Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.

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ABSTRACT

Coping strategies are significant in the prevention and development of mental problems in children and adolescents. Specific coping strategies within broad coping categories may be associated with symptoms of psychopathology differently. Yet, we lack comprehensive data on these associations in South Africa. The present cross-sectional study investigates specific coping strategies and their association with symptoms of anxiety and depression among 415 Etwatwa adolescents between the ages of 15 and 19 years. A quantitative, correlational research design was adopted, and data was collected in the form of self-report questionnaires. Female adolescents reported significantly more symptoms of anxiety and depression than male adolescents ($p < .001$). The only statistically significant gender difference in coping was that female adolescents used more behavioural disengagement ($p = .001$) than male adolescents. Using substances, behavioural disengagement and self-blame predicted more symptoms of both anxiety and depression among adolescents. Denial was associated with more symptoms of anxiety while venting was associated with more symptoms of depression. When the data set was split by gender, behavioural disengagement predicted anxiety in both female and male adolescents. Self-blame predicted both anxiety and depression in female adolescents and only anxiety in male adolescents. Venting predicted depression in female adolescents but not in male adolescents. While further research is recommended to determine the direction of effects, the findings of this study suggest that targeting the use of these strategies may help to prevent emotional distress among adolescents.

Keywords: adolescents, depression, anxiety, coping strategies, socioeconomic disadvantage, quantitative

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CHAPTER 1: INTRODUCTION

Studies on coping and adolescent mental well-being in South Africa are underdeveloped. Adolescence is a major developmental stage that has implications for adult mental health because most mental health problems emerge during this period (Solmi et al., 2021). Numerous studies have identified the impacts of anxiety and depression – the most prevalent mental disorders – on adolescent physical and mental well-being (e.g., life satisfaction, physical health, eating problems, risk of suicide), academic functioning and school achievement (e.g., poor performance or attendance, school dropout), and social functioning (e.g., social problems, peer and family relationships) (Bernal-Morales et al., 2015; Glied & Pine, 2002; Hoseini-Esfidarjani et al., 2022; Reiss, 2013; World Health Organization [WHO], 2021; Zhang et al., 2021). The prevention and development of mental problems in children and adolescents are significantly influenced by coping (Skinner & Zimmer-Gembeck, 2016).

Coping, according to Lazarus and Folkman (1984), is making behavioural and cognitive efforts to deal with stressful situations. They theorised coping as a mediator between perceived stress and emotion (Folkman & Lazarus, 1988; Lazarus, 1993). This indicates that coping emerges during (or changes as a result of) the stress encounter and is a pathway through which stressful experiences have an impact on psychopathology (Folkman & Lazarus, 1988; Zimmer-Gembeck & Skinner, 2016). Previous research has demonstrated that using different coping strategies may have different mental health outcomes, either positive or negative. For example, strategies such as self-blame and behavioural disengagement (trying to disengage from the stress) have often been found to be risk factors for symptoms of psychopathology (Basterfield et al., 2014; Horwitz et al., 2011; Wadsworth & Compas, 2002). In contrast, coping strategies such as active coping, seeking instrumental social support and acceptance have often been found to act as protective factors against symptoms of psychopathology (Asanbe et al., 2021; Compas et al., 2017; Gonzales et al., 2001; Malooly et al., 2017). Because research argues that the effectiveness of coping strategies depends on the context (Lazarus & Folkman, 1984), it is essential to examine whether the use of some of these coping strategies could contribute to symptoms of anxiety and depression for South African adolescents.

Research has repeatedly shown that the risk of negative psychological outcomes is moderated by gender, such that women typically report more psychopathology than men (Campbell et al., 2021; Girgus & Yang, 2015). Data from coping studies have also demonstrated that women and men cope in different ways and that these gender disparities in coping could explain why women report more symptoms of depression and anxiety than men (Calvete et al., 2011; Govender & Killian, 2001; Kelly et al., 2008; Malooly et al., 2017; Wilson et al., 2005). For this reason, it would be beneficial to investigate gender differences in both psychopathology and coping to ascertain and understand the interaction of gender with coping and mental health among South African adolescents.

Many South African adolescents live in poverty and are generally at an increased risk of poor mental health (Harrison et al., 2021). Yet the role of coping strategies in adolescents' psychological health in impoverished or socioeconomically disadvantaged communities has received little attention. Socio-economic disadvantage may include living in underdeveloped and unfavourable communities that have characteristics like high unemployment, violence and crime, poverty, limited access to healthcare, low household income, low food security, poor education, and low living standards (Barbarin, 2003; Duby et al., 2022; Futshane, 2021; "Gauteng Profiles," 2020; Harrison et al., 2021; World Bank, 2018). South African townships are an example of such communities (Mahajan, 2014; Mampane, 2014; Mbambo & Agbola, 2020; Ndhlovu, 2022; Pernegger & Godehart, 2007; Sedibe & Hendricks, 2020). Adolescents who live and attend school in these communities are particularly at risk of depression and anxiety (Das-Munshi et al., 2016).

The City of Ekurhuleni (CoE) has a population of about 3.8 million people, with over 34% of the population living in poverty and a 37.1% unemployment rate. Most people rely on the city for socioeconomic support (City of Ekurhuleni, 2023; "Gauteng Profiles," 2020). The Daveyton/Etwatwa region, located on the fringes of the City of Ekurhuleni, is one of the city's historically impoverished communities ("Gauteng Profiles," 2020). With about 62% of the CoE population living on the fringes of the urban areas where there are job opportunities, inequality is a concern (City of Ekurhuleni, 2022; "Gauteng Profiles," 2020). Most of the impoverished households are concentrated in townships, high-density informal settlements, and peri-urban parts of the city (City of Ekurhuleni, 2022; City of Ekurhuleni, 2023; "Gauteng Profiles," 2020). Given this context, this study is well suited to investigate the specific coping strategies that may make adolescents from Etwatwa, Daveyton more or less susceptible to psychological distress.

Research Questions

The central question in the present study is whether the specific coping strategies utilized by adolescents to overcome problems and difficulties are related to symptoms of anxiety and depression. To support the main research question, the following sub-questions are posed:

1. Are there gender differences in anxiety and depression symptoms in female and male adolescents?
2. Are there gender differences in specific coping strategies used by adolescents?
3. What is the association between specific coping strategies and the symptoms of anxiety and depression?

4. Are there gender differences in the association between specific coping strategies and the symptoms of anxiety and depression?

