

**Bio-psychosocial risk factors associated with adolescent sub-threshold depression in
Mamelodi Township, North-East Pretoria, South Africa.**

By

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Statement of Original Authorship

The work contained in this mini-dissertation has not been previously submitted to meet requirements for an award at this or any other higher institution, to the best of my knowledge and belief, the mini dissertation contains no material previously published or written by another person except where due references is made.

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Abstract

Depression is a primary source of illness burden and disability in people of all ages. Current diagnostic procedures, which classify people with sub-threshold depression into complex discrete groups, may obscure the fact that depressive symptoms are dimensional and range from none to severe. Minor and sub-threshold depression are widespread, and individuals who fall below the diagnostic threshold have significant functional difficulties with a negative influence on their quality of life. Adolescents appear to be particularly susceptible to depression as noted by literature. The aim of this study was to explore the correlation between familial, peer, gender, genetics and South African factors (e.g. such as vulnerability to crime and violence; adolescent sexual behaviour, and threat to HIV/AIDS); and the development of adolescent sub-threshold depression with a sample of adolescents in Mamelodi Township. This study employed a correlation study design. Three online questionnaires were administered to 134 learners in three different schools in Mamelodi Township. The questionnaires were demographic questionnaire, Beck's Depression Inventory-Second Edition (BDI-II), and the Adolescent Life Perspective Questionnaire (ALPQ). The results of the study were analysed using a multivariate analysis. The study found that familial, peers, genetics, and South African factors had a positive association to adolescent sub-threshold depression in Mamelodi Township. This suggests that the four factors had the possibility to influence the development of adolescent sub-threshold depressive symptoms in Mamelodi Township. Gender had a negative association towards adolescent sub-threshold depression, meaning that gender did not have an influence in the development of sub-threshold depression amongst adolescents residing in Mamelodi Township. The policy and service delivery implications of the findings will be to help mental health care practitioners, teachers, and the community enhance awareness of bio-psychosocial variables and adolescent sub-threshold depression symptoms.

Keywords: Adolescent, bio-psychosocial factors, family, gender, genetics, peers, South African factors, sub-threshold depression.



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Chapter 1: Introduction

Introduction

The study aims at exploring the bio-psychosocial factors and their influence on the development of adolescent sub-threshold depression (depressive symptoms) in Mamelodi Township, in Gauteng province, South Africa. This chapter presents a brief outline of what is to follow in this dissertation.

The background to the research will be detailed, with specific focus on the academic framework of the research as well as the population setting of the research. The justification, aims, and objectives of the research will also be presented in this chapter. This chapter will also present a rationale of the current research study. This chapter will also have a brief outline of the remaining chapters of the dissertation.

Background

Depression is a primary source of illness burden and disability in people of all ages (Magklara et al., 2015). Suicide, substance abuse, substantial social and educational disabilities are all major risk factors (Magklara et al., 2015). According to Rodríguez, Nuevo, Chatterji, and Ayuso-Mateos (2012), depression is better understood as a spectrum rather than a collection of distinct classifications. The question of whether diagnosable depression exists on a continuum with sub-threshold depressed symptoms or is a categorically separate phenomena has been debated. Lewinsohn, Solomon, Seeley, and Zeiss (2000) undertook a study titled *Clinical implications of "sub-threshold" depressive symptoms* in an attempt to answer this topic. The study's findings revealed that the clinical importance of depressive symptoms is not contingent on reaching the major depressive diagnostic threshold, and that depression should be viewed as a continuum.

Fergusson, Horwood, Ridder, and Beautrais (2005) stated that “current diagnostic procedures, which classify people with sub-threshold depression into complex discrete groups, may obscure the fact that depressive symptoms are dimensional and range from none to severe” (p. 66). Minor and sub-threshold depression are widespread, and individuals who fall below the diagnostic threshold have significant functional difficulties with a negative influence on their quality of life (Rodríguez et al., 2012). Sub-threshold depression and anxiety, according

to Balazs et al. (2013), are linked to increased illness burden and suicide risk. Sub-threshold depressive disorder is one of the best-established risk factors for the start of full-syndrome depressive disorders. This suggests that sub-threshold depression raises the chances of a major depressive episode emerging (Shankman et al., 2009). Despite the importance of major depression in clinical practice and in the community, its sub-threshold manifestations that do not match existing classification standards have received less attention (Rodríguez et al., 2012).

Adolescents are frequently thought to be a healthy generation, however they appear to be particularly susceptible to depression (Thapar, Collishaw, Pine, & Thapar, 2012). Adolescence is a difficult time because adolescents are suddenly expected to become self-sufficient, abstract thinkers, problem solvers, and planners (Suneetha, 2013). As a result, they are unprepared for the aforementioned changes, which may cause mental distress. Sserunjogi et al. (2016) argued that the shift from childhood to adulthood entails significant physical, psychological, cognitive, and social changes that might be stressful for the teenager. Emotional distress, especially depression, is frequently associated with these transformational obstacles.

Adolescence is a phase of high risk for depression, which is linked to unfavourable psychological, social, and educational consequences. Despite the scarcity of studies on sub-threshold depression, there are a few that have looked at adolescent sub-threshold depression. According to several research, the prevalence of sub-threshold depression rises dramatically after the age of 12 and peaks in adolescence between the ages of 14 and 16. Sub-threshold depression in adolescents was the subject of a systematic review undertaken by Bertha and Balázs (2013). The review highlighted the fact that sub-threshold depression is a significant health problem among adolescents, and adolescents with sub-threshold depression may be a subgroup of youth who require additional assistance to reduce clinically significant depressive symptoms in order to successfully prevent a later major depressive episode. As a result, early detection of adolescent sub-threshold depression and anxiety is critical in order to reduce the risk of the aforementioned mental illnesses during adolescence.

Eapen and Črnčec (2012) have indicated multiple factors that enhance the likelihood of depression, including a family history of mood and stressful life issues. Gender was also shown to have an influence on adolescent depression, apart from the above-mentioned risk variables (Eapen & Črnčec, 2012). According to previous research, the prevalence of adolescent depressive symptoms amongst adolescent was found to lie more on females than males (Thapar et al., 2012). Some research have demonstrated that sub-threshold depression is at risk for

negative effects of victimization, psycho-pathogenic parenting, poor parenting and attachment issues similar to the major depressive diseases (González-Tejeras et al., 2005). In other research, belonging to an ethnic minority has been linked to a higher incidence of sub-threshold depression while lower parental education has been linked to a younger onset of sub-threshold depression (Crockett, Martínez, & Jiménez-Molina, 2020). Sub-threshold depression in adolescence has also been linked to socio-emotional dysfunction and higher interpersonal stress in comparison to adolescents who do not have depressive symptoms (Balázs et al., 2013). In other words, sub-threshold depression has been associated with a considerable impact on the quality of life of adolescents (Stewart et al., 2002).

According to Toska, Hodes, Cluver, Atujuna, and Laurenzi (2019), South African adolescents confront a variety of health issues, some of which overlap, including HIV, exposure to and perpetration of violence, poor mental health, and substance abuse. This might continue and exacerbate the likelihood of developing mental health disorders in South African adolescents. According to Das-Munshi et al. (2016), adolescents who live in low-income homes and attend low-income schools are more prone to acquire mental disorders. This is attributable to a number of circumstances, including increasing exposure to violence, food and financial poverty, substance abuse, a lack of economic security, and fewer work or career options. Some of these risk factors, such as violence and poverty, are especially prevalent in South Africa (Kleintjes et al., as cited in Das-Munshi et al., 2016). Furthermore, Flisher et al. (2012) discovered that HIV infection, drug use, and exposure to violence all increase vulnerability to mental health disorders in South Africa. However, little study has been undertaken in this environment to evaluate the association between these occurrences and mental health concerns. These are some of the factors that South African adolescents face on a daily basis, which may lead to the development of mental disorders such as depression.

Therefore the current study focused on the bio-psychosocial risk factors which might have an influence in the development of adolescent sub-threshold depression in Mamelodi Township. The bio-psychosocial risk factors included familial factors, gender, environmental factors, genetics, and peer relations. A depth discussion of these factors is outlined in the literature review of the study (Chapter 2).

Explanation of concepts

Adolescence

According to Kapur (2015), adolescence begins at the age of 10, 11 or 12, with differences between cultures and societies, and ends between the ages of 18 and 21.

Adolescence, according to Steinberg (2014), is defined as the period of time between the onset of puberty and the attainment of social independence. According to Grumbach and Styne (1998, as referenced in Curtis, 2015), the acknowledged mean age for the onset of puberty is 11 years, with boys starting between the ages of 9 and 13.5 years and girls starting between the ages of 7 and 13. This is the stage Erikson referred to as Identity versus Role Diffusion, in which the child must integrate all of the tasks from the previous four stages into a coherent identity and prepare to face the world as an independent adult (Erikson, 1968). The current study will use Kapur's (2015) definition of adolescence.

Depressive symptoms

In the purpose of this study, depression will refer to a clinical syndrome, or cluster of symptoms, that encompasses alterations in emotion, cognition, and behaviour and meets the DSM 5 diagnostic criteria for a Major Depressive Disorder (American Psychiatric Association, 2013, as cited in Makhubela, 2015). Clinical depression is distinguished by persistent sadness, anxiety, hopelessness, rumination, anhedonia, suicidal ideation, tearfulness, and vegetative and somatic complaints, whereas non-clinical depression/dysphoria is a normal reaction to certain life events or stressful events and is not always a psychiatric disorder (Makhubela, 2015)

Sub-threshold Depressive symptoms

Adolescents with a score of 20 or higher are depressed, according to Beck et al. (1996, as cited in Balazs et al., 2013). Those who score less than 20 on the BDI-II and are positive (>0) on items assessing DSM-IV-TR MDE core symptoms (sadness or loss of pleasure) have sub-threshold depression (Balazs et al., 2013). Individuals with significant functional impairment who do not meet diagnostic criteria are considered to have sub-threshold disorders

Genetic predisposition

McLean (2003) defines genetic predisposition as inherited characteristics that may influence the development of depression. According to Boomsma et al. (2000), genetic factors account for approximately 50% of the variance in depression, anxiety, somatic anxiety, and neuroticism.

Peer relationships

Peer relationships, according to McLean (2003), are described as relationships with others of similar age and status to oneself.

Family relationships

Family relationships are those that exist between a group of parents and their children (McLean, 2003). Family relationships have a significant impact on a person's emotions throughout their life (Merz, Consedine, Schulze, & Schuengel, 2009). In the South African context, it extends beyond the nuclear family. This includes grandparents, uncles, aunts, and cousins. Family members are connected in significant ways at every stage of life, and these interactions serve as a vital source of social connection and social influence for individuals throughout their lives (Umberson, Crosnoe, & Reczek, 2010).

Gender Characteristics

Gender refers to the duties and expectations assigned to men and women in a given society, roles that fluctuate through time, place, and stage of life, according to Philips (2005).

Bio-psychosocial factors

Bio-psychosocial factors refer to the biological, psychological, and social factors which have an impact or influence on an illness or disorder (Havelka, Lucanin, & Lucanin, 2009).

Aim

To explore the correlation between familial, peer, gender, genetics and South African factors and the development of adolescent sub-threshold depression with a sample of adolescents in Mamelodi Township.

Context

In this study bio-psychosocial risk factors for adolescent depressive symptoms in Mamelodi Township are explored. Mamelodi is a township northeast of Pretoria, Gauteng, South Africa, that is part of the City of Tshwane Metropolitan Municipality. Depressive symptoms can be a result of different factors, some of which are mentioned in the background and literature review of this study. Therefore the study will provide more exposure to those bio-psychosocial factors which might have an influence in the development of adolescent sub-threshold depression in Mamelodi Township. This study will investigate bio-psychosocial risk factors such as familial relationships, peers, gender, genetics, and South African factors (violence, crime, HIV/AIDS, and future prospects). It will further explore which of those bio-psychosocial factors are prevalent in the cohort of adolescents residing in Mamelodi Township. Due to covid-19 restrictions established by the Department of Education, the majority of the study will be done remotely (online).

Rationale

Since the incidence of depression increases during puberty, especially among females, Thapar et al. (2012) suggested that effective prevention, as well as early detection and intervention strategies, are needed during this key life period. As a result, it is critical to revisit the risk and protective variables for depression in adolescents, with a particular emphasis on the individual, familial, and social contexts of depression (Kassis, Artz, & White, 2017). As a result, the goal of this study is to look into the bio-psychosocial risk factors for adolescent depressive symptoms in Mamelodi Township, in order to aid in the development of effective intervention processes and to add to the existing research on adolescent depressive symptoms in township areas. Furthermore, to raise awareness of common bio-psychosocial risk factors that may affect adolescent depression symptoms, as well as to determine which gender is more prone to develop adolescent depressive symptoms based on gender prevalence.

Thesis Outline

There are five chapters in the dissertation, as well as an appendix section. The first chapter gives an overview of the research that will be carried out. This chapter also discusses the research study's background, justification, goals, and context.

The second chapter will be devoted to a thorough assessment of the literature. This research study's literature evaluation focuses on several studies that have previously been undertaken in relation to bio-psychosocial variables and teenage depressive symptoms. The review is divided into five sections: family functioning and adolescent depressive symptoms, environmental factors and adolescent depressive symptoms, peer relationships and adolescent depressive symptoms, genetics and adolescent depressive symptoms, and gender and adolescent depressive symptoms.

The third chapter will present the research methods and methodology used in the study. This includes the research design, sampling, participant recruitment, measurement instruments, and the manner in which data was collected and analysed. The chapter will also consider the ethics of conducting research with adolescent populations. The fourth chapter will present the results obtained from the measurement instruments which were used to collect data.

The fifth chapter discusses the findings of the research study, further provides a brief summary of the study, the limitations and recommendations for future study.

Chapter 2: Literature review

Introduction

This chapter focuses on the literature that is relevant to the present study. Some of these literature sources are outdated but provide basic and important principles that could not be excluded. This chapter includes the identification and articulation of the relationship between similar and different studies in the literature. This literature is specifically in the field of study of the bio-psychosocial risk factors associated with adolescent depressive symptoms in Mamelodi Township. It also provides more in-depth information about the influence of the above-mentioned factors on adolescent depressive symptoms, in terms of the relevant literature sources. This chapter identifies studies that have been similar and also describes how this study is different. It also fits the study into the existing body of knowledge.

This chapter consists of a literature review on the following topics: Environmental factors and adolescent depressive symptoms, which speaks to how environmental factors might play a significant role in the development of adolescent depressive symptoms. The second topic is family factors and adolescent depressive symptoms. This topic speaks to how familial factors and relationships might have an influence on the development of adolescent depressive symptoms. The third topic in this chapter is based on how gender plays a role in the development of adolescent depressive symptoms. The fourth topic is genetic factors and adolescent depressive symptoms. This topic explores the influence of genetics on the development of adolescent depressive symptoms. The last topic in the chapter discusses the role which peers might have in the development of adolescent depressive symptoms.

