depressive symptoms

(Khasakhala et al., 2012; Trudgen & Lawn, 2011). Various authors, internationally(Collins, Patel, Joestl, March, Insel, Daar, Bordin, Costello, Durkin & Fairburn, 2011; World health Organization, 2013) and within Africa (Durbin, Durbin, Hensel & Deber, 2013; Jenkins, Kiima, Njenga, Okonji, Kingora, Kathuku & Lock, 2010; Kiima & Jenkins, 2010; Petersen, Bhana & Swartz, 2012b; Sadik, Abdulrahman, Bradley & Jenkins, 2011) have recommended the integration of mental health services within general health care settings These authors note that depressive symptoms are not being identified and diagnosed in the general health care settings where the majority of the population, specifically the youth, seek health services. The focus on physical health in such services and the fact that the person seeking help presents with medical rather than psychological complaints, especially in cases where physiological symptoms are elevated, are described as factors leading to the non-recognition of depressive symptoms (Kiima & Jenkins, 2010; Petersen, Lund, Bhana & Flisher, 2012c; Sadik et al., 2011). Various common physiological symptomswhich could be indicitive of depression include fatigue, sleep disturbances, musculoskeletal pains, headaches, palpitations, increased blood pressure and gastrointestinal complaints (American Psychiatric Association, 2013; Dihigo, 2014; Menchetti, Murri, Bertakis, Bortolotti & Berardi, 2009; World Health Organization, 2010). In a case control study, Juurlink and colleagues (2004) reported that 75% (n=1354) of suicide subjects had registered more than three visits to a physician prior to their death. These authors reported common symptoms associated with depression and potential suicide behaviour as including anxiety, unspecified gastrointestinal symptoms, hypertension and unspecified cardiac symptoms.

More recent literature identifies various factors contributing to the failure to achieve prompt identification of depressive symptoms (Crosby et al., 2011; Khasakhala et al., 2013; Petersen, Bhana & Baillie, 2012a; World health Organization, 2013; World Health Organization & World Organization of Family Doctors (Wonca), 2008). Thombs and colleagues (2012) reported that medical practitioners seem uninterested in diagnosing non-medical issues and were dismissive of depression as a diagnosis. Petersen and colleagues (2012c) argue that not treating patients holistically by considering their social and psychological wellbeing as well as physiological symptoms contributes to the failure to recognize depressive symptoms in general health care settings. It is suggested that this failure to diagnose depressive symptoms in general health care

settings contributes towards the high prevalence of suicide, specifically among the youth, and that addressing this failure can improve service delivery and mental health care outcomes in general health care settings (World health Organization, 2013; World Health Organization & World Organization of Family Doctors (Wonca), 2008).

With a view to address the integration of assessment, specifically for depression, in general health care settings, Ndetei and colleagues (2009) found that using Beck's Depression Inventory Scale to screen adults in general medical facilities substantially increased the accurate identification of depressive symptoms. Results indicated that 42.3% of depressive symptoms were identified when this scale was used as opposed to 4.1% that were detected by doctors based on general clinical examination. These authors and others proposed that the adoption of an integrated approach in general health care setting would help in dealing with issues of non-recognition and/or misinterpretation of depressive symptoms (Keugoung, Kongnyu, Meli & Criel, 2013; Petersen, Ssebunnya, Bhana & Baillie, 2011; Sadik et al., 2011). At its core, this approach promotes general screening of identified high risk groups, such as the youth.

However, despite valid and reliable screening instruments being available and strongly advocated for by medical and mental health professionals, current literature indicates that implementation is limited (Khasakhala et al., 2013; Schlebusch, 2012b; World Health Organization, 2014). This reluctance may be linked to Thombs and colleagues (2012) findings that the biomedical model is the dominant and exclusionary discourse in general health care settings. It is suggested that general health care personnel need to incorporate a bio-psycho-social model which promotes an holistic approach to care delivery and thus early identification of depressive symptoms and potential suicide ideation (Crosby et al., 2011; Petersen et al., 2011; World health Organization, 2013).

1.2. Statement of the problem

Suicide behaviour, a common cause of death globally, specifically among emerging adults, is on the rise in Kenya (Crosby et al., 2011; Khasakhala et al., 2013; Mekonnen & Kebede, 2011; World Health Organization, 2014). Literature suggests: firstly, that persons with suicidal

behaviour will present at general health care settings with physiological complaints before suicide or suicide attempt (Mekonnen & Kebede, 2011; World health Organization, 2013);secondly, that suicide behaviour is commonly associated with a diagnosis of depression, a diagnosis that is not screened for and not recognized in general health care facilities (Ndetei et al., 2010); and lastly, that such screening for depressive symptoms does lead to prompt identification of at-risk persons for suicide and is an effective preventative approach if this identification leads to referral to specialised counselling services (Centre for disease control and prevention, 2013; Jenkins et al., 2010; Khasakhala et al., 2013). It is suggested as timeous to identify potential physiological risk indicators that can be used to guide and inform the development of a depression screening instrument and processes in general health care settings in Kenya.

1.3. Operational definitions

Youth is defined as a person at the stage of life where he/she may leave compulsory education and be engaging in tertiary education or finding his/her first employment (UNESCO, 2012). The specific age that this developmental phase relates tovaries slightly from country to country. UNESCO and NZ define youth as the age group ranging between 15-24, the USA ranges it between 15-29, while Kenya ranges it between 15-30 (Crosby et al., 2011; Government of Kenya, 2007; Ministry of Health New Zealand, 2012; UNESCO, 2012). However, according to Kenyan policy (law of Kenya, Cap 8), adulthood begins at 18 years when the child ceases to be under the care of parents. To avoid ethical issues related to non-adult participants, youth was operationalized for the purposes of this studyto be between the ages of 18-24 years, and the term '*emerging adult'* has been used.

Depression has been defined as a disorder that is characterized by experiencing five (or more) of the following symptoms for at least two weeks; sadness; loss of interest or pleasure; feelings of guilt or low self-worth; disturbed sleep or appetite; feelings of tiredness; poor concentration; and recurrent thoughts of death or suicide (American Psychiatric Association, 2013). Within this study, depression was denoted according to the score achieved on the Beck's Depression Inventory scale II (BDI-II), specifically a score of 17 and above, which called for intervention in

the form of psychoeducation, antidepressants, addressing current psychosocial stressors or psychotherapies (World Health Organization, 2010).

Physiological symptoms were defined by Dihigo (2014) as a range of symptoms that include changes in appetite and libido; lack of energy; sleep disturbance; non-painful somatic symptoms (e.g. dizziness, palpitations, dyspnoea); and general aches and pains (e.g. headache, backache, musculoskeletal aches and gastrointestinal disturbances). The physiological symptoms included in this research study to be potential indicators of depression have content validity (point 3.5.1.2, pg 37) and included general body pains not associated with a physical injury; respiratory symptoms; cardiovascular symptoms; general body fatigue; and gastrointestinal symptoms. These were identified to the extent that they appear in the literature associated with suicidal behaviour (point 3.5.1.2 pg. 37) and were applied in the conceptual model of this study (point 1.7. pg. 9).

1.4. Purpose of the study

The purpose of this research study was to explore and describe the incidence of depressive symptoms and associated person's variables (specifically physiological symptoms and other demographic variables) among emerging adults attending a specific general health care outpatient facility in a general hospital in Kenya. This was in order to add to the literature on screening youth for depression. Furthermore if such screening is effective in the long term, implemention thereof in general health settings may contribute to suicide prevention.

1.5.Significance of the study

Current African and local studies attributed under-detection of depression in general health care settings to the dominant biomedical model discourse (Keugoung et al., 2013; Kigozi, 2007; Ndetei et al., 2010; Petersen et al., 2012c). It has been suggested that this research study could positively influence practice, specifically nursing practice, and mental health care outcomes within the research setting. Firstly, through the implementation of this research study, the researcher identified emerging adults with depressive symptoms, who were then referred for mental health care services within the general health care facility, thus facilitating improved

mental health care outcomes (Petersen et al., 2012b). Secondly, based on research evidence, it is possible that the collection of data related to mental health and physical health in the outpatient department of the general health care setting and the presentation of a report to hospital management may have stimulated reflective practice amongst the general health care workers at the data collection setting (Yackel, McKennan & Fox-Deise, 2010). Lastly, the report provided to the management of the research setting could result in evaluation of current practices and the introduction of policy and protocol for screening for depression in the outpatient department.

In addition, the findings of this study will add to the body of nursing practice knowledge. The research findings could inform the nursing education curriculum, specifically general nursing modules that address integrated management of physical and mental health (Jenkins et al., 2010; Othieno et al., 2014). This study also adds to the body of knowledge related to physiological indicators of depressive illness, particularly in relation to emerging adults in Kenya (Khasakhala et al., 2012; Ndetei et al., 2010). The presence of depressive illness and its association to specific demographic variables in the Kenyan context can add to the existing research on health seeking behaviour and serve as a base for further research related to integration of mental and physical health care (Khasakhala et al., 2012; Ndetei et al., 2009; Ndetei et al., 2010).

1.6. Research objectives, research questions and hypothesis

The objectives of the study were threefold and are presented below. The research questions are presented after each objective for readability.

Objective 1: Describe the incidence of depressive symptoms among emerging adults presentingwith key physiological symptoms at a specific general health care outpatient facility.

Research questions

- How many emerging adults with key physiological symptoms scored 17 and above on the Beck Depression inventory scale II?
- How many emerging adults with key physiological symptoms fall into the categories of mild, moderate and/or severe depression?

Objective 2: Describe common physiological symptoms associated with evidence of depressive symptoms among the emerging adults attending a specific general health care outpatient facility.

Research questions

- What physiological symptoms are more or less present?
- To what greater or lesser extent are specific key physiological symptoms associated with depression?

Objective 3: Explore associations between physiological symptoms and symptoms of depression with other demographic variables (gender, occupation, educational success, relationship status) among the emerging adults attending a specific general health care outpatient facility.

Research Questions

- What demographic variables (age, gender, occupation, educational success and relationship status) are more or less associated with symptoms of depression?
- In the presence of depression, what physiological symptoms are more or less associated with other demographic variables (gender, occupation, educational success and relationship status)?

1.7.Conceptual model

1.7.1. Introduction to the conceptual model

This study made use of the bio-psychosocial model proposed by George Engel in 1977 (Adler, 2009). This model, rooted in humanistic philosophy, expands on the biomedical model by suggesting that illness is a result of interaction between the biological, psychological and social domains (Adler, 2009; Schotte, Van-Den-Bossche, De-Doncker, Claes & Cosyns, 2006). In essence, the model suggests that physiological disorders can be produced primarily by psychosocial variables which operate to sustain, facilitate or modify the course of illness (Ghaemi, 2010; Schotte et al., 2006). Specifically, this model recognizes somatising and views such illness behaviour as legitimate, challenging clinical indicators rather than time wasting

(Schotte et al., 2006). Figure 1.1 below illustrates the development of disease and clinical outcomes from the bio-psychosocial perspective.

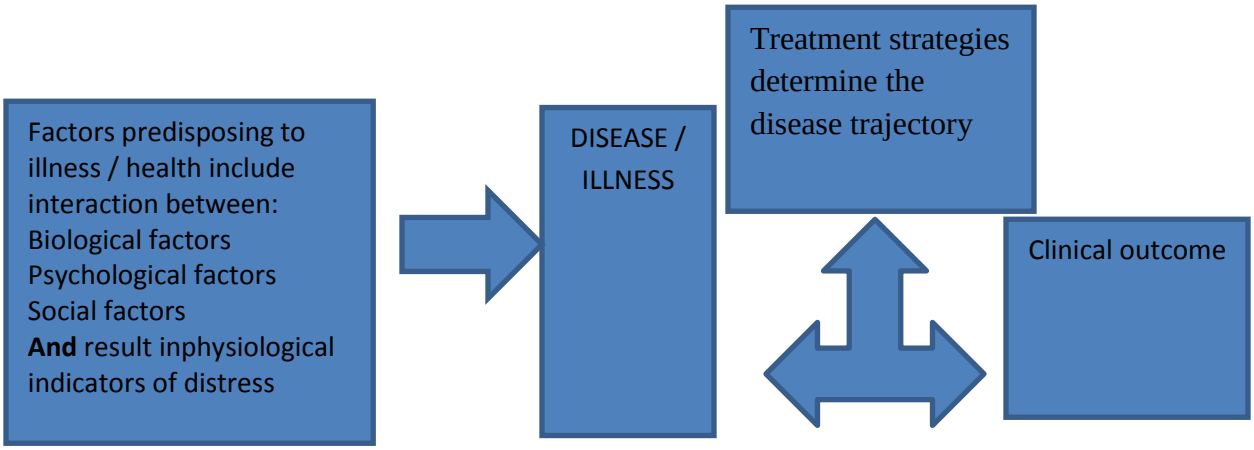

Figure 1.1:Schematic representation of biopsychosocial model (Schotte et al., 2006) .

Using depression as a resultant disease, the model could be applied in the following way: predisposing biological factors include not only genetic vulnerability towards illness, but also gender, race and ethnic origin that have an effect on the mind and body and which result in activation of the disease process (McGill, 2011). Psychobiological (psychological and biological) factors such as neurotransmitter regulation (biological) and personality traits (psychological) when impaired result in low self-esteem, negative thoughts and inaccurate interpretation of own social life situations, leading an individual to regard themselves, their future, and their on-going experiences in a negative manner. For example, gender related hormonal makeup (biological) interrelates with life experiences (social factors such as divorce), resulting in depression as the disease process (Ghaemi, 2010; McGill, 2011). The clinical outcomes of the disease process (depression) and the disease trajectory are affected by the treatment strategies employed (Adler, 2009).

1.7.2. Application of conceptual model to this study

As illustrated in Figure 1.2 below, this study focused on specific predisposing variables and the emergence of disease. The predisposing variables were included to the extent they appeared in current literature (Chapter 3, point 3.5, page 37).These variables therefore included biological

(age, gender) and social variables (relationship status, occupational status and educational success)(Menchetti et al., 2009).

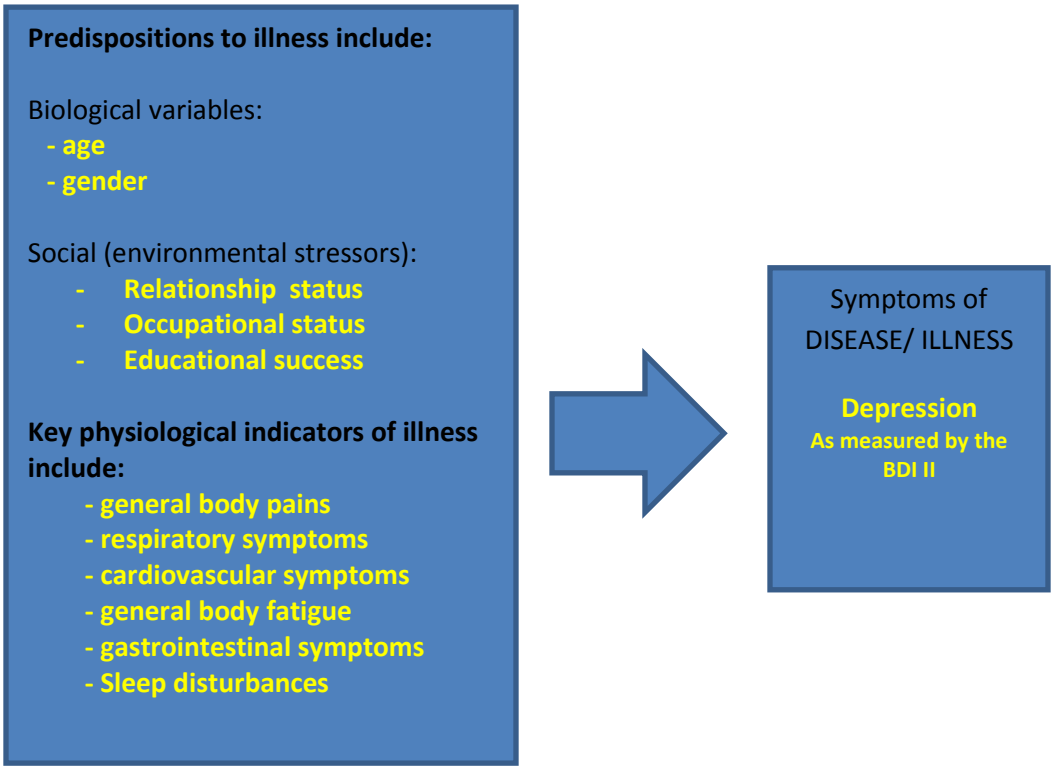

Figure 1.2: Application of the bio-psychosocial model to the study

Physiological indicators that are suggested to be potential indicators of the disease process (depression) were also identified. The presence of general body pains, respiratory symptoms, cardiovascular symptoms, general body fatigue, gastrointestinal symptoms and sleep disturbance were used to determine potential participants for the study. This is explained in the data collection process (point 3.5, page 37). In addition, the disease/illness domain is utilized in the study through the identification of depressive symptoms using the Beck's Depression inventory scale II (BDI-II).

It was beyond the scope of this study to measure the clinical outcomes. However, those persons who were identified as having depression, according to the BDI-II, were referred for professional

intervention to facilitate a positive clinical outcome, This has been explained in greater detail in the data collection process (point 3.5, pg.37).

1.8. Summary of the chapter

This chapter provided the background to the study and built an argument for its purpose and potential significance. Study objectives and the conceptual framework used to guide the methodology were presented. Based on global and local recommendations for screening for depression within general health care settings, an overview of depression, the need to screen for depression in general health care settings and the recognition of depression as a variable of interest, a major risk indicator for suicidal behaviour, introduced these concepts. These concepts and their interrelatedness are discussed in greater detail in Chapter Two.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The literature review, based on the study objectives, used specific key words and phrases. The search terms "suicide", "youth", "depression","somatic and physical symptoms" "physiological manifestations", "mental health care" and "general health care settings" were entered in various combinations into Google Scholar, initially, and then into other search engines (MEDLINE-EbscoHost, CINAHL, Science Direct, MEDLINE-PubMed, and BioMed central) with the time period restricted from 2000-2014.

This chapter begins with an overview of the concept, suicide behaviour, and associated components; suicide, suicide attempt and suicide ideation. The second section outlines the prevalence of suicide behaviour globally, as well as within Africa and in Kenya. Suicide risk factors/indicators, mainly focusing on the biopsychosocial model, are discussed in detail. The last section explores depression as a valid suicide indicator, screening being a core strategy to early identification of depression and the barriers to its implementation in PHC.

2.2. The concept of suicide behaviour

Originally, researchers and scholars focused on suicide as a singular concept, but later understandings acknowledged suicide as the end result of a process, resulting in a broader focus on 'suicidal behaviour'. This expansion is reflected in the presentation of the literature. Suicide, a term derived from the Latin word 'suicidium', meaning 'self- murder', was first noted in the works of Durkheim in 1897 to be "all cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result" (Nock, 2014:8). However, Durkheim's generalization of the term suicide focused on social conditions as causative agents and overlooked specific individual characteristics that may predispose one to suicide (Marson & Powell, 2010; Nock, 2014). He argued that social conditions regulated an

individual's life and that a 'reclassification' or change from perceived 'normal' compromised psychological health and predisposed a person to suicide (Marson & Powell, 2010). In 1985, after reviewing the work of Durkheim, Edwin Shneidman, focusing mainly on the effect of thoughts and feelings on behaviour, explored and defined suicide behaviour as "the conscious act of self-induced annihilation, best understood as multidimensional malaise in a needful individual who defines an issue for which the suicide act is perceived as the best solution" (Leenaars, 2010:8; Selby, Joiner Jr and Ribeiro, 2014:293). A later review of suicide behaviour by Crosby and colleagues (2011) does not perceive suicide as a solution to a perceived problem. These authors define suicide as "death that is caused by direct injurious behaviour with intent to die as a result of the behaviour" (Crosby et al., 2011:21). Individuals who die as a result of suicide are often referred to as 'completers', while those who intended to die and failed are referred to as 'failed suicide' (Selby, Joiner Jr & Ribeiro, 2014).

Failed suicide, commonly known as suicide attempt, can be distinguished from suicide as although it was intended to result in death, failed suicide results in non-fatal self-injury (Crosby et al., 2011). Literature makes a distinction between types of failed suicide based on intended outcome. Para suicide, although often used as a synonym for suicide attempt, is distinguished from suicide attempt by the intent inherent within the behaviour. Para suicide, defined as non-suicidal self-harm, is argued to be self-harm carried out with the intent of drawing attention to self or current plight, with absolutely no intention to die (Bossarte & Swahn, 2011; Meel, 2009). This leads to the acknowledgement that there are cognitive processes prior to self-harm regardless of the intended outcome. Definitions of suicide ideation presented in literature recognize that suicide is the final step within a process. Suicide ideation, thinking about suicide, as a part of the evolution of suicide, has some authors defining this concept in relation to suicide, their definitions including aspects of consideration and planning for suicide (Crosby et al., 2011; Schlebusch, 2012a). Clearly, suicidal behaviour, despite the outcome, indicates high levels of psychological distress among the individuals (Nock, 2014; Roberts, Wassenaar, Canetto & Pillay, 2009).

The term suicidal behaviour was adopted in this research to characterize the self-destructive or damaging acts that can result in suicide and include suicide ideation and suicide attempts (Crosby et al., 2011; Schlebusch, 2012a; World Health Organization, 2014). In today's world, suicide, regarded as an act of self-inflicted harm, is culturally and religiously unacceptable, a global social taboo (Schlebusch, 2012a; World health Organization, 2013). Despite the social unacceptability of suicide, suicidal persons are generally viewed with pity and/or anger. They are perceived as harbouring feelings of hopelessness characterized by intense emotional pain and a belief that there is no solution to their problem/s; in essence things will not get better so why continue trying (Mekonnen & Kebede, 2011). With increasing focus on people's mental health, there is growing recognition that it encompasses not only the suicidal individual's emotional distress, but also the mental health care outcomes for families of a person struggling with suicidal behaviour. Various studies have highlighted increasing incidence of suicide attempts, suicide and the global mental health burden resulting from suicidal behaviour (Fisher et al., 2011; Ndetei et al., 2010; Schlebusch, 2012a; Van Niekerk et al., 2012; World Health Organization, 2014).

2.3. Suicide behaviour, a global health care problem

Suicide, a problem affecting all age groups constitutes a global health problem (Crosby et al., 2011; Fisher et al., 2011; Leenaars, 2010; World health Organization, 2013). As highlighted in Chapter one (point1.1, pg. 1), global suicide statistics are increasing. Predictions that incidence will reach 1.5 million suicides and 15-30 million attempted suicides by the year 2020, an estimate of 20 suicide attempts for every suicide, suggests a need for greater prevention strategies (Mekonnen & Kebede, 2011; World health Organization, 2013; World Health Organization, 2014). Current epidemiological studies report an annual global suicide incidence of 1 million people (Ndetei et al., 2010; Schlebusch, 2012a). In addition to predictions of increasing suicide rates, there is evidence that the traditional age profile associated with suicide has been changing in recent years, with the youth and young adults emerging as the most at risk group (Crosby et al., 2011; Schlebusch, 2012a; World Health Organization, 2014).

In 2000, suicide was, globally, the third leading cause of death among young people aged 15- 35.

This has changed. In 2009, suicide within the same age group rated as the second most common global cause of death (World health Organization, 2013; 2014). Country specific statistics confirm this changing trend. The 2008-2009 USA surveillance report included all components of suicidal behaviour and indicated that suicide was the tenth leading cause of death, with a total of 36,909 (11.77 per 100,000 people) cases reported (CDC, 2013). The age group suicide associations in the report indicated suicide as the fourth leading cause of death of persons > 75 years and the third leading cause of death of persons within the 15-24 age group (CDC, 2013; Crosby et al., 2011). Furthermore, according to the report, an estimated 8.3 million adults (3.7% of the U.S adult population) reported having suicidal thoughts, 2.2 million adults (1.0% of the adult population) had suicidal plans and 1 million (0.5% of the adult population) reported an attempted suicide (Crosby et al., 2011;U.S. Department of Health and Human Services US HHS, 2012). The reported age associations to suicidal ideation and suicide attempts revealed firstly, that 1.4 million adults above the age of 30 (0.8% of the age group) had made suicidal plans as compared to 821,000 adults aged 18-29 (1.6% of the age group), the percentage of emerging adult age group being double the adult age group. Secondly, an estimated 477,000 adults aged 18-29 (1.0% of the age group) had attempted suicide as compared to 581,000 adults > 30 years of age (0.3% of the age group). Currently, USA gender-suicide behaviour associations indicate that suicide is higher among middle aged and older males and that suicide attempts are more common among female adolescents and young adults (CDC, 2013). Clearly, when viewing percentages of the population groups in the USA, there is a higher prevalence rate of suicide behaviour among the 18-29 age group (CDC, 2013; Crosby et al., 2011).

Contrary to the global rise in suicide statistics, New Zealand (NZ) suicide statistics reveal a decrease. The New Zealand Ministry of Health (NZ MOH) (2014) statistics indicate a total of 478 people (10.6 deaths per 100,000 populations) died as a result of suicide in the year 2011. These were slightly lower as compared to 502 in 2005 and 488 in 2004 (NZ MOH., 2007). The suicide rate for adults aged 25-44 was 13.8 per 100,000 populations in 2011, a figure slightly lower that of youth (15-24 years) statistics of 19.3 deaths per 100,000 people (NZ MOH., 2014). Adults > 65 years had the lowest rate of suicide with 7.3 per 100,000 population. However, a 2007 report released by NZ MOH showed self-harm to be ten times more prevalent than suicide.

This is evident in the current NZ MOH (2014) national report. This 2014 report indicates 2647 (61.1 per 100,000) intentional self-harm incidents among the 15-19 age group; 80.8 per 100,000 males and 212.0 per 100,000 females.

Due to the cost of epidemiological studies, statistics specific to suicide behaviour within Africa are few. However, recent studies indicate suicide rates similar to the global trend (Keugoung et al., 2013; Khasakhala et al., 2013; Kinyanda et al., 2012; Naidoo & Schlebusch, 2014b; Othieno et al., 2014; Schlebusch, 2012a). In South Africa (SA), statistics show an increase in the suicide rate since 1993, from 5.2 per 10,000 in 1993 to 16.2 per 10,000 in 2003 (Meel, 2009). More recent studies cite a national increase of 3%; from 8% in 1999 to 11% in 2012, the rates per population ranging from 11.5 per 100,000 to 25 per 100,000 (Naidoo & Schlebusch, 2014b; Schlebusch, 2012a). In addition, SA researchers report the 15-24 age group as having the highest suicide rate (Naidoo & Schlebusch, 2014b). Approximately 5000 suicide cases are reported annually in SA, a figure that put suicide among the top eight leading causes of death in this country (Masango, Rataemane & Motojesi, 2009; Naidoo & Schlebusch, 2014b).

As with international statistics, SA suicide attempt rates are higher than suicide rates, approximately 137,860-160,000 South Africans attempting suicide annually (Naidoo & Schlebusch, 2014b).A two year retrospective study conducted in Durban, KwaZulu-Natal, by Naidoo and Schlebusch (2014b), revealed suicide incidence at 14.53 per 100,000 population in 2006 and 15.53 per 100,000 population in 2007; an increase of 6.68%. These authors indicated that suicide accounted for 7.7% (N=6046) and 9.0% (N= 5550) of all non-natural death in the years 2006 and 2007 respectively.