Significance of the Research

Research on the associations between coping and adolescent mental health in South Africa is lacking, especially in at-risk adolescents. With this study, I hope to contribute to knowledge by filling a gap in the research area of stress and coping by increasing understanding of the use and adaptiveness of specific coping strategies (instead of broad categories of coping) in the context of socioeconomic disadvantage in South Africa. The investigation of specific coping strategies will provide more data on strategies that have been underrepresented in previous research such as venting, denial, humour, and religion (Malooly et al., 2017; Trần et al., 2023). The study also aims to advance our understanding of the associations of these specific coping strategies with mental health in the context of socioeconomic disadvantage in South Africa. Moreover, I hope that the findings will assist in informing future context-based mental health and educational interventions that will drive adaptive coping skills and help prevent mental disorders. Such interventions could empower adolescents and provide them with a chance to flourish in the face of adversity.

Structural Outline of the Dissertation

This dissertation consists of five chapters. This chapter gave background information on the topic as well as the context in which the study is situated. Following that, the research questions were identified, and the significance of the study was also acknowledged. The second chapter addresses the pertinent literature on adolescent mental health, socioeconomic disadvantage as a risk factor for mental disorders, and coping and its association with depression and anxiety. The study's theoretical background is also discussed. In chapter three, the research methodology and approach used in the study are introduced together with information about the participants and the procedure used before and during data collection.

The measures used in the study are also described, as are the data analytic plan and the ethical issues considered in the study. Chapter four presents the research findings of the study. Chapter five discusses the results which emerged from the statistical analyses presented in chapter four. Following that, the limitations of the study and recommendations for future research are presented. The chapter further outlines the practical implications of the study and concludes the study.

CHAPTER 2: LITERATURE REVIEW

This chapter summarises and evaluates previous relevant literature. This chapter first details the prevalence of mental disorders among adolescents before delving into socioeconomic adversity as a risk factor for anxiety and depression. After that, this researcher describes the transactional theory of stress and coping, which serves as the theoretical foundation of this study. The literature on gender differences in coping strategies is presented next, followed by a consideration of previous studies on the association between coping strategies and symptoms of depression and anxiety and their associated limitations. The section after that presents the literature on gender differences in the association between coping strategies and symptoms of anxiety and depression. Finally, the research aims and hypotheses are stated.

The Prevalence of Mental Disorders Among Adolescents

The most prevalent mental disorders that are causing illness and disability among adolescents are depression and anxiety (Cortina et al., 2012; WHO, 2021). Depression symptoms include feelings of sadness and hopelessness, loss of interest in activities, increased fatigue, sleeping problems, poor concentration and changes in weight and appetite (American Psychiatric Association [APA], 2022). Generalised Anxiety Disorder is characterised by uncontrollable worry, restlessness, poor concentration and sleeping problems [APA, 2022]. These mental disorders often occur concurrently, with one risking the manifestation of the other (Garber & Weersing, 2010). Depression and anxiety are more prevalent in older adolescents (15- to 19-year-olds) than in younger adolescents (10- to 14-year-olds) (WHO, 2021). The prevalence of anxiety is estimated at 3.6% among 10- to 14-year-olds but at 4.6% among 15- to 19-year-olds. Depression, on the other hand, is estimated to affect 1.1% of 10- to 14-year-olds but 2.8% of 15- to 19-year-olds (WHO, 2021). Worldwide, 10-20% of children and adolescents suffer from mental health problems (Cortina et al., 2012; Kieling et al., 2011). A systematic review estimated the pooled prevalence of mental health problems among adolescents in the sub-Saharan Africa region to be 26.9% for depression and 29.8% for anxiety disorders (Jörns-Presentati et al., 2021). The prevalence rates reported in this review are higher compared to those reported in studies from European countries and the USA (Jörns-Presentati et al., 2021). Other low- and middle-income countries like India and Brazil report lower prevalence rates of mental disorders among children and adolescents than those reported in South Africa (Patel et al., 2007).

In South Africa, Kleintjes et al. (2006) conducted an insightful study on the overall prevalence rate for a wide range of mental disorders (including anxiety and depression) in the Western Cape, which was 17% among children and adolescents. Yet, national prevalence rates of child and adolescent mental disorders in South Africa are unknown. The lack of such studies indicates that the gaps in the available prevalence data on adolescent mental health are not being addressed. Nevertheless, even in the absence of this information, reported mental health outcomes from several studies carried out in various parts of South Africa demonstrate that conditions like poverty and violence make it difficult for teenagers to flourish (Cheng et al., 2014; Cluver & Orkin, 2009; Stansfeld et al., 2017; Strydom et al., 2012; Ward et al., 2018). The vulnerable nature of the adolescence stage and the different changes (i.e., cognitive, psychological, emotional, social, physical and biological) that occur during this time (Ajaero et al., 2018; Chukwuere et al., 2021; Girgus & Yang, 2015), along with exposure to stressors such as poverty, pressure to conform, harsh parenting, socioeconomic problems, chronic illness, teenage pregnancy, being orphans and violence, make adolescents vulnerable to mental health problems (Ajaero et al., 2018; WHO, 2021). Adolescents may also use less effective coping strategies than adults because of their relative cognitive immaturity, which puts them at risk of negative psychological outcomes (Krapić et al., 2015).

Research on adults, children, and adolescents shows gender differences in the prevalence of mental disorders between men and women. Girls often have worse mental health than boys, including a higher prevalence of depression and anxiety (Bach & Louw, 2010; Campbell et al., 2021; Cheng et al., 2014; Girgus & Yang, 2015; Zhang et al., 2021). Biological changes such as girls going through puberty earlier than boys put them more at risk of depression and this difference widens as girls get older (Girgus & Yang, 2015). These patterns of prevalence in childhood and adolescence may account for the reported high prevalence of mental disorders in adult women (Campbell et al., 2021; Girgus & Yang, 2015; Ndungu et al., 2020; Pretorius, 2021; Salk et al., 2017; Sloan & Sandt, 2006; Zhao et al., 2020).

One explanation for these gender differences is that girls tend to be subjected to higher levels of stressors compared to boys (Krapić et al., 2015). For instance, research has shown that girls are subjected to physical and sexual abuse more frequently than boys, which increases their risk of developing depression (Aldwin, 2011; Helgeson, 2011; Krapić et al., 2015). In South Africa, adolescent girls face additional risk factors that increase their vulnerability to mental health issues. First, compared to other low and middle-income countries, South Africa has the world's largest HIV epidemic, with a quarter of new infections occurring among adolescent girls and young women, three times higher than their male counterparts. This is a contributing factor to poor mental health (Duby et al., 2020). South Africa also has the highest rate of teenage pregnancy globally (South African Government, 2024), which in turn is a contributing factor to poor mental health in resource-deprived settings (Duby et al., 2020).