Prevalence of adolescent depression in South Africa

According to Lund, Boyce, Flisher, Kafaar, and Dawes (2009) it is estimated that approximately three quarters of mental health comorbidities that affect adults across the life course emerge during the age period of adolescence and young adulthood. Mental health comorbidities in young people have been linked to adverse social conditions such as exposure to trauma, violence and familial fragmentation (Lund et al., 2009). Simultaneously, while this generation of South African adolescents are the first to enter adulthood in the post-apartheid era, full of new possibilities, they are coping with the inherited postcolonial legacy of high rates of poverty, violence, gender inequality, familial fragmentation and an educational and

employment system that is challenging to negotiate (Klot & Nguyen, 2011). This tends to create discrepancies on the mental health of adolescents growing in South Africa. In sustenance of this statement, Das-Munshi et al. (2016) conducted a study in a large metropolitan area in Cape Town, South Africa which was titled *Mental Health Inequalities in Adolescents Growing Up in Post-Apartheid South Africa*. The study's objective was to assess mental health disparities in a representative sample of adolescents growing up in South Africa. The study had a response rate of 88% (1034 of 1169 individuals). The aforementioned study found that adolescents experienced a high prevalence of depression (41%), anxiety (16%) and PTSD (21%). A gradient between material disadvantage and common mental disorders (CMD)/ Post Traumatic Stress disorder (PTSD) was evident across all ethnic/racial groups. Furthermore the respondents self-identifying as 'black' or 'coloured' were disadvantaged across most indicators. After adjusting for confounders, relative to white children, relative risk (RR) of CMD in black children was 2.27 and for PTSD was 2.21. Relative risk of CMD was elevated in children self-identifying as 'coloured' (RR: 1.73 and for PTSD it was 2.70). Putative mediators (violence, racially motivated bullying, social support, self-esteem) partially accounted for differences in CMD and fully for PTSD. Suliman et al. (2009) study indicated that adolescents exposed to multiple traumas are more likely to experience more severe symptoms of PTSD and depression than those who experience a single event, with this effect independent of childhood adversity and everyday stressful life experiences. Exposure to multiple trauma, however, does not seem to be associated with more severe anxiety symptoms. This would mean that white adolescents are less likely to experience depression as a result of PTSD.

Another study on depression prevalence was conducted by Nduna et al. (2013) which was titled *prevalence and factors associated with depressive symptoms among young women and men in the Eastern Cape Province, South Africa*. A cross-sectional analysis of interviews with 1 415 women and 1 368 men aged 15–26 was undertaken. The study found that the prevalence of depressive symptoms was 20.5% in women and 13.5% in men. For women, depressive symptoms were associated with increased childhood adversity; drug use; experience of intimate partner violence; sexual violence before the age of 18 years and lower perceptions of community cohesion. For men, depressive symptoms were associated with a mother's death; childhood adversity; alcohol abuse, sexual coercion by a woman and relationship conflict.

Environmental factors and adolescent depressive symptoms

Community (Neighbourhood)

Living in areas defined by high poverty, high crime rates, and a lack of resources and supports, according to Gepty, Hamilton, Abramson, and Alloy (2019), may be considered chronically stressful, and exposure to this type of stress during adolescence may have significant acute and long-term physical and mental health consequences. Adolescents may be particularly sensitive to developing psychological disorders, because of neighbourhood characteristics unique to the urban environment. Crime has been determined to be one neighbourhood component that contributes to depression (Gepty et al, 2019). Higher levels of perceived neighbourhood crime and self-reported exposure to violence and crime are connected to depressive symptoms among adolescents.

Vulnerability to crime and violence have a negative psychological influence on communities (Burns, 2015). People who live in such communities are subjected to long-term psychological stress and anxiety. According to Lynch and Cicchetti (1998, as referenced in Tomita, Labys, & Burns, 2015), violent neighbourhoods are linked to feelings of powerlessness and hopelessness, which exacerbate depressive symptoms. Being a victim or witness of community violence, according to a literature studies have repeatedly review, is a predictor of psychological distress in urban youth, particularly depressive symptoms, anxiety, post-traumatic stress (PTS), and aggression (McDonald & Richmond, 2008) . Wilson-Genderson and Pruchno (2013) investigated the impact of neighbourhood violence and perceptions of neighbourhood safety on individual's depressive symptoms. The researchers hypothesized that, after controlling for age, sex, and household income, higher levels of neighbourhood violent crime and poorer perceptions of neighbourhood safety are linked to higher levels of depressive symptoms. The findings of their research backed up this hypothesis.

Curry, Latkin, and Davey-Rothwell (2008) did another study to look into the impact of neighbourhood violent crime on Baltimore's inner-city citizens. The findings revealed that neighbourhood violence had both a direct and indirect impact on depression symptoms. Emotional and behavioural impact of exposure to neighbourhood violence in inner-city adolescents was investigated by Cooley-Quille, Boyd, Frantz, and Walsh (2001). A total of 185 inner-city high school learners took part in the study. Adolescents who had high levels of community violence exposure expressed more fears, anxiety, internalizing behaviour, and poor life experiences than those who had low levels of exposure, according to the study. There were no differences in depression or externalizing behaviour. Fowler, Tompsett, Braciszewski,

Jacques-Tiura, and Baltes (2009) did a meta-analysis study on the impact of community violence exposure on children's and adolescents' mental health outcomes. Community violence had the greatest impact on posttraumatic stress disorder (PTSD) and externalizing difficulties, while having the least impact on other internalizing symptoms, according to their findings. It was also discovered that experiencing community violence had a bigger influence on externalizing difficulties than hearing about it, but both types of exposure had an equal impact on internalizing problems.

Although there have been direct links between crime and depression, it is unclear how crime influences a person's depressive manifestation (Lorenz et al. 2012). Given that exposure to violence and crime can lead to depression in some adolescents, but not all of those who are exposed develop depressive symptoms, it is crucial to look at individual risk factors or underlying vulnerabilities that could amplify the impact of crime exposure on depression (Gearty et al., 2019).

School Environment

Schools are an important cultural framework for the development of children and adolescents. In the United States, adolescents spend more time in schools than in any other setting other than their homes (Eccles & Roeser, 2010). This emphasizes the significance of the school environment for adolescents. It is where they are exposed to their culture's font of knowledge, where they hang out with their friends, where they participate in extracurricular activities that can shape their identities, and where they plan for their future. It is also a place where adolescents spend more time integrating social experiences, learning demands, mental overload, and psychological stress. Schools are a universal and influential setting for adolescent's development. Roeser, Eccles, and Sameroff (1998, as cited in Brière, Pascal, Dupéré, & Janosz, 2013) noted that scholars have long claimed that schools can have a significant impact not just on learner's intellectual advancement, but also on their social and emotional well-being. Although both structural (e.g., school size) and compositional (e.g., aggregate learner characteristics) aspects of schools can influence learner's adjustment, previous research has focused on whether school environments provide adequate socio-educational support to learner's relevant developmental needs, such as competence, autonomy, and relatedness.

Ncontsa and Shumba (2013) looked at the nature, causes, and consequences of school violence in four South African high schools. Bullying, vandalism, gangsterism, indiscipline, intolerance, and physical punishment were found to be common in schools, according to the

survey. Furthermore, the study discovered that school violence resulted in the following consequences on pupils: lack of attention, poor academic performance, class skips, and depression (Ncontsa & Shumba, 2013). Du Plessis, Kaminer, Hardy, and Benjamin (2015) conducted a study that looked at the role of different types of violence on internalizing and externalizing symptoms in early adolescents in South Africa. A community-based sample of 616 high school learners completed self-report measures assessing exposure to six distinct types of violence as well as the degree of depression, aggressiveness, and conduct disorder symptoms. The study discovered that when all kinds of violence were analysed concurrently, domestic victimization emerged as the biggest predictor of both internalizing and externalizing issues. (Du Plessis et al., 2015). Exposure to other types of violence, on the other hand, did not add to the prediction of aggressiveness or conduct disorder (Du Plessis et al., 2015).

Positive features of school socio-educational environments, such as strong learner-learner and learner–teacher relationships, teacher support, learner connectivity, and classroom management methods, have been shown to lower the incidence of depressive symptomatology in learners, supporting this theory (Kidger, Araya, Donovan, & Gunnell, 2011). The evidence for a link between school socio-educational environment and student depressed symptomatology, on the other hand, is restricted in various respects. Above all, the vast majority of research has simply looked at how students evaluate their educational surroundings on a single level. As a result, it is impossible to say whether the relationships found in research are due to learners’ views, school features, or a combination of the two. These connections may, in fact, capture well-documented cognitive biases in adolescents who are sensitive to depression, despite the fact that they are often viewed as potential effects of school surroundings. (Beck, 1967, as cited in Brière et al., 2013).

Although a few multilevel studies have found a link between school or class context and depressive symptoms at the school level, the majority of these studies were cross-sectional and did not control for previous depressive symptoms, limiting our understanding of the direction of the relationship. The most compelling empirical technique for examining potential effects of the school socioeconomic environment to the risk of learners’ depressive symptoms is to utilize a multilevel and longitudinal design that controls for baseline levels of depressed symptoms (Brière et al., 2013).

A comprehensive review was undertaken by Kidger et al. (2011) on the impact of the school environment on the emotional health of adolescents. Although student perceptions of

teacher support and school connectedness are associated with greater emotional health, the analysis concluded that there is limited evidence that the school environment has a significant impact on adolescent mental health. Brière et al. (2013) investigated the relationship between school climate and depressed symptoms. Adolescents who attend a secondary school with a better socio-educational environment have a lower likelihood of developing depressive symptoms, according to the study. In addition, school surroundings appear to have a bigger impact on risk in adolescent girls than in boys, according to their research.

Rawatlal and Petersen (2012) did a case study on the factors preventing learners from being connected to their schools. The study discovered that at the interpersonal level, peer pressure to join groups where adolescents resist school restrictions was prominent. It was also shown that adolescents are more inclined to seek support from informal sources such as peers and family for interpersonal problems or challenges. At the intrapersonal level, the study discovered that self-regulation skills, emotional competence, and a positive future orientation were reportedly underdeveloped among learners, which was attributed to poor discipline and a lack of warmth at home, a focus on academics and assessment at school, and perceptions of limited post-school opportunities (Rawatlal & Petersen, 2012)

Adolescent sexual behaviour in South Africa and the threat of AIDS

Given the widespread AIDS epidemic that has overtaken many nations, as well as a persistently high rate of adolescent childbirth, adolescent sexual and reproductive health is a key policy and programmatic concern in Sub-Saharan Africa. Peltzer and Pengpid (2008) investigated sexual abuse, violence and HIV risk among a sample of South African adolescents. The sample included 400 male and 400 female 16 or 17 year-olds; 400 were from rural and 400 from urban areas, and almost all from African descent. Results indicated high rates of sexual and physical violence, 17% of the girls reported having been raped, and 26.3% reported to have experienced sexual and / or physical violence. Predictors for having experienced physical and / or sexual violence among girls and boys included socio-economic variables, HIV risk behaviour and substance use (Peltzer & Pengpid, 2008).

The developmental, physiological, and behavioural changes that occur during adolescence might raise the risk of contracting HIV and other sexually transmitted diseases (STIs), as well as the risk of an unintended pregnancy. Bankole, Biddlecom, Guiella, Singh, and Zulu (2007) discovered that very young adolescents are already sexually active, and many feel that their close companions are sexually active. They are well-informed on pregnancy and HIV prevention, but lack in-depth understanding. This puts adolescent groups at a higher risk

of obtaining HIV, which could lead to additional mental health difficulties during their adolescent years.

Doyle, Mavedzenge, Plummer, and Ross (2012) found that up to 25% of 15 to 19-year-olds in Sub-Saharan Africa reported having sex before the age of 15; however, this number has decreased over time in several countries. The least educated and/or rural girls were more likely to have an early sexual debut and childbirth. Males were more likely than females to report multiple sexual relationships. Condom usage was also shown to be greater among adolescents in urban regions. Adolescents are at an increased risk of HIV and AIDS infection, according to this study, due to a lack of condom use and repeated partnerships. Those in metropolitan regions, on the other hand, were less likely to contract HIV and AIDS due to increased condom use and various partnerships.

According to UNAIDS (2016, as cited in Lippman et al., 2018), about 8500 new HIV infections occur per week among adolescent girls and young women aged 15 to 24 in Sub-Saharan Africa. South Africa has the most severe pandemic in the area, with 5.6 percent of adolescent girls aged 15 to 19 infected with HIV. Individuals in South Africa may be at higher risk for depression due to HIV and AIDS, violence, and poverty, according to Kuo et al (2019). The HIV epidemic has a distinct gendered dimension, with rates of infection up to four times higher among adolescent females in South Africa than among adolescent boys (Shisana et al., 2014). The rationale for this is that adolescent depression and other mental health comorbidities have been linked to low self-esteem and self-efficacy, two factors that are intimately linked to condom use and healthy sexual interactions, including positive sexual communication.

Khan et al. (2009) discovered a link between depression and the frequency of STIs among adolescents in a study. Higher sexual risk behaviours, such as transactional sex and sex while using alcohol or drugs, may be to blame for the increased occurrences of STIs among adolescents with depressed symptoms (Tucker, 2014, as cited in Barhafumwa et al., 2016). In addition to the gendered distribution of HIV among young South African women (aged 26 and under), Nduna, Jewkes, Dunkle, Shai, and Colman (2010) discovered that they also had disproportionate rates of depression as compared to young men (21.1 % among women, and 13.6 % among men). In support of this, Barhafumwa et al (2016) conducted research on the high incidence of depression symptomology among teenagers in Soweto, South Africa, which was linked to being female and HIV transmission cofactors. The study discovered that a significant number of adolescents in Soweto may be depressed, with those who were screened

as potentially depressed being more likely to be female and to have cofactors linked to an elevated risk of HIV. Despite their heightened HIV risk, female adolescents face the possibility of becoming pregnant, which entails a burden that may make them sensitive to depressive symptoms.

Depressive symptoms are linked with higher alcohol use and unsafe sexual behaviours among young South African women (Davis, Rotheram-Borus, Weichle, Rezai, & Tomlinson, 2017), all of which are risk factors for HIV (McKinnon & Karim, 2016). The link between depression and risky sexual behaviour might be linked back to childhood sexual abuse or adolescent/adult sexual assault (Tyler, 2002) Furthermore, depression may cause a young woman to use sex as a coping method to manage negative emotions, enhance a young woman's desire to please her partner (Lara & Abdo, 2016), and contribute to a loss of effectiveness or power in sexual interactions (Nduna et al., 2010). This might indicate a relationship between HIV risk, sexual behaviour, and potential pregnancies and adolescent depression.

Family factors and adolescent depressive symptoms

The home environment, according to Hannigan, McAdams, and Eley (2018), is a critical context for children and adolescents throughout their development. The nature of the correlations that exist between features of the family environment and the onset of depressive symptoms, however, cannot be inferred. Singh, Gupta, and Grover (2017) conducted a study in Chandigarh to determine the prevalence of depression and the factors that contribute to it. According to the findings, depression has a complicated and multifaceted cause structure. In addition to gender and genetics, the study discovered that low parental warmth, high maternal hostility, and escalating adolescent-parent conflict are all important factors associated with depression in adolescents; in addition, perceived rejection by peers, parents, and teachers predicts an increase in depressive symptoms in children and adolescents. As a result, the relationships that develop within an adolescent's household have a substantial impact on their mental well-being. This is supported by a study conducted by Rawatlal, Kliewer, and Pillay (2015), which looked at adolescent attachment, family functioning, and depression symptoms in a Durban-based population. Positive family communication, cohesion, and support, all of which are indicators of a healthy parent-adolescent attachment relationship, were found to lower the incidence of depressive symptoms.