In Kenya, scarcity of reliable data on the full extent of suicide behaviour limits understanding of the magnitude of the problem. However, the few Kenyan research studies and media reports suggest that the suicide rate is comparable to that of SA (Khasakhala et al., 2013; Khasakhala et al., 2012; Ndetei et al., 2010; Othieno et al., 2014). Kenyan studies have tended to focus on suicidal behaviour and depression as a potential indicator among adult patients in general medical facilities (Khasakhala et al., 2013; Ndetei et al., 2010; Othieno et al., 2014). A study conducted by Ndetei and colleagues (2009) suggest that Kenya has an overall suicide attempt

and ideation prevalence of 10.5%, the highest prevalence, 14.5%, being within the 18-20 age group and the lowest, 8.0%, among the > 75 age group. Similar findings are reported in a study conducted in Nairobi high schools where between 31.8 and 34.2% of students exhibited suicidal ideation and reported suicide attempts (Ndetei et al., 2010). Recent media reports indicate increasing prevalence of suicide behaviour among young and middle aged adults (aged 31- 45 years), reporting that hospitals treat at least three cases weekly (Kahenda, 2014; Kiarie, 2014b; Oside, 2014).

All current authors argue that the available statistics are an under-representation of the actual figures, a fraction of suicide mortality (Bossarte & Swahn, 2011; Fisher et al., 2011; Keugoung et al., 2013; Khasakhala et al., 2013; Othieno et al., 2014; Schlebusch, 2012a). Literature cites suicide cases being obscured by other mortality diagnoses, specifically accidental deaths and weak surveillance systems that produce inadequate data (Bossarte & Swahn, 2011; World health Organization, 2013; 2014). In addition, these authors argue that suicide deaths are not always registered as such because family members sometimes provide misinformation because of the shame and stigma attached to such acts. This would also account for individual's failure to access general health care in the event of minor injuries resulting from a suicide attempt(Crosby et al., 2011; Keugoung et al., 2013; Kinyanda et al., 2012). Despite the argument that statistics under-represent the problem, the increase in suicide behaviour reflected in current statistics are significant enough to cause concern and therefore increase global and local focus on preventative strategies (World health Organization, 2013; World Health Organization, 2014).

2.4. Identification of risk

Though suicide is a personal and individual act, international and local research evidence points to intertwined predisposing factors that include psychological and psychiatric vulnerability that are compounded by social, environmental and biological demographic factors (Centre for disease control and prevention, 2013; Keugoung et al., 2013; Khasakhala et al., 2013; Kinyanda et al., 2012; Othieno et al., 2014; Schlebusch, 2012a; World health Organization, 2013). Therefore, in order to devise identification and interventions strategies, predisposing factors need to be understood.

2.4.1. Demographic risk

The core biological and demographic factors that compound psychological and psychiatric vulnerability include gender, age and a family history of suicide (Crosby et al., 2011; Masango et al., 2009). Literature suggests that gender is a factor. More males commit suicide than females, while women are two to three times more likely to exhibit suicidal ideation and attempt suicide (Crosby et al., 2011; Khasakhala et al., 2012). Studies have found that the ratio among adults is three adult males committing suicide for every one adult female (Mekonnen & Kebede, 2011; Othieno et al., 2014). The ratio is even higher among the youth, with studies citing male youths being five times more likely to commit suicide than females (Keugoung et al., 2013; Kinyanda et al., 2012). It is argued that the high suicide rate among males is due to their use of suicide methods that are more lethal than those used by women (Crump, Sundquist, Sundquist & Winkleby, 2014). Presentation of these gender specific suicide risk rates within the adult population have been attributed to difficulties in meeting demands of increasing social responsibility and feelings of hopelessness, resulting in a negative view of self and future (Mekonnen & Kebede, 2011; Selby et al., 2014).

Another cited biological predisposition to suicide is a positive family history, specifically an immediate family member, where emerging adults with suicidal first degree family members are at an increased risk of suicidal behaviour (Masango et al., 2009; Nock, 2014). Clearly the interaction with life events and vulnerability is an important consideration.

Research indicates that specific social and environmental factors, such as employment status, education achievement and relationship status, play a critical role in the psychological health of the emerging adult (Nock, 2014; Patel, Ramasundarahettige, Vijayakumar, Thakur, Gajalakshmi, Gururaj, Suraweera & Jha, 2012; World health Organization, 2013). Typical definitions of emerging adults suggest engagement in final stages of education or being in early stages of employment, and trying to embark on adult pursuits, such as stabilizing relationships (Gulliver, Griffiths & Christensen, 2010; Mäki & Martikainen, 2009).

Current international research indicates that individuals with no or just basic education are at two

and a half times higher risk of suicide than those with tertiary education (Fisher et al., 2011; Marson & Powell, 2010; Nock, 2014). Education success and employment status are suggested as core to personal and social determinants of a satisfactory and successful life (Haftgoli, Favrat, Verdon, Vaucher, Bischoff, Burnand & Herzig, 2010). Educational underachievement is suggested to reduce individuals' opportunities to access economically lucrative employment which provides practical resources that can facilitate not only social interaction, but also health services access (Gulliver et al., 2010; Nock, 2014). Lower levels of educational achievement further compromise knowledge and skills that negatively impact the person's ability to care for self and/or their family, increasing feelings of hopelessness, unhappiness and disappointment (Keugoung et al., 2013; Kinyanda et al., 2012).

In Kenya, however, a study carried out by local researchers reported that a higher level of education is associated with greater suicide risk (Ndetei et al., 2010). These authors suggest that in an environment where unemployment rates are high and social status is drastically changed as a result of employment, higher levels of tertiary education lead to raised expectations of career opportunities that may not be available. They agreed, nevertheless, that sustained gainful employment acts as a protective factor against suicide risk and that this is possibly a more important variable of interest than educational achievement in low and middle income countries (Ndetei et al., 2010).Clearly, the context needs to be considered before definitive assumptions about relevant suicide risk demographic variables can be made (Keugoung et al., 2013; Van Niekerk et al., 2012). This is equally true for relationship status as a demographic variable of interest.

Epidemiological data suggests suicidal behaviour is more commonly associated with individuals who have no meaningful social ties (Marson & Powell, 2010; Masango et al., 2009; Othieno et al., 2014). Suicide risk is associated with the absence of relationships, whether exclusive romantic relationships or friendship (Ndetei et al., 2010). Authors suggest that the resultant social isolation and lack of effective group integration that facilitate a sense of belonging, identity and purpose increase suicide risk (Marson & Powell, 2010; Nock, 2014).However, context needs to be taken into account as circumstances regarding relationship status can vary

dramatically from country to country. For example, some studies suggest being single, divorced or separated indicates increased risk for suicide (Naidoo & Schlebusch, 2014b; Othieno et al., 2014). In line with this, studies indicate marriage as a protective factor against suicide due to perceived purpose (responsibilities) within the marital or parental identity, specifically for men who fulfil the role of 'husband' and more specifically 'father' (Mäki & Martikainen, 2009). In contrast, South East Asia and Cameroon studies reveal marriage among women to be a trigger factor to suicidal behaviour, citing the increased social responsibilities, violence and harassment associated with marriage (Keugoung et al., 2013; Patel et al., 2012).

2.4.2. Psychological and psychiatric risk indicators

Predisposing psychological and psychiatric factors encompass psychological indicators, such as impulsivity, hopelessness and psychological pain, and psychiatric diagnoses, such as major depression and addiction disorders, specifically substance abuse (American Psychiatric Association, 2013; Selby et al., 2014). Shneidman (1985), in Leenaas (2010) elaborates psychological pain as 'psychache', which in brief refers to hurt, anguish or emotional pain that is perceived by an individual as unbearable, unending and unresolvable. 'Psychache' among emerging adults can result from harsh living environments in the form of abusive and violent homes and/or unsupportive learning environments characterized by bullying, that intensify mental break down and act as trigger factors to suicidal behaviour (Selby et al., 2014; Van Niekerk et al., 2012).

In line with Shneidman's concept of 'psychache', modern authors argue that 'individuals', specifically emerging adults navigating new roles, have a threshold to enduring mental anguish and psychological pain resulting from life stressors (Crosby et al., 2011; Séguin et al., 2011; Selby et al., 2014). Youth, specifically emerging adults, are characterized by impulsivity and fragile self-esteem, which have an effect on their emotional control and self-restraint. When faced with stressful situations, therefore, they may not have the necessary resources to respond, putting them at risk of suicide (Mäki & Martikainen, 2009; Selby et al., 2014).

Psychological distress can be a precursor to, or a result of, a psychiatric diagnosis. Although

Durkheim dismissed mental illness as causative to suicidal behaviour, rather citing psychological characteristics, such as impulsiveness and lack of rational reflection, modern authors argue that overwhelming emotions, such as rage and guilt, are associated with life stressors as precursors to development of mental illness, specifically depression(Keugoung et al., 2013; Mäki & Martikainen, 2009). Life stressors result from the individual being faced with a life situation for which they might not have the necessary resources, knowledge, skills, emotional support or money to respond effectively (Mäki & Martikainen, 2009). Emerging adults are navigating new roles, a period described by Erikson (1950) as 'identity crisis', of unpredictability, while experiencing reduced parental ties and/or contact and support, a transition period acknowledged as a high risk of emotional well-being (Patel et al., 2012; Séguin et al., 2011). In addition, Masango and colleagues (2009) argue that inability to respond effectively to a life situation due to lack of resources is perceived by emerging adults as a developmental failure and is suggested to facilitate feelings of defeat and a sense of hopelessness that may progress to depressive symptoms. This sense of failure and/or defeat and hopelessness can further hamper the individual's ability to carry out activities of daily living within occupational and social environments (Othieno et al., 2014). Research indicates that the development of depression within this age group has a profound impact on initiating and sustaining relationships, employment, sense of achievement and future orientation, thus further predisposing the youth to suicide behaviour (Chen et al., 2013; Khasakhala et al., 2013; Naidoo & Schlebusch, 2014a; Othieno et al., 2014).

Psychiatric disorders that predispose a person to suicidal behaviour include mood and anxiety disorders, alcohol-substance abuse disorders, attention-deficit/hyperactive disorder, defiant disorder and conduct disorder (Kinyanda et al., 2012; Trudgen & Lawn, 2011). With respect to mood disorders, bipolar and depression account for the largest portion (over 60%) of suicide behaviour associated with a psychiatric label, followed by alcohol/substance abuse (American Psychiatric Association, 2013). Research in both SA and Kenya indicate that bipolar and major depressive disorders account for nearly one-quarter of all suicides (Naidoo & Schlebusch, 2014b; Ndetei et al., 2010). In view of the association between depression and suicide behaviour, the

prevalent rates of depression and indicators of depression are significant considerations for suicide preventative interventions.

When assessing predisposition, it becomes clear that contextually relevant demographic variables can be associated with risk of suicide behaviour and that local research would specifically inform variables of interest that could be useful in screening for risk within specific contexts. However, contrasting reports in literature highlight that while international and local demographic variables, if available, can be used to facilitate screening, these do not measure emotional distress as effectively as depression risk scales. Statistics associating depression and suicide behaviour presented earlier (point 2.3. pg15) suggested that screening for depression would be a more valid and reliable approach.

2.5. Depression: a valid suicide risk indicator

Global predictions are that depression will be the second leading cause of the disease burden by 2030 (World health Organization, 2013). Current statistics further reveal that nearly 154 million people suffer from depression, with this disoder accounting for 11% of years lived with disability (World Health Organization, 2014; World Health Organization & World Organization of Family Doctors (Wonca), 2008). Global annual prevalence estimates indicate that there are 400 per 100,000 depressed males and 180 per 100,000 depressed females (Othieno et al., 2014; Séguin et al., 2011; World health Organization, 2013). In studies conducted in general health care settings in SA and Kenya, prevalence of depressive symptoms in the general population range between 4.8% and 42.3% (Naidoo & Schlebusch, 2014b; Ndetei et al., 2010). Among the youth, depression is rated to be higher, between 25% and 43.7% (Khasakhala et al., 2012; Ndetei et al., 2010; World Health Organization, 2010).

The universally accredited authority for psychiatric diagnosis, the Diagnostic and Statistical Manual of Mental Disorders (DSM), and empirical literature point to depression manifestation as either psychological or physiological (American Psychiatric Association, 2013; Crump et al., 2014; Haftgoli et al., 2010). The psychological symptoms that have been identified include dysphoric mood, loss of interest, impaired concentration and cognitive errors, and somatic

symptoms (lack of energy and general body aches and pains) (American Psychiatric Association, 2013). Cognisance of physiological symptoms is specifically pertinent to risk assessment within general health care settings.

Current literature has commonly identified physiological symptoms suggestive of depression to include fatigue, sleep disturbances, musculoskeletal pains, headaches, palpitations, increased blood pressure and gastrointerstinal complaints(American Psychiatric Association, 2013; Dihigo, 2014; Haftgoli et al., 2010; World Health Organization, 2010). Research evidence argues that people express their emotions through their physical bodies, supporting the likelihood that mood disorders coexist with physiological symptoms presented bypatients at general health care facilities (American Psychiatric Association, 2013; Dihigo, 2014; Haftgoli et al., 2010; Menchetti et al., 2009). Physiological symptoms presented at general health facilities suggestive of depression are mainly body pains and respiratory complaints (American Psychiatric Association, 2013; Dihigo, 2014) and of these, body pains account for the largest portion (15-85%) (American Psychiatric Association, 2013). Body pains are suggestive of depression as both share biological pathways and neurotransmitters serotonin and norepinephrine, all of which are responsible for mood changes (Menchetti et al., 2009; Mykletun, Overland, Aarø, Liabø & Stewart, 2008). Mykletun and colleagues (2008)discuss physiological symptoms from both aspects of the symptom trajectory. These authors argue that the presence of physiological symptoms often leads to worry on the nature and cause of symptoms resulting in feelings of hopelessness and helplessness, a major indicator of depression. In addition, the severity of depression increases with the elevation of physiological symptoms, which further hampers detection of depression (Dihigo, 2014; James, Jenkins & Lawani, 2012).

Furthermore, many of those who have underlying social or psychological problems may adopt a physiological symptom as an adaptive mechanism as it is perceived as being a more legitimate reason for seeking health services and less socially unacceptable (Freeman & Joska, 2013; James et al., 2012). This is supported by research results that cite people's reasons for focusingon physiological rather than psychological symptoms include stigmatizing attitudes, discrimination and misconceptionsregarding persons with mental illness (Freeman & Joska, 2013; James et al.,

2012). Another reason that has been identified is the misconception held by the general population that presentation of physioloigcal symptoms is the language that health care providers best understand (Alexander, Arnkoff, Glass & Kaburu, 2013).

However, focusing on the physiological symptoms rather than psychological symptoms in general health care settings can be potentially problematic in that the physiological symptoms tend to dominate the clinical picture, leading to underdetection of depression, specifically among the emerging adults (Haftgoli et al., 2010; Menchetti et al., 2009). With global statistics indicating that as many as 76% of depressed youth present with physiological symptoms in the general health facilities, it is suggested as timerous to integrate mental health services into all health care settings, specifically primary health care (PHC) (Petersen et al., 2012b; World Health Organization & World Organization of Family Doctors (Wonca), 2008).

International and African authors suggest that in order to reduce suicide rates, interventions are required to facilitate prompt identification and treatment of mental illness, specifically depression, in the general health care settings (Crump et al., 2014; Jenkins et al., 2010; Keugoung et al., 2013; Petersen et al., 2012a; Sadik et al., 2011; World Health Organization, 2010).

2.5.1 Screening for depression

Literature, both international and local, suggests depression to be the most valid indicator of potential suicide behaviour. Emerging adults experiencing psychological distress tend to seek health services at general health care settings as opposed to psychiatric units (Alexander et al., 2013; Wells, Lagomasino, Palinkas, Green & Gonzalez, 2013). Furthermore, virtually all present with physiological complaints rather than psychological complaints (Ivbijaro, Kolkiewicz, Lionis, Svab, Cohen & Sartorius, 2008; Petersen et al., 2012c). Focus on the physiological presentation has led to under-detection, misdiagnosis and under-treatment of depression in general health care settings (Thombs et al., 2012).

In a bid to combat mental illness, more so depression, the WHO Mental Health Action Plan (2013-2020) highlights in depth strategies of promoting mental health wellbeing through its four

objectives (World health Organization, 2013). Objective three relates to strategies of suicide behaviour prevention, particularly multisectoral collaboration that facilitates early detection and treatment resulting in suicide reduction. The Grand Challenges in Global Mental Health initiative assembled the world's researchers, mental health clinicians and advocates in the international Delphi panel (Collins et al., 2011). This group identified integration of screening and core packages of services into routine primary health care (PHC) as a priority area for research.

Medical and mental health professionals have advocated screening for mental illness, specifically depression, in PHC and district hospitals(Betz, Sullivan, Manton, Espinola, Miller, Camargo & Boudreaux, 2013; Yackel et al., 2010). Thombs and colleagues (2012:413) define screening for depression to involve "the use of questionnaires concerning the symptoms of depression or small sets of questions about depression to identify patients who may have depression, but who have not sought treatment and whose depression has not already been recognized by health care providers". In an effort towards enhancing patient outcomes, it has been recommended that accurate screening instruments be used, with the clinician verifying the responses selected by taking into account patients' understanding of the selected responses (Dihigo, 2014; Thombs et al., 2012). The presence of key physiological symptoms suggestive of depression and the severity of physical illness should elicit screening for depression in PHC (Dihigo, 2014; Yano, Chaney, Campbell, Klap, Simon, Bonner, Rubenstein & Lanto, 2012).

Evidenced based screening instruments that are age-group sensitive and structured to measure both physiological and psychological symptoms that patients may have been experiencing in the previous two weeks are widely available (Alexander et al., 2013; Wells et al., 2013). These screening instruments include the Beck Depression Inventory (BDI), I and II; the Patient Health Questionnaire (PHQ), 2 and 9; the Hamilton Rating Scale; the Zung self-depression scale; the Centre for Epidemiology Studies Depressed Mood Scale (CES-D); and the Geriatric Depression Scale (Alexander et al., 2013; Chen et al., 2013; Freeman & Joska, 2013; Kravitz, Paterniti, Epstein, Rochlen, Bell, Cipri, Fernandez y Garcia, Feldman & Duberstein, 2011). These self-reported screening tools have been established to have adequate psychometric properties and

feasibility for use in PHC, proving to be more accurate than physician interviews (Khasakhala et al., 2013; Williams, O'Connor, Eder & Whitlock, 2009).

Implementation of screening programs for depression has been executed in various primary care settings where the majority of people seek health services (Dihigo, 2014; Thombs et al., 2012; Williams et al., 2009). In USA and Canada, screening for depression has been integrated into primary care settings by means of a staff-assisted system to manage a positive result for depression (Thombs et al., 2012). Non-medical specialists were incorporated into these primary care settings and a collaborative care program put in place to facilitate management and follow up(Dihigo, 2014; Williams et al., 2009). Successful evidence based screening programs for depression have also been adopted in New Zealand physical therapy settings as a routine clinical practice (Walsh & Abbott, 2008).

However, the existence of valid and reliable instruments does not ensure implementation of screening practices. McGoey and colleagues (2013) argue that countries that have embraced the use of screening instruments are not entirely successful in identifying depression. A multifaceted system is thus required for implementation of screening programs that will facilitate prompt identification, management of positive results and follow up(Thombs et al., 2012). This is, however, a great challenge in resource constrained countries, specifically in the African context where there is limited literature citing implementation of screening instruments for depression in PHC (Alexander et al., 2013; Fisher et al., 2011; Keugoung et al., 2013).

2.5.2. Barriers to implementation

With the high comorbidity of depression and presentation of physiological symptoms by the emerging adults in the PHC, solo identification and management of depression by health workers is likely to be ineffective without a support screening program that promotes integration of mental health into PHC (Collins et al., 2011; Keugoung et al., 2013). Despite the Alma-Ata Declaration (1978), aimed at provision of preventive, promotive, curative and rehabilitative services under one comprehensive health umbrella through integration of health services, specifically in PHC, integration of mental health has been lacking (Durbin et al., 2013; Ivbijaro

et al., 2008; World health Organization, 2013; World Health Organization & World Organization of Family Doctors (Wonca), 2008). In low and middle income countries, mental health, an essential element of PHC, has lagged behind in the integration process (Kiima & Jenkins, 2010; World health Organization, 2013). This is despite studies indicating that mental health disorders, specifically depression, are major indicators of suicide behaviour and are under-detected in PHC settings, where the majority of the emerging adults seek health services (Ivbijaro et al., 2008; Petersen et al., 2012c; World health Organization, 2013; 2014; World Health Organization & World Organization of Family Doctors (Wonca), 2008)

Primary health care for mental health, an initiative advocated by the WHO, refers to mental health services that are integrated into the primary care level, such as health centres and district hospitals (World Health Organization, 2010). Objective 2 under the WHO mental health act (2013-2020), "provide comprehensive, integrated and responsive mental health and social care services in community-based settings" acts as a national guideline to early identification and treatment of mental disorders through integration of mental health service into general health care settings, specifically primary health care (WHO, 2013:14). Outlined strategies for countries to follow include firstly, service reorganization and expansion of coverage through decentralization and integration of mental health into PHC; secondly, coordination of holistic integrated and responsive care that meets the physical and mental needs of the population; and lastly, development of human resources through training and improving the skills of general and specialized health workers on mental health issues.

In spite these suggested strategies, integration of mental health into PHC has been a slow process, which has hampered provision of holistic care and positive health care outcomes of interwoven physiological and mental health illness through implementation of screening instruments that foster early identification (James et al., 2012; Sadik et al., 2011). Furthermore, the low mental health budget allocation that has led to a treatment gap of over 75% and limited mental health specialists (one psychiatrist per 200,000 people) in low and middle income countries leaves the detection and treatment of mental health illness to primary care workers who have limited training on mental health issues (World Health Organization, 2010; 2013). James

and colleagues (2012) argue that the majority of health care workers working in unspecialized units, such as the PHC, where the majority of emerging adults seek services, lack training on prompt identification of mental illness, specifically on the importance of screening for depressive illness. There is a general lack of education and training to general health care workers to reinforce adoption of a mental health diagnostic framework encompassing a bio-psychosocial approach that recognises mental health disorders, specifically screening for depression(Schlebusch, 2012a; World Health Organization & World Organization of Family Doctors (Wonca), 2008). Although the WHO provides a mental health treatment guideline for non-specialized care settings (mhGAP guidelines, 2010), insufficient training on general wellness of individuals, importance of screening for depression and early intervention for mental illness has not bridged the treatment gap for mental illness in low and middle income countries (Freeman & Joska, 2013; World health Organization, 2013).

Despite measures that have been adopted to address limited human resources through task shifting in these countries, insufficient supervision hampers sustainability of use of screening instruments and achievement of positive outcomes (Kravitz et al., 2011; Petersen et al., 2012c). In brief, task shifting is training of non-specialized health workers in the provision of health services under the supervision of scare specialist health personnel as a mechanism to compensate for mental health shortage in low and middle income countries and also provision of cost effective care (Petersen et al., 2012c).

Additional identified barriers to use of screening instruments in PHC include firstly, health workers experiencing time constraints in a busy working environment with high patient attendance, resulting in them not dedicating enough time for screening and managing patients (Freeman & Joska, 2013; Kravitz et al., 2011). Secondly, scant resources in most PHC settings restrict health care workers in the effective use of screening instruments and in managing those who achieve a positive score (Jenkins et al., 2010; McGoey, Huang & Palmes, 2013). Lastly, lack of an appropriate referral protocol and stigmatizing attitudes to those who achieve a positive score still present great challenges(Kravitz et al., 2011; Thombs et al., 2012).

In an effort to improve mental health outcomes in PHC, it is essential to train health workers on the importance of screening and in treating mental health illness, specifically depression (World Health Organization & World Organization of Family Doctors (Wonca), 2008). Such training would foster better understanding of mental health issues among health workers, leading to less stigmatizing attitudes on mental health illness, thus improving the treatment process (Yackel et al., 2010). The media also provides a good channel for transmitting information and could be useful in clarifying myths and making mental health disorders, specifically depression, more understandable, and thus play a part in reducing the stigma attached to these disorders (Crosby et al., 2011; Schlebusch, 2012a). This would make it easier for those suffering from depression to be more open about their psychological problems in the general health care settings (Othieno et al., 2014; Petersen et al., 2012b).

2.6. Summary of the chapter

This chapter highlighted literature on the prevalence of suicide behaviour globally, paying specific attention to the African context and the predisposing bio-psychosocial factors to suicide behaviour among emerging adults. Depression is identified as a variable of interest in the prevention of suicide behaviour, and screening for depression in PHC and general health care settings is explored. Chapter three presents the methodology for the study and outlines the data collection process.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

This chapter describes the research process and outlines how the research was conducted in line with the study design. It provides a description of the study setting, the data collection instrument, the data collection process and ethical considerations.

3.2. Research paradigm and design

The research study used a positivist paradigm. Within this study, the researcher endeavoured to be objective in uncovering universal truths and facts regarding the demographic variables, specifically physiological symptoms, that are associated with depressive symptoms (Blanche, Durrheim & Painter, 2006; Krauss, 2005). A quantitative non-experimental cross-sectional survey relational research design that is descriptive in nature and makes use of a self-reported questionnaire was used to allow the researcher to observe and measure the study variables objectively (Polit & Beck, 2008). Blanche and colleagues (2006) argue that relational research is non-manipulative and involves the coordinated observation of at least two variables. In this study, these independent variables were identified as gender, physiological symptoms, employment status, educational success and relationship status. The dependent variable in this study was depressive symptoms.

3.3. Study setting, Population and target population

The study population consisted of all emerging adults attending general healthcare outpatient settings in Kenya (Polit & Beck, 2008). The target population was the emerging adults attending an outpatient department in a general mission hospital in Kenya.

The hospital was purposely sampled due to the researcher's past relationship with the management and also due to her geographical proximity to the setting (Blanche et al., 2006; Polit & Beck, 2008).

Kenya is a developing country located in the eastern part of Africa. It lies on the equator and covers an area of 585, 646 square kilometres. As per the 2009 national census, the estimated population was 40 million, composed of 42 different ethnic groups (Republic of Kenya, 2010). The country is multilingual with Kiswahili as the national language and English as the official language used in formal settings. Kenya was ranked a low income country until recently when it was categorized as a middle income country with a GDP of $1,246 US dollars (Okoth & Anyanzwa, 2014). The economy is primarily based on agriculture and tourism (Kenya Institute for Public Policy Research and Analysis, 2013). The country's total work force is approximately 20.6 million, of which 69.2 per cent are in employment. Current statistics indicate 2.1 million people are employed in the formal sector (consist of public sector, parastatal and medium size enterprises) and 10 million are employed in informal sector (consist of small-scale enterprises and sole-proprietorships) (Kenya Institute for Public Policy Research and Analysis, 2013; Kenya National Bureau of Statistics & ICF Macro, 2010).

The country faces a double disease burden of the preventable communicable diseases, malaria and HIV (Kenya National Bureau of Statistics & ICF Macro 2010). In additional, it is faced with burden of maternal mortality rate of 488 deaths per 100,000 live births (Jenkins et al., 2010). Kenya is adversely affected by famine, insecurity, poverty, widespread violence and unemployment. Approximately 20.1 million people are living in poverty and have limited access to general health care hospitals (Kenya National Bureau of Statistics & ICF Macro 2010). Like many other African countries, Kenya is considered a youthful nation with approximately 78% of her population being below 34 years. However this age category has the highest (14.2%) unemployment rate (Jenkins et al., 2010; Kenya institute for public policy research and analysis, 2013).