Other research suggests that women may report higher levels of stressors than men merely because they are more likely to report feeling extremely stressed than men do (American Psychological Association, 2012; Herres & Ohannessian, 2015). Even when experiencing comparable stressful events, women are more likely to be more affected by the events than men because they tend to appraise the same stressful events as four times more stressful or severe than males do (Seiffge-Krenke, 1995, as cited in Calvete et al., 2011). Gender socialisation is another important factor that may contribute towards the differential gender reporting of psychopathology. Gender socialisation refers to how what people learn about gender expectations is influenced by rules, norms, and culture (Farhane-Medina et al., 2022). Due to this, girls are allowed, encouraged, and even expected to openly express their fears, worries and feelings of anxiety. Conversely, boys are often taught to suppress emotions like anxiety due to strong social expectations for them to be strong and brave (Farhane-Medina et al., 2022).

Socioeconomic Disadvantage as a Risk Factor for Depression and Anxiety

Socioeconomic conditions in low- and middle-income countries such as poverty, exposure to violence, financial stress, low education, poor housing, food, and income insecurity put people at risk of mental disorders including depression and anxiety (Cortina et al., 2012; Das-Munshi et al., 2016; Duby et al., 2022; Hunt et al., 2019; Lund, 2014; Lund & Cois, 2018; Lund et al., 2010). This risk is said to be two to three times higher for children and adolescents who live in these conditions compared to children and adolescents who are more socioeconomically advantaged (Reiss, 2013). The underlying association between adversity and mental health is explained by the social causation hypothesis which argues that such conditions create stress, which in turn can result in poor mental health (Hunt et al., 2019; Ndungu et al., 2020). Because children and adolescents make up 25% of the world's population and about 85% of them live in low-and middle-income countries where they account for a sizeable portion of the population, it is crucial that research on mental health considers the socio-economic context in which it occurs (Erskine et al., 2017).

Given that South Africa is one of the most unequal countries in the world, most of the population is disproportionally impacted by poverty (Das-Munshi et al., 2016; Donenberg et al., 2020; Duby et al., 2022). The most prevalent risk factors for mental disorders in South Africa are violence and poverty (Cluver et al., 2013; Flisher et al., 2012; Kleintjes et al., 2006). Poverty has been widely documented as having direct negative effects on South African adolescents' mental health (Cluver & Orkin, 2009; Cluver et al., 2013; Flisher et al., 2012; Harrison et al., 2021; Hunt et al., 2019; Stansfeld et al., 2017). For instance, a South African study by Stansfeld et al. (2017) reported that adolescents in the "poorest" category were 5 times more likely to be depressed and 4 times more likely to report anxiety symptoms compared to those in the "richest" category. Another study by Cluver et al. (2009) revealed that adolescents who had access to sufficient food and who lived in homes where someone was employed or receiving grants reported lower symptoms of depression and anxiety than poorer adolescents. This association between socioeconomic hardship and mental health is also supported by several other studies (Cheng et al., 2014; Duby et al., 2022; Gibbs et al., 2018).

Exposure to poverty increases the chance of exposure to violence (Stansfeld et al., 2017). South Africa is one of the most violent countries in the world, with five times the global average for homicide (Donenberg et al., 2020; Hunt et al., 2019). Male and female adolescents in South Africa are 8 and 5 times more likely than the global average to experience violence (Hunt et al., 2019; Norman, 2007; Sui et al., 2018), which in turn has been associated with poor mental health (Shields et al., 2008; Stansfeld et al., 2017; Sui et al., 2018; Ward et al., 2001, 2007). The problems of crime and violence cannot be separated from the problems of poverty (Barbarin, 2003). For instance, research conducted in low socioeconomic regions (or including low socioeconomic groups) in Johannesburg and Cape Town reported adolescents experiencing significant levels of violence (either at home, school, or the community). This included witnessing a murder, someone being shot or stabbed, or someone being beaten in their community or being direct victims themselves (Boyes et al., 2014; Kaminer et al., 2013; Richter et al., 2018; Otwombe et al., 2015; Shields et al., 2008; Ward et al., 2007). A study conducted in Cape Town reported the prevalence of exposure to community violence at 84.1% (Stansfeld et al., 2017). Additionally, findings from 14 out of 21 waves of data obtained in the Birth to Twenty Plus longitudinal study, which included over 1000 participants, revealed that only 1% of the sample had not experienced violence in the previous two decades (Richter et al., 2018). Although it is important to keep in mind that exposure to violence can differ based on the study's setting and the types of violence being examined, these findings paint a very concerning picture.

The COVID-19 pandemic is likely to have compounded these socioeconomic challenges, making adolescents even more vulnerable to psychological distress (Duby et al., 2022). Therefore, studies that investigate mental health within the context of socioeconomic disadvantage are important. Investigating specific coping strategies and their association with anxiety and depression in South Africa during this post-pandemic time is essential to guide interventions that will focus on the provision of adaptive coping skills.

Theoretical Framework: Transactional Theory of Stress and Coping

Stress, as depicted by Lazarus and Folkman (1984), is the relationship between the person and their environment, which they appraise as taxing and threatening to their well-being. Coping frameworks are central in explaining the relationship between stress and mental health (Stanisławski, 2019). One coping framework is the transactional theory of stress and coping which remains the foundation of stress and coping research (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) define coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p.141). One of the key features of this framework is that coping is a process that is constantly changing as the encounter unfolds and that context is important in judging and understanding coping (Frydenberg, 1997; Lazarus & Folkman, 1984). This process is demonstrated in people dealing with grief where an individual may initially try to deny the death before moving on to disengagement and depression until ultimately coming to terms with the loss. This is true for all stressful experiences, whether brief or prolonged; there are changes in cognitive appraisals, reappraisals, coping and emotional processes (Lazarus & Folkman, 1984).

The transactional model of coping takes a contextual approach to coping rather than a dispositional approach. Lazarus and Folkman (1984) consider coping as a response to a specific stressful situation (contextual) rather than as a stable personality characteristic (dispositional) (Holahan et al., 1996). Measures of dispositional coping ask respondents what they usually do when experiencing stress, whereas measures of contextual coping ask them what they did or are doing in response to a specific stressful event (Carver et al., 1989). A contextual approach to coping suggests that predicting how individuals cope in a specific stressful context requires considering the unique adaptive demands of the situation and the cognitive appraisals used to interpret it (Moos & Holahan, 2003).

Cognitive appraisal is central to the transactional framework and involves evaluating whether a situation is significant to one’s well-being and impacts one’s emotions, mood state or subjective well-being (Lazarus, 1991). This concept is essential to understanding the differences in vulnerability and sensitivity among people. It allows us to understand and account for the variations in reactions or responses under different or comparable environmental demands (Lazarus & Folkman, 1984). The interpretation of events is subjective, which means that what is stressful or threatening for one person may not be stressful for another. This cognitive appraisal is divided into three forms: primary, secondary, and reappraisal.