According to Brouillard, Brendgen, Vitaro, Dionne, and Boivin (2018), the quality of a child's relationship with both parents may influence depressive symptoms in both girls and boys, but that these associations are influenced to some extent by the genetic vulnerabilities of

adolescents. The parenting style has an impact on the quality of the relationship between the adolescent and the parent. According to Liem, Cavell, and Lustig (2010), the process of self-development may serve as a vehicle through which an authoritative parenting style influences depression in young adulthood because of the importance of developing a positive and stable sense of self during adolescence and emerging adulthood, and its connection to emotional well-being and parenting. Furthermore, Liem et al. (2010) established a link between adolescent parenting style and the development of depressive symptoms. Negative contemporary parenting, manifested in parent-adolescent conflict, was linked to increased adolescent anxiety, depression, aggression, worse self-esteem, and school satisfaction. While current good parenting (i.e., parental support, parent-child future orientation, and parent education support) was linked to lower depression (Liem et al., 2010).

In South Africa, Meinck et al. (2017) investigated the linkages from familial disadvantage to adolescent health risks via abusive parenting and caregiver mental health. Abusive parenting was linked to increased adolescent health risks, according to the study. Furthermore, family disadvantage was linked to caregiver mental health distress, which elevated the probability of adolescent mental illness. Although there was no direct influence of family disadvantage on adolescent health risks, indirect effects were discovered through caregiver mental health distress and abusive parenting.

Chen et al. (2017) investigated the features and role of family functioning and parent-child relationships in adolescents with depressive disorders and their parents. According to the findings of the study, adolescents with depressive disorder and their parents have perceptual disparities in partial family functioning and parent-child relationships. This implies that adolescents and their parents have different ideas about how the family should function and how their parent-child relationship should be. This is influenced by the roles they undertake within the family as a whole. The authors went on to argue that ambiguous roles between family members, mutual participation, and too much or too little emotional commitment, as well as a lack of awareness of inner emotions, parental divorce, and a low average monthly income, were the main causes of a strained parent-child relationship. The impact of family rituals in the intergenerational transmission of depressive symptoms between parents and their adolescent children was investigated by Manczak, Williams, and Chen (2017). Family routines were found to statistically explain for some of the link between parent and adolescent depressed symptoms in their study. These findings show that family routines may be another aspect of the family

environment that can contribute to the transfer of depression symptoms from generation to generation.

On the contrary, Guan et al. (2013, as cited in Akhtar, 2014) showed no significant difference in the prevalence of depression in extended and nuclear households. Furthermore, when controlling for potential confounding variables, the link between family structure and depression (for both males and females) was not statistically significant. The study discovered a statistically significant link between depression and family-related unpleasant life events and family economic position. Males had a statistically significant link between family support and depression, whereas females did not.

Socio-economic status

According to Miller and Taylor (2012), according to research, adolescents from socially advantaged families have less depressive symptoms because they are exposed to fewer social stresses and have more access to coping mechanisms. Adolescents who live in households and attend schools that are socially and economically disadvantaged are more likely to develop mental disorders. This is due to a number of factors, including increased exposure to violence, food and income insecurity, substance abuse, reduced economic protection, and fewer employment opportunities. Namjam et al. (2010) did a study that looked at family poverty throughout adolescence and recurring anxiety and depression in adolescents and young adults. According to their findings, family poverty predicts higher incidence of anxiety and depression in adolescents and young adults. Increased child poverty exposure is a strong predictor of anxiety and depression in adolescents and young adults. Repeated poverty experiences during a child's early life are linked to higher degrees of poor mental health.

According to Buttler (2014), there are a number of probable paths for how poverty can lead to increased depressive symptoms in children. Lack of funds may prevent the acquisition of items and services that encourage healthy emotional growth (Buttler, 2014). Denny et al (2016) investigated the link between socioeconomic deprivation and the health of secondary school students. There were three distinct categories of students identified within the participating sample. Across all categories, 80% of pupils had low levels of home poverty, 15 % had moderate poverty, and 5% had high levels of poverty. When compared to students who were not in poverty, depressive symptoms and cigarette smoking were 2-3 times greater in the poverty groups.

Family income, as well as other family characteristics such as parental separation or divorce, has been demonstrated to be significantly associated with depressive symptoms in children, according to Tracy, Zimmerman, Galea, McCauley, and Stoep (2008, as cited in Etcheverry, Pereira, & Cordeiro, 2014). Johnson, et al. (1999) discovered that a poor family socioeconomic level is linked to a higher incidence of anxiety, depression, disruptive disorders, and personality disorders in children in a longitudinal research. Kuo et al. (2019) did a study on building resilient families, with the goal of establishing family interventions in low-resource settings to reduce adolescent depression and HIV. According to their findings, HIV and poverty are significant risk factors for depression.

Gender and Adolescent Depressive Symptoms

Chen and Yu (2015) stated that girls are no more depressed than boys in childhood, but at around the age of 13, more girls than boys begin to develop depressive symptoms and clinical depression. They also proposed that the aetiology of sex differences in depression is due to differences in the genetic and environmental influences on boys and girls. This differential influence could be qualitative (i.e., there are some sex-specific genetic and/or environmental contributors to adolescent depressive symptoms) or quantitative (i.e., the same genetic and environmental factors contribute to boys' and girls' depressive symptoms, but these contributors have unequal impact on the two sexes). Chen and Yu (2015) observed no qualitative sex differences in genetic and environmental aetiologies of adolescent depression symptoms after conducting a meta-analysis of sex differences in genetic and environmental impacts on adolescent depressed symptoms. They discovered evidence of quantitative disparities between men and women.

Body image can predict health-related quality of life in adolescent girls through self-esteem and psychological well-being, according to Ra and Cho (2017). Depression is also linked to body image and is a strong predictor of adolescent health-related quality of life (Ra & Cho, 2017). Adolescent girls with socially unfavourable weight and appearance may have lower life satisfaction, a negative self-perception as a result of external pressure to lose weight, and less social acceptance through social interaction with close others, such as parents, peers, and teachers, than adolescent boys. A study by Flores-Cornejo, Kamego-Tome, Zapata-Pachas, and Alvarado (2017) looked at the link between body image dissatisfaction and depression symptoms in adolescents. According to the findings, body image dissatisfaction contributes to depression symptoms in Peruvian adolescents. The Adolescent Life Perspective Questionnaire,

which is one of the measuring tools to be used in the study, is used to look into how adolescents consider themselves.

Bennett, Ambrosini, Kudes, Metz, and Rabinovich (2005) studied gender differences in adolescent depression, focusing on symptom differences between boys and girls. Depressed girls and boys had similar symptom prevalence and severity ratings for most depression symptoms, according to the study. On other comparisons, however, depressed girls exhibited higher levels of guilt, body image dissatisfaction, self-blame, self-disappointment, feelings of failure, concentration issues, difficulties functioning, sadness/depressed mood, sleep problems, exhaustion, and health concerns than depressed boys. Poor males, on the other hand, experienced higher levels of anhedonia, depressed morning mood, and morning weariness as measured by clinicians. These data suggest that adolescent girls and boys have similar experiences with depression in general. However, several gender differences previously observed in depressed adults appear to be evident during adolescence, suggesting that males and females may have different aetiologies for depression.

The research of Conley and Rudolph (2009) looked at the developmental stages (pubertal status) and circumstances (early or late timing relative to peers, and an environment of stressful versus supportive peer relationships) in which the sex difference in depression occurs. A total of 158 young people (ages 9.6–14.8) and their carers supplied data on puberty, peer stress, and depression in two waves, one year apart. To predict depression, pubertal state and time (both actual and perceived) interacted with sex. At various levels of pubertal status and timing, both actual and perceived, sex differences in depression were observed. In females, depression was linked to a more mature pubertal status and earlier timing (both actual and perceived), whereas in boys, depression was linked to a less mature pubertal status and later timing (both actual and perceived). These behaviours persisted at the same period, and often throughout time, especially in the setting of tense peer relationships (peer stress moderated sex-differentiated associations between puberty and depression). There were no significant differences in depression between men and women at any age. As a result, the contributions of age, pubertal status, pubertal timing, and perceived timing to the sex difference in adolescent depression are highlighted in this study. More broadly, these findings add to our developing understanding of the interconnections between physical, social, and psychological factors that lead to adolescent depression sex differences.

On the other hand, Cyranowski, Frank, and Young (2000) focused on the gender gap in lifetime rates of serious depression beginning in adolescence. According to their findings, prepubescent boys are more prone than girls to be depressed. However, during adolescence, the trend in depression rates reverses: between the ages of 11 and 13. Females are roughly twice as likely as males to have had a depressive episode by the age of 15, and this gender discrepancy remains for the next 35 to 40 years. Females' affiliative needs are stimulated by social and biological reasons during puberty, according to their findings. They also discussed how, as at-risk girls approach puberty, increased affiliative need can intersect with adolescence transition issues to create a depressogenic diathesis. This vulnerability is linked to gender, which explains why adolescent females are more prone than males to develop depressive symptoms when confronted with bad life experiences, particularly those with interpersonal effects.

Marcotte, Fortin, Potvin, and Papillon (2002) investigated the effect of gender-typed features, self-esteem, body image, stressful life events, and pubertal state in gender variations in depressive symptoms during adolescence. Although boys had a similar or even greater proportion of depressive symptoms than girls prior to puberty, girls become more depressed than boys during their adolescent years, according to their research. It has been hypothesized that pubertal changes are more traumatic for girls than for boys. Furthermore, they occur more frequently in synchrony with the transition to high school, explaining why girls have a higher rate of depressive symptoms than boys during adolescence. Body image, self-esteem, and negative stressful life events moderate the association between gender and depression symptoms during adolescence, according to the Marcotte, Fortin, Potvin, and Papillon, (2002) study. Body image, self-esteem, and negative stressful life experiences appear to modulate the association between pubertal status and depressive symptoms during the transition to high school, according to analyses of a subsample of adolescents who just completed the transition to high school.

Genetics and Adolescent depressive symptoms

According to Rice (2010), there is heterogeneity in the gender mix of afflicted cases, prevalence, rates of recurrence, and risk factors for depression in childhood, adolescence, and adulthood. This poses difficult problems about how to perfect the phenotype for molecular genetic investigations of depression and how to choose the right proband groups. The relevance of genetic variables in the development of depression in adolescents and young adults has been studied extensively. There are few comprehensive studies, however, that update our

understanding of adolescent depression with scientific findings identifying gene expression functions.

Xia and Yao (2015) conducted one of these studies, which focused on the role of genes in adolescent depression. This study systematically evaluated the data that clearly established a gene's contribution to the risk of depression in adolescents and young adults aged 10 to 19 years old, as well as young adults aged 20 to 25 years old. The majority of the articles ($n = 12$) focused on genes in the serotonergic, dopaminergic, and brain-derived neurotrophic factor (BDNF) systems. Positive relationships of the 5-HTTLPR polymorphism with depressive illness or symptoms were found in 92.3 percent of investigations. 83.3 percent of studies (10/12) identified a link between the BDNF Val66Met genotype and depressive symptoms in adolescents.

Sallis et al. (2017) conducted another study that focused on the genetics of depressive symptoms in adolescence. It discovered that estimations for depressive symptoms at age 11 were significantly lower than those previously reported in adults. The study also discovered that heritability peaks at the age of 13. According to Sallis et al. (2017), environmental influences are more likely to play a role in the aetiology of depressive symptoms in early adolescence than in adulthood. Consistent with this study, Eaves, Silberg, and Erkanli (2003) did a study on resolving various epigenetic routes to adolescent depression. According to the study, genes that affect early anxiety enhance sensitivity to adverse life events; genes that raise risk of early anxiety increase exposure to depressogenic environmental effects. Additional depression-related genetic consequences heighten sensitivity to adversity. Failure to consider the impacts of genotype-environment interaction and genotype-environment correlation will result in a misunderstanding of how genes and environment interact to influence complex behaviour.

A significant challenge in understanding research relating parent and child psychopathology is that, in most situations, parents and children are genetically linked, therefore relationships may be confounded by shared genes (Rice, 2010). Depression is influenced by genetic variables in both adults and childhood, therefore genetic factors might explain correlations between emotional issues in parents and adolescents. Furthermore, because genetic effects overlap across variables, genetic similarities might account for links between parental depression and any heritable adolescent outcome. Informative data are necessary to fully examine the nature of parent-child association (Rice, 2010). This will assist

the researcher to fully understand the role which genetics play in the development of adolescent depressive symptoms.

Similarity owing to hereditary factors and similarity due to environmental variables cannot be distinguished in family studies. However, because they provide an upper limit to heritability estimates, they are an important initial step in genetic epidemiology studies. They also provide information about the conditions that cause the most family aggregation, which is useful for genomic research (Rice, 2010). Family studies of major depressive disorder in children and adolescents have taken two approaches: 'bottom-up studies' that looked at the relatives of depressed children/adolescents, and 'top-down studies' that looked at the children and adolescents of depressed parents. All studies have strengths and weaknesses; however, bottom-up and top-down studies may have different strengths and weaknesses ((Rice, 2010).

Clinical referral biases, in particular, may be important to consider in bottom-up studies, as many depressed children/adolescents never present at clinic (Kataoka, Zhang, & Wells, 2002), whereas top-down studies may show higher rates of aggregation than bottom-up studies, given that depression in a parent negatively affects the family environment (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). When compared to healthy control groups, studies of children and adolescents with major depressive disorder show a twofold increase in risk to first-degree relatives. When compared to the offspring of healthy control groups, the offspring of depressed parents have a three- to fourfold increased risk of major depressive disorder. Depression (if it occurs) may have an especially dismal prognosis in these high-risk offspring (Lieb, Isensee, Höfler, Pfister, & Wittchen, 2000).

Depressed symptoms in young people are heritable, according to twin studies of depressive symptoms in children and adolescents. The estimates of heritability, on the other hand, range significantly amongst studies. Because heritability estimates are population-based statistics, some fluctuation is to be expected; nonetheless, the amount of heredity estimates appears to fluctuate depending on who reports the kid's symptoms (child, parent, or teacher), making strong conclusions difficult to reach. However, in the instance of this current study, the adolescent will be the one reporting their parent's symptoms, which may have limitations that will be discussed in the chapter 4 and 5 of the current study.

Peers and adolescent depressive symptoms

Although interpersonal theories suggest that depression symptoms influence and are influenced by peer connections, little is known about how the links between depressive

symptoms and peer relationships vary as people become older. Victimization throughout adolescence, according to Armitage, Wang, Davis, Bowes, and Haworth (2021), is a substantial risk factor for not just the beginning of depression, but also poor adult wellbeing. Cohen, Shahar, and Klomek (2020) stated that bullying victimization among adolescents is a common occurrence linked to depression and suicidal thinking. A review of the effect of peer rejection in adolescent depression was undertaken by Platt, Kadosh, and Lau (2013). The study included a thorough examination of research that used novel experimental paradigms to better understand the impact of peer rejection in adolescent depression. It also demonstrated how, throughout adolescence, reciprocal interactions between peer rejection and depression symptoms develop and perpetuate maladaptive trajectories.