The public health system in Kenya comprisesthe Ministry of Health (MOH) and parastatal organizations, whilethe private sector, consists of privatefor profit, non-governmental organizations and faith-based organizations(Luoma, Doherty, Muchiri, Barasa, Hofler, Maniscalco, Ouma, Kirika & Maundu, 2010). Since the adoption of the new constitution (2010), health care has been decentralized and integrated into the public health system (Ministry of Medical Services., 2012). The health sector embraces the Kenya health policy framework (2012-2030) that is guided by the Vision 2030 national developmental agenda as the blue print for developing and managing health services (Luoma et al., 2010; Ministry of Medical Services., 2012). Within this framework, integrated care in the public system is structured into four main tiers; community, primary care, county referral and national referral services. Integration of health services moves up the hierarchy of the health structure, with community level being the first point of contact with a health worker (Ministry of Medical Services., 2012). The county and national referral facilities are more specialized and equiped to offer advanced care than the community and primary care facilities (Jenkins et al., 2010; Ministry of Medical Services., 2012). In a country with a high communicable disease rate, over 63,277 registered medical personnel are depolyed to serve in the country's health system, comprising mainly of registered community health nurses at diploma and bachelor level, enrolled community health nurses, registered clinical officers (diploma in clinical medicine), medical doctors, radiologists, nutritionists, pharmacists, pharmacy technologists, dentists, public health officers and public health technicians (Luoma et al., 2010). Despite this, the country faces low human resources, with 1-2 nurses and clinical officers for each 10-20,000 population, and limited or no medical doctors at the primary level of care (Jenkins et al., 2010; Kenya National Bureau of Statistics & ICF Macro, 2010).

Mental health is integrated into PHC at the lower levels of care in the public health system (Kiima & Jenkins, 2010). However, in a county with an estimate of 10 to 15 % of the population suffering from mental disorders, less than 100 psychiatrists are employed in health, research and education to serve the country's population (Jenkins et al., 2010). There is an overallshortage of mental health workers, with approximately 75 psychiatrists and 427 psychiatrist nurses working at the county and national referral facilities, themajority of whom are concentrated in the

country's mental referral hosital, Mathari (Jenkins et al., 2010; Kiarie, 2014b). In the lower community and primary tiers of care, assessment and management of physical and mental disorders are done by registered community health nurses or clinical officers(Kiima & Jenkins, 2010).

The hospital in this study is at county referral level. It is a mission general hospital located in Kiambu County, which is located in central Kenya. Kiambu County borders Murang'a County to the north and north east, Machakos County to the east, Nairobi and Kajiado Counties to the south, Nakuru County to the west and Nyandarua County to the north-west. According to the 2009 national census results, Kiambu County covers an area of 2,449.21 sq km, with an estimated population of 1,623,282 (Government of Kenya, 2010). The population density is 638 per sq km. The hospital not only serves the wide catchment area of Kiambu County, but also Nairobi, Naivasha, Nakuru and Nyandarua Counties. The hospital is fully equipped to handle general medical and surgical cases. It has five wards (maternity, male and female medical/ surgical/ orthopaedic, paediatric and an intensive care) with a total bed capacity of 265. It also has a 24 hour casualty and an 8am-5pm outpatient unit, which handles all general health conditions, including referrals from outreach clinics. Within the outpatient unit there is the mother child health (MCH) and five clinics that deal with conditions such as gynaecology, orthopaedic and surgical cases, paediatrics and ENT. According to the obtained hospital records, the outpatient services are used by approximately 149,500 patients per year, 12,000 per month and 400 patients per day. Information obtained from the human resource office of the hospital indicates that the hospital is served by 220 nurses of different cadres, as well as 18 clinical officers and 17 medical officers. Other health care personnel include a pathologist, laboratory assistants and technicians, and a nutritionist who deals with both physical and mental conditions.

Psychiatric mental health services are limited. There are no psychiatrists or social workers in the hospital and counselling services are usually handled by the chaplaincy department. A patient diagnosed with a mental disorder by a clinical officer is referred to the medical officer, who prescribes psychotropic medication and refers the patient to Mathari hospital, which is the

national referral hospital for mental conditions and is located two kilometres out of Nairobi city (approximately 49 km from the county referral hospital).

Data was collected in the Out Patient Department (OPD) and a description of the treatment flow and process, as observed by the researcher, is given, with time allocations, to underscore the description of the data collection process.

Upon arrival at the OPD, new patients had to open a file, while re-visiting patients retrieved their existing files, using a card with their outpatient number. Once the files had been opened or retrieved from the records, the observation nurse took and recorded vital observations: temperature, respiration, pulse and blood pressure. This initial step took approximately 5-15 minutes. The files were then taken by an administrator to the clinical officer's, (CO's) pigeon hole and the patient waited to be called, with a general waiting time of approximately 20-45 minutes. Once in the CO's room, the patient stated their complaints for the first time. Based on the CO's examination, further investigations (such as X-ray or blood analysis) were ordered or a diagnosis was made and a prescription written, which the patient took to the pharmacy. The administrator took the patient's file to the pharmacy, where the patient waited for approximately 10 minutes to be served. For those going for investigations, the request form was taken by the administrator to the lab or the radiology department and the patient waited between 10 minutes and an hour before receiving their results. Thereafter, the administrator took the results back to the CO. Depending on the outcome of the requested test, the patient either received a prescription and/or was sent to the pharmacy before going home or the patient was referred to the medical officer (a degree holder in medicine and surgery).

3.4. Sample and sampling procedure

Approximately 30,000 youths (15-24 years) attend the health facility yearly and it was the researcher's intention to invite participation from all who met the inclusion criteria until 200 participants had been achieved or a period of two weeks had elapsed. This was suggested as it was likely to result in a representative sample of the youth in the county and also enable a good statistical analysis (Blanche et al., 2006; Polit & Beck, 2008). The youth attending the outpatient

health facilities during the two weeks study period were not sampled, rather all were invited to participate in the study. Permission to have access to the patients' files and have an identification tag on the file as evidence of patient participation in the study was sought from the outpatient nurse in-charge. This was necessary to avoid sampling the same patient twice if they returned to the study setting within the two week study period.

3.4.1. Inclusion criteria

Those who were invited to participate included youth:

- Aged between 18-24 years seeking health service in the OPD at the research setting
- presenting with one or more of the physiological symptoms that were identified as the variables of interest (Annexure I,pg.89).
- able to communicate in either English or Kiswahili
- willing to participate

3.4.2. Procedure for participation in the study

The researcher had recruited two field workers to assist her in the data collection process, both of whom were general nurses in possession of a diploma qualification in community health, which included basic mental health training. Potential participants were identified after they had arrived at the OPD and their files had been retrieved. When the observation nurse had taken all retrieved files and the patients were waiting to be called, one of the field workers went through the files, checking for those who met the age criteria. Once the observation nurse had taken their vital signs, the potential participant was approached and invited to participate in the study. Potential participants were asked to resume their seat in the waiting bay with the intention of collecting data during the time that they were waiting to see the CO. Each potential participant who met the inclusion criteria was then approached by one of the field workers, who introduced themselves, explained the procedure and purpose of the study, and invited them to participate.

A total of 101 participants had been invited to participate in the study by the end of the two week period (7^{th} - 19^{th} April, 2014). They were required to complete the first section of the

questionnaire containing the demographic data and the predisposing physiological variables (Annexure 1, pg 88). Based on the second inclusion criterion, presenting with at least one or more physiological variable of interest, the researcher considered only those participants who had completed Section A, item 2, of the questionnaire. Those who met the criterion proceeded to complete Section B, the BDI scale (Annexure 1 pg 90). Participants who scored 17 and above were referred for counselling and psychotropic medication as per the mhGAP mental health guidelines (World Health Organization, 2010). A final sample of n=84 was thus achieved.

3.5. Data collection instrument and its validity and reliability

In order to cover the stated objectives, the researcher used one self-report data collection instrument made up of two sections, Section A (item 1. demographic information and item 2. check list for predisposing variables of interest) and Section B (Beck Depression Inventory scale version II). The self-report questionnaire had been translated into the local language, Kiswahili (Annexure 2, pg 94) by a local English-Kiswahili language teacher and checked by the researcher who speaks Kiswahili for no change in content validity.

3.5.1. Section A

This section outlined the inclusion criteria and contained questions relating to demographic information and a check list for predisposing variables of interest.

3.5.1.1. Item 1: Demographic information.

Age, as a demographic variable, was included as the first step in the identification of the target population as it was the first of the inclusion criteria. Other demographic variables were selected to the extent that they appeared in literature as potential associates of predisposing risk for depression. These included gender (Crosby et al., 2011; Fisher et al., 2011; Keugoung et al., 2013; Kinyanda et al., 2012; Ndetei et al., 2010), relationship status(Keugoung et al., 2013; Khasakhala et al., 2012; Kinyanda et al., 2012; Mäki & Martikainen, 2009; Othieno et al., 2014), education success (Crosby et al., 2011; Du Toit, Kruger, Swiegers, Van der Merwe, Calitz, Philane & Joubert, 2008; Khasakhala et al., 2013; Kinyanda et al., 2012; Mäki & Martikainen,

2009; Ndetei et al., 2010), and employment status (Du Toit et al., 2008; Khasakhala et al., 2012; Kinyanda et al., 2012; Mäki & Martikainen, 2009; Othieno et al., 2014).

3.5.1.2. Item 2: Check list for physiological symptoms of interest and inclusion criteria

Current literature was used to establish content validity. In addition, face validity in the form of expert opinion was established with the research supervisor. The following physiological symptoms were included in accordance with previous studies that cite a high relation with depression: body pains (Aguera-Ortiz, Failde, Cervilla & Mico, 2013; Dihigo, 2014; Gulliver et al., 2010; Haftgoli et al., 2010; Kroenke, Spitzer, Williams & Löwe, 2010; McGoey et al., 2013; Menchetti et al., 2009), respiratory symptoms (American Psychiatric Association, 2013; Dihigo, 2014; Freeman & Joska, 2013; Govender, Oosthuizen & Cloete, 2011; Haftgoli et al., 2010), stomach problems (Aguera-Ortiz et al., 2013; Dihigo, 2014; Haftgoli et al., 2010; Menchetti et al., 2009), chronic fatigue (Dihigo, 2014; Fisher et al., 2011; Freeman & Joska, 2013; Haftgoli et al., 2010; Kroenke et al., 2010; Menchetti et al., 2009), cardiovascular problems (American Psychiatric Association, 2013; Govender et al., 2011; Gulliver et al., 2010; Haftgoli et al., 2010; Kroenke et al., 2010) and sleep disturbances (American Psychiatric Association, 2013; Chen et al., 2013; Dihigo, 2014; Fisher et al., 2011; Gulliver et al., 2010; Kroenke et al., 2010).

3.5.2. Section B: Beck Depression Inventory Scale, second edition (BDI-II)

The Beck Depression Inventory Scale (BDI) was designed by Aaron Beck (1961). The second edition produced in 1996 is more consistent with DSM-V criteria for depression. The BDI- II for adults and adolescents is a 21- item self-reported tool written in English that is designed to measure depressive symptoms producing a score for depression and suicidal symptoms. Items in the BDI- II are rated on a 4-point scale with ranges of 0-3, 0 representing no evidence of the symptom and 3 representing the greatest level of agreement with the statement. The higher scores therefore indicate the presence of depressive symptoms. Participants are rated according to how they have been feeling in the past two weeks. The BDI- II score cut off points are classified into three broad categories: low depression, with scores of 1-10 equating to normal ups and downs and 11-16 to mild mood disturbances; moderate depression, with scores of 17-20

indicating borderline depression and 21-30, moderate depression; and significant depression with scores of 31-40 indicating severe depression and 41-63, extreme depression (Beck, Steer & Brown, 1996). The instrument has been used in English and translated to various other languages (Campos & Gonçalves, 2011; Ghassemzadeh, Mojtabai, Karamghadiri & Ebrahimkhani, 2005; Kojima, Furukawa, Takahashi, Kawai, Nagaya & Tokudome, 2002; Schneibel, Brakemeier, Wilbertz, Dykierek, Zobel & Schramm, 2012; Steele & Edwards, 2008). For this study, the instrument was translated into the local language, Kiswahili, by experts, and a test-retest done to produce a reliability coefficient.

3.5.2.1. Validity and reliability of the BDI-II

Various studies, including local studies, have used the BDI- II and reported a high degree of internal consistency, reliability and an acceptable degree of concurrent and discriminant validity (Lipps, Lowe, De La Haye, Longman-Mills, Clarke, Barton & Bain, 2010; Ndetei et al., 2009; Ndetei et al., 2010; Sashidharan, Pawlow & Pettibone, 2012). The BDI- II was found to have excellent internal consistency, with Cronbach's alpha ranging between 0.92- 0.94 in four (4) separate studies (Brouwer, Meijer & Zevalkink, 2013; Joe, Woolley, Brown, Ghahramanlou-Holloway & Beck, 2008; Kjærgaard, Arfwedson Wang, Waterloo & Jorde, 2014; Osman, Barrios, Gutierrez, Williams & Bailey, 2008).

3.6. Data collection process

Data collection began after the researcher had obtained ethical clearance from the Research and Ethics Committee of the University of KwaZulu-Natal (UKZN) (REF: 345/13) and the Hospital Director of the Kenyan Medical Education and Research body (Annexure 8 pg.118 and Annexure 9 pg.119). Thereafter, an email was sent to the Nursing Director (matron) of the hospital seeking permission to carry out the research in the hospital. The email included the approval letter from the Hospital Director of the Medical Education and Research body, the information and consent sheet and the contact details of the researcher. Once the matron's approval had been granted, the researcher had a personal meeting with the person in charge of the OPD where the ethical approval letters, matron's letter, information sheet and questionnaire

were presented. In addition, the referral and data collection process was discussed, which resulted in scheduling continuous medical education for all the medical workers in OPD in regards to use of mhGAP treatment guidelines, specifically for depression.

The researcher recognized the vulnerability of potential participants. Before data collection commenced, the researcher and practitioners established a referral system, which was sanctioned by hospital management. This was achieved through presentations of the proposal and a meeting with the heads of the outpatient and chaplaincy departments to map the referral process according to the WHO mhGAP guidelines (2010). It was agreed that participants who scored less than 17 in the BDI-II scale were to be referred to a chaplain counsellor, while those who scored 17 and above would be referred to the CO for administration of the psychotropic medication and counselling (Annexure 3, pg.100). A one day orientation related to the agreed upon referral process was done with all outpatient COs, medical officers and the counsellors in the chaplaincy department and included a review of BDI-II scoring; treatment and referral in response to the scores achieved and WHO (2010) mhGAP treatment guidelines.

To enhance the reliability of the study findings, two field workers were recruited and trained, specifically on the steps of the data collection process outlined below focusing on identifying potential participants, providing the information and consent sheets and processing the completed questionnaire. In addition, the training included a review of information related to depression, communication skills (specifically empathic responding), confidentiality and potential participants' rights to refuse to participate. The field workers were general nurses, as few nurses with a specialty in mental health in the country are mainly located in specialized mental health facilities and were unavailable. The recruited field workers had, however, a basic training in mental health in the form of a diploma qualification in community health nursing (Kenya Registered Community Health Nursing- Basic).

The duration of data collection was dictated by either achieving the 200 sample size or the elapsing of the two weeks period. Data was collected for a period of two weeks and a sample of 101 achieved. The data collection process took place in seven steps as they related to each

potential participant. The process was designed to fit in with the usual waiting periods and did not interfere with the accessing of services.

Step 1: Potential participants retrieved their files from records and had their vital signs recorded by a nurse. The field worker had identified the potential participants according to the correct age bracket (18-24) by going through the files before the observation nurse called them out.

Step 2: While the participants who had been identified were waiting to see the CO, one of field workers approached them and introduced themselves. The field worker then clearly explained the purpose of the research study which was to establish the incidence of depressive symptoms and their association with physiological symptoms and other demographic variables among emerging adults attending the hospital outpatient unit. The potential participants were informed that by conducting this research, it would help in identification and provision of treatment to individual with depressive symptoms which may contribute to suicide prevention. They then provided the potential participant with an information sheet in the preferred language, either Kiswahili or English (Annexure 6, pg. 114) and remained with the person to clarify any points and answer questions. Potential participants who agreed to be part of the study were asked to sign the consent form, which were then placed by the field worker in sealed box for safe keeping.

Step 3: The field worker thereafter provided the participant with a self-reported questionnaire (Annexure 1, pg.88) and remained with the participant until the questionnaire had been completed. The participants had plenty of time to complete the questionnaire while they were waiting to be called to the CO's consultation rooms.

Step 4: Once the completed questionnaire had been handed to the field worker, there were two potential courses of action. The field worker checked the questionnaire to ascertain whether Section A, item 2 and Section B had been completed.

- Those questionnaires with no ticks in Section A, item 2and blankSection Bs were posted in a sealed box and the participant thanked for their time.

- Those questionnaires with ticks in Section A, item 2 and a completed section B resulted in the field worker escorting the participant to the researcher.

Step 5: The researcher, a mental health nurse with two and a half years' experience in mental health nursing and currently studying for a Master's degree, was stationed in one of the rooms in the OPD and scored Section B of the questionnaires (BDI-II scale). The score and the meaning of the score were then explained to the participant, who was then advised if referral was needed and, if so, of the referral path as agreed with hospital management. The proposed pathway that had been agreed upon suggested that participants who scored less than 17 would, in accordance with the WHO mhGAP (World Health Organization, 2010) treatment guidelines, be referred for counselling and permission would be requested from them to be referred (Annexure 5,pg.104). Those who scored greater than 17 were advised to be referred to the CO and their permission sought to do so (see Annexure 3, pg. 100). Due to the nature of the research setting, the CO was mandated to prescribe and refer to the psychiatric set up as the MO on duty covers the OPD and casualty.

Step 6: A referral note was issued to the field worker who accompanied the participant to the CO or the Chaplin counsellor (Annexure 3, pg.100). The scores were noted on the participants' files by the researcher. Participants, who refused to be referred, even after being advised, were thanked and their refusal noted in their file with their signature acknowledging refusal. All participants were handed a health education pamphlet on depression to take home. This was available in both Kiswahili and English (Annexure 4, pg.101).

Step 7: Finally, the completed questionnaires were placed in a sealed box.

3.7. Data management and analysis and dissemination of information

Data was analysed using the Statistical Package for the Social Sciences (SPSS for Windows) version 21 (Pallant, 2013). Before information from the questionnaire was entered into SPSS, a codebook was prepared to ensure that the information obtained from each participant was in a format that can be understood by SPSS (Pallant, 2013). Numerical codes were assigned for each response and then entered into SPSS. Screening the data file for errors was done by checking for

outliers and missing values. Descriptive analysis included frequencies, distribution and measures of central tendency. Based on the data distribution, a non-parametric test to compute multivariate analysis was arrived at (Polit & Beck, 2008). Data was saved on a computer that had a special login code known only by the researcher. Completed questionnaires were scanned and saved to disk, as was the data in the SPSS program, and stored in the research supervisor's office for a period of five years. The questionnaires were then shredded and data erased from both the program file and the recycle bin. The results will be presented to the hospital management in a written report and the completed thesis will be handed in to UKZN. In none of the reports will the researcher identify the names of the hospital, staff or any participants.

3.8. Ethical considerations

Ethical clearance was obtained from the Biomedical Research Ethics Committee (BREC) at the University of KwaZulu-Natal and the Hospital Director of the Medical Education & Research body in Kenya (Annexure 8, pg.118 and annexure 9, pg.119). Permission to carry out the study was received from the nursing director (matron) of the selected hospital and the unit manager in charge of the Outpatient Department at the research setting (Annexure 10, pg. 120).

The researcher recognized that participants were a potentially vulnerable group and proposed strategies to reduce risk. Initially, this involved the implementation of a hospital sanctioned referral pathway that could be achieved before the participant left the hospital. Due to the nature of the study and the ethical obligation to do no harm, confidential information related to initial 'illness and complaint' and scores on the Beck's depression scale were shared by the researcher with practitioners within the referral pathway. The researcher had to divulge this information and to whom the data belonged in order to be able to facilitate positive health care outcomes and respond in a responsible and ethical manner to identification of depressive symptoms. Anonymity of participants may have been lost as information was shared within the referral pathway and the presence of depressive symptoms noted in their files. The researcher disclosed these 'risks' when seeking permission from potential participants through the contents of the information sheet (Annexure 6, pg.114). The information sheet explained the scoring of the depression scale and proposed referral should a positive score be achieved. In addition, the

information sheet emphasized the participants' right to refuse to participate, and/or refuse referral should they achieve a positive score on Beck's Depression Inventory Scale. Although information was recorded in participants' files, these are legal and confidential documents, which are bound by the existing protection of information within hospital policy. Field workers were specifically oriented to the importance of confidentiality.

The researcher, a mental health nurse, counselled participants and provided information related to depression in order to achieve positive health care outcomes. Before the completed questionnaires were posted in the sealed box, the voluntary nature of participation was emphasised along with participants' right to withdraw from the study without any negative consequences related to their accessing services at the research site. The information sheet ensured full disclosure as to the nature of the study and potential treatment recommendations (see Annexure 6, pg.114). All participants who agreed to participant in the study were required to sign a consent form.

3.9. Summary of the chapter

This chapter outlined the research methodology used in the study, the data collection process and research instrument that was used, as well as their content validity and reliability. It also included a detailed discussion of the ethical considerations related to the research process. Lastly, it provided a brief outline of the data analysis process, which will be discussed in greater depth in Chapter four. Chapter four outlines the data findings presentation.

CHAPTER FOUR

PRESENTATION OF DATA

4.1. Introduction

This chapter presents the findings of the study. The purpose of the study was to explore and describe the incidence of depressive symptoms and associated person variables (physiological and other demographic variables) among the emerging adults attending a specific general health care outpatient facility in a general hospital in Kenya. Data was collected using a self-reported questionnaire consisting of two sections, A and B. Section A consisted of two items; item 1 obtained demographic information (age, gender, relationship status, employment status, and educational success) and item 2 obtained data indicating the presence of specified physiological symptoms. Section B measured the participants' levels of depression using the Beck Depression Inventory Scale, Version two (BDI-II). Depression scores were totalled and categorized according to Beck's categorization (detailed explanation is given in Chapter 3, point 3.5.2. pg. 38).

The presentation of the results in this chapter follows the flow of the self-report questionnaire (Annexure 1, pg 88). The presentation begins with a description of the sample and its representativeness, followed by the physiological symptoms indicated by the participants. It continues with cross tabulations of physiological symptoms to identify possible groupings within participants' selections, the participants' BDI-II scores and associations between demographic variables and depression scores. It concludes by correlating the total of each participant's physiological symptoms and their BDI-II score. Throughout the chapter, the results of this study are followed by a presentation of other research results to allow for comparison with other international and, where available, local studies. A full, discussion of the results is presented in Chapter five.

Data analysis was done using the Statistical Package for Social Sciences (SPSS) for Windows, Version 21, using a code book. Data was analysed using descriptive statistics and measures of

association. Descriptive statistics included mean, mode, median, minimum and maximum, skewness, kurtosis, quartiles, graphic representation (bar chart) and cross tabulation (Pallant, 2013; Polit & Beck, 2008). Skewness is an indication of the symmetry of the distribution, while kurtosis indicates its peakness, which aids in determining the use of non-parametric tests for measures of association (Pallant, 2013). Non-parametric tests were used, therefore, not only due to the small sample achieved (n=84), but also because of the markedly skewed distribution of data, specifically in the demographic variables of age and educational success, and physiological symptoms (Polit & Beck, 2008). It is suggested that non-parametric techniques are more robust when assumptions of normal distribution are not met (Pallant, 2013; Polit & Beck, 2008).

The level of significance indicating a strong relationship between two variables was a value equal or less than .05 (p=<.05) (Pallant, 2013). Spearman's rho correlation coefficient was used to explore the existence of positive or negative relationships and their strengths between scores. A correlation of 0 indicates lack of relationship, while a correlation of 1 indicates a perfect correlation, regardless of the direction (Pallant, 2013). Cohen (1988), cited in Pallant (2013, p.139), provides the following guidelines for interpretation of strength of values: rho= .10 - .29 connotes a small correlation, rho= .30 - .49 connotes a medium correlation, while rho= .50 - 1.0 connotes a large correlation.

4.2. Description of the sample and its representativeness

A cross sectional survey was carried out on emerging adults, 18-24 years of age, attending a hospital outpatient department in Kenya within a two week data collection period. A total sample of 101 persons met the age and language criteria, who were given the questionnaire to complete. Of these, eighty four (n=84) met the additional inclusion criteria by completing item 2 in Section A, thus indicating that they had experienced one or more of the 17 physiological symptoms listed. Only those who completed item 2 were considered for analysis as, based on the study objectives, a comparison was to be made on the presence of physiological symptoms and depression. All of the 84 participants completed Section B, and thus a final sample of eighty four (n=84) was achieved.

The frequency of all demographic variables is outlined in Table 4.1 below.

Table 4.1: Frequency of demographic variables

Demographic variables	Attribute	frequency	percentage
Age	**19**	**4**	**4.8%**
	20	**13**	**15.5%**
	21	**12**	**14.3%**
	22	**11**	**13.1%**
	23	**17**	**20.2%**
	24	**27**	**32.1%**
Gender	**Male**	**31**	**36.9%**
	Female	**53**	**63.1%**
Employment status	**Employed**	**5**	**6.0%**
	Self-employed	**8**	**9.5%**
	Student	**58**	**69.0%**
	Not employed	**13**	**15.5%**
Relationship status	**Married**	**4**	**4.8%**
	Living with my partner	**5**	**6.0%**
	In a relationship but not living together	**31**	**36.9%**
	Not in a relationship	**44**	**52.4%**
Educational success	**University degree**	**6**	**7.1%**
	Diploma	**54**	**64.3%**
	Certificate holder	**12**	**14.3%**
	Form four	**11**	**13.1%**
	Standard eight	**1**	**1.2%**

4.2.1. Gender

As reflected in Table 4.1 above, a larger proportion of participants were female (n=51, 63.1%) than male (n=31, 36.9%). The gender distribution within the study sample is not representative of Kenyan youth statistics where gender distribution is relatively equal, male 4,148,153 and female 4,147,896 (Government of Kenya, 2010). However, the reason that there were many more females in the sample may be attributed to local research findings which indicate higher female utilization of health care services as opposed to their male counterparts (Ndetei et al., 2010)

4.2.2. Age

Within the participant age range of 18-24 years, the youngest participants were 19 and the oldest, 24. One can see from the table that over 50% of participants are aged 23 and 24. Measures of central tendency, Md= 23, Mo= 24, are indicative of upper age parameters within the group. In addition, the skewness statistic (-.450) is negative and more than double the standard error of skewness (.263), the negative skew meaning that more participants fall within the higher age parameters, specifically 24 years.

4.2.3. Highest educational level

Briefly, to contextualise results, the age for compulsory primary education in Kenya is between 6-14 years. Thereafter, a Kenyan child proceeds to the optional four year secondary education and if this is achieved, they can engage in tertiary education (Kenya Institute for Public Policy Research and Analysis, 2013). Current Kenyan statistics (2011) indicate compulsory primary enrolment being 9,857,900 as compared to voluntary secondary, enrolment (1,767,700), diploma and/or certificate enrolment (411,000) and university enrolment (198,300) (Government of Kenya., 2014). The diploma and/or certificate qualification mainly encompass the technical, industry, vocational and entrepreneurship training (TIVET) (Kenya Institute for Public Policy Research and Analysis, 2013), with the diploma level being considered to be higher than the certificate level. The 2011 statistics reveal that 29.7% (11.89 million) of the country's population are students enrolled in various learning institutions (Kenya Institute for Public Policy Research and Analysis, 2013; Kenya National Bureau of Statistics & ICF Macro, 2010).

The high number of emerging adults engaging in tertiary education can be attributed to Kenyan government measures to increase enrolment in tertiary education in form of loans and bursaries, and increased access to higher education by expanding self-sponsored programs to all public universities (Kenya Institute for Public Policy Research and Analysis, 2013).Self-sponsored programs (also called parallel degrees) were as a result of public universities admission limitation of approximately 10,000 government sponsored students yearly (Kenya Institute for Public Policy Research and Analysis, 2013; Njonjo, 2010). In the recent past also, there has been

an increase in number of registered universities and colleges (currently there are seven public universities, 15 constituent colleges and 23 private universities) (Kenya Institute for Public Policy Research and Analysis, 2013).