During *primary appraisal*, an individual asks, “Am I in trouble” or “What is at stake?” (Frydenberg, 1997, p. 21; Lazarus & Folkman, 1984, p. 31). This involves evaluating a situation as either irrelevant, benign positive or stressful. Evaluating a situation as irrelevant involves appraising the encounter as not being a threat to one’s well-being and believing that nothing is to be lost or gained in the transaction. In a benign positive evaluation, the outcome of the situation has a positive effect on one’s well-being or the potential to do so. These appraisals are accompanied by emotions such as joy, love, happiness, and peacefulness. Situations evaluated as stressful include harm or loss, threat, and challenge (Lazarus & Folkman, 1984). In the case of harm or loss, the harm or loss has already occurred; for example, the loss of a loved one. Threat appraisal involves anticipated harms or losses that have not occurred but are expected to occur. This threat appraisal is accompanied by negative emotions such as fear, anxiety, and anger (Lazarus & Folkman, 1984). Lastly, challenge appraisals call for coping efforts and are centred on potential gain or growth from the situation and are associated with positive emotions.

During *secondary appraisal*, an individual may question what they can do about the situation or what resources or options are available (Frydenberg, 1997; Lazarus & Folkman, 1984). When a situation is appraised as a threat or challenge, the individual will engage in a process that involves evaluating available coping strategies, whether a particular coping strategy will achieve what it is supposed to, and the probability of using that coping strategy effectively (Lazarus & Folkman, 1984). This appraisal usually considers the controllability of the situation: it appears that to cope with a situation is an effort to exert control over it (Aldwin, 2011; Krapić et al., 2015; Lazarus & Folkman, 1984). The appraisal of controllability is important in understanding the relationship between coping and psychopathology (Zimmer-Gembeck & Skinner, 2016); the choice of coping strategy must match the adolescent’s perceived ability to control the event and rise above it (Compas et al., 1988). Stressful events are more likely to lead to depression and/or anxiety if they are perceived as uncontrollable. The perceived ability to control an event influences the appraisal of the event and coping efforts (Lazarus & Folkman, 1984). The resources that are available to people (such as problem-solving abilities, social support, and material resources), as well as the constraints that prevent the use of these resources (e.g., personal constraints, refusing help because they believe doing so implies they are helpless), are also factors in how people cope with specific stressful events (Lazarus & Folkman, 1984).

Reappraisal happens when a situation is re-evaluated and the meaning of the situation changes (Folkman & Lazarus, 1988; Lazarus & Folkman, 1984). There is no major distinction between appraisal and reappraisal, only that the latter is an appraisal of the same event that comes after an earlier appraisal. This usually happens when there is new information from the environment (changes from the environment) or from the individual's own reactions. For example, a situation may go from being appraised as threatening to irrelevant or from irrelevant to threatening. This further results in changing emotions and appraisals (Lazarus & Folkman, 1984). Sometimes, reappraisal results from coping efforts and will impact subsequent coping efforts such as employing alternative coping strategies if those previously employed were perceived as ineffective (Lazarus, 1999; Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2016).

Coping is theorized to be a mediator between stressful events and emotional outcomes such as anxiety, depression, and psychological distress (Folkman & Lazarus, 1988; Lazarus, 1993, 1999; Parker & Endler, 1992). Lazarus and Folkman (1984) argue that coping efforts have two functions. The first function of coping is to alleviate the emotional suffering caused by a stressful event when it is appraised as unchangeable (e.g., one may have to live through it). This may involve using strategies aimed at shifting attention or modifying the meaning of the event on which the emotion is based (emotion-focused coping). The second function of coping is to take action and change situations that are appraised as changeable (e.g., something can be done about it), which leads to changes in the emotion (*problem-focused coping*; Lazarus, 1991). Research has shown that emotion-focused coping was used the most in situations where there was low appraised control over the stressful event and problem-focused coping the most when there was high appraised control (Compas et al., 1988; Osowiecki & Compas, 1999, 1998; Zimmer-Gembeck & Skinner, 2016).

Emotion- and problem-focused coping are the most known and cited broad categorizations of coping into which strategies are differentiated. However, some researchers agree on the existence of a third category called avoidant coping (Parker & Endler, 1992). This refers to when one avoids or denies the unpleasant stressful event by using activities such as watching TV to distract oneself from the stressful event. Other categorizations of coping strategies include assimilative versus accommodative coping, palliative versus instrumental, engagement versus disengagement, approach versus avoidance, active versus passive, and more (Frydenberg, 1997; Zimmer-Gembeck & Skinner, 2016). Some of the specific coping strategies that form part of all these broad categories include active coping, planning, suppression of competing activities, restraint coping (holding oneself until it is possible to take action), seeking social support (for instrumental purposes), seeking social support (for emotional purposes), positive reinterpretation, denial, acceptance, turning to religion, withdrawal, social diversion, disengagement, substance use, distancing, social withdrawal, venting and distraction (Carver, 1997; Carver et al., 1989; Parker & Endler, 1992; Stanisławski, 2019; Zimmer-Gembeck & Skinner, 2016).

The categorization of these coping strategies into broad categories can sometimes be inconsistent and confusing. First, a specific coping strategy may overlap into two different categories; for example, removing oneself from a conflict can be used both to regain one's composure (emotion-focused coping) as well as to shift the context of the conflict (problem-focused coping) (Horwitz et al., 2011). Second, the categorization of a particular strategy may differ from one researcher to the other. For example, Lazarus and Folkman (1984) describe avoidance as a subtype of emotion-focused coping, while other researchers see it as a distinct category of coping (Parker & Endler, 1992; Wilson et al., 2005). Third, there are inconsistencies in how some coping strategies are conceptualized, such as whether asking for social support counts as a coping strategy or a coping resource. The discrepancies in how coping is measured also make it difficult to make accurate comparisons between studies (Garcia, 2009; Horwitz et al., 2011). Therefore, the investigation of specific coping strategies, rather than broad forms of coping, is required.

Gender Differences in the Use of Coping Strategies

According to research, male and female adolescents employ different ways to cope. Several studies have reported that girls use more emotion-focused coping than boys (Horwitz et al., 2011; Krapić et al., 2015; Li et al., 2006; Malooly et al., 2017), whereas others have discovered that boys use more problem-focused and avoidant coping than girls (Govender & Killian, 2001; Herres & Ohannessian, 2015). However, much uncertainty still exists about gender differences in coping because other studies have reported results that contradict these patterns (Adhiambo et al., 2017; Herres & Ohannessian, 2015; Li et al., 2006; Magaya et al., 2005; Som & Patil, 2019; Wilson et al., 2005). As far as specific coping strategies are concerned, while Verma (2019) reports no gender differences, other research found that female adolescents tend to use more coping strategies than male adolescents because they experience more stressful events (Frydenberg, 1997; Gámez-Guadix et al., 2020; Girgus & Yang, 2015; Herres & Ohannessian, 2015; Kelly et al., 2008). For instance, girls report using active coping, acceptance, emotional support, religion, self-blame, denial, instrumental support, planning, and venting to a greater extent than boys (Eschenbeck et al., 2007; Flannery et al., 2018; Frydenberg, 1997; Govender & Killian, 2001; Horwitz et al., 2011;