Following the review, Cohen, Shahar, and Klomek (2020) did a study focusing on bullying victimization among adolescents. Self-blame in the face of peer bullying was found to be connected with depression and suicide ideation in the study. Even after controlling for victimization degree, the impact remained. There was no evidence of a direct influence of violent coping or of self-blame or aggression as a moderator of the link between victimization and depression/suicide thoughts. According to the findings, adolescents who blame themselves for being bullied have a higher risk of depression and suicide than adolescents who do not blame themselves.

A study by Oppenheimer and Hankin (2014) looked at the quality of relationships and depressive symptoms in adolescents. A multi-wave design was employed in this study to look at the short-term longitudinal and bidirectional relationships between depression symptoms and peer relationship quality in a group of early to middle adolescents. According to the findings, depressive symptoms were linked to an increase in negative traits and a reduction in positive qualities. Positive and negative relationship characteristics, on the other hand, did not predict an increase in depression symptoms. The findings contribute to a developmentally based interpersonal model of depression by increasing our understanding of the longitudinal direction of effects between depressed symptoms and relationship quality during adolescence.

In a community sample of Chinese adolescents in grades 6 to 9, Yang, Chen, Zhang, Ji, and Zhang (2020) investigated the longitudinal links between group- and dyadic-level peer relationships and depressive symptoms. There were no dynamic state-like relationships found in the study, however there were correlations between stable trait-like components of peer acceptance/rejection and depressed symptoms. Conflict with friends was also found to be a

constant interpersonal risk factor for eventual depressive symptoms from late infancy through middle adolescence, according to the findings. Friendship support was not linked to depressed symptoms in early adolescence, but it influenced and was influenced by depressive symptoms in middle adolescence. The study found that depressed symptoms are linked to an adolescent's peer social status and friendship in a variety of ways, and that friendship and depressive symptoms interact more as they progress through adolescence.

Christ, Kwak, and Lu (2017) conducted a study with a group of at-risk adolescents to assess the association between exposure to caregiver psychological neglect and isolation from peers with depression. A total of 2776 adolescents were analysed, representing a cohort of adolescents who came into contact with Child Protective Services in the United States. The data comes from the National Survey of Child and Adolescent Well-Being (NSCAW), which was conducted in four waves over a seven-year period. Adolescents who are emotionally ignored by their primary caregivers and isolated from their classmates had significantly higher rates of depression, according to the study. Furthermore, it was discovered that peer isolation has a greater influence on depression than caretakers' psychological neglect. Deficits in these two key forms of emotional support are responsible for 40% of the variance in depression. Although there are reciprocal links between depression and peer isolation as well as depression and psychological neglect, the predominant effect direction is from neglectful events to depression.

Adolescent depression risk is predicted by increased emotional sensitivity to peer feedback. Stone et al. (2016) investigated whether trait rumination, which amplifies emotional reactions, could explain variation in depressed adolescents' physiological reactivity to peer feedback. They hypothesized that rumination would be linked to a greater pupillary response to peer rejection and a decreased response to peer acceptance. Rumination was linked to increased initial pupil dilation in both peer rejection and acceptance trials, as well as decreased late pupillary response in only peer acceptance trials, according to the study. The findings show that depressed adolescents with high trait rumination are more receptive to social input regardless of valence, but they are unable to maintain cognitive-affective load while receiving positive feedback.

According to Abbott, Zisk, Bounoua, Diamond, and Kobak (2019) study, while interpersonal issues have been recognized as risk factors for adolescent suicide, parent and peer interactions are frequently assessed as discrete risk domains. Adolescents who were associated

with deviant peers were more likely to: (a) report greater intensity (increased frequency and duration of suicidal ideation and decreased controllability) of their suicidal ideation, and (b) identify peers rather than adults as attachment figures, according to their research. In a clinical sample of suicidal and depressed adolescents, it was discovered that adolescent peer interactions are linked to the severity of suicide thoughts.

Paradigm of the present study

According to Williams, Holmbeck, and Greenley (2002), several essential health behaviours arise throughout adolescence, influencing future illness outcomes in adulthood. Furthermore, the majority of the leading causes of morbidity and death throughout adolescence are unique to this stage of development, implying that health-focused interventions must be targeted specifically to adolescents (Williams et al., 2002). Furthermore, adolescence is the time when lifetime patterns of self-management and adjustment to chronic health issues are formed. Thus, a greater emphasis on adolescence in health psychology research is necessary to enhance the health of adolescents as well as to optimize health trajectories throughout adulthood (Williams et al., 2002)

According to Havelka et al. (2009), in medical practice, the biological model of health and disease predominated. Disease was explained as a condition induced by external pathogens or problems in the operations of organs and body systems, according to the paradigm, which gave a key role to biological determinants. Extending the biomedical approach and giving psychosocial variables equal weight have proven critical in improving treatment success and disease control, as well as humanizing relationships between health care providers and patients.

George Engel proposed a new bio-psychosocial model in 1997 that included all significant determinants of health and disease and promoted the integration of biological, psychological, and social aspects in disease evaluation, prevention, and treatment (Halvelka et al., 2009). According to Taukeni (2019), among the strengths of the bio-psychosocial model discovered in research were, in no particular order, improved patient satisfaction, better adherence to prescriptions, more sustained behaviour change, better physical and psychological health, and a lower predisposition to initiate malpractice litigation.

The paradigm for this study will be a bio-psychosocial model. The relevance of this approach in this study is to analyse sub-threshold depression holistically using the bio-psychosocial model. This will aid in understanding the social, biological, and psychological patterns of adolescent sub-threshold depression

Chapter 3: Methodology

Introduction

The research methodology employed in the study is discussed in this chapter. The technique and research design, which is a correlation study design, are discussed in the first section. The participants' sampling process is also detailed, as well as the problems the researcher had in obtaining the volunteers. Data collection is described, as well as the instruments used to collect data and the steps of data analysis. The ethical considerations that were utilised during the study are described.

Methodology and research design

Quantitative research, according to Apuke (2017), entails quantifying and analysing variables in order to obtain results. It entails the use of statistical tools to analyse numerical data in order to answer questions such as who, how much, what, where, when, how many, and how. It also refers to the process of accumulating numerical data in order to understand a problem or event. This study employed a correlation study design, which is a quantitative tool for determining whether and to what extent there is a relationship between two or more variables in a population (or a sample). The purpose of using this type of study design is to explore further into the association between bio-psychosocial variables and adolescent sub-threshold depression in a cohort of adolescents from Mamelodi Township. Furthermore, to comprehend the correlation coefficients that exist between the variables under consideration.

The degree of relationships are expressed by correlation coefficients. The values of the coefficients range from +1.00 to -1.00. Stronger associations are indicated by higher correlations (coefficients closer to +1.00 or -1.00). Positive correlations show that as the values connected with one variable rise, the values associated with the other rise as well. Negative correlations show that as the values of one variable rise, the values of the other fall. However, correlation does not always imply causation, because the relationship between two variables could be explained by a third factor.

Sampling and Participants

The type of sampling employed for this study was non-probability sampling, and the exact sampling method was voluntary response sampling, because the sample used for this

study had a specified characteristic which is adolescent residing in Mamelodi Township and they had to voluntarily choose to participate in the study. The final sample is drawn from possible respondents who are willing and qualified to participate in the survey, as the term suggests (Murairwa, 2015). This gives prospective respondents plenty of time to decide whether or not they want to volunteer for selection to participate in the survey (Murairwa, 2015).

The study's participants were learners from selected Mamelodi Township's several government high schools, who are in grades 8 and 11 for the year 2021. The schools were chosen at random, based on the fact that they provide classes from grade 8 to grade 11. This was done to increase the availability of adolescents who would be interested in participating in comparison to those schools who only have grade 10, 11, and 12. The Learner's age from Mamelodi Township's various government high schools ranged from 13 to 18 years old. The sample population for the study comprised of 134 adolescent participants, with the government schools chosen falling into quintile 3.

Defining quintiles

The South African government has classified the country's public schools into five quintiles for the aim of distributing financial resources to address the issue of socioeconomic status and disparities in access to education (Dass & Rinquist, 2017; Graven, 2014). According to Ogbonnaya and Awuah (2019), a school's socioeconomic standing is established by measures of average income, unemployment rates, and general literacy levels in the school's geographical area. Quintile 1 schools are in the most economically disadvantaged (poorest) geographical areas, whereas Quintile 5 schools are in the most economically advantaged (wealthiest) geographical areas. Quintiles 1 to 3 are non-fee-paying schools that receive greater government support per pupil than schools in Quintiles 4 and 5. The latter are fee-paying schools that require less government support than schools in lower quintiles, assuming that parents can afford to pay fees (Ogbonnaya & Awuah, 2019).

How the participants were recruited?

Prior to data collection, the researcher emailed the principals of the chosen schools using the schools' email addresses. The email contained a summary of the study, a proposal, and a letter of permission to conduct research at several Mamelodi Township schools (from the Gauteng Department of Education). A recruitment form explaining the characteristics and aim of the study was also sent to the principals of the selected schools. The principals were instructed to inform their learners about the research study either during class or at assembly.

On the recruitment form, there were empty columns underneath the research description where learners who were interested in participating entered in simply their email addresses. Those who were interested had to also complete an assent form and also take the consent forms to be completed by their parents or guardian. Following that, the researcher collected the recruitment forms, consent and assent forms from the principals of the schools. After receiving the said forms, the researcher sent a link to the learners which contained the three questionnaires (demographic questionnaire, BDI-II, and ALPQ). Teachers and principals were asked to make it clear that participation would be entirely voluntary, and that anyone could withdraw from the research at any time. Visitors were not permitted on school grounds due to COVID-19 regulations and restrictions stated by the Department of Education in order to reduce greater likelihood of contracting COVID-19. As a result, teachers were asked to aid in disseminating the information to students who might be interested in the study.

Measurement instruments

The study utilized three questionnaires, namely; demographic questionnaire, Beck's Depression Inventory-II Scale (BDI-II) and Adolescent Life Perspective Questionnaire (ALPQ).

Demographic questionnaire

This questionnaire is a form of questionnaire that is used to determine the characteristics of a population. Race, ethnicity, gender, age, education, profession, occupation, income level, and marital status are examples of demographics that are commonly used in surveys.

The Beck's Depression Inventory-II scale (Beck, Steer, & Brown, 1996)

Description: The BDI-II, according to Toosi, Rahimi, and Sajjadi (2017), is a 21-item self-reporting questionnaire used to assess the severity of depressive symptoms in both normal and psychiatric populations. The version includes a number of self-reported items, each of which corresponds to a significant depressive symptom experienced in the previous two weeks. The 21 items were compiled based on observation and were given a severity rating of 0 to 3. The questionnaire is typically self-administered and takes 5-10 minutes to complete.

Validity and reliability: Toosi, Rahimi, and Sajjadi (2017) conducted a study in Shiraz, Iran, with the goal of determining the reliability and validity of the Beck's Depression Inventory-second edition (BDI-II). The concurrent validity of this inventory with the Beck Anxiety Inventory and Beck's Depression Inventory-II had correlation coefficients of 0.45 and 0.55, respectively. The test-retest and Cronbach's alpha procedures yielded reliability and

correlation coefficients of 0.55 and 0.83, respectively. Cronbach's alpha was 0.89 among Korean adolescents, according to Lee, Lee, Hwang, Hong, and Kim (2017). Makhubela (2015) reported alpha coefficients of 0.84 and 0.90 for the entire scale in a research on the validation of the BDI-II in South Africa. Validity in terms of both concurrent and concept validity was similarly satisfactory.

Adolescent Life Perspective Questionnaire (McLean, 2003)

Description: The ALPQ is a 50-item self-reporting questionnaire used to assess the symptoms and factors that influence adolescent depressive symptoms. It also aids in determining the extent to which potential causes influenced the onset of teenage depressive symptoms (McLean, 2003). It takes approximately 40–60 minutes to complete. The ALPQ assesses five aspects (family, peers, genetics, gender, and environmental). The ALPQ was used in this study because it can assess the three components of the bio-psychosocial aspect, which are biological, psychological, and social.

Validity and reliability: McLean (2003) made a concerted effort to give each variable equal weighting and to accurately question what was being studied, resulting in satisfactory reliability and validity. Family relations (0.0371), peer relations (.0001), genetics (0.3508), gender (0.2898), and South African Factors (0.0371) are the p-values from the ALPQ when connected with depression scores (0.8045). The researcher could not find other studies which have used the ALPQ to look at factors that potentially can influence adolescent depressive symptoms.

The Adolescent Life Perspective Questionnaire is scored on a scale of 0 to 1. Each item contains a positive and negative response option with a score of 0 or 1. With specific questions, negative and positive replies (Yes/No) could score 0 or 1 depending on whether or not they were regarded to be a contributing element to emotional well-being. To answer the above-mentioned research question, the Beck's Depression Inventory-II scores and Adolescent Life Perspective Questionnaire responses were correlated.

Data collection procedures

Data collection began immediately once permission or consent as appropriate was granted by relevant stakeholders, including the University of Pretoria-Research Ethics Committee, the Gauteng Department of Education, principals of the designated schools, parents of adolescents where required, and assent from adolescents who fell under the age of 18. The Adolescent Life Perspective Questionnaire was used to further analyse the adolescent

participants who scored below 20 on the Beck's Depression Inventory-II. The reason for the BDI-II cut-off score is further discussed in the data analysis process

The principals of the selected schools were given a recruitment form that detailed the study's features and objectives. There were empty columns below the study description where learners who were interested in participating only had to fill in their emails. Parental consent forms (hard copies) were distributed to principals of the chosen schools along with the adolescent consent forms to avoid issues with internet access at participant's homes (only those who were interested to participate). Adolescents had to complete the forms at home with their parents or guardians. Both the parent or guardian's consent and the completed assent forms were returned to the principals by the adolescents. After a two-week period, the researcher collected the forms from the principals (post distribution). Only adolescents who completed the consent and assent forms received a link to the research questionnaires. The questionnaires were filled out on the internet. The questionnaires were created using online Google Forms. To complete the questionnaire, the students needed access to the internet or Wi-Fi. The government had already installed Wi-Fi in Mamelodi Schools, so this was not a problem. The questionnaires were completed after school hours and participants had to fill in the questionnaires alone. The questionnaires were completed in English, which most of the learners use as a second additional language in their schools. The concept of language barrier is discussed in the limitations of the current study in chapter 5. Each questionnaire came with instructions on how to complete it and what information needed to be included. Once participants completed their online questionnaires, the responses automatically went to the researcher's email and they were stored there for further analysis. The data from the three questionnaires was entered into an excel spreadsheet.

Data analysis

The data collected from both the Beck's Depression Inventory scale and the Adolescent Life Perspective Questionnaire was analysed using the Statistical Package for the Social Sciences software (SPSS) version 25. The study used a Multivariate Correlation Matrix as its method to correlate the data obtained from the Beck's Depression Inventory scale of adolescents who scored below 20 together with their completed Adolescent Life Perspective Questionnaires. According to Beck et al. (1996, as cited in Balazs et al., 2013) adolescents who score from 20 and above are depressed. Those who score below 20 on BDI-II and being positive (>0) on items assessing core symptoms of DSM-IV-TR MDE (sadness or loss of pleasure) display sub-threshold-depression (Balazs et al., 2013). This was the basis for the cut-off score

since the study focuses on sub- threshold depression (depressive symptoms). The Pearson correlation coefficient between the bio-psychosocial risk factors and adolescent sub-threshold depression was also calculated. The method of analysis assisted in determining which bio-psychosocial risk factors derived from the ALPQ has an influence on the sub-threshold depression scores which were obtained from the BDI-II. The results of the study are further discussed in Chapter 4.