Research results revealed the majority of participants had achieved a diploma education level (n=54, 63.3%), followed by participants with a certificate (n=12, 14.3%), form four education (n=11, 13.1%) and university level education (n=6, 7.1%). The minority reported having only achieved compulsory primary education 1.2% (n=1). These statistics are representative of national figures in that they reflect firstly, that all youth achieve compulsory primary education. Secondly, not all youth engage, and or proceed from, form four education. Thirdly, youth who do engage in further education predominantly achieve a diploma level qualification (Government of Kenya, 2010).

4.2.4. Employment status

The majority of the participants (n=58, 69%) indicated that they were currently students, which is age appropriate (Patel, Flisher, Hetrick & McGorry, 2007). This is in keeping with current national statistics which indicates that young adults, aged 20-24, are commonly engaged in the completion of tertiary education. (Government of Kenya, 2010; Kenya Institute for Public Policy Research and Analysis, 2013)Although these participants are essentially unemployed, their engagement in tertiary education is seen as 'purposeful activity' and distinct from unemployment.

Among the remaining 26 participants, half were unemployed and half employed, 13 (15.5%) respectively. Within the employed group 5 (6%) worked within the open labour market and 8 (9.5%) were self-employed. This is in keeping with national statistics (2013) that indicate 19% of formal employment in the country, the remaining being informal or casual employment (Kenya Institute for Public Policy Research and Analysis, 2013). As per the most recent employment statistics in Kenya (2009), the employment ratio for the working age population (15-64) is 69% and of this total figure, the youth (15-34 years) account for 49% (Kenya Institute for Public Policy Research and Analysis, 2013).

Though the country has made remarkable strides in improving literacy, it is becoming increasingly clear that there is more to just providing a pool of literate citizens (Kenya Institute for Public Policy Research and Analysis, 2013; Njonjo, 2010). Recent findings revealing that graduates take approximately five years to secure a job exposes the county's current limited and competitive job market where individuals are required to prove possession of employment skills and not only their education qualification (Etale, 2013; Oginde, 2014; United Nations Development Programme, 2013). The possible implication of unemployment and depression is discussed in Chapter five, (point 5.2.3 pg.69).

4.2.5. Relationship status

Although it has been argued that relationship status is representative of the emerging adult population, analysis of the questionnaire revealed that slightly more than half of the sample, (52.4%, n=44) were not involved in a relationship. A third (36.9%, n=31) indicated that they were in a relationship, but not cohabiting, and a small percentage of participants were living with their partners (6.0%, n=5) or were married (4.8%, n=4). Current local statistics indicate a small percentage of the emerging adult group are married. National statistics indicate that 87% of females and 99.5% of males in the 15-19 age group are unmarried and 37% of females and 82.6% of males within the 20-24 age group are unmarried (Kenya National Bureau of Statistics & ICF Macro, 2010). The percentage of persons who remain unmarried, however, decreases with increasing age as people marry later in life. The reports of this organisation further reveal that females enter into a relationship earlier than their male counterparts, with over 51.5% of females being in a relationship by the age of 18 years and getting married by 20. The distribution of the participants with respect to their relationship status within this study sample is similar to the national figures in that the majority of Kenyan youth aged 15-25 are neither married nor in a relationship.

4.3. Physiological symptoms identified by participants

This section presents a review of the physiological symptoms experienced by participants as indicated in their responses. It incorporates a review of how many of the selected 17

physiological symptoms each individual was experiencing, as well as the most common symptoms experienced. Table 4.2 below displays the frequency distribution of the physiological symptoms indicated, followed by number of physiological symptoms selected and concluding with results of cross tabulations indicating common groupings, coexistence of physiological symptoms.

Table 4.2: Frequency distribution of physiological symptoms

Physiological symptom	Yes	
	n=	Percentage % of sample (n=84)
Headache	46	54.8
General fatigue	26	31.0
Cough	26	31
Changes in appetite	22	26.2
Changes in sleep pattern	18	21.4
Ulcers	16	19
Stomach ache	14	16.7
Chest pain	12	14.3
Lack of energy	12	14.3
Backache	10	11.9
Musculoskeletal pains	9	10.7
Dizziness	8	9.5
Dyspnoea	4	4.8
Increased blood pressure	3	3.6
Asthma	3	3.6
Diarrhoea/constipation	3	3.6
Palpitations	3	3.6

4.3.1. Number of physiological symptoms experienced by participants

As presented in Chapter three (point 3.5.1.2, p 37), a total of 17 physiological symptoms were presented as options in Section A, item 2, and participants were requested to indicate which of

these they were experiencing. The majority of the participants (76.2%, n=64) selected three or less symptoms, with 20% (n=17) selecting three, 25% (n=21) selecting two and 31% (n=26) selecting only one. However, two of the participants indicated that they were experiencing nine of the 17 physiological symptoms. Participants who selected between four and nine symptoms constituted just less than a quarter of the total sample (23.8%, n=20), with nine participants (11%) selecting four symptoms, two (2%) selecting five symptoms, one (1%) selecting six symptoms, three (4%) selecting seven and eight symptoms and two (2%) selecting nine symptoms (Annexure 13E pg. 125).

The clustering of results around the lower rather than greater number of physiological symptoms is confirmed by the histogram representation (Annexure 13E, page 125) and the positive skewness statistics (1.538) being double the std error of skewness (.263), as well as measures of central tendency and distributions (Mo=1, Md=2, 25th percentile=1, 75th percentile=3).

4.3.2. Most common physiological symptoms

Table 4.2 above also presents, in descending order, a summary of the frequency of each physiological symptom. Out of the 17 physiological symptom options, headache was the most frequent selection (54.8%, n=46) and the least frequent selections (3.6%, n=3) were palpitations, increased blood pressure, asthma and diarrhoea/constipation

Headache (54.8%, n=46) was not only the most frequently selected symptom, it was also selected almost twice as often as the next most frequently selected symptoms, general fatigue and cough, each selected by almost a third of the participants (31%, n=26). In relation to international literature, the research findings indicate that of the seventeen symptoms selected, the top three (headache, fatigue and cough) represent the most common physiological symptoms that the majority of patients present with in health care settings (American Psychiatric Association, 2013). Local studies conducted in SA and Cameroon also indicate headache, general malaise and respiratory symptoms being commonly reported in health care settings (Keugoung et al., 2013; Ngcobo & Pillay, 2008).

The next most commonly selected symptoms were changes in appetite (26.2%, n=22) and changes in sleep patterns (21.4%, n=18), followed by ulcers (19%, n=16), stomach ache (16.7%, n=14), chest pain (14.3%, n=12) and lack of energy (14.3%, n=12). The remaining symptoms selected by less than an eighth of participants included backache (11.9%, n=10), musculoskeletal pain (10.7%, n=9), dizziness (9.5%, n=8) and dyspnoea (4.8%, n=4).

Various authors cite body pain (headache, backache, musculoskeletal pain and chest pain) as a frequent complaint among depressed individuals, a symptom (headache) that was also frequently selected in this study (American Psychiatric Association, 2013; Haftgoli et al., 2010; World Health Organization, 2010).

Physiological symptoms commonly selected in this study (changes in appetite (n=22), changes in sleep pattern (n=18) and lack of energy (n=12) are cited to be among the core vegetative symptoms of moderate to severe depression (American Psychiatric Association, 2013; World Health Organization, 2010). The presence of these vegetative symptoms among patients who score for depression are similar to other studies conducted in China and USA (Simms, Prisciandaro, Krueger & Goldberg, 2012; Zhu, Ou, Geng, Zhang, Ye, Chen & Jiang, 2012). Findings of research conducted by Simms and colleagues (2012) revealed core vegetative symptoms of depression reported by participants to be, 'lacked energy or felt tired all the time' (14.1%), 'had trouble falling asleep' (16.1%) and 'trouble staying awake' (15.0%).

Cardiovascular symptoms (increased blood pressure and palpitations), asthma and gastrointestinal distress (diarrhoea or constipation) were least selected 3.6% (n=3). These symptoms are noted in literature to be less reported among patients, unlike the painful physiological symptoms (American Psychiatric Association, 2013; Haftgoli et al., 2010; World Health Organization, 2010). Various authors have argued that these symptoms are more suggestive of other mental disorders; notably anxiety disorder (Kroenke et al., 2010; Zhu et al., 2012).

In summary, recognition of depressive symptoms can be based to a larger extent, on the painful symptoms, specifically, headache. In addition to this, core vegetative symptoms, such as lack of

energy, general fatigue, changes in appetite and changes in sleep pattern, identified within literature and in this study as strong indicators of moderate to severe depression can be early indicators of depression in general health care settings(American Psychiatric Association, 2013; World health Organization, 2013).

4.3.3 Physiological symptom clusters

Cross tabulations were done to determine the extent of physiological symptom clusters in order to establish possible co-morbid presentations between physiological symptoms. Cross tabulation within SPSS is possible with three variables at a time only. The seventeen physiological variables were therefore exported to Microsoft Excel and manually analysed by visual cross tabulation of symptom cluster greater than three. This process began with the production of spread sheets to allow for an inspection of physiological symptoms displayed on the horizontal axis and individual participants' selection on the vertical. The physiological symptoms were abbreviated as S (symptom), and each symptom given a number (S1 to S17) in the order displayed in Section A, item 2 of the questionnaire (Annexure 1, pg. 89). The data was then rearranged onto a new spread sheet to display results of the total number of physiological symptoms selected in descending order (Annexure 16A pg.128). Only the physiological symptoms that were most commonly selected by participants were displayed, and only participants who selected more than two physiological symptoms (n=59) were considered. A second spread sheet was computed to display the most common selections of participants who had indicated more than three physiological symptoms (Annexure 16B, pg. 131).

As indicated in these spread sheets (Annexure 16A and 16B), participants' selections of physiological symptoms varied throughout the sample and symptom clusters were minimal. Physiological symptoms that had little coexistence with others included palpitation, diarrhoea/constipation, asthma, increased blood pressure and dyspnoea. However, as displayed in Annexure 16B (pg. 131) headache was the most common physiological symptom that coexisted with others. Clustering of symptoms however did not always include headache. A symptom cluster was determined by 2 or more participants indicating the same set of symptoms. A description of these clusters follows.

The greatest clustering of symptoms totalled six, and included four participants. Within this there were three distinct clusters. Cough was included in all three. Musculoskeletal pain, chest pain, stomach-ache, changes in appetite, headache and general fatigue were included in two of the three cluster sets. Backache, sleep disturbance and lack of energy were present in one cluster only.

Two distinct clusters of five symptoms were observed in three participants. Headache, backache and cough were included in both clusters. Changes in appetite, stomach ache, chest pain and lack of energy were only present in one cluster.

Symptom clusters that included four physiological symptoms were extensive and are displayed in Table 4.3.below. Clustering of four physiological symptoms occurred among nine participants, and revealed 12 distinct clusters patterns. As indicated in Table, 4.3, no symptom appeared in all the 12 clusters. However, headache and cough were included in nine clusters. Lack of energy, backache and general fatigue were included in three clusters. Musculoskeletal pain and changes in appetite were included in four cluster sets. Stomach ache and sleep disturbance were present in one cluster only.

Table 4.3: Combinations of four physiological symptoms

Cluster ID	Symptoms within cluster	n
1	Headache, backache, general fatigue, musculoskeletal pains,	4
2	Headache, general fatigue, cough, lack of energy	3
3	Headache, backache, general fatigue, changes in appetite	3
4	Headache, backache, cough, lack of energy	3
5	Headache, cough, changes in appetite, lack of energy	3
6	Headache, backache, musculoskeletal pain, lack of energy	2
7	Headache, backache, musculoskeletal pain, cough	2
8	Headache, backache, general fatigue, cough	2
9	Headache, musculoskeletal pain, general fatigue, cough	2

10	**Backache, cough, changes in appetite, lack of energy**	**2**
11	**Cough, changes in appetite, lack of energy, sleep disturbance**	**2**
12	**Cough, stomach ache, changes in appetite, lack of energy**	**2**

As explained above, clusters of three symptoms and below were cross tabulated within SPSS. A visual cross tabulation was initially done to examine clusters of three and two symptoms among the participants and findings were then confirmed using the SPSS cross tabulation.

A summary of the findings from both visual and SPSS cross tabulation is displayed in Annexure 16C (pg. 132). The following findings were yielded from the cross tabulation: The clustering of three symptoms occurred among twenty one participants. Within this there were twenty three distinct clusters, but no symptom appeared in all the twenty three cluster sets. However general fatigue, was included in fifteen of the twenty three clusters, headache was included in twelve clusters, lack of energy and cough were included in eight, while changes in appetite, chest pain, backache, stomach ache, musculoskeletal pain and sleep disturbances were included in seven, six, four, three and two of the twenty three cluster sets respectively. Ulcers appeared in only one cluster.

Clusters of two symptoms were noted among fifty nine (n=59) participants whose total number of physiological symptoms were greater than two. Analysis of instances occurring in more than six participants indicating the same two physiological symptoms yielded the following results: general fatigue and headache (20.2%, n=17), headache and cough (15.5%, n=13), changes in appetite and cough (14.2%, n= 12), sleep disturbance and headache (11.9%, n=10), headache and changes in appetite (10.7%, n=9), chest pain and cough (10.7%, n=9), headache and backache (9.5%, n=8), chest pain and headache (9.5%, n=8), sleep disturbance and general fatigue (8.3%, n= 7), headache and dizziness (8.3%, n=7), general fatigue and ulcers (8.3%, n=7), headache and fatigue (8.3%, n=7), backache and general fatigue (7.1%, n=6) and headache and musculoskeletal pain (7.1%, n=6). From the above fourteen cluster set, headache was included in eight of the fourteen cluster sets, and cough and general fatigue were included in three of cluster

sets. Changes in appetite, sleep disturbance, chest pain and backache were included in three of the fourteen cluster sets. Musculoskeletal pain, dizziness and ulcers were represented in one cluster each.

The various clustering of two, three and four physiological symptoms revealed the existence of nine physiological symptoms (headache, backache, musculoskeletal pain, general fatigue, cough, chest pains, stomach ache, changes in appetite, and lack of energy) that were selected by the majority of the participants. Of these physiological symptoms, headache, and cough appeared most in the clustering. Bohman and colleagues (2010) argue that it is not only the number of physiological symptoms that increase the severity of depression, but also the clustering of certain physiological symptoms. Symptom clustering within this study bear similarity with a study conducted in Sweden which aimed to explore whether particular somatic symptoms were predictive of depression. The study found clustering of painful symptoms, respiratory symptoms and feeling chilly were more predictive to development of depression (Bohman, Jonsson, Päären, von Knorring, Olsson & von Knorring, 2012).

4.4. Becks Depression Scale (BDI-II) scores

As indicated in Chapter 3 (point 3.5.2, p 38), the existence of depression was measured using Beck's Depression Inventory Scale II (BDI-II). Participants' scores were classified into three major groups: low depression, whereby scores of 1-10 signified normal ups and downs and11-16, mild mood disturbance; moderate depression, whereby scores of 17-20 signified borderline depression and 21-30 moderate depression; and significant depression, whereby scores of 31-40 signified severe depression and 41-63, extreme depression.

The majority of the participants (81%, n=68) scored for low depression, with 60.8% (n=51) scoring between 1-10, signifying normal ups and downs, and 20.2% (n=17) scoring 11-16 indicating mild mood disturbances. Only 19% (n=16) of participants scored within the moderate depression range, with 7.1 % (n=6) falling into the range of borderline clinical depression (scores 17-20) and 11.9% (n=10) into the range of moderate depression (scores 21-30). Global depression rates among the youth are estimated to be between 4.8%-42.3%, (Chen et al., 2013;

Christensson, Vaez, Dickman & Runeson, 2011; Naidoo & Schlebusch, 2014b; Ndetei et al., 2010). This study finding indicated a rate within this global estimate. No participant achieved a score indicating significant depression. Measures of central tendency (Mo=1, Md=1) and distributions (25^{th} percentile=1.00, 50^{th} percentile=1.00 and 75^{th} percentile=2.00) confirmed a positive skewness of 1.290 double the std error skewness (.263), indicating that participants' scores tended to cluster around the lower scores, the majority of the participants scoring less than 2 (ranged in the low depression).

4.4.1. Response to item 9: suicidal thoughts

Part of the ethical consideration was to ensure individual positive outcomes. Interventions to persons with a higher depression score (>17) or presenting with suicidal thoughts were to be managed according to WHO mhGAP intervention guidelines (Annexure 5 pg. 104). Item 9 in the BDI scale (Annexure 1, pg 91) specifically asked participants to indicate whether they had experienced suicidal thoughts, giving them a choice of four possible responses; "I don't have any thoughts of killing myself", "I have thoughts of killing myself, but I would not carry them out", "I would like to kill myself" and/or "I would kill myself if I had a chance".

Annexure 16D (pg.133) displays the distribution of scores on item 9 of BDI scale. Twelve (n=12, 14.2%) of participants responded to having suicidal behaviour. Of these, ten (n=10, 83.3%) had moderate depression (four had borderline depression of a score between 17-20 and six had moderate depression of a score between 21-30) and two (n=2, 16.7%) had low depression (one with normal ups and downs, a score of 0-10 and one with mild depression of a score between 11-16).

Of the participants who scored for moderate depression (score of 21-20), four indicated having thoughts of killing themselves, but were not willing to carry them out, and two stated they would like to kill themselves. Three participants with borderline depression indicated having thoughts of killing themselves but would not carry them out, while one responded to 'I would kill myself if I had a chance'.

The two participants who scored for low depression (mild depression and normal ups and down) all selected the response; “I would like to kill myself”.

Findings within this study are slightly higher when compared to other international studies citing suicidal thoughts among the youth being between 2.3%- 8% (Cash & Bridge, 2009; Crosby et al., 2011; Nock, Green, Hwang, McLaughlin, Sampson, Zaslavsky & Kessler, 2013; World Health Organization, 2014). However, similarity can be drawn from other studies conducted in low-middle income countries that estimate suicide thoughts within this age group being 10%-34.2% (Fatiregun & Kumapayi, 2014; Khasakhala et al., 2012; Ndetei et al., 2009; Randall, Doku, Wilson & Peltzer, 2014).

4.5. Associations between demographic variables and BDI-II scale scores

Associations were computed between demographic categories, as the independent variables, and BDI-II scores as the dependent variable. The Mann-Whitney U test was used to test for associations between the two independent groups on a continuous measure through converting continuous variable scores to ranks and evaluating whether the ranks in the two groups differed significantly (Polit & Beck, 2008). The Mann-Whitney U test was used to establish gender associations with BDI-II scores. In addition, the z-approximation test for samples greater than 41 was used to reveal correlation ties within the data (Pallant, 2013). The Kruskal-Wallis test was used to test for associations on continuous variables where comparisons were required for more than two groups and for converting the scores of each group into rank and means for easy comparison (Pallant, 2013). These included age, educational success, relationship status and employment status. Although age is numerical, in this study each age between 18-24 was perceived as an independent variable and therefore represented one category, with a total of six categories (19, 20,21,22,23 and 24) as no participant recorded an age of 18 years (Pallant, 2013).

Statistical results revealed significant associations and score distribution could suggest possible trends. These are reported below with respect to each demographic variable.

4.5.1 Gender and BDI-II score

Results indicate no statistical significant associations or differences between depression scores for males and females (U= 747.5). This is confirmed by a z- approximation test value of -.78 and a significance level of p=.43. In addition, the median score of both males and females in relation to the BDI–II scale are identical (Md= 1) as are the computed percentiles (25^{th} percentile= 1; 50^{th} percentile= 1; 75^{th} percentile= 2), confirming no notable difference in gender and scores achieved on the BDI-II scale.

This finding is similar to previous studies that indicated no statistical difference in gender and depressive symptoms (Chen et al., 2013; Othieno et al., 2014), but contrary to others that found females having higher depression scores than males (Dihigo, 2014; Zhu et al., 2012). Chen and colleagues (2013), who also found no statistical difference between depression and gender in their study, argue lack of difference on depression to be due to similar challenges and opportunities faced by both genders.

4.5.2 Age and BDI-II score

Results revealed no statistically significant association between age and BDI-II score, χ^2 (5, n=84) =5.033, p=0.412 (Pallant, 2013). Although there was no significant association, the measures of distribution of scores did indicate a possible trend. As displayed in Table 4.4 below, participants aged 20 recorded the highest BDI-II median score (2.00) and participants aged 21 recorded a higher than average BDI-II median (1.5) and significantly higher 25th and 75th percentiles of 1 and 3 respectively. These results suggest that emerging adults aged 20 and 21 years may be more vulnerable to higher depression scores than others.

This study finding is similar to previous studies that indicate significant difference in youth age group and depressive symptoms, (Akhtar-Danesh & Landeen, 2007; Chen et al., 2013; Khasakhala et al., 2013; Othieno et al., 2014). A study conducted by Akhtar-Danesh and Landeen (2007) revealed the highest prevalence rate (14.3%) of depression among the younger age group (20-24 years). Similar findings were yielded in the Kenyan study by Othieno and colleagues (2014) that showed no year difference among the youth age group sampled. Although

these studies indicate association of younger age and depression, they do not suggest association on a particular age in the emerging adult category.

Table 4.4:Kruskal-Wallis H test results, median and percentiles of each age group

	Age	N	Median	75th percentile	
BDI-II score	**19**	**4**	**1.00**	**1.75**	**Chi square= 5.033**
	20	**13**	**2.00**	**2.50**	**df=5**
	21	**12**	**1.50**	**3.00**	**Asymp. Sig.= .412**
	22	**11**	**1.00**	**2.00**	
	23	**17**	**1.00**	**2.00**	
	24	**27**	**1.00**	**1.00**	
	Total	**84**			

4.5.3 Relationship status and BDI score

There was no statistically significant association between BDI-II score and relationship status, with χ^2 (3, n=84) =1.808, p=.613.

Participants living with a partner did however record a higher median (Md=2) than other relationship options (Md=1.5 for married and Md=1 for not in a relationship and in a relationship, but not living together). Similarly, the percentile scores were higher for participants living with a partner (25^{th} percentile=1, 75^{th} percentile= 4) than married (25^{th} percentile=1, 75^{th} percentile=2.75), not in a relationship (25^{th} percentile=1, 75^{th} percentile =2), in a relationship, but not living together (25^{th} percentile=1, 75^{th} percentile =2). This distribution of scores suggests a possible trend that unmarried participants living with partner have a higher score for depression than other relationship status.

These findings contrast with international and local study findings that revealed a higher rate of depression among those divorced, widowed and single (Naidoo & Schlebusch, 2014b;Nock, 2014; Othieno et al., 2014). However, similarity of this study's results indicating a higher

depression score for individuals cohabiting with their partner can be drawn from other studies conducted in Ethiopia and Canada (Akhtar-Danesh & Landeen, 2007; Ali & Zuberi, 2012). Various authors argue that social stress resulting from domestic violence, bad relationship with in-laws, dissatisfaction with the relationship, power imbalance and communication gaps between young adult spouses as contributing factors to depression among those living with their partner (Ali & Zuberi, 2012; Ngcobo & Pillay, 2008).

4.5.4 Employment status association

There was no statistical significance between BDI-II score and employment status (not employed, student, self-employed and employed) with the BDI II score χ^2 (3, n=84) =.317, p=.957).

However, although the median score for all categories of employment status were similar, the percentile scores for those who were employed were different from other groups. The employed category scored a higher 75th percentile (Md=1, 25th percentile= 1, 75th percentile= 3) than the other categories; students (Md=1, 25th percentile= 1, 75th percentile=2), self-employed (Md=1, 25th percentile=1, 75th percentile=2.75) and not employed (Md=1, 25th percentile=1, 75th percentile=2). This indicates that employed participants scored higher on depression than students, self- employed and not employed.

Results in this study contrast with local and international studies that point to an inverse relationship between depression and employment status (Keugoung et al., 2013; Naidoo & Schlebusch, 2014b;World health Organization, 2013). Nevertheless, the results of Gulliver and colleagues (2010) bear similarities with the current study findings. These authors and Cheng and colleagues (2013) are of the opinion that development of depression among the emerging adults could result from financial changes and adjustment in adult roles.

4.5.5 Educational level and BDI-II score

Statistical findings revealed that there was no significant difference on the depression score and education across the five levels of education χ^2 (4, n=84) =4.28, *p*=.370.

However, participants with university education recorded a higher 75th percentile (Md=2, 25th percentile=1, 75th percentile=4) than those with certificate education (Md= 1, 25th percentile= 1, 75th percentile= 1.75) for depression score. These results indicate participants with university education have higher depressive symptoms than those with certificate education level.

The median and percentile score of university education category is suggestive, as cited in Ndetei and colleagues (2010) and Akhtar-Danesh & Landeen(2007), that a higher education achievement acts as a trigger factor to development of depression. These authors argue that the rise in expectations as one attains higher levels of education could result in depression if the expectations are not achieved. Current literature of other researchers, on the other hand, suggests that because educational success is commonly perceived as a core determinant of a successful and satisfying life, educational underachievement can be considered as a risk factor to the development of depression (Chen et al., 2013; Haftgoli et al., 2010; Nock, 2014).

This study's findings indicate emerging adults' association of specific demographic variables; age 20 and 21, employed status, living with a partner, and university education level with BDI-II score for depression. This finding is in unison with other studies that suggest a significant difference in individual demographic variables and depressive symptoms (Akhtar-Danesh & Landeen, 2007; Ali & Zuberi, 2012; Chen et al., 2013; Gulliver et al., 2010; Ndetei et al., 2010).

4.6. Correlation

A score was achieved for physiological symptoms by totalling the number of physiological symptoms selected by each participant, each symptom representing a score of one and a total possible score of 17. This physiological symptom score was correlated with scores achieved on the BDI-II.

Correlations were carried out with two main purposes: firstly, to determine the relationship between total physiological scores and the BDI-II score and secondly, to compare the strength of the correlation coefficient for demographic groups.

Before performing the final analysis, a preliminary analysis was performed using a scatterplot to ensure there were no violations of the assumptions of normality, linearity and homoscedasticity. In addition, the scatterplot explored the relationship between the two continuous variables; total physiological symptoms and BDI-II score (Annexure 15A, pg 127). The scores from the scales representing total physiological symptoms were considered to be the independent variables and placed on the horizontal axis, while the dependent variable, the BDI-II scores, were placed on the vertical axis. The distribution of data on the scatter plot was scattered.

Results from Spearman's rho correlation coefficient revealed a significant medium positive correlation between the total physiological symptoms and the BDI-II score (rho.315, n=84, p< 0.001). These results suggest that an increase in the total physiological symptoms coincided with an increase in the BDI-II scores. In their study, Bohman and colleagues (2010) also found a linear relationship between depression and physiological symptoms; as the number of physical symptoms increased so did the severity of depression.

An interrelationship between total physiological symptoms, BDI-II score and gender was explored (Annexure 15B, pg 127). The results on correlation between total physiological symptoms and BDI-II score for males were rho= .351, while for females it was slightly lower at rho= .304. These findings suggest that an increase in physiological symptoms among males tend to increase the BDI=II score more than among females.

4.7 Conclusion

This study identified physiological symptoms that are suggestive indicators of depression. These key physiological symptoms include painful symptoms, specifically headache, cough general fatigue and vegetative symptoms (changes in appetite and lack of energy).

The results of this study also suggest a linear relationship between total physiological symptoms, rather than any specific symptom, and BDI-II score for depression. Findings of this study revealed certain demographic variables among emerging adults that had a bearing on their BDI-II scores. These included age 20/21years, living with partner, university education and employed status.

The results of this study are in support of the bio-psychosocial model that certain factors, specifically, physiological symptoms and demographic variables that were identified within this research are responsible for development of depressive symptoms.

Chapter five contains the discussion of key findings, study limitation, recommendations and conclusion.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the major findings of the study and is presented according to the study objectives. In addition, the limitations of the study are discussed and future recommendations for health practice, nursing education, research and health organizations are outlined.