Malooly et al., 2017; Phelps & Jarvis, 1994; Som & Patil, 2019; Vera et al., 2012). Boys, in contrast, report greater use of alcohol, drugs, and humour than girls (Flannery et al., 2018; Frydenberg, 1997; Frydenberg & Lewis, 2000; Krapić et al., 2015; Phelps & Jarvis, 1994; Plancherel & Bolognini, 1995). The reasons behind these gender disparities are not straightforward. One possible explanation is that different appraisals result in different coping strategies, even within comparable events (Frydenberg, 1997). For example, Kerig (1998) showed that violence between parents was associated with appraisals in gender-distinctive ways. The violence between parents was related to increased perceived threat for boys which led them to attempt to attack a problem (i.e., find a solution). On the other hand, the interparental violence was related to increased self-blame for girls. According to research, when appraising coping options, males report higher proportions of appraisals involving direct handling of stressful situations and lower proportions of appraisals preventing action, compared to females (Manzi, 1986, as cited in Frydenberg, 1997). Additionally, socialization has also been seen as a possible reason for gender differences in coping. For instance, girls are believed to be socialized in a way that allows them to use emotion-focused coping such as expressing their feelings while boys are discouraged from doing so (Moodley et al., 2012). A look at the gender differences in specific coping strategies, however, shows that girls use a combination of strategies directed at both alleviating emotional distress and attempting to change the stressful encounter. This may be due to the high levels of psychological stress that girls encounter forcing them to engage in more coping (Kelly et al., 2008).

Most of these previous studies have been conducted in North America and their findings cannot be generalised to South African adolescents. This is because the context in which adolescents from these Western countries cope may differ from that of South Africa. According to Aldwin (2004), cultural variations (e.g., individualism vs. collectivism) influence the choice of coping strategies. For example, a study by Persike and Seiffge-Krenke

(2012) found that adolescents from Western regions (e.g., the United States, and Germany) scored higher on the use of social support and emotionally expressive coping compared to those from Eastern/Asian or Southern regions (e.g., South Africa, Pakistan). Open emotional expression is normal and encouraged in Western cultures (Möller et al., 2022; Persike & Seiffge-Krenke, 2012; Schunk et al., 2022). South African cultures also promote hegemonic masculine norms, where men and boys deny distress due to the expectation of showing strength, taking control, and not seeking help. Negative coping strategies like alcohol and drugs are normalised, while positive ones are ridiculed as feminine (Bateman, 2021). South Africa is made up of diverse ethnicities and cultures. Using coping strategies may involve conforming to community cultural expectations of behaviours (Nadat & Jacobs, 2021).

The Association between Coping Strategies, Anxiety and Depression Among Adolescents

Previous research has reported that both emotion-focused coping and avoidant coping strategies are associated with high levels of anxiety (Delvecchio et al., 2022; Inguglia et al., 2020; Krapić et al., 2015; Simpson et al., 2018; Wilson et al., 2005) and depression (Krapić et al., 2015; Wilson et al., 2005). Problem-focused coping, in contrast, is reported to be associated with lower levels of anxiety (Inguglia et al., 2020) and depressive symptoms (Cong et al., 2021; Horwitz et al., 2011; Li et al., 2006; Simpson et al., 2018). However, the contradictory findings reported by other studies suggest that a combination of coping strategies may be important in predicting psychological distress and that the adoption of a single coping approach may not be a reliable predictor of depression and anxiety (Delvecchio et al., 2022; Herres & Ohannessian, 2015; Inguglia et al., 2020; Wilson et al., 2005). Consistent with this view, specific strategies within broad categories may be associated with symptoms of depression and anxiety differently. The use of behavioural disengagement, substances, venting, denial, and self-blame are associated with reports of higher levels of depression (Basterfield et al., 2014; Compas et al., 2017; Dianovinina et al., 2023; Fear et al., 2009; Freyhofer et al., 2021; Horwitz et al., 2011; Malooly et al., 2017; Skogen et al., 2014) and anxiety (Compas et al., 2017; Fear et al., 2009; Freyhofer et al., 2021; Skogen et al., 2014). In contrast, acceptance, planning, religion, and seeking instrumental support are associated with fewer symptoms of anxiety and depression (Carleton et al., 2008; Compas et al., 2017; Dianovinina et al., 2023; Federici & Skaalvik, 2013; Forouhari et al., 2019; Konaszewski et al., 2021; Lopes & Nihei, 2021; Malooly et al., 2017; Terreri & Glenwick, 2011).

Lazarus and Folkman (1984) acknowledged that coping with a situation is an effort to exert control over it. A goodness of fit between appraisals of controllability and coping is therefore important in predicting symptoms of psychopathology (Compas et al., 1988; Osowiecki & Compas, 1998, 1999). Research shows that problem-focused coping is more commonly used in controllable situations, while emotion-focused coping is most widely used in coping with uncontrollable events, despite both being used in general (Compas et al., 1998; Forns-Santacan et al., 2012; Forsythe & Compas, 1987). A poor goodness of fit would involve attempting to change uncontrollable stressors with problem-focused coping or alleviating negative emotions aroused by controllable stressors using emotion-focused coping. On the other hand, a good fit involves using problem-focused coping to address controllable stressors and emotion-focused coping in responding to uncontrollable stressors (Forsythe and Compas (1987). Forsythe and Compas (1987) found a poor goodness of fit between appraisals and coping to be associated with higher symptoms of anxiety and depression when dealing with major life events such as the death of a family member. On the other hand, a good fit between appraisals and coping was associated with fewer symptoms. (Folkman & Moskowitz, 2004). The effectiveness of a coping strategy can thus depend on the controllability of the situation.

Most of these previous studies were conducted in North America and Europe and the generalisability of the findings to South African adolescents is unclear. This is because the challenges that adolescents across the world face may be distinct to their country. South Africa's history of Apartheid makes it unique for studies on socioeconomic class and poverty – which directly intersect with factors such as race, gender, and geographical location (SA-TIED, 2019). For instance, half of the population in South Africa lives in poverty, with black Africans comprising the majority (Centre for Social Development in Africa, 2019). Children and adolescents in South Africa are exposed to and experience a range of chronic uncontrollable stressors and adversities such as extreme poverty, inequality, violence, crime, abuse, a high prevalence of HIV/AIDS, living with HIV and being orphaned by AIDS (Barbarin, 2003; Cluver et al., 2009; Maarman & Lamont-Mbawuli, 2021; Norman, 2007; Roberts et al., 2021; Steyn et al., 2010; Toska et al., 2019). Most children in South Africa grow up in socioeconomically deprived communities (Barbarin, 2003). Approximately 67% of children and adolescents experience poverty, making up the largest proportion of poor people in the country (Statistics South Africa, 2017).