Ethical Considerations

Consent and Permission

Both consent from the parents and assent from learners was obtained and participation was voluntary. The adolescents interested in participating received both the assent and consent for their parents from the school principals. The University of Pretoria Research Ethics Committee and Gauteng Department of Education provided an ethical clearance certificate prior to conducting this study. The principals of the chosen schools gave permission by means of verbal agreement.

Voluntary participation and anonymity of participants

Participants in this study volunteered to participate, as previously stated. Participants were informed that they could opt out of the study at any time if they no longer wanted to participate. Participants were assured that their participation in the study was their responsibility and that they could withdraw at any time if they no longer wanted to be a part of it, with no repercussions.

Confidentiality

The participants were assured that their information would be kept strictly confidential and that the information they provided would only be used for research purposes. The researcher kept a record of the participant's information on an excel sheet. For reasons of confidentiality, the names of the schools were not mentioned in this research paper. The completed questionnaires will be kept at the humanities faculty of the University of Pretoria for future research. If a researcher wishes to use them, they must adhere to the University of Pretoria Research Ethics Committee's ethical guidelines.

Non-maleficence

The participants were assured that the research project had no purpose of physically or mentally harming or injuring them in any way. To avoid injury, the study's goals and objectives were fully stated to the participants. In addition, an application to the University of Pretoria

Ethics Committee was established to ensure that the study does not endanger or harm the participants.

Beneficence

The findings of the study will be used to educate the general public and mental health professionals about bio-psychosocial factors that may influence adolescent depressive symptoms in Mamelodi, so that community members, particularly parents and teachers, can help by providing adequate support to adolescents who are experiencing depressive symptoms.

Arrangement for follow up assistance

Participants who exhibit depressed symptoms during data collection were advised that they may contact one of the organizations indicated below for assistance. Participants with high BDI-II scores were recommended to contact the organizations listed below, as well as to seek psychological help from various organizations and local clinics in Mamelodi Township (those that were still operating during the COVID-19 pandemic). Principals, teachers, and learners were provided contact information for depression-related organizations. The following are a few South African organizations and their contact information that can help with adolescent depressive symptoms:

South African Depression and Anxiety Group (SADAG)

Contact details: 011 234 4837

Life-Line Pretoria

Contact Details: 012 804 1853

Mamelodi Hospital

Contact Details: 012 841 8300 / 1

Chapter 4: Results

Introduction

The literature review identified a number of bio-psychosocial factors that may influence adolescent depressive symptoms and sub-threshold depressive symptoms. In order to assess the significance of these factors, the Demographic questionnaire, Beck’s Depression Scale -II (BDI-II), and Adolescent Life Perspective Questionnaire (ALPQ) were administered to 134 adolescents. Each adolescent’s age and gender was also obtained. The results of the adolescents were analysed using a multivariate matrix analysis, as previously mentioned. A total of 35 students (out of the original 134) met the criteria for sub-threshold depressive symptoms. The results and analysis of both the 134 students and the target group will be presented in this chapter. The ALPQ was analysed for this specific sample according to each of the five bio-psychosocial factors, and the results of this analysis were correlated with their BDI-II scores.

Results

A brief breakdown of the sample:

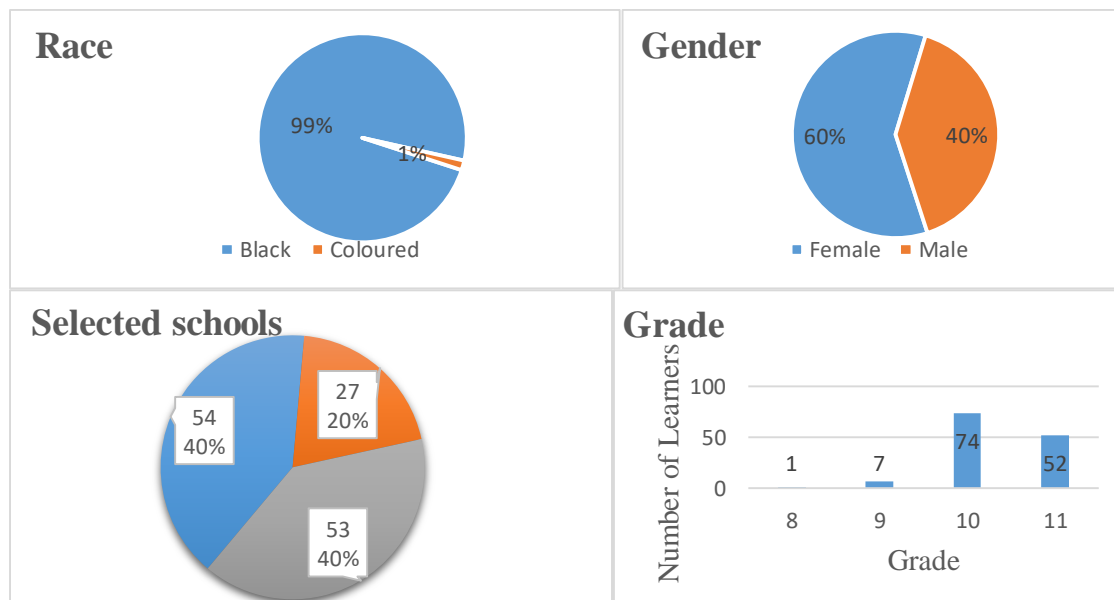


Figure 1: Demographics of learners who participated in the Study (Race, Gender, Selected schools, and Grade)

The three approached schools had 173 learners who completed the assent and consent forms, however a total of 134 completed the online questionnaires (refer to figure 1 for the

exact numbers of adolescents per school). In terms of race, the study had a population of 132 Black learners and 2 Colored learners, which 60% ($n=80$) of them were females and the remaining 40% ($n=54$) were males. Schools 1 and 2 both had 40 % of the sample. The remaining 20% of the sample was from School 3. The majority of the learners were in grades 10 and 11 ($n=74$ and 52 , respectively), with the remaining students in grades 8 and 9 ($n=8$).

Beck's Depression Scale-Second Edition

Below is the table of scores categories of the BDI-II (Beck, Steer, & Brown, 1996)

Cut-off Scores	Classification
0-13	Minimal Range
14-19	Mild Depression
20-28	Moderate Depression
29-63	Severe Depression

Table 1: Scores Categories of the BDI-II

Prevalence of Depression in the sample

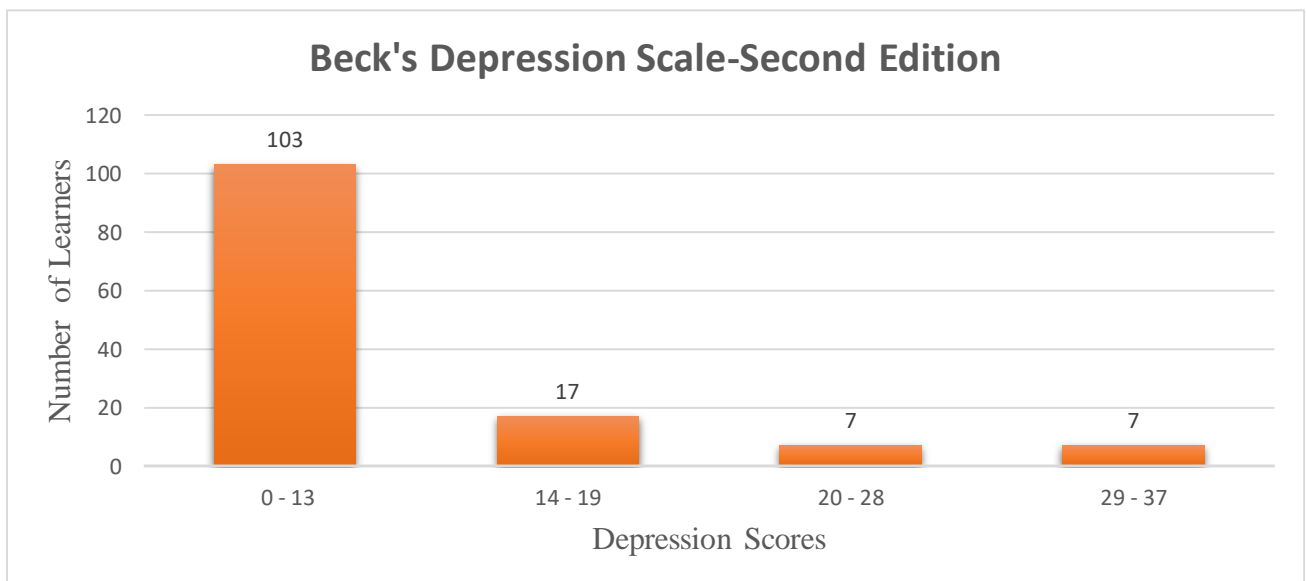


Figure 2: Depression scores of participants

The learners are grouped according to their BDI-II scores, with 76,87% learners falling into the minimal range, 12,69% learners falling into the mild range, 5,22% learners falling into the moderate range, and 5,22% learners falling into the severe level, as seen in the graph above.

Adolescent Life Perspective Questionnaire

Future prospects, HIV/AIDS, criminality, and violence are all South African elements in this research. The relationship that adolescents have with their peers makes up the peers factor. Gender variables are how adolescents identify themselves based on their gender, as well

as their body image and how this impacts their emotional well-being. The genetic components are made up of heredity and how it might affect their emotional well-being. The genetic component of the study is measured by asking questions about their parent's emotional well-being. Familial variables include family cohesiveness and the environment that adolescents share with their family members, as well as how this affects their emotional well-being. Below is the table that displays the item numbers and the bio-psychosocial factors which the Adolescent Life Perspective Questionnaire addresses:

Factors	Item Number
Family	Questions: 1, 6, 14, 19, 26, 29,33, 36, 37, 49
Peers	Questions: 2, 7, 9, 15, 20, 25, 30, 41, 45, 48
Genetics	Questions: 3, 10, 11, 16, 21, 22, 27, 31, 32, 50
Gender	Questions: 4, 8, 13, 17, 23, 35, 39, 40, 43, 46
Environmental Factors	Questions: 5, 12, 18, 24, 28, 34, 38, 42, 44, 47

Table 2: Factors and Item Numbers of the ALPQ

Scoring the Adolescent Life Perspective Questionnaire

With specific questions, negative and positive replies (Yes/No) could score 0 or 1 depending on whether or not they were regarded to be a contributing element to emotional well-being. A negative response received a 1 whereas a positive response received a 0. Table 2 shows the ten items for each of the bio-psychosocial factors that were assessed. The following graphs depicts how learners scored on the ten items per bio-psychosocial factor.

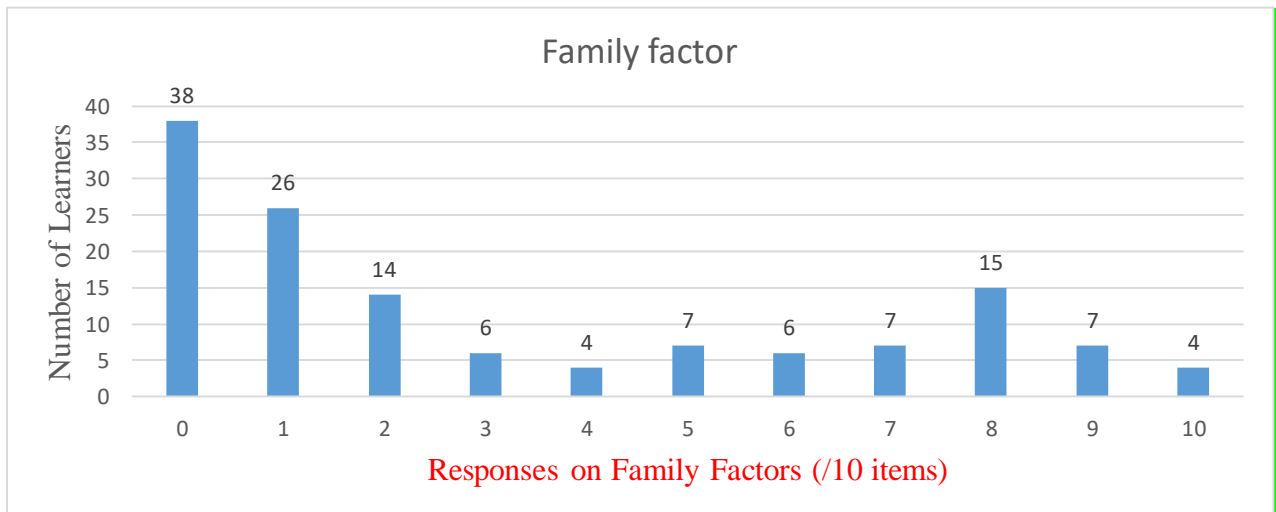


Table 3: Responses on Family Factors

On the ALPQ, there were n=38 learners who scored 0 out of 10 on the familial factors items. This suggests that 38 students do not consider family to be a negative influence on their emotional well-being. On the other hand, four adolescents received a perfect score (10/10) on familial variables. This suggests that four students have a poor perception of their family

environment, which could have a detrimental impact on their emotional well-being, as explained in Chapter 2.

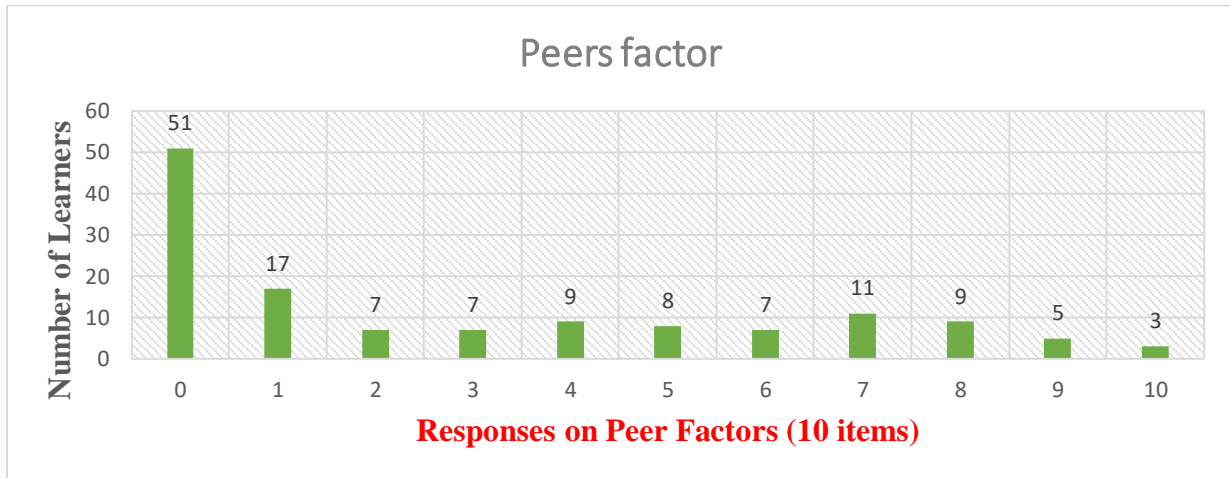


Table 4: Responses on Peer Factors

On the ALPQ, 51 adolescents scored 0 out of 10 on the family factors items. This suggests that 51 adolescents do not consider peers to be a negative contributor to their emotional well-being. In contrast, three adolescents received a perfect score (10/10) of ten on the peer component measures. This suggests that three adolescents have a poor perception of their peer relationships, which may have a negative impact on their emotional well-being, as explained in Chapter 2.