The study objectives were to describe the incidence of depressive symptoms among an emerging adult sample presenting with key physiological symptoms; to describe common physiological symptoms associated with depressive symptoms; and to explore associations between physiological symptoms and symptoms of depression with other demographic variables (gender, age, occupation status, educational success, relationship status).

5.2. Discussion of results

Although objective one was to report on the incidence of depression and not interventions, the study included a referral system to ensure a moral and ethical research process. Comments on this referral system, based on the score achieved on the BDI II and mhGAP interventions guidelines for depression, will be presented with the discussion related to objective one.

5.2.1. Using the BDI II to measure the incidence of depression

As reported in point 4.4 (pg. 57), there was no evidence of severe depression within the sample. The majority (81%, n=68) of the sample achieved a score indicative of low depression and the remaining 19% (n=16) scored for moderate depression. This finding is similar to international studies (Chen et al., 2013; Christensson et al., 2011; Crump et al., 2014) and studies in low income countries (Ibrahim, Kelly & Glazebrook, 2012; Keugoung et al., 2013; Khasakhala et al., 2013).

These studies argue however, that such results should not be discounted as individuals with mild depression are at risk of progressing into moderate depression and possible severe depression. The results of the current study support this potential progression because, as reported in Chapter four (point 4.4.1, pg.58) 20.2% (n=17) of the participants with a BDI II score for mild depression also reported suicidal behaviour.

Various authors argue that the unpredictable political and socioeconomic environment that individuals living in low to middle income countries (LMIC) face on daily basis predisposes them to depression (Ali & Zuberi, 2012; Ball, Sumathipala, Siribaddana, Kovas, Glozier, McGuffin & Hotopf, 2009; Eshetu & Woldesenbet, 2011). These LMIC contextual challenges are reported to play a great role in poor living standards and uncertainty and a possible negative view of the future, which leave individuals disillusioned with their life's prospects (Ball et al., 2009; Eshetu & Woldesenbet, 2011).

Lack of economic resources in LMIC reduces access to comprehensive health care, specifically mental health care. In addition, the scarcity of mental health care facilities and health workers in LMICs also compromises delivery of quality care (Bruckner, Scheffler, Shen, Yoon, Chisholm, Morris, Fulton, Dal Poz & Saxena, 2011; Kiima & Jenkins, 2010). In Kenya, in particular, an acute shortage of mental health workers and limited crisis support centres has resulted in the vast majority of the population, particularly those who are economically disadvantaged and those in rural areas, without a psychological support system (Jenkins et al., 2010; Kakuma, Minas, Ginneken, Poz, Desiraju, Morris, Saxena & Scheffler, 2011). This lack of specialist personal and limited resources in Kenya is significant to the utilization of the mhGAP intervention guideline within this study.

The WHO mhGAP intervention guideline is structured for non-specialized health facilities in LMICs for assessment and management of major psychiatric conditions (World Health Organization, 2010). Interventions are structured based on subjective reported symptoms, with the unspecialized health worker determining the diagnosis and thereafter providing the necessary treatment and/or referral (World Health Organization, 2010). Studies, however, indicate a lower recognition rate for mild depression among general health care workers who rely on reported

symptoms (James et al., 2012; Mitchell, Vaze & Rao, 2009). In their study, Mitchell and colleagues (2009) found a lower recognition among clinicians on people with mild depression and distress as opposed to their recognition of moderate and severe depression, with the general practitioner correctly identifying only one third of people with mild depression. Such study results have strongly supported the use of validated screening instruments in general health care facilities to maximize prompt and accurate identification of depression and potential suicide cases (Dihigo, 2014; Yackel et al., 2010; Yano et al., 2012). As mhGAP is utilized by non-specialized health workers, use of validated screening instruments to detect depressive symptoms and advise on the management of depressive symptoms based on the mhGAP guidelines would help greatly in recognition of not only the major depressive cases, but also the cases of mild depression that are mostly undetected and untreated (Eshetu & Woldesenbet, 2011).

5.2.1.1 Referral patterns and resources

As described in Chapter 3 (point 3.6, page 39),as part of this research, the establishment of a referral system in response to participants' potential scores on the BDI II was negotiated with hospital management and was used in conjunction with the mhGAP intervention guide. Being a rural mission hospital, the services of a chaplain were utilised for psychosocial support as opposed to a mental health specialist because the chaplaincy program within the hospital carries out psychological care, specifically crisis counselling, in its role in patient ministry (Kijabe hospital., 2014). As previously described, there is a shortage of mental health workers in Kenya. The few mental health care workers available in the country are mainly concentrated in public county hospitals, the main referral hospital, Mathari, and in urban private sectors. This leaves very few to no mental health workers in rural public and private hospitals to deliver mental health care services. Task shifting has been adopted in such rural health care settings to bridge the gap of inadequate health care workers, specifically mental health care givers (Jenkins et al., 2010; Petersen et al., 2012c). Use of trained lay workers and clergy men who share cultural, linguistic and social backgrounds with those receiving care to provide health care in resource constrained countries increases the quality of care offered and improves service delivery (Swartz, et al., 2014).

5.2.2. Physiological symptoms

Physiological symptoms selected by participants within this study are concomitant with internationally recognised physiological symptoms of depression (American Psychiatric Association, 2013; World Health Organization, 2010). In addition, positive scores for depression among participants presenting with physiological symptoms in general health care settings affirmed observations in current literature that people express their emotions through physical body ailments (American Psychiatric Association, 2013; Dihigo, 2014). This study results specifically highlighted painful symptoms (headache, backache, musculoskeletal pain and chest pain) being suggestive of depression.

The study results are in keeping with previous research that pain and or painful symptoms are the more common ailments that are suggestive of depression (Bohman et al., 2010; Dihigo, 2014; Khan, Khan, Harezlak, Tu & Kroenke, 2003).

The link between pain and depression is argued to result from the shared neurotransmitters (norepinephrine and serotonin) and coinciding nociceptive and affective pathway (Kroenke, Wu, Bair, Krebs, Damush & Tu, 2011; Menchetti et al., 2009). Longitudinal studies conducted indicate a relationship between painful physical symptoms and depression; with painful physical symptoms argued to be a precursor to depression (Beesdo, Jacobi, Hoyer, Low, Höfler & Wittchen, 2010; Kroenke et al., 2011; Linton & Bergbom, 2011). In their study to examine reciprocal relationship between depression and pain, Kroenke and colleagues (2011) found that 57.1% of the depressed participants with chronic pain reported experiencing body pains first before developing depression. Therefore, towards improving positive outcomes in general health settings, interventions focusing on assessment of pain and screening for depression ought to be structured (Keugoung et al., 2013; Kroenke et al., 2010; Simms et al., 2012; Zhu et al., 2012).

5.2.3. Depression scores and demographic variables

Demographic findings within this study are representative of the country's current state. Although there were no significant associations between BDI II scores and demographic variables, results did suggest possible trends between university education, employment, living

with partner and BDI II scores. Keeping with the study sample and age appropriateness, the majority of the participants were students. A third of the sample was unemployed, with the least number indicating employed status.

With unemployment being the primary cause of poverty and social instability in LMICs, gainful employment has an impact on an individual's wellbeing (Njonjo, 2010). Employment for emerging adults represents independence, social development, responsibility and active participation in nation building (Jamah, 2014; Okoth & Anyanzwa, 2014). However, national reports cite highest unemployment rate among youth (18-25) with more than 125,000 of this age group unemployed in each year's age cohort (United Nations Development Programme, 2013; Michira, 2014). Though the majority of the youth have attained formal education, 92% of unemployed youths in the country have had no formal training other than their schooling (Kenya Institute for Public Policy Research and Analysis, 2013; Njonjo, 2010). It is estimated that 800,000 young adults graduate from universities and colleges yearly and only 50,000 are absorbed into the formal sector (Etale, 2013; Njonjo, 2010). Studies attribute this high unemployment rate in this age group to the slow growth and weak labour absorptive capacity of the economy and a mismatch in skills development and labour demand (Etale, 2013; Government of Kenya, 2010). In addition, the increasing number of young adults and rapid growth rate of the working population continue to aggravate unemployment (Kenya Institute for Public Policy Research and Analysis, 2013).

Literature indicates social determinants of health being dependent on environmental factors (Ball et al., 2009; Chen et al., 2013; Lund, Breen, Flisher, Kakuma, Corrigall, Joska, Swartz & Patel, 2010). Ball and colleagues (2009) argue that certain environmental factors, such as poverty, employment patterns, reduced access to health care, poor standards of living and adverse life events, play a vital role in development of depression. Development of depression as a result of environment factors is explained by the social causation hypothesis, which assumes environmental factors precipitates or maintains mental illness (Lund et al., 2010; Kroenke , Spitzer , Williams & Löwe, 2010). Lund and colleagues (2010) add that individuals in low and middle income countries are faced with hazardous environmental conditions, insufficient access

to basic amenities, increased crime and unemployment that predisposes them to mental illness. Kenya, though recently categorized as a middle income country, is faced with rampant unemployment, political and economic instability, double disease burden and inaccessibility to general health care facilities (Kiima & Jenkins, 2010; Michira, 2014; Okoth & Anyanzwa, 2014).

With the prevailing circumstances in the country, it is almost certain that individuals who are still in school are at an increased risk of being unemployed once they complete their studies. This will therefore predispose them to developing depression.

5.3. Limitations of the study

Although this study employed a survey sampling method in data collection, the sample achieved was relatively low, mainly as a result of the multiple languages spoken by potential participants. Due to the political unrest in East Africa, Kenya accommodates many foreign nationals and also approximately 572,268 refugees and asylum seekers (UNICEF Kenya., 2013). In addition, political unrest in the country has resulted in internal displacement of persons (over 412,000 IDPs) (Norwegian Refugee Council/Internal Displacement Monitoring Centre NRC/IDMC., 2014). With the questionnaire being presented in only English or Kiswahili, between 8 and 20 potential participants who met the age criterion were excluded daily. Translation to these foreign and native languages was impossible within this study due to lack of knowledge of the languages. Language is, however, considered the heart of mental health care, with language barrier and absence of sophisticated interpreters greatly hampering delivery of care (Logan, Steel & Hunt, 2014; Swartz, Kilian, Twesigye, Attah & Chiliza, 2014). The limited linguistic services in the research settings therefore had implication on service delivery (Swartz et al., 2014).

Due to time and travel constrains, the data collection period was limited to a two week period, which contributed to a lower than the initially anticipated sample size of 200. It was not within the researcher's ability to extend the data collection time due to delays in receiving the second ethical clearance and travel visa expiry dates (Annexure 9 pg 119). However, prior preparations had been made with the field workers and hospital management that made it possible for the researcher to focus exclusively on data collection in the two week period. The assistance of the

field workers and outpatient nurses in mobilizing participation in the research setting contributed to the success of this project.

5.4. Conclusion and recommendations

This study revealed the incidence of depressive symptoms among emerging adults with the use of the BDI scale and showed that physiological symptoms, specifically painful symptoms, were indicative of depression. This study highlights the dire need for screening of depression among emerging adults in general health care settings, focusing specifically on headache, cough, general fatigue and vegetative symptoms (changes in appetite and lack of energy). The recommendation emphasizes early recognition of depression, a core risk factor to suicide among emerging adults.

Limited availability of mental health specialists in LMIC has led to treatment and detection of mental health illness being carried out entirely by unspecialized general health care workers (Jenkins et al., 2010; Kakuma et al., 2011; Sadik et al., 2011). In improving practice and positive outcomes, general health care workers in unspecialized settings should be trained on use of available validated depression screening instruments so that they can carry out an in-depth assessment of painful body symptoms while incorporating the mhGAP intervention guideline (Dihigo, 2014; Yano et al., 2012). Furthermore, in a context where the number of general health workers is limited, there is a need to adopt a task shifting approach to optimize mental healthcare delivery, specifically in rural setting of low-middle income countries (Petersen et al., 2012c; Swartz et al., 2014). Workshops and seminars could be organized within community and hospitals to train health workers and non-health care workers on mental health issues. Training aimed at psychological support of mental patients should focus on mental health, specifically where spiritual leaders are involved (Sullivan, Pyne, Cheney, Hunt, Haynes & Sullivan, 2013). In addition to continuous training, close supervision coupled with emotional and technical support of mental health workers need to be applied to facilitate positive outcomes and success in the task shifting approach (Petersen et al., 2012a; Petersen et al., 2012c; Schlebusch, 2012a; World Health Organization & World Organization of Family Doctors (Wonca), 2008).

With the strong advocacy on task shifting in resource constrained countries, future research should examine the extent of involvement and effectiveness of non-health care workers, specifically the clergy, in mental health service delivery

Mental and physical health conditions are interwoven (Alexander et al., 2013; Zhu et al., 2012). Integrating mental health into other medical services in PHC generates positive health outcomes (World Health Organization & World Organization of Family Doctors (Wonca), 2008). To help overcome the challenges of insufficient mental health workers and high cost of training health specialists, providing training and support on mental health issues to enrolled nursing students and other health workers will improve recognition and management of mental health disorders (Jenkins et al., 2010; Kiima & Jenkins, 2010).

A mental health module could be developed and incorporated into all nursing programs. Such a module, focusing on assessment, specifically risk assessment of suicide and depression, and a bio-psychosocial model in management of these conditions, will generate good outcomes in patients (World Health Organization, 2014).

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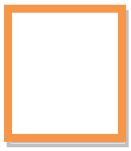
ANNEXURE I: Data collection instrument



SELF REPORT QUESTIONNAIRE

The following questionnaire consists of two sections; S*ection A* (item 1. demographic information and item 2. check list for predisposing variables of interest) and *Section B* (Beck depression inventory II scale).

INSTRUCTIONS

You are required to complete section A of this questionnaire.

If you tick any item in item 2, please proceed to section B of this questionnaire.

If you will not tick any symptom in item 2, please hand over your questionnaire to the nurse.

This should take approximately 10 minutes.

SECTION A:

Item 1; basic participant information

1. Please write down your age at your last birthday _____
2. Please tick if you are male or female

Male	Female

3. Please tick to indicate your highest level of education

University Degree	
Diploma	
Certificate holder	
Form four	
Standard 8	
Less than standard 8	
Other (please write)	

4. Please tick to indicate your relationship status

Married	
Living with my partner	

In a relationship but not living together	
Not in a relationship	

5. Please tick to indicate your employment status

Employed	
Self- employed	
Not employed	
Student	

Item 2: Check list for physical symptoms

Please tick in the right column of the table below all the symptoms that you are presenting with today at this general health facility. You can tick more than one

Reported symptoms	Yes
- Headache	
- Backache	
- Musculoskeletal pain	
- General fatigue	
- Asthma	
- Dyspnea	
- Cough	
- Chest pain	
- Palpitation	
- Increased blood pressure)	
- Dizziness	
- Ulcers	
- Diarrhea / constipation	
- Stomach ache	
- Changes in appetite	
- Lack of energy	
- Sleep disturbances	

PLEASE NOTE: proceed to section B **ONLY IF** you have put a tick on the above check list for physical symptoms.

Section B.

In column 1 below are 21 phrases related to aspects of your thoughts and feelings. For each one there are four possible responses. Pick the response that best describes how you feel and place an **X** beside the response. You can only pick one response for each

For example

Sadness

0 I do not feel sad
1 I feel sad much of the time
2 I am sad all the time **X**
3 I am so sad or unhappy that I can't stand it.

Please turn over and complete the last set of questions

1. Sadness
   0. I do not feel sad
   1. I feel sad much of the time
   2. I am sad all the time
   3. I am so sad or unhappy that I can't stand it.
2. Pessimism
   0 I am not discouraged about my future
   1 I feel more discouraged about my future than I used to be
   2 I do not expect things to work out for me
   3 I feel my future is hopeless and will only get worse
3. Past failure
   0 I do not feel like a failure
   1 I have failed more than I should have
   2 As I look back, I see a lot of failures
   3 I feel I am a total failure as a person
4. Loss of pleasure
   0 I get as much pleasure as I ever did from the things I enjoy.
   1 I don't enjoy things as much as I used to.
   2 I get very little pleasure from the things I used to enjoy.
   3 I can't get any pleasure from the things I used to enjoy.
5. Guilty feelings
   0 I don't feel particularly guilty.
   1 I feel guilty over many things I have done or should have done.
   2 I feel quite guilty most of the time.
   3 I feel guilty all the time.
6. Punishment feelings
   0 I don't feel I am being punished
   1 I feel I may be punished.
   2 I expect to be punished
   3 I feel I am being punished
7. Self- dislike
   0. I feel the same about myself as ever.
   1. I have lost confidence in myself.
   2. I am disappointed in myself
   3. I dislike myself.
8. Self- criticalness
   0 I don't criticize or blame myself more than usual.
   1 I am more critical of myself than I used to be.
   2 I criticize myself for all of my faults.
   3 I blame myself for everything bad that happens.
9. Suicidal thoughts or wishes
   0 I don't have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I would not carry them out.
   2 I would like to kill myself
   3 I would kill myself if I had the chance.
10. Crying
   0 I don't cry any more than I used to.
   1 I cry more than I used to.
   2 I cry over every little thing.
   3 I feel like crying, but I cant
11. Agitation
   0 I am no more restless or wound up than usual.
   1 I feel more restless or wound up than usual.
   2 I am so restless or agitated that it's hard to stay still.
   3 I am so restless or agitated that I have to keep moving or doing something.
12. Loss of interest
   0 I have not lost interest in other people or activities.
   1 I am less interested in other people or things than before
   2 I have lost most of my interest in other people or things.

3. It's hard to feel interested in anything

13. Indecisiveness
    0 I make decisions about as well as ever.
    1 I find it more difficult to make decisions than usual.
    2 I have much greater difficulty in making decisions than I used to.
    3 I have trouble making any decisions.
14. Worthlessness
    0 I do not feel I am worthless.
    1 I don't consider myself as worthwhile and useful as I used to.
    2 I feel more worthless as compared to other people.
    3 I feel utterly worthless.
15. Loss of energy
    0 I have as much energy as ever.
    1 I have less energy than I used to have.
    2 I don't have enough energy to do very much
    3 I don't have enough energy to do anything.
16. Changes in sleeping pattern
    0. I have not experienced any changes in my sleeping pattern.
1. I sleep somewhat more or less than usual.
2. I sleep a lot more or less than usual.
    3. I sleep most of the day or I wake up 1-2 hours early and can't get back to sleep.
17. Irritability
    0 I am no more irritable than usual.
    1 I am more irritable than usual.
    2 I am much more irritable than usual.
    3 I am irritable all the time.

18. Changes in appetite
    0. I have not experienced any changes in my appetite.
1. My appetite is somewhat less or more than usual.
    2. My appetite is much less or much greater than before.
3. I have no appetite at all or I crave food all the time
19. Concentration difficulty
    0 I can concentrate as well as ever
    1 I can't concentrate as well as usual.
    2 It's hard to keep my mind on anything for very long.
    3 I find I can't concentrate on anything.
20. Tiredness or fatigue
    0 I am no more tired or fatigued than usual.
    1 I get more tired or fatigued more easily than usual.
    2 I am too tired or fatigued to do a lot of the things I used to do.
    3 I am too tired or fatigued to do most of the things I used to do.
21. Loss of interest in sex
    0 I have not noticed any recent change in my interest in sex.
    1 I am less interested in sex than I used to be.
    2 I am much less interested in sex now.
    3 I have lost interest in sex completely.

TOTAL FINAL SCORE _____

Participant accepted the referral ☐ OR Participant rejected the referral ☐

Score and acceptance or rejection of referral recorded in participants OPD file by Name:

_____

ANNEXURE 2: Questionnaire translated in Kiswahili

Dodoso binafsi

Dodoso lifuatayo lina sehemu mbili; sehemu A (kipengo cha kwanza: habari za mshirika, kipengo cha pili: orodha ya dalili za kimwili) na sehemu ya B (Beck Depression inventory scale II).

MAELEKEZO

-Unahitajika kukamilisha sehemu A ya dodoso hili.

-Japo utaweka alama ya X katika kipengo cha pili, tafadhali endelee na sehemu ya B ya dodoso hili .

-Kama hutaweka alama yoyote katika kipengo cha pili, tafadhali mkabili muuguzi dodoso lako.

-Kukamilisha dodoso hili litakuchukua takriban dakika kumi.

SEHEMU A:

<u>Kipengo cha kwanza: maelezo ya mshiriki.</u>

1. Tafadhali andika tarehe yako ya kuzaliwa _____

2. Weka alama ya X kuashiria jinsia yako (aidha wewe ni wa kiume au wa kike)

Kiume	Kike

1. Tafadhali weka alama ya X kuashiria kiwango chako cha juu cha elimu

Shahada ya chuo kikuu	
Stashahada	
Cheti	
Kidato cha nne	
Darasa la nane	
Chini ya darasa la nane	
Nyingine (tafadhali andika)	

2. Tafadhali weka alama ya X kuashiria uhusiano wako wa kimapenzi

Nimeolewa	
Naishi na mpenzi wangu	
Niko katika uhusiano lakini hatuishi pamoja	
Siko katika uhusiano wowote	

3. Tafadhali weka alama ya X kuashiria hadhi ya ajira yako

Nimeajiriwa	
Nimejiajiri	
Sina ajira	
Mwanafunzi	

Kipengo cha pili : Orodha ya dalili za kimwili

Tafadhali weka alama ya X kwa safu ya upande wa kulia katika jedwali hili kwa dalili zote zinazolingana na zile unazowasilisha leo katika huduma hii ya afya. Unaweza weka alama kwa dalili zaidi ya mmoja.

Dalili zilizowasilishwa	**Ndio**
- Maumivu ya kichwa	
- Maumivu ya mgongo	
- Maumivu ya misuli na mifupa	
- Uchovu wa kimwili	
- Pumu	
- Kushindwa kupumua	
- Kukohoa	
- Maumivu ya kifua	
- Mpapatiko wa moyo	
- Kuongezeka kwa shinikizo la damu	
- Kizunguzungu	
- Vidonda vya tumbo	
- harisho/kuvimbiwa	
- kusokotwa na tumbo	
- mabadiliko katika hamu	
- ukosefu wa nishati/nguvu	
- misukosuko ya usingizi	

KUMBUKA: endelea na sehemu ya B **IWAPO TU** umetia alama ya X katika kipengo cha pili.

SEHEMU YA B (BECK DEPRESSION INVENTORY SCALE)

Sehemu hii ina maswali ishirini na moja zinazohusu hisia na mawazo yako. Kwa kila moja ya swali, kuna fungu la sentensi nne. Unahitajika kuchagua sentensi moja tuu unayoona inaeleza vyema hali yako ya mawazo au hisia ulizo nazo. Wahitajika kuweka alama ya **X** kando ya sentensi inayoeleza bora hisia zako. Hakuna jibu litakalokataliwa kuwa si sahihi

Kwa mfano

1. huzuni

0. Mara chache huwa sina furaha
1. Mara nyingi sina furaha
2. Kila wakati sina furaha X
3. Sina furaha kiwango cha kutostahimili.

Tafadhali geuza karatasi ukamilishe seti ya mwisho ya maswali.

1. Huzuni
    0. Mara chache huwa sina furaha
    1. Mara nyingi sina furaha
    2. Kila wakati sina furaha
    3. Nina huzuni kiwango cha kutostahimili.
2. Kukosa tumaini
    0. Sijakosa tumaini ya maisha
    1. Nahisi kukosa tumaini ya maisha.
    2. Sitarajii mambo kuwa mema kwangu.
    3. Nimekata tumaini kabisa juu ya maisha yangu
3. Kushindwa kimaisha
    0. Sijihisi kama nimeshindwa maishani
    1. Nahisi kana kwamba nimeshindwa maishani kuliko ifaavyo.
    2. Nitazamapo maisha yangu, naona makosa na kushindwa maishani
    3. Najihisi nimeshindwa kabisa maishani.
4. Kukosa raha
    0. Nafurahishwa na mengi
    1. Sifurahishwi na mambo jinsi nilivyokuwa hapo kitambo.
    2. Nafurahishwa na machache
    3. Hakuna kinachonifurahisha
5. Hisia za hatia
    0. Sihisi kuwa na hatia.
    1. Nahisi nikiwa na hatia kwa mambo niliyoyafanya ama ningelifanya.
    2. Nahisi mwenye hatia mara mengi.
    3. Nahisi mwenya hatia kila wakati.
6. Hisia za kuadhibiwa
    0. Sihisi kana kwamba naadhibiwa
    1. Nahisi ni kama pengine naadhibiwa.
    2. Natarajia kuadhibiwa.
    3. Nahisi kuwa naadhibiwa.
7. Kutojidhamini
    0. Najipenda
    1. Sina imani na nafsi yangu.
    2. Sijipendi
    3. Sijidhamini
8. Kujikosoa
    0. Sijikosoi wala kujilaumu kuliko hapo awali.
    1. Najikosoa mwenyewe mara nyingi kuliko hapo awali.
    2. Mambo mengi mabaya yanatokana na makosa yangu
    3. Mambo yote mabaya yanatokana na makosa yangu
9. Mawazo ya kujiua
    0. Sifikiri kuhusu kujiua
    1. Huwa nafikiria kujiua, lakini sitajiua
    2. Ningependa kujiua
    3. Nataka kujiua
10. Kulia
    0. Huwa silii zaidi ya hapo awali.
    1. Nalia mara nyingi
    2. Nalia kwa jambo lolote
    3. Naskia kulia, lakini siwezi.
11. Msukosuko
    0. Kwa kawaidia huwa siangaiki.
    1. Nahisi kuhangaika kuliko kawaida.
    2. Nahangaika sana kiwango cha kushindwa kutulia.
    3. Nahangaika sana kiwango cha kushinda nikisonga au kufanya kitu fulani.
12. Kupoteza hamu
    0. Napenda kujumuika na watu.
    1. Sipendi kujumuika na watu mara kwa mara
    2. Sipendi kujumuika na watu mara mingi.
    3. Nimepoteza hamu ya kila kitu.

13. Kufanya maamuzi
    0. Huwa nafanya maamuzi kwa urahisi
    1. Mara kwa mara napata tatizo kufanya maamuzi kuliko hapo awali.
    2. Mara nyingi huwa nashindwa kufanya maamuzi.
    3. Nina shida kufanya maamuzi yoyote.
14. Ubatilifu
    0. Sina hisia za kutojidhamini.
    1. Sijioni wa dhamana na manufaa kama nilivyokuwa hapo mbeleni.
    2. Nikijilinganishwa na wengine, najihisi mimi sio wa maana.
    3. Ninahisi mimi si wamaana kamwe.
15. Kukosa nguvu
    0. Nina nguvu kama kawaida.
    1. Mara chache huwa sina nguvu ya kutosha.
    2. Huwa sina nguvu za kutosha kuniwezesha kufanya mengi
    3. Huwa sina nguvu za kutosha kuniwezesha kufanya kitu chochote.
16. Mabadiliko ya hali ya kulala
    0. Sihisi mabadiliko yoyote kwa jinsi ninavyo lala.
    1. Mimi hulala zaidi kuliko hapo awali /ama mimi hulala kwa muda mfupi kuliko hapo awali.
    2. Napata taabu kulala mara kwa mara /ama nalala sana mara kwa mara
    3. Nalala sana kwa siku/ Napata taabu kupata usingizi kiwango cha kuamka saa moja au mbili mapema na siwezi pata usingizi tena.
17. Kukerwa
    0. Kwa kawaida mambo huwa hayanikeri.
    1. Mara chache mambo yananikera.
    2. Mara nyingi mambo yananikera.
    3. Kila wakati mambo yananikera.
18. mabadiliko ya hali ya kula
    0. Sijashuhudia mabadiliko yoyote kwa jinsi ninavyo kula.
    1. hamu yangu ya kula imepungua kiasi kuliko hapo awali/ ama hamu yangu ya kula imeongezeka kiasi kuliko hapo awali.
    2. Hamu yangu ya kula imeongezeka maradufu kuliko hapo awali/ ama hamu yangu ya kula imepungua maradufu kuliko hapo awali.
    3. Kamwe sina hamu ya kula/ ama nahisi kula kila saa
19. Ugumu wa kuwa makini
    0. Mimi niko makini kama hapo awali.
    1. Siko makini kama kawaida.
    2. Ni vingumu kwangu kuwa makini kwa muda mrefu.
    3. Ni vingumu kwangu kuwa makini kwa jambo lolote.
20. Kuwa mchovu
    0. Kwa kawaida mimi si mchovu.
    1. Huwa mchovu mara kwa mara kuliko kawaida.
    2. Huwa mchovu kiwango cha kutofanya kazi nying.
    3. Huwa mchovu sana kiwango cha kutofanya kazi nilizokuwa nikizifanya awali.
21. Kupoteza hamu ya ngono
    0. Sijaona mabadiliko yoyote hivi karibuni katika maslahi yangu ya ngono.
    1. Hamu yangu kushuriki ngono imepungua kiasi hivi karibuni.
    2. Hamu yangu kushiriki ngono imepungua sana hivi karibuni.
    3. Nimepoteza hamu yote ya kushiriki ngono.