The coping strategies that are used by, and adaptive for, at-risk adolescents may differ from those used by adolescents who are not at risk (Wadsworth et al., 2018). This is because unique environmental demands may necessitate different adaptations (Gaylord-Harden et al., 2018). Most poverty-related stress is experienced as less controllable and not easily amendable to change compared to typical adolescent stressful experiences (Wolff et al., 2011). The uncontrollable nature of poverty may preclude the use of problem-focused coping like active coping (taking direct action to eliminate the stressor), even though this strategy has been linked to good psychological health (Wadsworth et al., 2018). Therefore, children may rely on avoidance or attempt to cope with the stress by using strategies such as acceptance, which may be associated with positive psychological functioning when faced with uncontrollable stressors (Wadsworth, 2015). In a South African study involving Hillbrow adolescents exposed to crime and violence, avoidance was reported as a coping strategy, such as avoiding areas that are well-known to be dangerous. Girls, for instance, made sure they were home by six o'clock for their safety, whereas boys steered clear of certain locations to avoid peer pressure to use drugs (Scorgie et al., 2017). Some adolescents also reported actively seeking out churches and community centres as places to avoid violence. These strategies to protect oneself from violence in South African adolescents are also reported by Normand (2007) and Sui et al. (2021). Even though avoidant coping has been associated with poorer psychological health, community violence and crime are beyond adolescents' control. In such a setting, using active coping to change the environment may not be adaptive but may risk adolescents' lives. In a different study, Ugandan adolescents talked about how they dealt with their HIV-positive status through religion (e.g., praying to God for the courage to face the challenge), social support (reminders about when to take pills), avoidance and distraction (e.g., trying to forget they were HIV-positive and live life like everyone else). Informational support was used as a problem-focused strategy to learn more about HIV (Mutumba et al., 2015). Social support has also been cited by South African adolescents coping with their HIV+ status (Petersen et al., 2010). These findings provide evidence that at-risk adolescents require a flexible and comprehensive repertoire of strategies to cope with unfavourable circumstances that are beyond their control (Wadsworth et al., 2018). This is supported by Asanbe et al. (2021) who found that vulnerable adolescents from a low-income community in South Africa did not use particular coping strategies but used a variety of coping strategies (Asanbe et al., 2021).

An American study found that avoidant coping had protective effects on adolescent anxiety in a violent, low-income area (Edlynn et al., 2008). Furthermore, Vera et al. (2011) discovered that among ethnic minority adolescents who were exposed to urban hassles (such as community violence) because of living in a lower-income environment, self-distraction (an avoidant coping strategy) decreased the relationship between urban hassles and emotional distress. Active coping (a problem-focused coping strategy), on the other hand, was unable to moderate the same relationship. The various – and nearly always uncontrollable – stressors that people with lower socioeconomic status face are met with a lack of resources to help them deal with the high levels of stress (Atal & Cheng, 2016). However, these individuals were found to be flexible and changed coping strategies according to the perceived controllability of stressors. Individuals with high socioeconomic status, on the other hand, have access to significant socioeconomic resources that provide them with personal control and the means to directly deal with stressful events (Atal & Cheng, 2016). These findings make it plausible to conclude that coping strategies that may be functional and adaptive in favourable circumstances may become maladaptive in adverse situations (Edlynn et al., 2008). Similarly, coping strategies that may be adaptive in dealing with controllable stressors may be associated with more emotional distress in situations of uncontrollable stressors where an individual may not actively be able to influence change (Forsythe & Compas, 1987). While Edlynn et al. (2008) and Vera et al. (2011) offer insights into the associations between coping and symptoms of psychopathology, studies that consider the adaptiveness of coping are limited in South African socioeconomically disadvantaged contexts (Asanbe et al., 2021; Harrison, 2014). Contrary to what is reported by Edlynn et al. (2008) and suggested by other research (Forsythe & Compas, 1987; Wadsworth et al., 2018), South African studies found avoidant coping strategies to be positively associated with symptoms of psychopathology among vulnerable adolescents in low-income communities (Asanbe et al., 2021; Harrison, 2014). Problem-solving coping and active coping strategies, on the other hand, minimised the risk of psychopathology. This contradicts what was reported by Cherewick et al. (2016), who found problem-focused coping to worsen depression and anxiety, while avoidant coping reduced these symptoms among adolescents who experienced victimization, material deprivation (e.g., lack of food or water), or witnessed violence in the Democratic Republic of Congo. These findings suggest that conclusions drawn from one context may not apply to another context – even across socioeconomically disadvantaged contexts. Therefore, studies must investigate the adaptability of coping strategies in specific contexts.

Children and adolescents in South Africa also experience normative stressors (e.g., academic, and social stressors) on top of poverty-related stressors (Van Rooyen et al., 2014). Wolff et al. (2011) suggest that stress created by poverty may intensify these normative stressors. Therefore, children coping in the context of poverty may need the skills and knowledge to match different types of coping strategies with stressful encounters and environments (Wadsworth et al., 2018). This indicates that adolescents who experience socioeconomic adversity may constantly need to reevaluate the coping strategies they employ (Harrison et al., 2021). Individuals with low socioeconomic status benefit from this flexibility in coping, which has been linked to better well-being and resilience in highly stressful situations (Atal & Cheng, 2016).

Gender Differences in the Association between Coping Strategies, Anxiety and Depression Symptoms

The data that is currently available on gender differences in the association between coping strategies and symptoms of depression and anxiety are conflicting; therefore, more research is necessary to fully understand these disparities. Because of a lack of studies that investigated specific coping strategies, the research reviewed here includes two studies with adult samples (with some including 18- and 19-year-olds) that provide insight into the associations between specific coping strategies and mental health (Cholankeril et al., 2023; Hasan et al., 2022; Kelly et al., 2008; Kleinke et al., 1982). The use of problem-focused coping has been found to predict anxiety in males but not in females (Li et al., 2006; Wilson et al., 2005). In contrast, the use of emotion-focused coping predicted symptoms of depression in both females and males while avoidant coping predicted depression only in females (Wilson et al., 2005). Regarding specific coping strategies, some studies show that the use of denial, self-blame and behavioural disengagement predicts both anxiety and depression in women but not in men (Alix et al., 2019; Calvete et al., 2011; Hasan et al., 2022; Kelly et al., 2008; Kleinke et al., 1982). Denial also predicted anxiety (but not depression) in men (Hasan et al., 2022). Malooly et al. (2017) found venting to predict symptoms of depression when used by girls but not when used by boys. Active coping predicted high levels of anxiety in men and not in women (Cholankeril et al., 2023). Furthermore, seeking instrumental social support was associated with high levels of depression and anxiety in men (Cholankeril et al., 2023; Hasan et al., 2022) and anxiety in women (Cholankeril et al., 2023). Seeking emotional support was associated with high levels of both depression and anxiety in men but only with anxiety in women (Hasan et al., 2022). These studies investigated mental health outcomes related to various stressful events and made use of a variety of coping assessments (for example, the use of broad categories versus specific coping strategies). Thus, the methodological variations as well as the different stressful events investigated may have contributed, in part, to the discrepancies in the research findings. There is also an apparent contradiction when it comes to the relationship between seeking instrumental support and psychopathology that needs to be further investigated in the present study. While seeking instrumental support has been reported to predict fewer symptoms of psychopathology in adolescents (Dianovinina et al., 2023; Federici & Skaalvik, 2013; Malooly et al., 2017), this strategy has been associated with more symptoms of psychopathology in adults (Cholankeril et al., 2023; Gurvich et al., 2020; Hasan et al., 2022). Although this association between seeking instrumental support and psychopathology seems to be moderated by gender, the results obtained with adult samples contradict the reported benefits associated with using this strategy in adolescence.