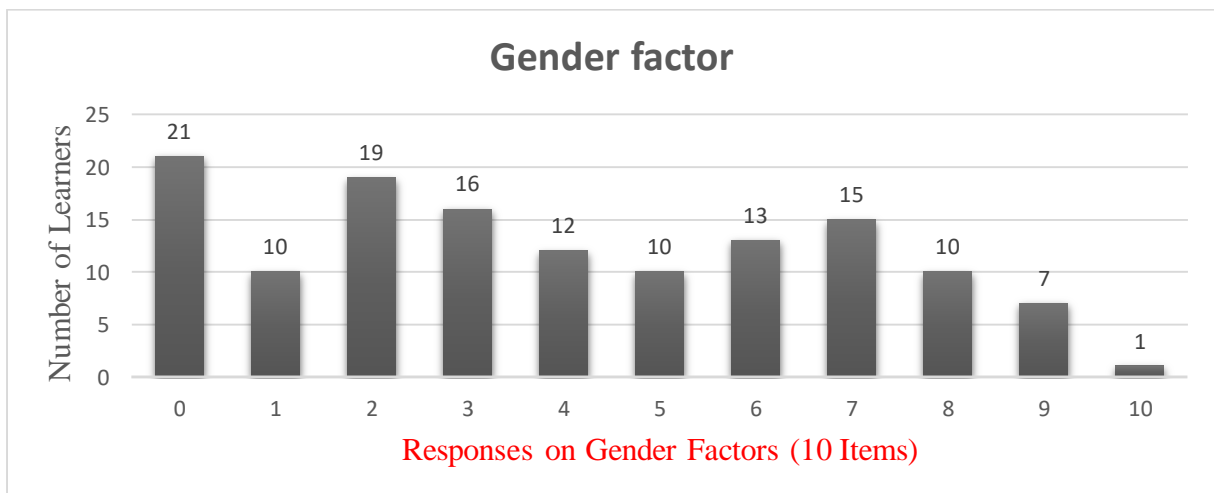


Table 5: Responses on Gender Factors

There are 21 learners that received a score of 0 on the gender factors items on the ALPQ. This suggests that 21 learners do not see gender as a negative contributor to their mental well-being. In contrast, 1 adolescent scored 10 out of 10 on gender aspects items. This suggests that 1 learner has a negative perception of gender, which could have an adverse impact on their emotional well-being, as explained in Chapter 2.

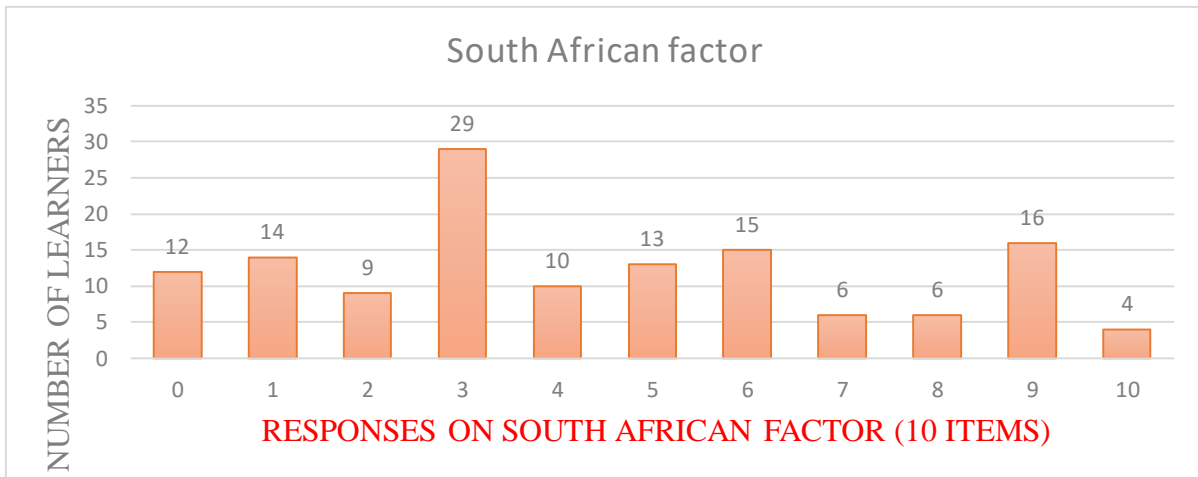


Table 6: Responses on South African Factor

There are 12 learners that received a score of 0 on the South African factors items on the ALPQ. This suggests that 12 learners do not see South African factors as a negative contributor to their emotional well-being. In contrast, four adolescents scored 10 out of 10 on South African factor items. This suggests that four students have a negative perception of South African variables, which could have a harmful impact on their emotional well-being, as discussed in Chapter 2.



Table 7: Responses on the Genetic Factor

There are 38 learners that earned a score of 0 on the ALPQ's genetics items. This implies that 38 of the learners do not consider the genetic component to be a negative contributor to their emotional well-being. On the other hand, 5 adolescents received perfect scores (10/10) on genetic component items. This means that 5 learners have a negative perspective of the genetic component, this could possibly suggest a genetic predisposition, which could be a negative contributor to their emotional well-being.



Descriptive Statistics

	Mean	Std. Deviation	N
Total Score	7.47	9.352	134
Family	3.22	3.330	134
Peers	2.94	3.204	134
Genetic	3.03	3.124	134
Gender	3.96	2.857	134
South African	4.39	2.915	134

Table 8: Descriptive Statistics of the Sample

Correlations

		Total Score	Family	Peers	Genetic	Gender	South African
Total Score	Pearson Correlation	1	.777**	.761**	.801**	.650**	.613**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	134	134	134	134	134	134
Family	Pearson Correlation	.777**	1	.897**	.834**	.698**	.668**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	134	134	134	134	134	134
Peers	Pearson Correlation	.761**	.897**	1	.794**	.680**	.707**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	134	134	134	134	134	134
Genetic	Pearson Correlation	.801**	.834**	.794**	1	.723**	.635**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	134	134	134	134	134	134
Gender	Pearson Correlation	.650**	.698**	.680**	.723**	1	.621**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	134	134	134	134	134	134
South African	Pearson Correlation	.613**	.668**	.707**	.635**	.621**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	134	134	134	134	134	134

Table 9: Correlations of the total score (BDI-II) and Bio-psychosocial factors for all participants

Correlations of the Total Score (BDI-II) and Bio-psychosocial Factors (All participants)

The correlation value between total score of the BDI-II and family factor is 0.777, indicating a positive moderate linear association. The correlation coefficient between total score of the BDI-II and peers factor is 0.761, indicating a positive moderate linear link. The correlation coefficient between total score of the BDI-II and genetic component is 0.801, indicating a positive strong linear relationship. The correlation coefficient between total score and gender factor is 0.650, indicating a positive moderate linear association. The correlation coefficient between total score and South African factor is 0.613, indicating a positive moderate

possible link. The total score of the BDI-II and the bio-psychosocial factors have a positive linear correlation, which implies that as the total score of the BDI-II increases, so do the impact of the bio-psychosocial factors. This confirms that the bio-psychosocial factors studied have the possibility to influence adolescent depressive symptoms.

The target group (Sub threshold Depressive Symptoms Group)

They were 35 students who met the Beck's Depression Inventory scale's criteria for sub-threshold depressive symptoms. According to Beck et al. (1996, as cited in Balazs et al., 2013) adolescents who score from 20 and above are depressed. Those who score below 20 on BDI-II and being positive (>0) on items assessing core symptoms of DSM-IV-TR MDE (sadness or loss of pleasure) displays sub-threshold-depression (Balazs et al., 2013). Since the study focused on sub-threshold depression, this was the basis for the cut-off score.

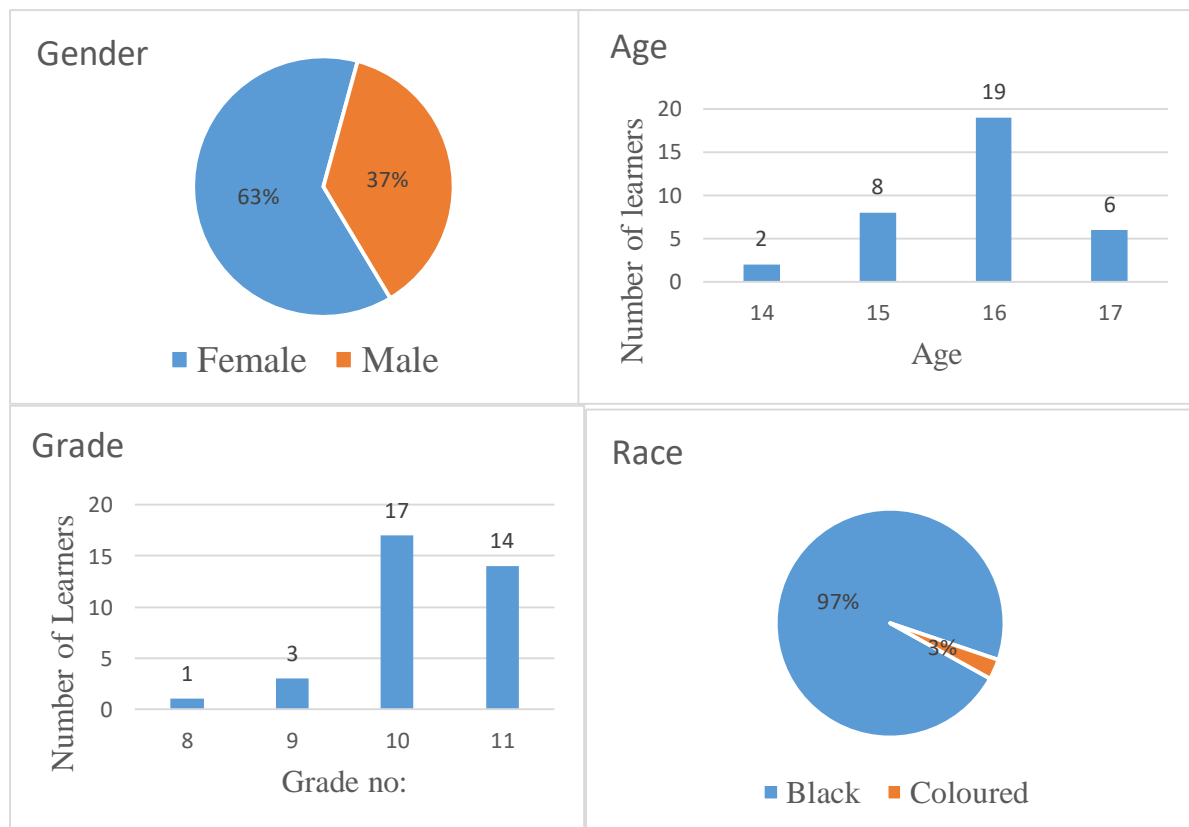


Figure 3: Demographics of learners who met the criteria for sub-threshold depression

Correlations

		Total Score	Family	Peers	Genetic	Gender	South African
Total Score	Pearson Correlation	1	.167	.151	.174	-.150	.211
	Sig. (2-tailed)		.337	.386	.316	.391	.223



	N	35	35	35	35	35	35
Family	Pearson Correlation	.167	1	.715**	.504**	.379*	.259
	Sig. (2-tailed)	.337		.000	.002	.025	.133
	N	35	35	35	35	35	35
Peers	Pearson Correlation	.151	.715**	1	.343*	.369*	.288
	Sig. (2-tailed)	.386	.000		.044	.029	.094
	N	35	35	35	35	35	35
Genetic	Pearson Correlation	.174	.504**	.343*	1	.460**	.002
	Sig. (2-tailed)	.316	.002	.044		.005	.991
	N	35	35	35	35	35	35
Gender	Pearson Correlation	-.150	.379*	.369*	.460**	1	.077
	Sig. (2-tailed)	.391	.025	.029	.005		.659
	N	35	35	35	35	35	35
South African	Pearson Correlation	.211	.259	.288	.002	.077	1
	Sig. (2-tailed)	.223	.133	.094	.991	.659	
	N	35	35	35	35	35	35

Table 10: Correlations of the total score of the BDI-II and bio-psychosocial factors (for learners who met the criteria for adolescent sub-threshold depression).

Descriptive Statistics

	Mean	Std. Deviation	N
Total Score	13.80	2.587	35
Family	6.23	2.556	35
Peers	5.80	2.374	35
Genetic	5.29	2.346	35
Gender	5.80	2.233	35
South African	6.46	2.593	35

Figure 4: Descriptive statistics of learners who met the criteria for sub-threshold depression



Frequency table amongst the different factors for students who fell under target group.

Family Factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	2.9	2.9	2.9
	2	4	11.4	11.4	14.3
	3	2	5.7	5.7	20.0
	5	7	20.0	20.0	40.0
	6	2	5.7	5.7	45.7
	7	5	14.3	14.3	60.0
	8	7	20.0	20.0	80.0
	9	5	14.3	14.3	94.3
	10	2	5.7	5.7	100.0
	Total	35	100.0	100.0	

Table 112: Target Group's Responses on Family Factor

Peers Factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	2.9	2.9	2.9
	2	1	2.9	2.9	5.7
	3	4	11.4	11.4	17.1
	4	6	17.1	17.1	34.3
	5	4	11.4	11.4	45.7
	6	3	8.6	8.6	54.3
	7	7	20.0	20.0	74.3
	8	5	14.3	14.3	88.6
	9	2	5.7	5.7	94.3
	10	2	5.7	5.7	100.0
	Total	35	100.0	100.0	

Table 13: Target Group's Responses on Peers Factor

Genetics Factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	8.6	8.6	8.6
	2	2	5.7	5.7	14.3
	3	3	8.6	8.6	22.9
	4	4	11.4	11.4	34.3
	5	6	17.1	17.1	51.4



6	5	14.3	14.3	65.7
7	7	20.0	20.0	85.7
8	2	5.7	5.7	91.4
9	2	5.7	5.7	97.1
10	1	2.9	2.9	100.0
Total	35	100.0	100.0	

Table 14: Target Group's Responses on Genetics Factors

Gender Factors

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0	1	2.9	2.9	2.9
2	1	2.9	2.9	5.7
3	4	11.4	11.4	17.1
4	4	11.4	11.4	28.6
5	5	14.3	14.3	42.9
6	4	11.4	11.4	54.3
7	8	22.9	22.9	77.1
8	5	14.3	14.3	91.4
9	2	5.7	5.7	97.1
10	1	2.9	2.9	100.0
Total	35	100.0	100.0	

Table 15: Target Group's Responses on Gender Factors

South African Factors

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 2	1	2.9	2.9	2.9
3	7	20.0	20.0	22.9
4	2	5.7	5.7	28.6
5	3	8.6	8.6	37.1
6	5	14.3	14.3	51.4
7	1	2.9	2.9	54.3
8	4	11.4	11.4	65.7
9	9	25.7	25.7	91.4
10	3	8.6	8.6	100.0
Total	35	100.0	100.0	

Table 16: Target Group's Responses on South African Factors

Total Score of the BDI-II and Bio-psychosocial Factors (target group)

The correlation coefficient between total score and family is 0.167, indicating a positive weak linear relationship. The correlation coefficient between total score and peers is 0.151, indicating a positive weak linear link. The correlation coefficient between total score and genetic component is 0.174, indicating a positive weak linear association. The correlation coefficient between total score and gender is - 0.150, indicating a weak negative linear association. The correlation value between total score and South African is 0.211, indicating a positive weak linear relationship. Peers, family, genetics, and South African have a positive linear association with total score, which means that when the overall score rises, so do these elements. This suggests that the four bio-psychosocial elements stated above may have an impact on adolescent sub-threshold depression. Gender has a negative linear association with total score, which means that as total score rises, gender drops. This suggests that the gender factor in this sample has no effect on adolescent sub-threshold depression.