JUMLA YA MATOKEO _____

Mshiriki kukubali rufaa ☐ AU Mshiriki kukataa rufaa ☐

Rekodi ya jumla ya matokeo, mshirika kakubali rufaa ama kukataa kupewa rufaa imerekodiwa katika faili ya mshirika na (jina la aliyerekodi) :

_____

ANNEXURE 3: Approved Referral Note

Date of referral:_____

To Clinical officer/ Medical officer/ Counsellor

Participant name_____ Patient number _____

The above mentioned patient completed a research questionnaire that included scoring of the Beck depression Inventory II.

The achieved score was_____and as per the WHO mhGAP treatment guidelines the patient is being referred for further assistance

Thank you.

Referred by: Nteere Jacqueline (researcher)
Masters in Nursing (Mental health) student
University of KwaZulu-Natal
Durban, South Africa

ANNEXURE 4: Pamphlet on depression

DEPRESSION

BASIC INFORMATION: INFORMATION FOR PATIENTS AND FAMILIES

What is depression?

Depression is a mental illness that causes people to feel hopeless, helpless, sad and negative.

Depression is not a weakness, it is an illness. It affects the way you eat and sleep, the way you feel about yourself, and the way you think about things and the world. Depression is not the same as ordinary, everyday blues or sadness that we all feel sometimes, it is not a sign of weakness, and it cannot be wished away. People with depression cannot just "pull themselves together" and get better. Without treatment symptoms can last for weeks, months, or years.

What causes depression?

The cause is not known. Some things we do know that may contribute to a person having a depression include:

- A family history of depression
- Serious and upsetting situations in a person's life
- A person's body chemistry like medical illness, (HIV / AIDS, TB and other health problems).
- A person's personality and thinking style

Types of Depression

A person with major depression feels very sad and down most of the time and this affects their work, and sleeping, how much or little they eat, and how little they now enjoy things they used to enjoy like soccer, TV, music, church and community events. (See Symptom list) When their down mood is swopped with very high or overly excited or manic feelings and behavior, this is called bipolar disorder (which used to be called manic-depression). Sometimes the mood changes happen fast, but most often they happen slowly over a few days or weeks.

What are the signs and symptoms of depression?

A person with depression may have **five or more** of the following:

- sadness lasting 2 weeks or more
- loss of interest in daily activities
- feeling tired, loss of energy
- changes in sleep (sleeping too much or too little)
- changes in weight and/or appetite (eating too much or too little)
- feeling worthless
- feeling very guilty
- not able to think clearly or concentrate
- irritability
- memory problems
- trouble making decisions
- decrease in sexual desires
- withdrawing from family and friends
- thoughts of wanting to die

How is a depression treated?

It is important to know that depression **can** be treated.

Your doctor may suggest one or more of the following:

1. Medicines that may help (anti-depressants)
Eight out ten of people with depression will make a good recovery on anti-depressants. If one medicine doesn't work for you, try another one. Anti-depressants don't work quickly - for most people, it takes 2-3 weeks to start feeling better. It is very important not to stop taking the pills and to give them a full chance of working. They may cause mild side effects like a dry mouth, sickness, headache, or dizziness but these usually pass in a week or two. Never mix medications of any kind – prescription ones from the hospital, or pharmacy with, over the-counter, or with borrowed – never you must consult your doctor first Always tell your doctor if you are pregnant or have any other illness – like HIV and AIDS. Call your doctor if you Have a question about any medicine or if you have a problem or go to the clinic.

2. Psychotherapy (talk therapy)
Psychotherapy (or talk therapy) with a psychologist, social worker, or counsellor gives people the skills to cope with their illness and the stress it causes.

3. Support groups
Support Groups are a very good way to get support and advice from people who know how you feel because they have felt the same way themselves. Support groups are run by patients for other patients as a safe place where you can share experiences and help.

What can someone with depression do?

If you feel you are depressed, talk to your doctor about it
If you have medicines ordered for you, take them as directed. Some medicines can take several weeks to work. If you have concerns about the effects of the medicine, talk to your doctor or pharmacist. Do not stop your medicine without talking to your doctor.
Learn as much as you can about the illness and how it is treated
Do not drink any alcohol as it is a depressant
Activity - have something to do every day
Get support - find the people in your life who will support you, and ask them for help

If someone you care about has depression

Find out what resources are available in your community
- listen - offer support
- do not criticize
- do not "push" the person to do things
- support them to do as much for themselves as they can
- do not take his or her comments personally
- do not take his or her illness personally

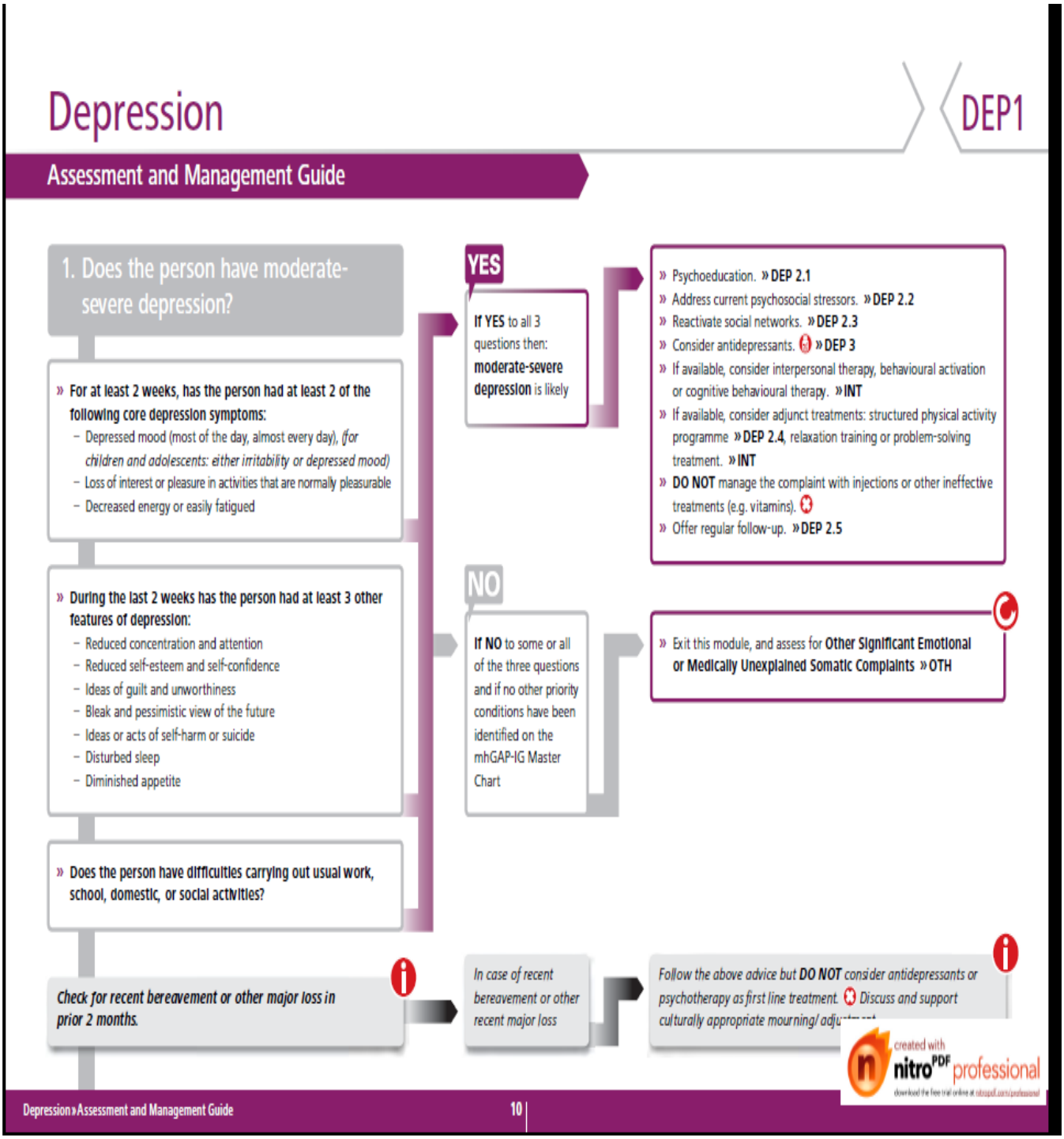
It is important to take care of yourself. Caring for and about someone with a depression is difficult. You will need support too.

IF YOU FEEL SOMEONE WITH DEPRESSION MAYBE FEELING SUICIDAL:

If a person is feeling so overwhelmed and helpless about life events that the future appears hopeless, they may consider that suicide is a logical solution to their problems.
Please show your concern by directly asking the person if they are contemplating suicide and if they have thought about how they might do it.
If the person does have a plan, assess if they have the means to carry it through.
If you believe the person may commit suicide, immediately seek professional help.
You can:

- call your doctor
- go to **EMERGENCY** at your nearest hospital.

ANNENXURE 5: WHO mhGAP Treatment guideline



Depression

DEP1

Assessment and Management Guide

2. Does the person have bipolar depression?

» Ask about **prior episode of manic symptoms** such as extremely elevated, expansive or irritable mood, increased activity and extreme talkativeness, flight of ideas, extreme decreased need for sleep, grandiosity, extreme distractibility or reckless behaviour. See Bipolar Disorder Module. » **BPD**

YES

Bipolar depression is likely if the person had:

» 3 or more manic symptoms lasting for at least 1 week OR

» A previously established diagnosis of bipolar disorder

» Manage the bipolar depression. See Bipolar Disorder Module. » **BPD**

NOTE: People with bipolar depression are at risk of developing mania. Their treatment is different!

3. Does the person have depression with psychotic features (delusions, hallucinations, stupor)?

YES

If YES

» Augment above treatment for moderate-severe depression with an antipsychotic in consultation with a specialist. See Psychosis Module. » **PSY**

4. Concurrent conditions

» **(Re)consider risk of suicide/self-harm** (see mhGAP-IG Master Chart)
» **(Re)consider possible presence of alcohol use disorder or other substance use disorder** (see mhGAP-IG Master Chart)
» **Look for concurrent medical illness**, especially signs/symptoms suggesting hypothyroidism, anaemia, tumours, stroke, hypertension, diabetes, HIV/AIDS, obesity or medication use, that can cause or exacerbate depression (such as steroids)

YES

If a concurrent condition is present

» Manage both the moderate-severe depression and the concurrent condition.
» Monitor adherence to treatment for concurrent medical illness, because depression may reduce adherence.

Depression

DEP2

Intervention Details

Psychosocial/Non-Pharmacological Treatment and Advice

2.1 Psychoeducation
(for the person and his or her family, as appropriate)

» Depression is a very common problem that can happen to anybody.

» Depressed people tend to have unrealistic negative opinions about themselves, their life and their future.

» Effective treatment is possible. It tends to take at least a few weeks before treatment reduces the depression. Adherence to any prescribed treatment is important.

» The following need to be emphasized:
- the importance of **continuing**, as far as possible, **activities that used to be interesting or give pleasure**, regardless of whether these currently seem interesting or give pleasure;
- the importance of trying to **maintain a regular sleep cycle** (i.e., going to be bed at the same time every night, trying to sleep the same amount as before, avoiding sleeping too much);
- the benefit of **regular physical activity**, as far as possible;
- the benefit of **regular social activity**, including participation in communal social activities, as far as possible;
- recognizing **thoughts of self-harm or suicide** and coming back for help when these occur;
- in older people, the importance of continuing to seek help for physical health problems.

2.2 Addressing current psychosocial stressors

» Offer the person an **opportunity to talk**, preferably in a private space. Ask for the person's subjective understanding of the causes of his or her symptoms.

» Ask about **current psychosocial stressors** and, to the extent possible, address pertinent social issues and problem-solve for psychosocial stressors or relationship difficulties with the help of community services/resources.

» Assess and manage any situation of **maltreatment, abuse** (e.g. domestic violence) and **neglect** (e.g. of children or older people). Contact legal and community resources, as appropriate.

» **Identify supportive family members and involve them** as much as possible and appropriate.

» **In children and adolescents:**
- Assess and manage **mental, neurological and substance use problems** (particularly depression) in parents (see mhGAP-IG Master Chart).
- Assess **parents' psychosocial stressors** and manage them to the extent possible with the help of community services/resources.
- Assess and manage **maltreatment, exclusion or bullying** (ask child or adolescent directly about it).
- If there are **school performance problems**, discuss with teacher on how to support the student.
- Provide culture-relevant parent skills training if available. » **INT**

2.3 Reactivate social networks

» Identify the person's **prior social activities** that, if re-initiated, would have the potential for providing direct or indirect psychosocial support (e.g. family gatherings, outings with friends, visiting neighbours, social activities at work sites, sports, community activities).

» Build on the person's strengths and abilities and actively encourage to **resume prior social activities** as far as is possible.

2.4 Structured physical activity programme
(adjunct treatment option for moderate-severe depression)

» Organization of physical activity of moderate duration (e.g. 45 minutes) 3 times per week.

» Explore with the person what kind of physical activity is more appealing, and support him or her to gradually increase the amount of physical activity, starting for example with 5 minutes of physical activity.

2.5 Offer regular follow-up

» Follow up regularly (e.g. in person at the clinic, by phone, or through community health

» Re-assess the person for im

Antidepressant Medication

3.1 Initiating antidepressant medication

» **Select an antidepressant**
- Select an antidepressant from the National or WHO Formulary. Fluoxetine (but not other selective serotonin reuptake inhibitors (SSRIs)) and amitriptyline (as well as other tricyclic antidepressants (TCAs)) are antidepressants mentioned in the WHO Formulary and are on the WHO Model List of Essential Medicines. See » **DEP 3.5**
- In selecting an antidepressant for the person, consider the symptom pattern of the person, the side-effect profile of the medication, and the efficacy of previous antidepressant treatments, if any.
- For co-morbid medical conditions: Before prescribing antidepressants, consider potential for drug-disease or drug-drug interaction. Consult the National or the WHO Formulary.
- Combining antidepressants with other psychotropic medication requires supervision by, or consultation with, a specialist.

» **Tell person and family about:**
- the delay in onset of effect;
- potential side-effects and the risk of these symptoms, to seek help promptly if these are distressing, and how to identify signs of mania;
- the possibility of discontinuation/withdrawal symptoms on missing doses, and that these symptoms are usually mild and self-limiting but can occasionally be severe, particularly if the medication is stopped abruptly. However, antidepressants are not addictive;
- the duration of the treatment, noting that antidepressants are effective both for treating depression and for preventing its recurrence.

3.2 Precautions to be observed for antidepressant medication in special populations

» **People with ideas, plans or acts of self-harm or suicide**
- SSRIs are first choice.
- Monitor frequently (e.g. once a week).
- To avoid overdoses in people at imminent risk of self-harm/suicide, ensure that such people have access to a limited supply of antidepressants only (e.g. dispense for one week at a time). See Self-harm/Suicide Module. » **SUI 1**

» **Adolescents 12 years and older**
- When psychosocial interventions prove ineffective, consider fluoxetine (but not other SSRIs or TCAs).
- Where possible, consult mental health specialist when treating adolescents with fluoxetine.
- Monitor adolescents on fluoxetine frequently (ideally once a week) for emergence of suicidal ideas during the first month of treatment. Tell adolescent and parent about increased risk of suicidal ideas and that they should make urgent contact if they notice such features.

» **Older people**
- TCAs should be avoided, if possible. SSRIs are first choice.
- Monitor side-effects carefully, particularly of TCAs.
- Consider the increased risk of drug interactions, and give greater time for response (a minimum of 6–12 weeks before considering that medication is ineffective, and 12 weeks if there is a partial response within this period).

» **People with cardiovascular disease**
- SSRIs are first choice.
- **DO NOT** prescribe TCAs to people at risk of serious cardiac arrhythmias or with recent myocardial infarction.
- In all cardio-vascular cases, measure blood pressure before prescribing TCAs and observe for orthostatic hypotension once TCAs are started.

3.3 Monitoring people on antidepressant medication

» If **symptoms of mania** emerge during treatment: immediately stop antidepressants and assess for and manage the mania and bipolar disorder. » **BPD**

» If people on SSRIs show **marked/prolonged akathisia** (inner restlessness or inability to sit still), review use of the medication. Either change to TCAs or consider concomitant use of diazepam (5–10mg/day) for a brief period (1 week). In case of switching to TCAs, be aware of occasional poorer tolerability compared to SSRIs and the increased risk of cardio-toxicity and toxicity in overdose.

» If **poor adherence**, identify and try to address reasons for poor adherence (e.g. side-effects, costs, person's beliefs about the disorder and treatment).

» If **inadequate response** (symptoms worsen or do not improve after 4–6 weeks): review diagnosis (including co-morbid diagnoses) and check whether medication has been taken regularly and prescribed at maximum dose. Consider increasing the dose. If symptoms persist 4–6 weeks at prescribed maximum dose, then consider switching to another treatment (i.e., psychological treatment » **INT**, different class of antidepressants » **DEP 3.5**). Switch from one antidepressant to another with care, that is: stop the first drug; leave a gap of a few days if clinically possible; start the second drug. If switching should be longer, for examp

Depression

DEP3

Intervention Details

» If **no response** to adequate trial of two antidepressant medications or if no response on one adequate trial of antidepressants and one course of CBT or IPT: **CONSULT A SPECIALIST**

3.4 Terminating antidepressant medication

» **Consider stopping** antidepressant medication when the person (a) has no or minimal depressive symptoms for 9–12 months and (b) has been able to carry out routine activities for that time period.

» **Terminate contact** as follows:
- In advance, discuss with person the ending of the treatment.
- For TCAs and most SSRIs (but faster for fluoxetine): Reduce doses gradually over at least a 4-week period; some people may require longer period.
- Remind the person about the possibility of discontinuation/ withdrawal symptoms on stopping or reducing the dose, and that these symptoms are usually mild and self-limiting but can occasionally be severe, particularly if the medication is stopped abruptly.
- Advise about early symptoms of relapse (e.g. alteration in sleep or appetite for more than 3 days) and when to come for routine follow-up.
- Repeat psychoeducation messages, as relevant. » **DEP 2.1**

» **Monitor and manage antidepressant withdrawal symptoms** (common: dizziness, tingling, anxiety, irritability, fatigue, headache, nausea, sleep problems)
- Mild withdrawal symptoms: reassure the person and monitor symptoms.
- Severe withdrawal symptoms: reintroduce the antidepressant at the effective dose and reduce more gradually.
- **CONSULT A SPECIALIST** if significant discontinuation/ withdrawal symptoms persist.

» **Monitor re-emerging depression** symptoms during withdrawal of antidepressant: prescribe the same antidepressant at the previous effective dose for another 12 months if symptoms re-emerge.

Depression

DEP3

Intervention Details

This information is for quick reference only and is not intended to be an exhaustive guide to the medications, their dosing and side-effects. Additional details are given in "Pharmacological Treatment of Mental Disorders in Primary Health Care" (WHO, 2009) (http://www.who.int/mental_health/management/psychotropic/en/index.html).

3.5 Information on SSRIs and TCAs

Selective Serotonin Reuptake Inhibitors (SSRIs; e.g. fluoxetine)

Serious side-effects *(these are rare)*
- marked/prolonged akathisia (inner restlessness or inability to sit still);
- bleeding abnormalities in those who regularly use aspirin and other non-steroidal anti-inflammatory drugs.

Common side-effects
(most side-effects diminish after a few days; none are permanent)
- restlessness, nervousness, insomnia, anorexia and other gastrointestinal disturbances, headache, sexual dysfunction.

Cautions
- risk of **inducing mania** in people with bipolar disorder.

Time to response after initiation of adequate dose
- 4–6 weeks.

Dosing fluoxetine in *healthy adults*
- Initiate treatment with 20 mg daily (to reduce risk of side effects that undermine adherence, one may start at 10 mg (e.g. half a tablet) once daily and increase to 20 mg if the medication is tolerated).
- If no response in 4–6 weeks or partial response in 6 weeks, increase dose by 20 mg (maximum dose 60 mg) according to tolerability and symptom response.

Dosing fluoxetine in *adolescents*
- Initiate treatment with 10 mg (e.g. half a tablet) once daily and increase to 20 mg after 1–2 weeks (maximum dose 20 mg)
- If no response in 6–12 weeks or partial response in 12 weeks, consult a specialist.

Dosing fluoxetine in *elderly* or *medically ill*
- Initiate treatment with 10 mg tablet (if available) once daily or 20 mg every other day for 1–2 weeks and then increase to 20 mg if tolerated.
- If no response in 6–12 weeks or partial response in 12 weeks, increase dose gradually (maximum dose 60 mg). Increase dose more gradually than in healthy adults.

Tricyclic antidepressants (TCAs; e.g. amitriptyline)

Serious side-effects *(these are rare)*
- cardiac arrhythmia.

Common side-effects
(most side-effects diminish after a few days; none are permanent)
- orthostatic hypotension (fall risk), dry mouth, constipation, difficulty urinating, dizziness, blurred vision and sedation.

Cautions
- risk of switch to mania, especially in people with bipolar disorder;
- impaired ability to perform certain skilled tasks (e.g. driving) – take precautions until accustomed to medication;
- risk of self-harm (lethal in overdose);
- less effective and more severe sedation if given to regular alcohol users.

Time to response after initiation of adequate dose
- 4–6 weeks (pain and sleep symptoms tend to improve in a few days).

Dosing amitriptyline in *healthy adults*
- Initiate treatment with 50 mg at bedtime.
- Increase by 25 to 50 mg every 1–2 weeks, aiming for 100–150 mg by 4–6 weeks depending on response and tolerability.
- If no response in 4–6 weeks or partial response in 6 weeks, increase dose gradually (maximum dose 200 mg) in divided doses (or a single dose at night).

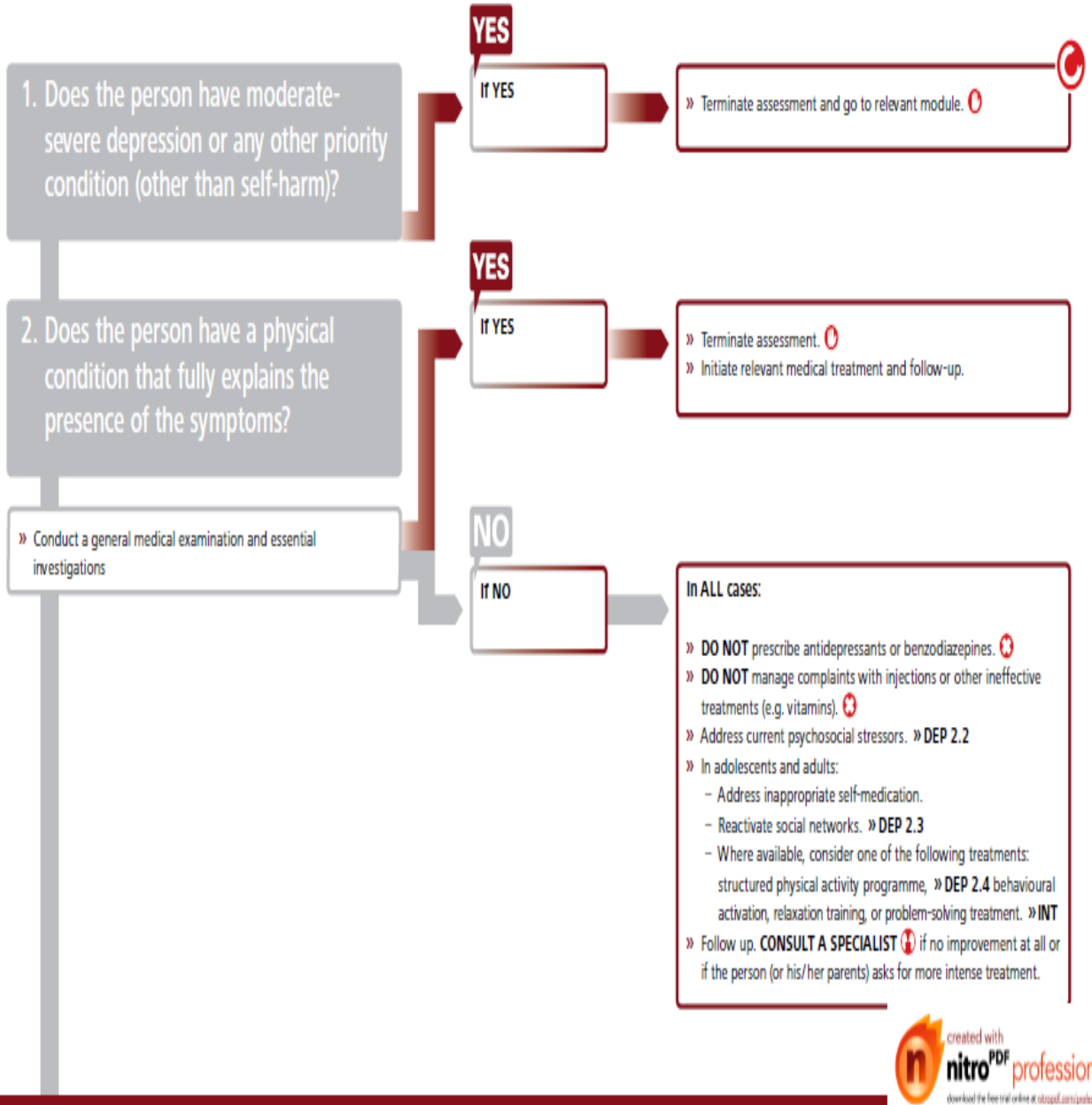
Dosing amitriptyline in *adolescents*
- **DO NOT** prescribe amitriptyline in adolescents.

Dosing amitriptyline in *elderly* or *medically ill*
- Initiate with 25 mg at bedtime.
- Increase by 25 mg weekly, aiming for a target dose of 50–75 mg by 4–6 weeks.
- If no response in 6–12 weeks or partial response in 12 weeks, increase dose gradually (maximum dose 100 mg) in divided doses.
- Monitor for orthostatic hypotension.