Research Aims and Hypotheses

Against the background of the literature reviewed, this study aims:

1. To determine whether there are gender differences in anxiety and depression symptoms in female and male adolescents. I hypothesize that female adolescents will report more symptoms of anxiety and depression compared to male adolescents.
2. To determine whether there are gender differences in specific coping strategies used by adolescents. I hypothesise that girls will use active coping, acceptance, emotional support, religion, instrumental support, planning, denial, self-blame and venting to a greater extent than boys. In contrast, boys will use more substances and more humour than girls.
3. To determine whether there is an association between specific coping strategies and the symptoms of anxiety and depression. I hypothesise that adolescents who use behavioural disengagement, substances, venting, denial, and self-blame will report more symptoms of anxiety and depression. In contrast, adolescents who use acceptance, planning, religion, and instrumental support will report fewer symptoms of anxiety and depression.
4. To determine whether there are gender differences in the association between specific coping strategies and the symptoms of anxiety and depression. I hypothesise that denial, self-blame, and behavioural disengagement will predict both anxiety and depression in girls. Venting will only predict symptoms of depression in girls while seeking instrumental and emotional support will only predict symptoms of anxiety. In boys, active coping and denial will predict anxiety symptoms while seeking instrumental and emotional support will predict both depression and anxiety.

This chapter surveyed the body of prior research and set the theoretical groundwork for the present study. The research revealed that anxiety and depression are the most common mental disorders among children and adolescents and that female adolescents and those faced with socioeconomic disadvantage are most vulnerable. The transactional theory of stress and coping explains coping as a process involving primary appraisal, secondary appraisal, and reappraisal. Coping alleviates emotional distress and alters the encounter, serving as a mediator between stressful encounters and emotional outcomes. Research revealed that female adolescents used more emotion-focused coping while male adolescents used more problem-focused coping than female adolescents. A look at specific coping strategies also revealed gender differences that supported the idea of female adolescents using a greater variety of coping strategies than male adolescents, including active coping, acceptance, emotional support, religion, self-blame, denial, instrumental support, planning, and venting. These strategies are associated with anxiety and depression differently, such that emotion-focused coping and avoidant coping are associated with more symptoms of psychopathology while problem-focused coping is associated with fewer symptoms. However, specific coping strategies within these categories are associated with anxiety and depression differently. For example, venting and denial are associated with more symptoms of psychopathology while planning and religion are associated with fewer symptoms of psychopathology. The literature on gender differences in coping strategies further revealed different associations between coping strategies and psychopathology. For instance, self-blame and denial predicted anxiety and depression in women but not in men, while active coping predicted anxiety in men and not in women. Seeking instrumental social support was associated with high levels of depression and anxiety in men and anxiety in women.

The literature also showed the importance of investigating the adaptiveness of coping strategies in various environments due to the different stressors that adolescents may experience. For instance, South African adolescents are faced with poverty and complex, multiple stressors, potentially leading them to adopt different coping strategies from those used by adolescents in low-risk contexts. Coping strategies adaptive under favourable conditions that may be controllable may be maladaptive in adverse conditions which are mostly uncontrollable.

CHAPTER 3: METHODS

This chapter describes the methods used in this investigation. It provides information on the research design that was employed and information on the participants, including how the sample size was determined, their demographics, and how they were recruited. Additionally, it details the measures used to collect data and the procedures undertaken before and throughout data collection. The final sections provide details on how the collected data were captured, the statistical software used, the statistical analyses performed on the data, how missing values were handled, and the ethical principles that guided the study's conduct.

Study Design

This study adopted a quantitative and correlational approach. I aimed to describe the relationships among variables that were measured using surveys to test hypotheses and yield findings that can be generalised and replicated (Creswell & Creswell, 2018; Gravetter & Forzano, 2012). This study utilised a cross-sectional design in which data was collected at a single point in time (Stockemer, 2019). Cross-sectional studies cannot ascertain the direction of associations between coping strategies and symptoms of depression and anxiety. However, they are important and a good starting point for establishing whether these associations exist in populations (such as at-risk adolescents) that have not been well studied in previous research (Compas et al., 2001, 2017). Cross-sectional studies lay the foundation for further longitudinal studies, which remain important in determining the direction of these associations.

Participants

The target population for this study was South African adolescents in township secondary schools. The sample included 415 adolescents from two secondary schools in Etwatwa, Daveyton. The adolescents were in grades 10 or 11 and ranged in age from 15 to 19 years of age ($M = 16.09$, $SD = 1.03$). Out of the 415 adolescents, 292 (70%) were female, 116 (28%) were male, and 7 adolescents (2%) identified as "other". To ensure that I had enough power for a regression analysis predicting anxiety and depression from specific coping strategies for each gender, an a priori power analysis using an F test was conducted using an effect size of 0.15 (medium effect) at a 0.05 significance level and a power of 80% (Memon et al., 2020). With the number of predictors set to 20, I required a minimum sample size of 314 for this study (at least 157 participants in each gender group).

Recruitment of Participants

This study used one-stage cluster sampling which involves randomly selecting clusters from natural pre-existing clusters (such as schools) and collecting data from everyone within those selected clusters (Gravetter & Forzano, 2012; University of Guelph, n.d.). Taking the large population into account, this type of sampling was the most practical approach. Compared to other probabilistic sampling techniques, cluster sampling also offers a reduced variability in its results, which means the sample or individual scores obtained will provide a good representation of the general population (Sharma, 2017).