Possible influential factors for adolescent sub-threshold depressive symptoms

Gender Factors

The gender component was mentioned in Chapter 2 as having the potential to influence adolescent sub-threshold depressive symptoms. The gender questions in the ALPQ, on the other hand, elicited unfavourable responses from both boys and girls, however, it was discovered to be insignificant. This implies that the gender component was not found to be a determinant in adolescent sub-threshold depression symptoms in this sample. McLean (2003) discovered that some of the questions used to measure a negative perception of gender were culturally biased. There are specific behaviours that males and females are required to exhibit in Africa.

Every social grouping in the globe, according to Maluleke (2012), has specific traditional cultural practices and beliefs, some of which are helpful to all members and others of which have become damaging to a particular group, such as women. Early and forced marriages, virginity testing, widow's ceremonies, sweeping the yard, and ironing clothes for other family members are examples of traditional practices (Maluleke, 2012). Females may be burdened as a result of this, which may lead to depressive symptoms at some point. This could place a burden to females and could result in depressive symptoms at a certain stage. However the gender component was found not to be significant in influencing adolescent sub-threshold depressive symptoms in Mamelodi Township.

Family Factors

In the study's literature review, it was stated that having a negative perception of one's familial relationships was linked to significant symptoms of adolescent sub-threshold depression. Rather than the family structure, questions focused on family cohesion and a loving and supporting environment. The findings suggest that of the adolescents who met the sub-threshold depressive symptoms criteria had a negative perception of their family cohesion. These results are in accordance with those of other studies. In Chapter 2, Rawatlal, Kliewer, and Pillay (2015) reported that strong family communication, cohesion, and support, are all indications of a healthy parent-adolescent attachment connection. The mentioned-above factors were found to reduce the occurrence of depressive symptoms in a Durban-based community.

South African Factors

The results of this study suggest a link between symptoms of adolescent sub-threshold depression and a pessimistic sense of future prospects, fear of crime and violence, and the threat of getting HIV/AIDS in South Africa. According to Kuo et al. (2019), individuals in South Africa may be at higher risk for depressive symptoms due to HIV and AIDS, violence, and poverty, as indicated in Chapter 2. As described in Chapter 2, being vulnerable to crime and violence has a negative psychological impact on communities (Burns et al., 2015). Long-term psychological stress and anxiety affect people who live in such communities. Violent neighbourhoods, according to Lynch and Cicchetti (1998, as cited in Tomita, Labys, & Burns, 2015), are associated to feelings of powerlessness and hopelessness, which exacerbate depressive symptoms.

Question: 24, (Do you feel hopeful about your future in South Africa?) elicited the most negative responses from 48 (35.8%) adolescents in terms of attitudes toward future chances. This could be related to the fact that the adolescents' environment may contain events that make them fearful of their future. According to Burns (2015), high levels of crime in communities can have a negative impact on how people envision the future.

Peers Factors

The analysis indicated that the peer factor may have a role in the development of adolescent sub-threshold depressive symptoms in Mamelodi Township. This is in line with earlier study, including one by Platt, Kadosh, and Lau (2013), which showed how reciprocal interactions between peer rejection and depressive symptoms build and sustain maladaptive trajectories throughout adolescence. Peer interactions are more essential to adolescents since they tend to identify themselves through them. In a variety of ways, an adolescent's depressive

symptoms are linked to their peer social status and friendship. The said friendship and depressive symptoms interact more as they move through adolescence (Yang et al., 2020).

Genetic Factors

As indicated in the study's literature review, genetic factors have the potential to affect adolescent depression symptoms. The study's findings corroborate prior studies mentioned in Chapter 2. This might be due to the gene-environment interactions. Wilkinson, Trzaskowski, Haworth, and Eley (2013) studied the role of gene-environment interactions. The researchers found that there is some evidence for a gene-environment link between characteristics of home environment in middle childhood and eventual depression symptoms. This shows that one of the processes through which genes influence depressed symptoms may be affecting depressogenic environments on their own (Wilkinson et al., 2013). Another limitation of this study is the method utilized to evaluate genetics. The ALPQ may potentially be insufficiently thorough to allow the researcher to reach this exact conclusions about gene-environment interaction. This is due to the fact that the gene factors were examined independently from the environmental variables. The study used a bottom-up strategy in which adolescents reported their parents' emotions subjectively. This means that participants would answer ALPQ questions on their parent's mood subjectively. Some individuals may provide incorrect information based on their connection with their parents. This might have had a negative impact on the reported findings.

Chapter 5: Discussion and conclusion

Introduction

This chapter consist of a full discussion of the results with reference to the existing literature. It is organised in terms of the aim of the study. The role of resilience is also discussed as it played an important part in the results of the study. This chapter also concludes with recommendations and limitations of the current study.

Overview of research

Adolescents in the present time confront exceptional demands and strains, as indicated in chapters 1 and 2. Adolescent HIV infection, abuse, crime, and violence are all on the rise, and are among the most highly contested issues. Adolescents' health, happiness, and eventual ability to function productively on a daily basis are all affected by these sorts of trauma. Adolescents can be unpredictable and struggle to cope physically, mentally, and emotionally.

Adolescents are especially prone to the impacts of stress since adolescence is a complex developmental period in and of itself. In order to confront the world as an autonomous adult, the adolescent must learn to deal with changes to his physique caused by puberty, adjust to his/her developing sexuality, and build a meaningful identity during adolescence. Even in an ideal educational environment, these challenges can be difficult for adolescents. When the educational environment is less than perfect, proper development of the adolescent can be compounded.

Adolescent sub-threshold depression can result in significant problems in school, work, and personal adjustment for the adolescent (Rodríguez et al., 2012). There is an increasing need to emphasize sub-threshold diagnosis of mental health disorders since it has substantial consequences for individuals. The World Health Organization might help in recognizing sub-threshold illnesses and the impact they have on populations worldwide. This can provide a platform for healthcare practitioners to focus more on risk factors that impact sub-threshold illnesses before they progress to the full-blown stage. According to Balazs et al. (2013), sub-threshold depression and anxiety are associated with greater illness burden and suicide risk. One of the most well-established risk factors for the onset of full-syndrome depressive disorders is sub-threshold depressive disorder. This shows that sub-threshold depression increases the likelihood of developing a severe depressive episode (Shankman et al., 2009).

Given South Africa's widespread socioeconomic challenges, it is difficult to understand why so little research has been done on the epidemiology of adolescent sub-threshold depression in the country, as well as the identification of bio-psychosocial factors that appear to influence the development of adolescent sub-threshold depression in South Africa or the world at large.

The aim of this study was to explore if there was a correlation between bio-psychosocial variables and adolescent sub-threshold depressive symptoms among Mamelodi Township adolescents. In Chapter 2, key bio-psychosocial factors were discovered via literature and explored in relation to how they could impact adolescent depressive symptoms. The three questionnaires utilized (refer to chapter 3) were used to aid the researcher in achieving the study's aim as well as answering the research question.

In Chapter 2, a variety of factors on the aetiology of adolescent depressive symptoms were explored. Although it is clear that no single factor can account for all of the mechanisms of adolescent sub-threshold depressive symptoms, each factor has adequate evidence to support it. It is evident that this study corroborates prior research in that it acknowledges that family stability, support, and strong peer relationships can protect an adolescent from developing depressive symptoms. Negative family and peer relationships exhibited a positive link to adolescent sub-threshold depressive symptoms scores.

Apart from the aforementioned bio-psychosocial factors, environmental factors associated to Mamelodi Township and the genetic characteristics were identified to have a positive correlation with adolescent sub-threshold depressive symptoms. This suggests that environmental and genetic variables may influence the development of adolescent sub-threshold depressive symptoms in Mamelodi Township. Gender was another bio-psychosocial factor explored in this study, and it was shown to have a negative correlation with adolescent sub-threshold depressive symptoms. This suggests that, in the cohort of adolescents residing in Mamelodi Township, gender had no influence on the possible development of an adolescent sub-threshold depressive symptoms.

Resilience

According to Herrman et al. (2011) adolescent resilience, or the ability to preserve or restore mental health despite hardship, is a well-known trait related to the prevention or mitigation of depressive symptoms. In accordance with resilience hypothesis, a resilient person possesses the psychological and biological strength needed to overcome adversity, as well as the capacity to mitigate or prevent negative psychological effects such as depressive symptoms

brought on by stressful events (Masten & Cicchetti, 2016). This might explain why some adolescents answered negatively to questions on familial relationships, South African characteristics, peer relationships, and genetics while yet exhibiting no sub-threshold depressive symptoms. This shows that, despite any negative perceptions of the investigated bio-psychosocial factors, the adolescent might be resilient to adolescent sub-threshold depression symptoms. However, it should be highlighted that the aforementioned adolescents may have had exposure to or poor impressions of other bio-psychosocial factors (excluding those investigated in this study) that may influence various mental disorders other than adolescent sub-threshold depressive symptoms.

Limitations of the study

The study's inclusion of a small number of males from three secondary schools within the total sample may have limited the validity of the results. Most self-report questionnaires have some typical restrictions. One of them is that determining the amount of honesty with which the adolescents completed the questionnaires is extremely challenging. It is also difficult to determine if all of the adolescents accurately comprehended all of the items. According to McLean (2003), when constructing ALPQ items, it is difficult to account for all of the diverse cultural conventions. When assessing human connections, it is hard to assure that all input factors are completely independent of one another. Individual adolescents may have had additional issues, such as anxiety or illness, on the day they completed the questionnaires, which may have biased the results. The BDI-II measures all depressed symptoms, although it is difficult to capture sub-threshold depression symptoms. To develop an appropriate score and criteria for sub-threshold depressive symptoms, the researcher had to depend on earlier definitions of the symptoms. Due to COVID-19 restrictions outlined by the Gauteng Department of Education, the researcher's physical presence during data collection limited the researcher's ability to further clarify concepts that the learners may have been struggling with. Given the small sample size, making broad conclusions about the results in regard to all Mamelodi adolescents is challenging. More adolescents and schools in the Mamelodi Township area should be included in the research to make generalisation about the results to be obtained.

Recommendations for further research

Only adolescents from Mamelodi Township were included in the research. The study might be replicated with adolescents from a broader rural and urban region to examine if the same influential factors are involved in the development of adolescent sub-threshold depression

symptoms. More research should be conducted on the sub-threshold of mental disorders. Individuals who do not meet the diagnostic threshold face significant functional challenges, which have a negative impact on their quality of life (Rodrguez et al., 2012). It would be interesting to conduct the study on a cross-sectional basis to include other ethnicities, socioeconomic statuses, and cultures. As stated in chapter 3, the schools chosen are in quantile 3. Schools in South Africa are classified into five quantiles, with the quantiles based mostly on socioeconomic factors. Which is typical of the population of secondary school adolescents within the Mamelodi area. Future studies should include more males in the sample. The study explored the correlation between possible influential factors and symptoms of adolescent sub-threshold depression in predominantly grade 10 and 11 learners. This study might be expanded to include additional participants from earlier secondary school grades, such as grade 8 and 9, so that the data can be used to develop programmes more quickly.

Conclusion

The study's research aim was to gain a deeper knowledge of the bio-psychosocial factors that may be associated with the development of adolescent sub-threshold depression in the South African environment. This study contributed essential research in the topic of adolescent depression to the field of clinical psychology. An awareness of the direction to be followed in designing intervention programs for adolescent depression, notably in Mamelodi Township, was acquired. This study identified certain issues in the realm of adolescent depression and suggested recommendations for further research.

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Appendix



Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomo



18 March 2021

Dear Mr DT Moloko

Project Title:	Bio-psychosocial risk factors associated with adolescent sub-threshold depression in Mamelodi Township
Researcher:	Mr DT Moloko
Supervisor(s):	Dr LM Eskell-Blokland
Department:	Psychology
Reference number:	11130912 (HUM032/1020)



Degree:

Masters

I have pleasure in informing you that the above application was **approved** by the Research Ethics Committee on 18 March 2021. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should the actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you

success with the

project. Sincerely,

Prof Innocent Pikirayi

**Deputy Dean: Postgraduate Studies and
Research Ethics Faculty of Humanities**

UNIVERSITY OF PRETORIA

e-mail: PGHumanities@up.ac.za



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



GAUTENG PROVINCE

Department: Education

REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	24 November 2020
Validity of Research Approval:	08 February 2021– 30 September 2021 2018/478A
Name of Researcher:	Moloko DT
Address of Researcher:	559 Libangeni Extension B Vaalbank
Telephone Number:	076 668 5598
Email address:	Moloko.tebza@gmail.com
Research Topic:	Investigation into bio-psychosocial factors for adolescent depressive symptoms in Mamelodi Township
Type of qualification	Masters
Number and type of schools:	3 Secondary Schools
District/s/HO	Tshwane West

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

1. Letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.

Moloko DT 25/11/2020
Making education a societal priority

1

Office of the Director: Education Research and Knowledge Management

7th Floor, 17 Simmonds Street, Johannesburg, 2001

Tel: (011) 355 0488

Email: Faith.Tshabalala@gauteng.gov.za

Website: www.education.gpg.gov.za

2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. **Because of COVID 19 pandemic researchers can ONLY collect data online, telephonically or may make arrangements for Zoom with the school Principal. Requests for such arrangements should be submitted to the GDE Education Research and Knowledge Management directorate. The approval letter will then indicate the type of arrangements that have been made with the school.**
4. **The Researchers are advised to make arrangements with the schools via Fax, email or telephonically with the Principal.**
5. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
6. A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
7. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
8. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
9. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
10. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
11. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
12. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
13. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
14. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
15. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
16. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards



Mr. Cuthani Mukatuni

Acting CES: Education Research and Knowledge Management

DATE: 24/11/2020



PARTICIPANT INFORMATION SHEET

TITLE OF THE STUDY

Bio-psychosocial risk factors associated with adolescent sub-threshold depression in Mamelodi Township.

Hello my name is **David Tebogo Moloko**, I am currently Master student at the Faculty of Humanities, University of Pretoria. You are being invited to take part in my research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please take some time to read the following information carefully, which will explain the details of this research project. Please feel free to ask the researcher if there is anything that is not clear or if you need more information.

WHAT IS THE PURPOSE OF THE STUDY?