Other Significant Emotional or Medically Unexplained Complaints

OTH 1

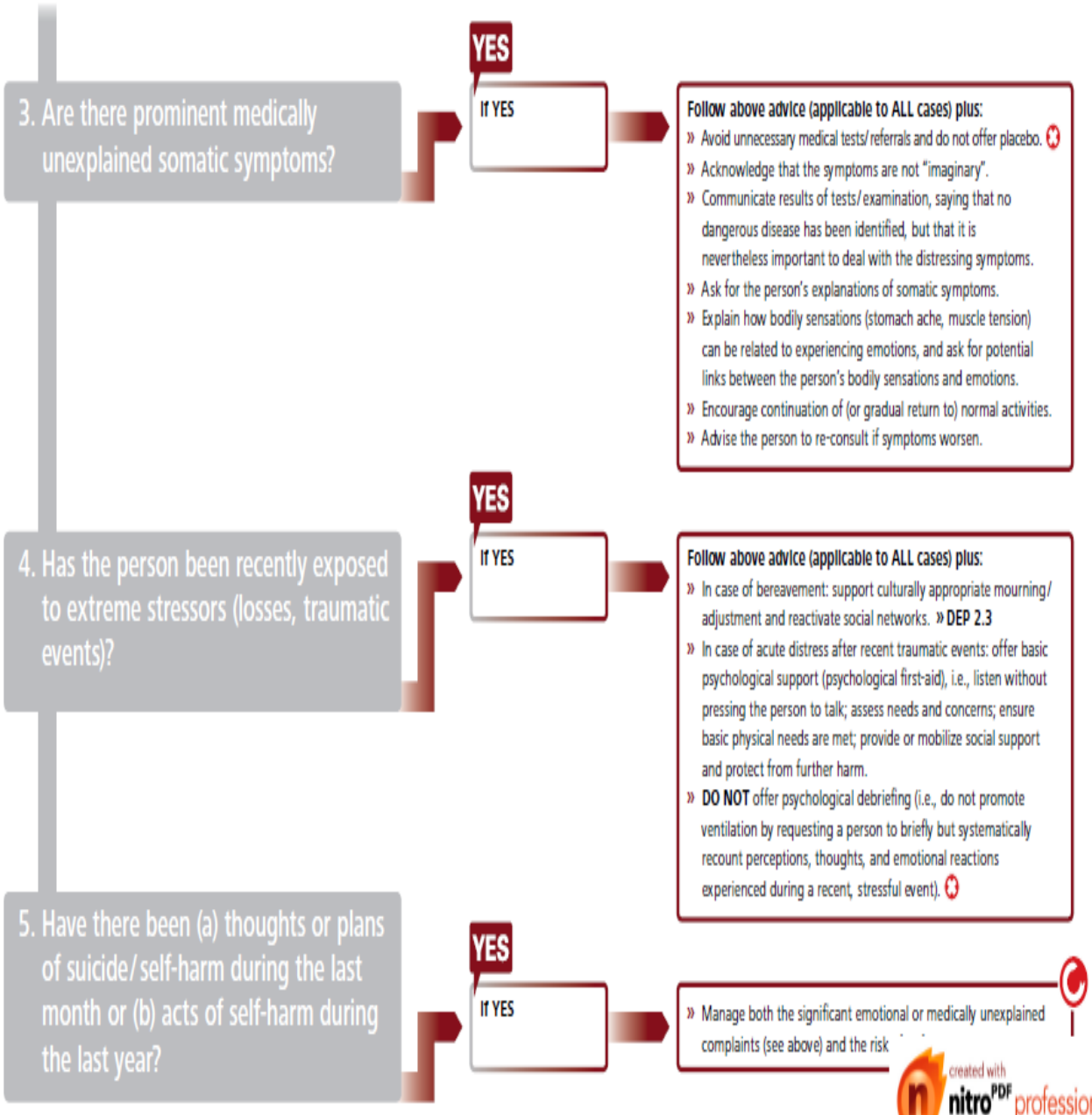
Assessment and Management Guide



Other Significant Emotional or Medically Unexplained Complaints

OTH 1

Assessment and Management Guide



Self-harm/Suicide

SUI 1

Assessment and Management Guide

1. Has the person attempted a medically serious act of self-harm?

Observe for evidence of self-injury

Look for:

» Signs of poisoning or intoxication

» Signs/symptoms requiring urgent medical treatment such as:

- bleeding from self-inflicted wound
- loss of consciousness
- extreme lethargy

Ask about:

» Recent poisoning or other self-harm

YES

If person requires urgent medical treatment for act of self-harm

» Medically treat injury or poisoning.

» If **Acute Pesticide Intoxication**, follow Pesticide Intoxication Management. » **SUI 2.3**

» If medical hospitalization is needed, continue to monitor the person closely to prevent suicide.

NO

If NO, assess for imminent risk of self-harm/ suicide

In all cases:

Place the person in a secure and supportive environment at the health facility (do not leave them alone).

» Care for the person with self-harm. » **SUI 2.1**

» Offer and activate psychosocial support. » **SUI 2.2**

» Consult mental health specialist if available.

» Maintain regular contact and follow-up. » **SUI 2.4**

Self-harm / Suicide

SUI 2

Intervention Details

Advice and Treatment

2.1 Care for the person with self-harm

Place the person in a secure and supportive environment at the health facility (do not leave them alone). If a person with self-harm must wait for treatment, offer an environment that minimizes distress, if possible in a separate, quiet room with supervision and regular contact with a named staff member or a family member to ensure safety.

» Remove the means of self-harm.

» Consult a mental health specialist, if available.

» If a mental health specialist is not available, mobilize family, friends and other concerned individuals or available community resources to monitor and support the individual during imminent risk period. **» SUI 2.2**

» Treat people who have self-harmed with the same care, respect and privacy given to other people, and be sensitive to likely emotional distress associated with self-harm.

» Include the carer(s) if the person wants their support during assessment and treatment, although the psychosocial assessment should usually include a one-to-one interview between the person and health worker to help explore private concerns or issues.

» Provide emotional support to relatives/carers if they need it.

» Ensure continuity of care.

» Hospitalization in non-psychiatric services of general hospitals with the goal of preventing acts of self-harm is not recommended. If admission to a general (non-psychiatric) hospital for management of medical consequences of an act of self-harm is necessary, monitor the person closely to prevent subsequent self-harm in the hospital.

» **If prescribing medication:**
- use medicines that are the least dangerous in case of overdose;
- give prescriptions for short duration (e.g. one week at a time).

2.2 Offer and activate psychosocial support

Offer psychosocial support

» Offer support to the person.

» Explore reasons and ways to stay alive.

» Focus on the person's positive strengths by getting them to talk of how earlier problems have been resolved.

» Consider problem-solving therapy for treating people with acts of self-harm in the last year, if sufficient human resources are available. **» INT**

Activate psychosocial support

» Mobilize family, friends, concerned individuals and other available resources to ensure close monitoring of the individual as long as the risk persists.

» Advise the person and carer(s) to restrict access to the means of self-harm (e.g. pesticides and other toxic substances, medication, firearms) while the individual has thoughts, plans or acts of self-harm.

» Optimize social support from available community resources. These include informal resources such as relatives, friends, acquaintances, colleagues and religious leaders, or formal community resources, if available, such as crisis centres and local mental health centres.

» Inform carers and other family members that asking about suicide will often reduce the anxiety surrounding the feeling; the person may feel relieved and better understood.

» Carers of people at risk of self-harm often experience severe stress. Provide emotional support to relatives/carers if they need it.

» Inform carers that even though they may feel frustrated with the person, it is suggested to avoid hostility or severe criticism towards the person at risk of self-harm.

ANNEXURE 6: Information and consent sheet

Date_____

To participant

My name is Nteere Jacqueline; student at the University of KwaZulu-Natal undertaking Masters in Nursing (mental health). Contact number: +27817761112/ +254724634402, email address jackientere87@yahoo.co.uk/ 212558467@stu.ukzn.ac.za.

You are being invited to consider participating in a study that involves describing the incidence of depressive symptoms and associated person variables among youth as emerging adults in a general outpatient department in AIC Kijabe hospital. Recent literature in Kenya suggests that the number of people struggling with depression may be increasing. This is of great concern especially as services where people can go and get help may not be easily accessible. I am conducting a study that aims to establish the number of young people attending a general hospital outpatient department who may be struggling with depression and attempt to identify physical complaints that may be a sign of this. The purpose of this is to help in the development of processes that can assist in the identification and provision of treatment to people who are struggling with symptoms of depression.

The study is expected to enrol 200 participants at AIC Kijabe hospital. It will involve you completing a self-reported questionnaire that consists of two sections. You will be required to write and place ticks in the questionnaires. The time for completion of the questionnaire will take approximately 10 minutes.

Section A which has two questions and a check list with general health symptoms where you will indicate if you have any of the symptoms listed. If you do have some of the symptoms listed in the check list you will be asked to complete section B. section B contains 21 questions related to how you have been feeling lately and you are required to tick the answer that best represents how you feel. If you do not have any of the symptoms listed in the item 2 check list you do not need to complete section B and the questionnaire will be placed in a sealed box provided.

If you do complete section B, the nurse will accompany you to a room where I explain to you the results of section B. if your responses indicate that you have some symptoms of depression, I will request that I be allowed to refer you so that you can gain additional assistance with how you are feeling. This could involve you seeing a counsellor or a medical officer for medication as well as counselling. You have the right to refuse to be referred; no negative consequences pertaining to you seeking services in this institution will befall you. However I will record in your file the results of section B and that you declined to be referred. In addition I will provide you with a pamphlet to take home with you that explain about depression and where you can access help. It is important for you to note that the information that you will provide on the questionnaire specifically item 2 check list and section B, will be available to, the researcher, the medical officer or the counsellor that you are referred to. Should you refuse the referral this information will be recorded in your file and can be accessed by the CO and or medical officer. Although you are not required to indicate your name on the questionnaire, your name will be indicated in the referral note to the medical officer or the counsellor.

Please also note that your participation in this study is voluntary and your refusal to participate or to withdraw at any stage of the study, without giving a reason, will result in no negative consequences related to the accessing services at the research site. However once the completed questionnaire has been placed in the sealed box it is not possible to remove it as it does not have your name recorded.

Involvement in this study will not affect your time in seeking treatment in this unit as you are required to complete the questionnaire as you await treatment. If you decide to participate in this study, there are no financial benefits for you. However, should you be struggling with unpleasant feelings and these are identified through the completion of the questionnaire you will receive a referral for assistance and this could produce positive health care outcomes for you.

The results of this study will be given to the hospital management in a written report. Your name WILL NOT appear in this report or other reports and publications submitted to the University of KwaZulu-Natal where I am a registered student.

You are free to ask myself, or the nurses assisting me, any questions.

This study has been ethically reviewed and approved by the UKZN Biomedical research Ethics Committee (REF: BE345/13) and AIC Kijabe hospital research and education director and permission to conduct this study from the hospital matron.

In the event of any problems or concerns/ questions you may contact:

1. **THE RESEARCHER**: +27817761112/ +254724634402,
Email address: jackientere87@yahoo.co.uk/ 212558467@stu.ukzn.ac.za,

2. **AIC KIJABE HOSPITAL NURSING DIRECTOR (MATRON):**
Mrs Grace Maina
Email address:nursdir.kh@kijabe.net

3. The UKZN Biomedical Research Ethics Committee, contact details as follows:
BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 2604609
Email: BREC@ukzn.ac.za

4. **AIC KIJABE HOSPITAL:DIRECTOR OF MEDICAL EDUCATION AND RESEARCH**
Tel: (+254)02-3204-6500- Fax (254) 02-3204-6355
Cell: 0733777680
Email: mededdirasst.kh@kijabe.net

ANNEXURE 7: Application to gate keepers for permission to conduct a research project.

The Nursing Director
AIC Kijabe hospital
P.O Box 20
Kijabe, Kenya.

Dear Madam

RE: Application to conduct research at AIC Kijabe hospital

I hereby seek permission to carry out research at AIC Kijabe hospital

I am a student at the University of KwaZulu- Natal, school of Nursing undertaking Master's Degree in mental health nursing. Part of the requirement for the fulfillment of the degree is to conduct a research study.

The title of the research is *A study to describe incidence of depressive symptoms and associated person variables among youth as emerging adults in a general Outpatient Department hospital in Kenya.*

AIC Kijabe was purposefully chosen to be the setting for this study. Data will be collected from youths (18-24 years) seeking outpatient services. Selected and consented participants will be required to fill in a self-reported scale during the period they will be visiting the unit.

This protocol has been approved by the research and Ethics committee at the University of KwaZulu-Natal and the Hospital Director of Medical Education & Research body. Enclosed are the research approval letters from research ethics committees, informed consent, data collection tools and information sheet in both English and Kiswahili.

Your consideration will be highly appreciated.

Yours sincerely

Nteere Jacqueline

Research supervisor: Ms. Amanda Smith Email address: smitha1@ukzn.ac.za
(University of KwaZulu- Natal)

ANNEXURE 8: Letter of approval by the AIC Kijabe hospital institutional review board

A.I.C. Kijabe Hospital

ox 20 Kijabe 00220 Kenya Medical Education and Research

Tel: 020-324-6429 fax: 020-3246335
E-mail: mededdir.kh@kijabe.net

"Health Care to God's Glory"

07 TH October 2013

NTEERE G.JACQUELINE,

RE: PREVALENCE OF DEPRESSIVE SYMPTOMS AND ASSOCIATED PERSON VARIABLES AMONG YOUTH AS EMERGING ADULTS IN GENERAL OUTPATIENT DEPARTMENT HOSPITAL IN KENYA

The institutional review board having carefully reviewed your above title proposal grants you approval to conduct this study at kijabe hospital.

This approval is for a period of one year from 07/10/13. Kindly note that if you intend to continue this study beyond 07/10/2014 then you will need to apply for approval from the institutional review board.

We look forward to receiving the results of the interim analysis.

We wish you all the best in the study. Kindly furnish this office with a copy of your results.

Thank you,

Dr Leland Albright,

Chairperson, institutional Review Board,
AIC Kijabe Hospital.

ANNEXURE 9: Letter of approval by the Research Ethics committee of University of KwaZulu-Natal

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

28 February 2014

Ms Nteere Jacqueline Gatwiri
2461 Nakuru
Kenya
212558467@stu.ukzn.ac.

PROTOCOL: A Study to Describe Prevalence of Depressive Symptoms and Associated person Variables Among Youth as Emerging Adults in a General Outpatient Department Hospital in Kenya
REF: BE345/13

EXPEDITED APPLICATION

A sub-committee of the Biomedical Research Ethics Committee has considered and noted your application received on 25 September 2013.

The study was provisionally approved pending appropriate responses to queries raised. Your responses received on 20 January 2014 to queries raised on 13 December 2013 have been noted by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval and may begin as from 28 February 2014.

This approval is valid for one year from **28 February 2014.** To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2004), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be **RATIFIED** by a full Committee at its next meeting taking place on **08 April 2014.**

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Professor D.R Wassenaar
Chair: Biomedical Research Ethics Committee

Professor D Wassenaar (Chair)
Biomedical Research Ethics Committee
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 2354 **Facsimile:** +27 (0)31 260 4609 **Email:** brec@ukzn.ac.za
Website: http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx
Founding Campuses: Edgewood, Howard College, Medical School, Pietermaritzburg, Westville

INSPIRING GREATNESS

ANNEXURE 10: Permission to conduct research project

AIC Kijabe Hospital
Health Care to God's Glory

October 16, 2013

To whom it may concern,

RE: NTEERE G.JACQUELINE RESEARCH APPROVAL

The above has been approved to carry out research study on:
PREVALENCE OF DEPRESSIVE SYMPTOMS AND ASSOCIATED PERSON VARIABLES AMONG YOUTH AS EMERGING ADULTS IN GENERAL OUTPATIENT DEPARTMENT HOSPITAL IN KENYA.

The timelines for the study is between 7th Oct, 2013 to 7th Oct, 2014 i.e. a period of one year and expected to maintain high standards of professionalism.

I wish you all the best in the study.

Thank You

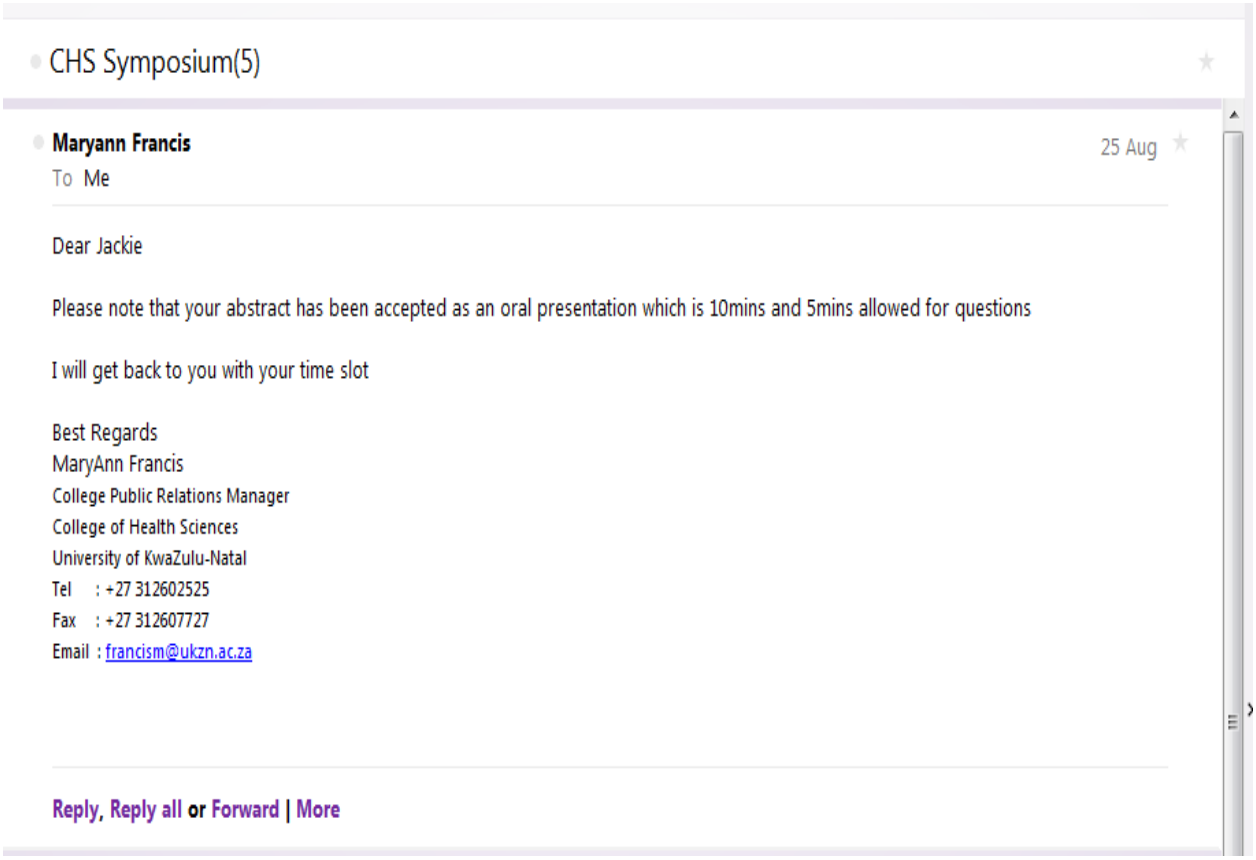
Grace Maina (Mrs)
Nursing Director
AIC Kijabe Hospital

Kijabe Hospital
P.O. Box 20
Kijabe 00220, Kenya
Naivasha Med. Centre
T 0733-422-346
Marira Clinic
T 0735-118-527

T 020-3240-500/492
F 020-3240-335
C 0737-370-090 General Enquiries
0712-504-050 General Enquiries
0727-145-122 On-Call Manager

E Info.khi@kijabe.net
W www.kijabehospital.org

ANNEXURE 11: CHS symposium invitation.



CHS Symposium(5)

Maryann Francis 25 Aug

To Me

Dear Jackie

Please note that your abstract has been accepted as an oral presentation which is 10mins and 5mins allowed for questions

I will get back to you with your time slot

Best Regards
MaryAnn Francis
College Public Relations Manager
College of Health Sciences
University of KwaZulu-Natal
Tel : +27 312602525
Fax : +27 312607727
Email : francism@ukzn.ac.za

Reply, **Reply all** or **Forward** | **More**

ANNEXURE 12: Editing Declaration

Editing Declaration

P O Box 531
Hillcrest
3650
KwaZulu-Natal

2014-10-28

TO WHOM IT MAY CONCERN

Thesis Title: Describing the Incidence of Depressive Symptoms and Associated Person's Variables Among Emerging Adults Within a Selected General Hospital Outpatient Department in Kenya

Author: Jacqueline Gatwiri Nteere

This is to certify that I have edited the above thesis from an English language perspective and have made recommendations to the author regarding spelling, grammar, punctuation, structure and general presentation.

A marked-up version of the thesis has been sent to the author and is available as proof of editing.

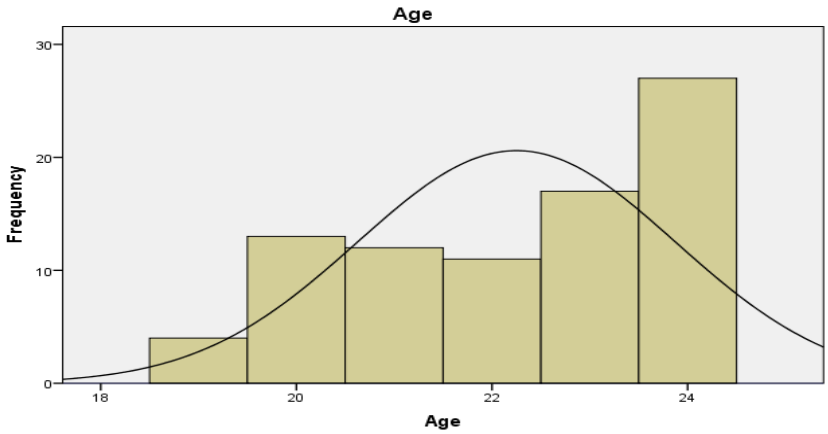
I have had no input with regard to the technical content of the document and have no control over the final version of the thesis as it is the prerogative of the author to either accept or reject any recommendations I have made. I therefore accept no responsibility for the final assessment of the document.

Yours faithfully

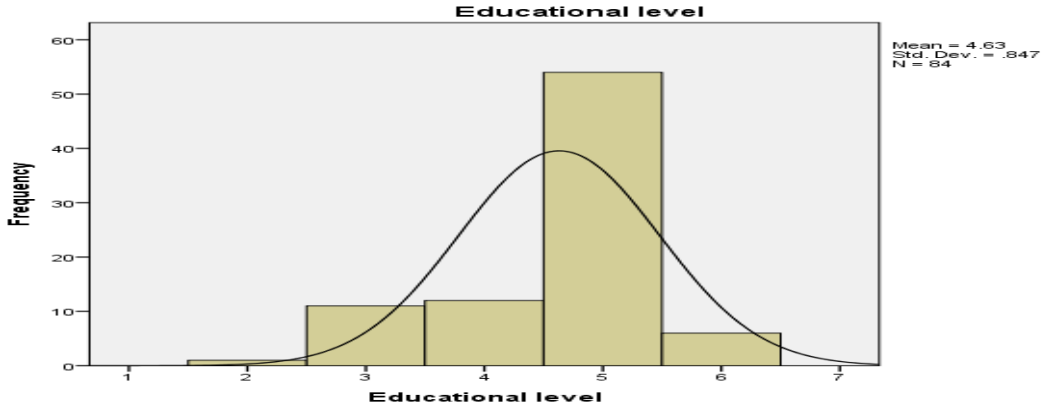
Margaret Addis

ANNEXURE 13: Histograms

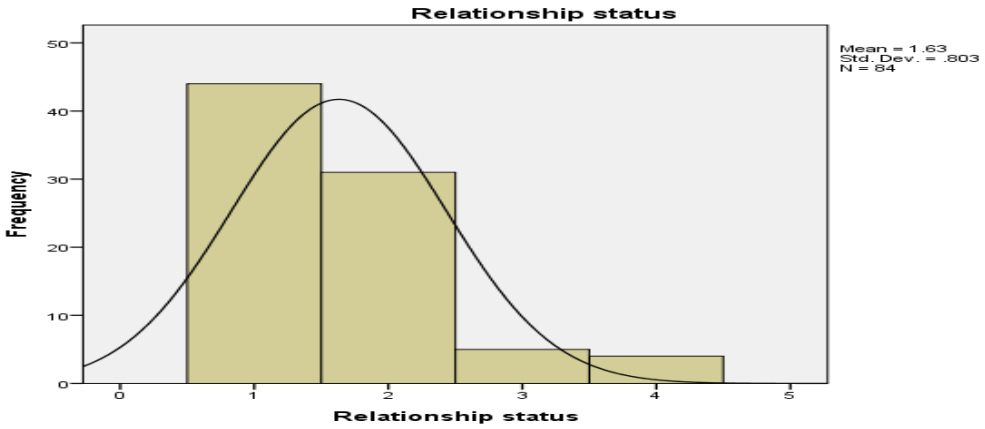
Annexure 13A: histogram of age distribution of participants



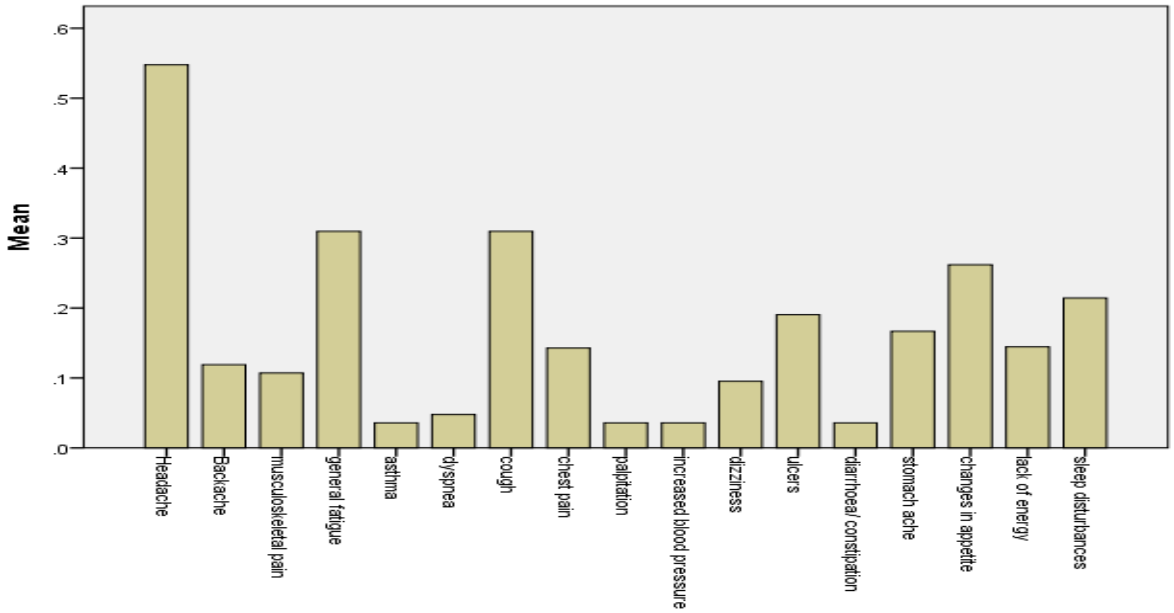
Annexure 13B: Histogram of education distribution of participants



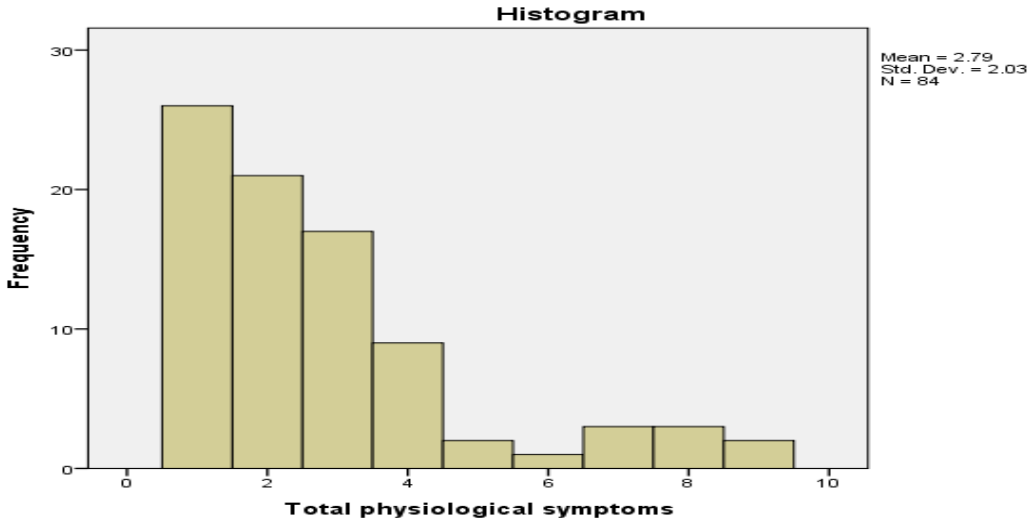
Annexure 13C: Histogram of the distribution of participants' relationship status



Annexure 13D: Histogram of the mean distribution of physiological symptoms

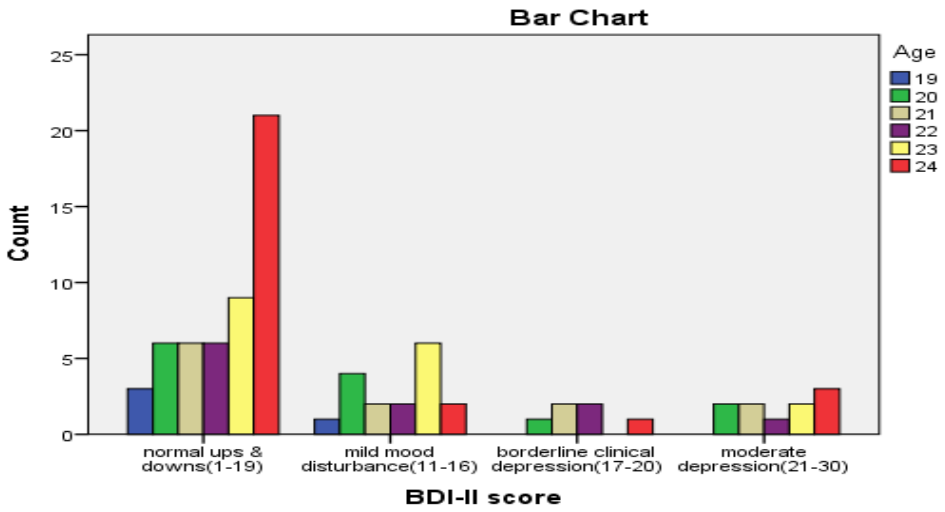


Annexure 13E: Histogram of the distributions of the total score of physiological symptoms



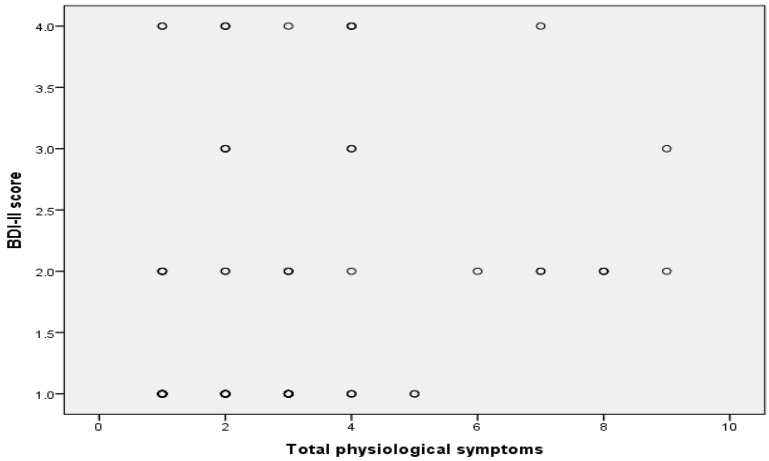
ANNEXURE 14: Charts

Annexure 14A: A bar chart of the BDI-II score and age of participants

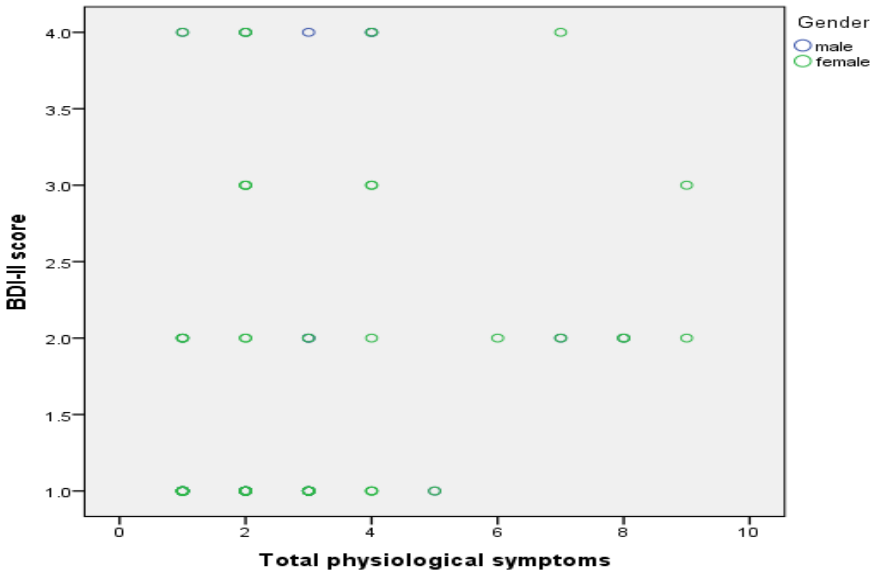


ANNEXURE 15: Scatterplots

Annexure 15A: Scatter plot of BDI-II score and total physiological symptoms

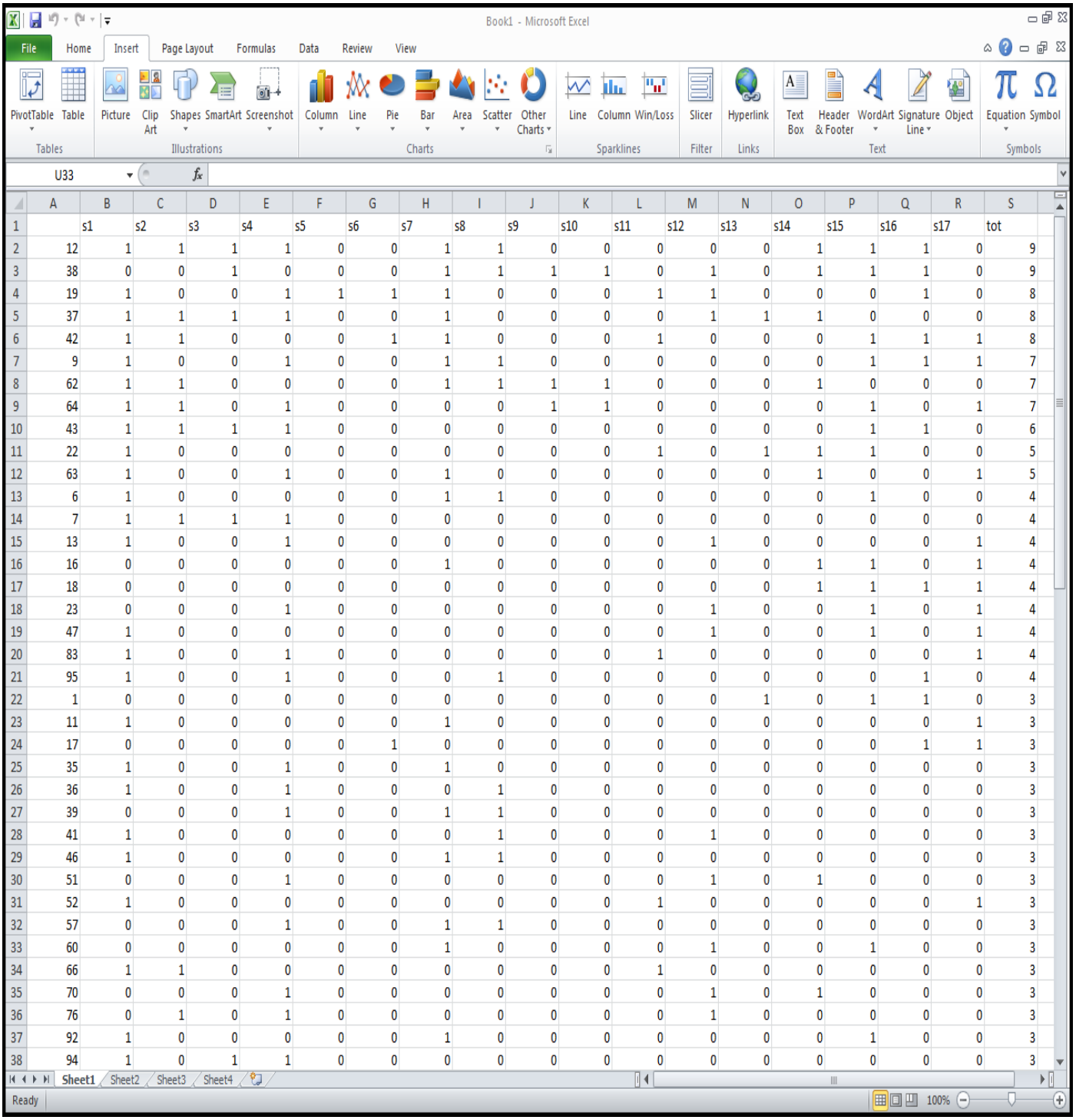


Annexure 15B: Scatter plot of Interrelationship between total physiological symptoms, BDI-II score and gender



ANNEXURE 16: Tables

Table 16A: Spread sheet of physiological symptoms



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1		s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	tot
2	12	1	1	1	1	0	0	1	1	0	0	0	0	0	1	1	1	0	9
3	38	0	0	1	0	0	0	1	1	1	1	0	1	0	1	1	1	0	9
4	19	1	0	0	1	1	1	1	0	0	0	1	1	0	0	0	1	0	8
5	37	1	1	1	1	0	0	1	0	0	0	0	1	1	1	0	0	0	8
6	42	1	1	0	0	0	1	1	0	0	0	1	0	0	0	1	1	1	8
7	9	1	0	0	1	0	0	1	1	0	0	0	0	0	0	1	1	1	7
8	62	1	1	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	7
9	64	1	1	0	1	0	0	0	0	1	1	0	0	0	0	1	0	1	7
10	43	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	6
11	22	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	5
12	63	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	5
13	6	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	4
14	7	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
15	13	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	4
16	16	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	1	4
17	18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	4
18	23	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	4
19	47	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	4
20	83	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	4
21	95	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	4
22	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3
23	11	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3
24	17	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	3
25	35	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
26	36	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3
27	39	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3
28	41	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
29	46	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3
30	51	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	3
31	52	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3
32	57	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3
33	60	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3
34	66	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
35	70	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	3
36	76	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3
37	92	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	3
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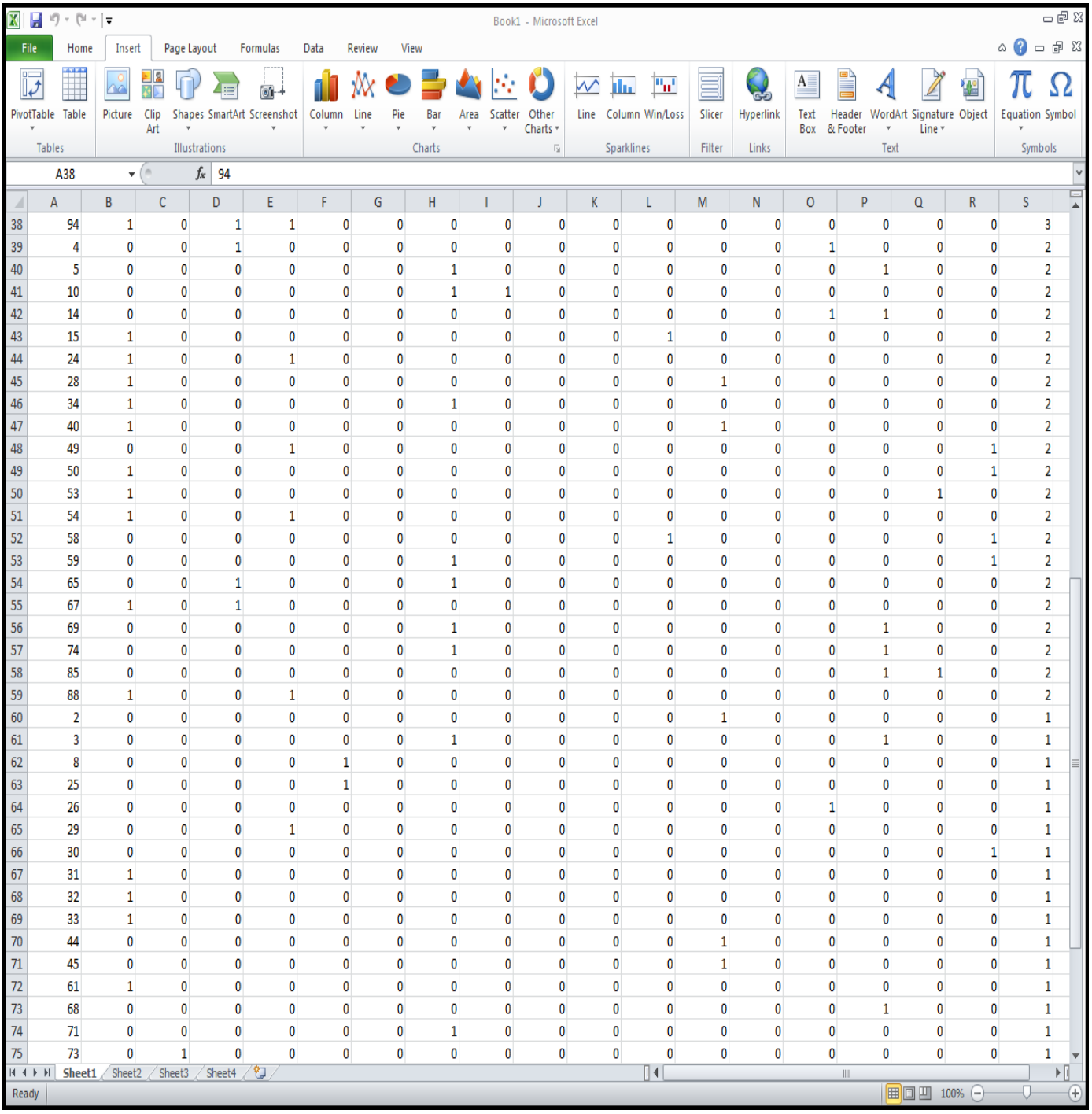

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
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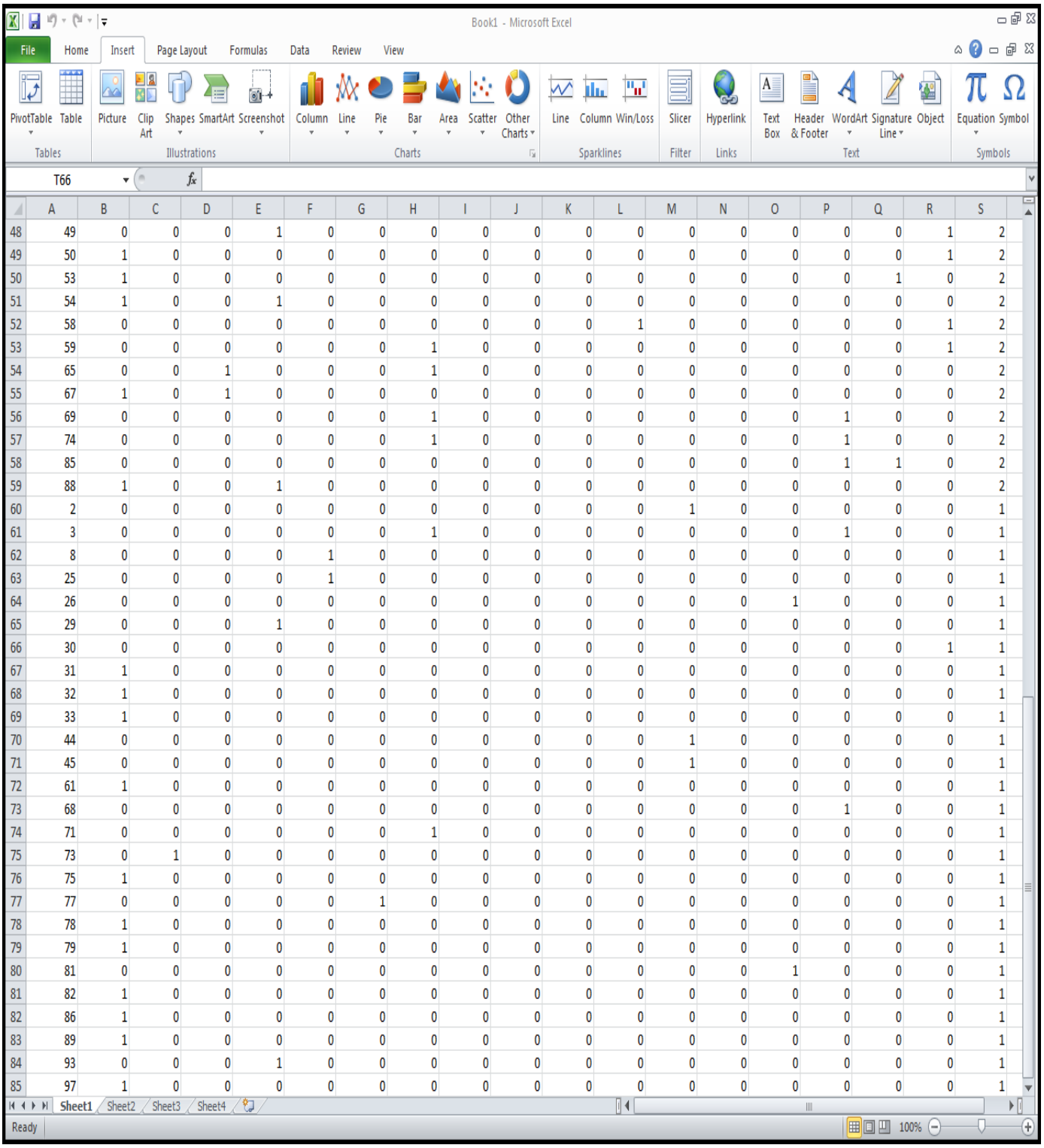
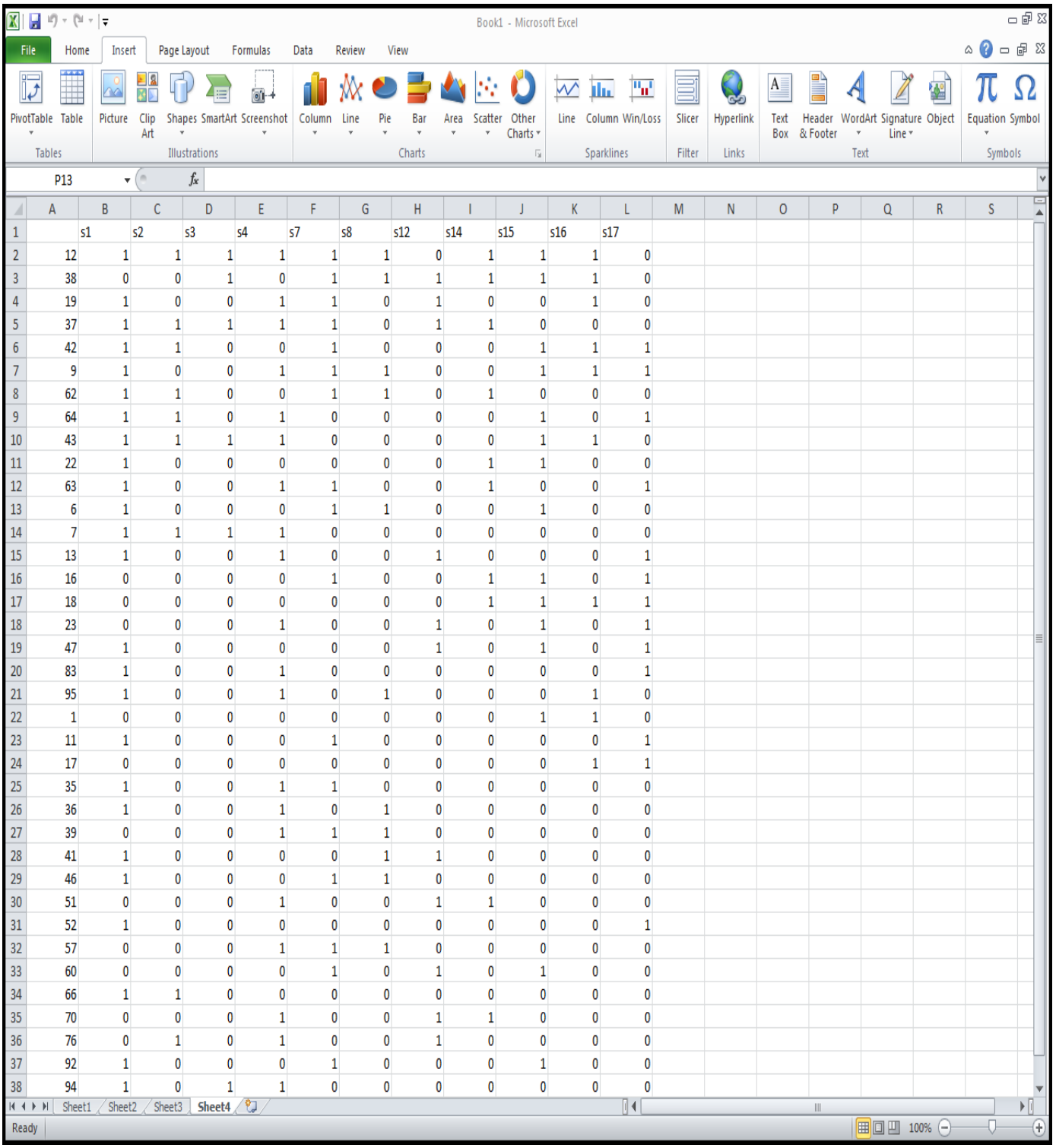
39	4	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
40	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
41	10	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
42	14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
43	15	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
44	24	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
45	28	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
46	34	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
47	40	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
48	49	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
49	50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
50	53	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
51	54	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
52	58	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
53	59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
54	65	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
55	67	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
56	69	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
57	74	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
58	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
59	88	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
60	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
61	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
62	8	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
63	25	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
64	26	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
65	29	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
66	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
67	31	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
68	32	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
69	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
70	44	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
71	45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
72	61	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
73	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
74	71	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
75	73	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
48	49	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
49	50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
50	53	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
51	54	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
52	58	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
53	59	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
54	65	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
55	67	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
56	69	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
57	74	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
58	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
59	88	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
60	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
61	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
62	8	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
63	25	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
64	26	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
65	29	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
66	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
67	31	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
68	32	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
69	33	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
70	44	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
71	45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
72	61	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
73	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
74	71	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
75	73	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
76	75	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
77	77	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
78	78	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
79	79	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
80	81	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
81	82	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
82	86	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
83	89	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
84	93	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
85	97	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Table 16B: Spread sheet of commonly selected physiological symptoms



	A	B	C	D	E	F	G	H	I	J	K	L
1		s1	s2	s3	s4	s7	s8	s12	s14	s15	s16	s17
2	12	1	1	1	1	1	1	0	1	1	1	0
3	38	0	0	1	0	1	1	1	1	1	1	0
4	19	1	0	0	1	1	0	1	0	0	1	0
5	37	1	1	1	1	1	0	1	1	0	0	0
6	42	1	1	0	0	1	0	0	0	1	1	1
7	9	1	0	0	1	1	1	0	0	1	1	1
8	62	1	1	0	0	1	1	0	1	0	0	0
9	64	1	1	0	1	0	0	0	0	1	0	1
10	43	1	1	1	1	0	0	0	0	1	1	0
11	22	1	0	0	0	0	0	0	1	1	0	0
12	63	1	0	0	1	1	0	0	1	0	0	1
13	6	1	0	0	0	1	1	0	0	1	0	0
14	7	1	1	1	1	0	0	0	0	0	0	0
15	13	1	0	0	1	0	0	1	0	0	0	1
16	16	0	0	0	0	1	0	0	1	1	0	1
17	18	0	0	0	0	0	0	0	1	1	1	1
18	23	0	0	0	1	0	0	1	0	1	0	1
19	47	1	0	0	0	0	0	1	0	1	0	1
20	83	1	0	0	1	0	0	0	0	0	0	1
21	95	1	0	0	1	0	1	0	0	0	1	0
22	1	0	0	0	0	0	0	0	0	1	1	0
23	11	1	0	0	0	1	0	0	0	0	0	1
24	17	0	0	0	0	0	0	0	0	0	1	1
25	35	1	0	0	1	1	0	0	0	0	0	0
26	36	1	0	0	1	0	1	0	0	0	0	0
27	39	0	0	0	1	1	1	0	0	0	0	0
28	41	1	0	0	0	0	1	1	0	0	0	0
29	46	1	0	0	0	1	1	0	0	0	0	0
30	51	0	0	0	1	0	0	1	1	0	0	0
31	52	1	0	0	0	0	0	0	0	0	0	1
32	57	0	0	0	1	1	1	0	0	0	0	0
33	60	0	0	0	0	1	0	1	0	1	0	0
34	66	1	1	0	0	0	0	0	0	0	0	0
35	70	0	0	0	1	0	0	1	1	0	0	0
36	76	0	1	0	1	0	0	1	0	0	0	0
37	92	1	0	0	0	1	0	0	0	1	0	0
38	94	1	0	1	1	0	0	0	0	0	0	0

Table 16C: Combination of three physiological symptoms

Cluster ID	Symptoms within cluster	n
1	Headache, general fatigue, cough	6
2	Headache, general fatigue, lack of energy	5
3	Headache, backache, general fatigue	5
4	Headache, musculoskeletal pain, general fatigue	5
5	Headache, general fatigue, sleep disturbances	5
6	Headache, general fatigue, lack of energy	5
7	Headache, general fatigue, chest pain	5
8	Headache, general fatigue, changes in appetite	4
9	Headache, backache, musculoskeletal pain	4
10	Cough, chest pain, changes in appetite	4
11	Backache, musculoskeletal pain, general fatigue	4
12	General fatigue, cough, chest pain	4
13	Cough, changes in appetite, lack of energy	4
14	Chest pains, changes in appetite, lack of energy	3
15	Changes in appetite, lack of energy, sleep disturbance	3
16	General fatigue, cough, stomach-ache	3
17	General fatigue, cough, lack of energy	3
18	Backache, general fatigue, changes in appetite	3
19	Headache, changes in appetite, lack of energy	3
20	Cough, chest pain, stomach ache	3
21	Cough, chest pain, lack of energy	3
22	Headache, general fatigue, stomach-ache	3
23	Headache, general fatigue, ulcers	3

Table 16D: Distribution of scores on item 9; suicidal thoughts

Beck's classification	Total BDI-II score of participant	Item 9- Suicide thoughts or wishes		
		I have thoughts of killing myself but I will not carry them out	I would like to kill myself	I would kill myself if I had a chance
Moderate depression (score of 21-30)	24	X		
	29	X		
	23	X		
	27	X		
	24		X	
	25		X	
Borderline depression (17-21)	17	X		
	20	X		
	18	X		
	20			X
Normal ups and downs	10		X	
Mild depression	15		X	

Table 16E: Correlation between total physiological symptoms and BDI-II scores

Correlations

			Total physiological symptoms	BDI-II score
Spearman's rho	Total physiological symptoms	Correlation Coefficient	1.000	.315**
		Sig. (2-tailed)	.	.003
		N	84	84
	BDI-II score	Correlation Coefficient	.315**	1.000
		Sig. (2-tailed)	.003	.
		N	84	84

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