- The purpose of this study is to explore factors which might contribute significantly to adolescent sub-threshold depressive symptoms (mild depressive symptoms). Little is known about/very few studies have been done on mild depressive symptoms in South Africa. I have decided to conduct a study on the bio-psychosocial risk factors associated with mild depressive symptoms in Mamelodi Township.
- The overall aim of this study is to investigate which bio-psychosocial risk factors are associated/might influence adolescent mild depressive symptoms in Mamelodi Township

WHY HAVE YOU BEEN INVITED TO PARTICIPATE?

- You will be invited to participate because you meet the below criteria:
 - Age: Above 13 years and below 18 years of age
 - Gender: All genders are included in the study



- Home Location: Mamelodi Township (since the study is focused on the biopsychosocial factors environment is crucial)
- Race: All races are accepted
- Exclusion Criteria: adolescent who do not meet the inclusion criteria will be excluded from the study (e.g. those who are above 18 and those who do not reside in Mamelodi Township)

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

- The study will use the demographic questionnaire for identification purposes of the participants, the Beck's Depression Inventory assessment tool (BDI-II) to check for depressive symptoms and Adolescent Life Perspective Questionnaire (ALPQ).
- The principal of the chosen schools will receive a recruitment form which will describe the aspects, and the purpose of the present study. Below the description of the study it will be empty columns where you will fill in only your email and cell-phone number (should you be interested in participating). To avoid issues with internet access at participant's home, parental consent (hard copies) will be distributed to principals of the chosen schools together with the adolescent assent forms (only those who are interested to participate). You will take the forms to parents or guardians at home for completion. You will return both the consent completed by the parent or guardians and your completed assent forms to the principals. The forms will be collected from the principals by the researcher after a period of a week (post distribution). Only adolescents whose forms (consent & assent) are completed will be sent a link that will contain the research questionnaires (mentioned above). The questionnaires will be completed online. You will be required to have internet connection or Wi-Fi, which are installed in Mamelodi Schools. Instructions will be given as to how to answer each questionnaire and what details needs to be filled in. The duration to complete the online questionnaires is approximately 50-70 minutes (1hour and 10 minutes). The responses from the questionnaires will automatically go to the researcher's email and they will be stored there. The information collected from the three questionnaires will be captured on an excel sheet which will be password encrypted

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

- Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason, if you decide not to take part in the study without negative consequences or being penalized

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER BE KEPT CONFIDENTIAL?

- Confidentiality will be ensured by assigning code names/numbers to each participant, and that will be used in all research notes and documents. Findings from this data will be disseminated through conferences and publications. Reporting of findings will be anonymous, only the researchers of this study will have access to the information.



- ❖ Please note participant information will be kept confidential, except in cases where the researcher is legally obliged to report incidents such as abuse and suicide risk.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

- There will be no direct benefit to you for participation in this study, However, I hope that information obtained from this study may be used to assist the community at large and the mental health care practitioners to create awareness about bio-psychosocial factors that might influence adolescent depressive symptoms in Mamelodi, so that the community members most specifically the parents and teachers can assist by providing enough support to adolescents experiencing depressive symptoms.

WHAT ARE THE ANTICIPATED RISKS FROM TAKING PART IN THIS STUDY?

- Due to the COVID-19 pandemic, data will be collected online to eliminate the risk of being infected by the virus.
- Adolescents who display severe depressive symptoms during the research process will be referred to organisations that might be able to provide assistance in that regard, such as:
 - South African Depression and Anxiety Group (SADAG)
 - Contact details: 011 234 4837
 - Life-Line Pretoria
 - Contact Details: 012 804 1853
 - Mamelodi Hospital
 - Contact Details: 012 841 8300 / 1

WHAT WILL HAPPEN IN THE UNLIKELY EVENT THAT SOME FORM OF DISCOMFORT OCCUR AS A RESULT OF TAKING PART IN THIS RESEARCH STUDY?

- Should you have the need for further discussions after the interviews or surveys an opportunity will be arranged for you?
- If there is a need to consult a mental health care professional, details will be provided on where you can find one.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

- Electronic information will be stored for period of 15 years. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable.
- Participant information in hard copies of raw data be will locked in the cabinet and electronic data will be kept in a file that is password protected in the Department of Psychology

WHAT WILL THE RESEARCH DATA BE USED FOR?

- Data gathered from the participant would be used for research purpose that include;
 - Dissertation, article publication, national and international conference presentations
 - For administration purpose or policy briefs
 - For further research inform of secondary data analysis.

WILL I BE PAID TO TAKE PART IN THIS STUDY?

- NO, you will not be paid to take part in this study.
- Travel expenses will not be necessary for the participants, since the study will be conducted online.
- Participants will be required to have internet connections, which Mamelodi schools have as provided by the Government and its free to be used by participants.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study is still to receive written approval from the Research Ethics Committee of Faculty of Humanities, University of Pretoria. A copy of the approval letter can be provided to you on request (once received).

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

- The findings of the research study will be shared with you by **David Tebogo Moloko** after one year or two years of completing the study(approximately 30 September 2022)

WHO SHOULD I CONTACT IF I HAVE CONCERN, COMPLAINT OR ANYTHING I SHOULD KNOW ABOUT THE STUDY?

If you have questions about this study or you have experienced adverse effects as a result of participating in this study, you may contact the researcher whose contact information is provided below. If you have questions regarding the rights as a research participant, or if problems arise which you do not feel you can discuss with the researcher, please contact the supervisor, and contact details are below

Thank you for taking time to read this information sheet and in advance for participating in this study.

Researcher

Name Surname: Mr David Tebogo Moloko

Contact number: 076 668 5598

Email address: moloko.tebza@gmail.com

Supervisor

Name: Dr Linda Blokland

Contact number: 082 202 2099

Email address: linda.blokland@gmail.com

Consent form (to be completed by parent and/or Guardian)

Research title: Bio-psychosocial risk factors associated with adolescent sub-threshold depression in Mamelodi Township

Research Leader: Mr David Tebogo Moloko (Contact email: moloko.tebza@gmail.com)

Research supervisor: Dr Linda Blokland (Contact email: linda.blokland@gmail.com)

Description of the Research:

The main focus of the study is to investigate which bio-psychosocial factors might have an influence in the development of adolescent sub-threshold depression (mild depressive symptoms) in Mamelodi Township. The study will be looking into the correlation of family, peers, gender, genetic predisposition and Mamelodi Township environmental factors on the development of adolescent sub-threshold depression (mild depressive symptoms). Part of the Mamelodi factors which will be investigated includes poverty rate, violence, and Human Immunodeficiency Virus (HIV) status. The present study will be using two standardised questionnaires which will be completed by the adolescent (your child) during data collection.

Below are few ethical considerations which the research study will follow:

Voluntary participation and anonymity of participants:

Participants will voluntarily take part in the proposed study. It will be explained to participants (your child) that they can drop out of the proposed study if they no longer want to continue with their participation. Participants (your child) will be assured that their participation in the

research is their responsibility and should they feel that they are no longer interested in the proposed study they can withdraw and there are no consequences to such action. Anonymity for the participants will not be assured as full demographic details will be collected from them, however the information collected will be kept confidential.

Confidentiality:

The participants (your child) of the proposed study will be assured that their information will be highly confidential and they should be aware that the information provided would be used for research purposes only. The participant's information will be recorded on a word document which will be encrypted with a password known to the researcher. The completed questionnaires will be kept at the faculty of humanities for further research, once the present study has been submitted or completed. Should any researcher seek to utilize them they will have to follow the right procedures through the University of Pretoria Ethics Committee.

Non-maleficence:

The participant (your child) will be assured that the research seeks not to harm or injure them in anyway, be it physical or mentally. The aims and objectives of the study will be clearly described to the participants so as to avoid harm. Furthermore an application to the University of Pretoria Ethics Committee will be established so as to assure that the study does not pose any harm or threat to the participant (your child)

Beneficence:

The research findings will be used to assist the community at large and the mental health care practitioners to create awareness about bio-psychosocial factors that might influence adolescent depressive symptoms in Mamelodi, so that the community members most specifically the parents and teachers can assist by providing enough support to adolescents experiencing depressive symptoms.

Suggestions:

- Participants who display depressive symptoms will be referred to organisations and other local clinics in Mamelodi Township. The chosen school's principals and teachers will be issued with referral forms for psychological interventions during the data collection period.



- The school’s principal and teachers will be given contact details of organisations that deal with depressions.

Below is the few organisations and their contact details in South Africa which can assist with adolescent depressive symptoms:

- **South African Depression and Anxiety Group (SADAG)**

Contact details: 011 234 4837

- **Life-Line Pretoria**

Contact Details: 012 804 1853

- **Mamelodi Hospital**

Contact Details: 012 841 8300 / 1

NB: If I have any questions about, or problems regarding the study, or should my child experience any undesirable effects, I may contact the project leader (Mr David Tebogo Moloko on 0766685598).

I, _____, give permission for my child _____ to participate in the research project entitled, “Investigation into bio-psychosocial risk factors for adolescent sub-threshold depression (Depressive Symptoms) in Mamelodi Township”. The study has been described to me and my questions are answered to my satisfaction. I understand that my child’s right to withdraw from participating or refuse to participate will be respected and that his/her responses and identity will be kept confidential. I give this consent voluntarily.

Signature of parent or guardian

Date

Signature of the project leader

Date



Assent form (to be completed by adolescent/participant)

Research title: Bio-psychosocial risk factors associated with adolescent sub-threshold depression in Mamelodi Township

Research Leader: Mr David Tebogo Moloko (Contact email: moloko.tebza@gmail.com)

Research supervisor: Dr Linda Blokland (Contact email: linda.blokland@gmail.com)

I, _____ hereby voluntarily consent to participate in the following project:

This research seeks to investigate which bio-psychosocial factors have an influence or risk on developing adolescent sub-threshold depressive symptoms (mild/moderate depression) amongst adolescents in Mamelodi Township.

I realise that:

1. The research deals with the investigation of bio-psychosocial risk factors for adolescent depressive symptoms in Mamelodi Township.
2. The research project, i.e. the extent, aims and methods of the research has been explained to me.
3. The procedures envisaged may hold some risk for me that cannot be foreseen at this stage (i.e., psychological distress as a result of completing a questionnaire on Adolescent Life Perspective and the Beck's Depression Inventory-II).



4. The Faculty of Humanities Research and Ethics Committee at the University of Pretoria has/will approve that individuals may be approached to participate in the study.
5. The project sets out the risks that can be reasonably expected as well as possible discomfort for persons participating in the research, an explanation of the anticipated advantages for myself or others that are reasonably expected from research and alternative procedures that may be to my advantage.
6. I will be informed of any new information that may become available during the research that may influence my willingness to continue my participation.
7. Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research.
8. Any questions that I may have regarding the research, or related matters, will be answered by the researcher.
9. If I have any questions about, or problems regarding the study, or experience any undesirable effects, I may contact the project leader (Mr David Tebogo Moloko on 0766685598).
10. Participation in this research is voluntary and I can withdraw my participation at any stage. I have also been provided with a stamped self-addressed envelope to return the questionnaires.
11. The raw data will be securely stored at the department of psychology's storage room (HSB 11-23) for a minimum period of 15 years for archiving and reuse. During this period the raw data might also be used for further research by other researchers.
12. I indemnify the University of Pretoria and all persons involved with the above project from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence on the part of the mentioned persons.

Signature of participant



Signature of person that informed the researched person.

Signed at _____ this _____ day of _____ 20____



Demographic Questionnaire.

Name: _____

Surname: _____

Are you residing in Mamelodi? _____

Gender: _____

Age: _____

Ethnicity: _____

Race: _____

Education: _____

Name of School: _____

Do you have children? _____ If yes, how many? _____

Do you have any disabilities? _____

If yes, please specify, _____

Are you currently employment? _____

If yes, please provide the type of work they do. _____

Relationship status: _____

Religion: _____

Sexual orientation: _____

Are your parents or guardian employed? _____

If yes, what kind of work do they do?

Mother _____

Father _____ or Guardian _____

Do you have siblings? _____ If yes, how many? _____



BDI - II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully. And then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

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.
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 of 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 anymore 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 can't.

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, 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 get 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 others.
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 change in my sleeping. 1a I sleep somewhat more than usual.



1b I sleep somewhat less than usual.

2a I sleep a lot more than usual.

2b I sleep a lot less than usual.

3a I sleep most of the day.

3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

0. I am not 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 change in my appetite.
- 1a. My appetite is somewhat less than usual.
- 1b. My appetite is somewhat greater than usual.
- 2a. My appetite is much less than before.
- 2b. My appetite is much greater than usual.
- 3a. I have no appetite at all.
- 3b. 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 Score: _____

THE PSYCHOLOGICAL CORPORATION

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THE ADOLESCENT LIFE PERSPECTIVE QUESTIONNAIRE (ALPQ)



Adolescent Life Perspective Questionnaire

Please fill in the details below

Male / Female:

Age:

Are you presently taking any medication?

Please list the medications

Question	Yes	No
1. Is your family supportive of you?		
2. Do you have friends your own age?		
3. Are you a happy person?		
4. Do you think you have to behave a certain way because you are A girl/boy?		
5. Do you think South Africa is a positive place to live?		
6. Would you describe your relationship with your mother as good?		
7. Do your friends influence you to do things you don't want to do?		
8. Do you feel ashamed or embarrassed about your body?		
9. Do your friends value your opinions and respect you?		
10. Does your mother cope well with day to day life?		
11. Does your father cope well with day to day life?		
12. Do you worry a lot about becoming a victim of crime?		
13. Do you feel you can solve problems by yourself?		
14. Does your family argue a lot?		
15. Do you often feel lonely?		
16. Does either of your parents seem sad, irritable or angry quite often?		
17. Do you have to take care of others in your family?		
18. Do you worry about getting infected with the HIV virus?		
19. Are you allowed to make important decisions in your family?		
20. Do you enjoy spending time with people your own age?		
21. Has your mother ever been depressed for more than two weeks?		
22. Has your father ever been depressed for more than two weeks?		
23. Do you think people want to hear your opinions?		
24. Do you feel hopeful about your future in South Africa?		
25. Do you and your friends drink alcohol often?		
26. Do you feel accepted by your parents?		
27. Do you cope well with day to day life?		
28. Do you worry that your friends might be HIV positive?		
29. Do you enjoy going home to your family?		



30. Do people your own age enjoy spending time with you?		
31. Is your mother a happy person?		
32. Is your father a happy person?		
33. Are your parents divorced?		
34. Has the threat of crime caused you to stop trusting people?		

Adolescent Life Perspective Questionnaire – continued

Question	Yes	No
35. Do you worry a lot about how you look?		
36. Has anyone in your close family died in the last two years?		
37. Are your opinions and beliefs respected in your family?		
38. Have you been personally affected by crime?		
39. Are you not allowed to do certain things because you are a boy/girl?		
40. Do you worry a lot about your relationships with others?		
41. Do you and your friends use illegal drugs?		
42. Do you worry about finding a job when you leave school?		
43. Do you feel it is your role to take care of others?		
44. Has the threat of getting HIV affected your enjoyment of life?		
45. Do you feel rejected by people your own age?		
46. Do you feel dependent on others to sort out your difficulties in life?		
47. Do you look forward to being an independent adult in South Africa?		
48. Do you feel understood by people your own age?		
49. Would you describe your relationship with your father as good?		
50. Do your parents' moods affect your moods?		