South African schools are ranked in quintiles (1–5) based on the community unemployment rate and education level (Van Dyk & White, 2019). Quintile 1-3 schools are the poorest and most disadvantaged, while Quintile 4 and 5 schools are affluent and associated with higher SES (Van Dyk & White, 2019; Van Zyl et al., 2021). The Etwatwa region has a total of nine secondary schools falling under quintiles 1 to 3. Initially, three schools were randomly selected from the 9 schools, one each from the 3 different quintiles. Each school in each quintile was assigned a unique identification number, and one school was then randomly selected from each quintile by using Excel to generate a random number. The principals of the two schools selected from Quintiles 2 and 3 provided permission to conduct the study. The principal of the third school (Quintile 1) was unresponsive, even after consistent follow-ups via emails, telephone calls and a visit to the school. Another school was randomly selected from Quintile 1 but attempts to contact the principal of that school were also futile. Taking into consideration the limited time and resources available, I decided to move forward with the schools that provided permission. All the learners in grade 10 and 11 classes from the two schools that provided permission were invited to participate in the study.

Measures

The predictor variables that were measured in this study were gender and specific coping strategies. The outcome variables were symptoms of depression and anxiety.

Demographic and Socio-Economic Status

A demographic and socio-economic questionnaire (Appendix A) asked about the participant's gender as well as their age and socioeconomic status (SES) (control variables). These variables must be controlled to ensure that age, gender, and SES are not responsible for any differences in the symptoms of anxiety and depression and that the study establishes true relationships between the specific coping strategies and symptoms of anxiety and depression. Controlling for age is important because studies have shown that the prevalence rates of anxiety and depression tend to increase with age across adolescence (Avenevoli et al., 2015; Bartels et al., 2011; Hankin et al., 1998; Kessler et al., 2005; LoParo et al., 2022; Merikangas et al., 2010). Gender and socioeconomic status have also been shown to be mental health determinants, such that being female and having a lower socioeconomic status increases the risk of depression and anxiety (Campbell et al., 2021; Das-Munshi et al., 2016; Duby et al., 2022; Girgus & Yang, 2015; Reiss, 2013).

The variables assessing SES comprised parental education, an asset index, and a food problem questionnaire. The asset index was derived from the household SES section of the Birth-to-Twenty 18th-year questionnaire (University of Witwatersrand, n.d.). The modified questions on the food problem questionnaire were taken from the General Household Survey

(Statistics South Africa, 2019). First, the mother and father's educational levels were given a score of 0 = no education (never went to school); 1 = primary school; 2 = secondary school or 3 = college or university. Higher education levels are associated with more affluent living standards because they result in better employment and income (Barbarin & Khomo, 1997; Deghaye et al., 2014). Second, the participants received a score of 1 for assets (e.g., car, fridge, microwave, television) that they have in their home and a score of 0 for assets that they do not have. A total score was calculated by adding the affirmative responses out of 13. Asset indices are mostly used in low- and middle-income countries such as South Africa (Das-Munshi et al., 2016; Kabudula et al., 2017; Kagura et al., 2016; McVeigh et al., 2004), where they are said to be reliable indicators of SES (Booysen, 2001). Compared to measuring income or occupation, these measures are more sensitive to use in LMICs and more indicative of a household's long-term wealth (Kabudula et al., 2017; Kagura et al., 2016). Third, participants were asked whether they struggled to afford sufficient food. This method provides the most direct non-monetary foundation for assessing financial well-being (Barbarin & Khomo, 1997). The total score ranged from 0 to 3 with higher scores indicating a food problem.

Coping Strategies

Coping strategies were measured using the Brief Coping Orientation to Problems Experienced (COPE) Inventory (Carver, 1997; Appendix B). This is a 28-item self-report inventory derived from the original 60-item COPE Inventory (Carver et al., 1989). The instrument has 14 subscales each with 2 items: (1) active coping is taking action or making efforts to cope with the event; (2) positive reframing is seeing the event in a positive light or finding the good in the event; (3) planning involves coming up with a strategy for dealing with the event; (4) use of emotional support involves seeking emotional support or comfort from others; (5) use of instrumental support involves getting advice or help from others on what to do; (6) venting is expressing the unpleasant/negative feelings associated with the stressor; (7) self-distraction involves taking one's mind off of the event through activities or work; (8) acceptance is accepting the state of the event as is and learning to live with it; (9) self-blame is criticising or blaming oneself for things that happened; (10) behavioural disengagement is giving up on dealing with the stressor; (11) humour is making fun of or joking about the situation; (12) denial is refusing to believe in the reality of the event; (13) use of religion involves finding comfort by turning to spiritual beliefs or meditation; and (14) substance use is the use of drugs or alcohol to help cope with or make one feel better about the event (Carver, 1997). Sample items include "*I use alcohol or other drugs to help me get through it*", and "*I get emotional support from others*" (Carver, 1997). The response options range from 1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*). The scores (ranging from 2 to 8) were calculated for each identified subscale. In South Africa, the scale has been found to be reliable among adolescents (Cronbach's alpha = 0.81) and among undergraduate students (Cronbach's alpha = 0.77) (Basterfield et al., 2014; Nel & Roomaney, 2015). Results from a factor analysis also indicate that the Brief COPE has good construct validity (Nel & Roomaney, 2015). In the current study, the Cronbach's alpha was 0.71.

Anxiety

Anxiety symptoms were measured using the Generalised Anxiety Disorder – 7 (GAD-7; Spitzer et al., 2006; Appendix C). The GAD-7 is a 7-item self-report scale that measures general anxiety symptoms experienced over the last 2 weeks. A sample item is "*not being able to stop or control worrying*". Each symptom is rated on a 4-point Likert scale and ranges from 0 (*not at all*) to 3 (*nearly every day*) (Spitzer et al., 2006). The total score ranges from 0 to 21 with high scores indicating high levels of anxiety. Total scores of 10 or above represent cases of GAD. Additionally, total scores of 5, 10 and 15 out of 21 indicate mild, moderate, and severe levels of anxiety respectively (Spitzer et al., 2006). The GAD-7 scale has been used in South Africa among tuberculosis patients (18 years and older) with a reported Cronbach's alpha of 0.86 (Kigozi, 2021). It has also been found to be reliable among Finnish adolescents (Cronbach's alpha = 0.91) and Ghanaian adolescents (Cronbach's alpha = 0.69) (Adjorlolo, 2019; Tiirikainen et al., 2019). Support has also been obtained for the construct validity of the GAD-7 scale (Adjorlolo, 2019; Kigozi, 2021; Tiirikainen et al., 2019). In the current study, the Cronbach's alpha was 0.79.

Depression

The Centre for Epidemiologic Studies Depression scale, 10-item version (CES-D-10; Andresen et al., 1994) was used to assess depressive symptoms (Appendix D). The CES-D-10 is a self-report 10-item Likert scale derived from the 20-item Centre for Epidemiologic Studies Depression (CES-D) scale. The participants rate the mood or symptoms they experienced during the past week on a scale from 0 (*rarely or none of the time)* to 3 *(most or all of the time*). Sample items include "I *was bothered by things that usually don't bother me*", and "*I felt hopeful about the future*". The scoring for items 5 and 8 is reversed because they measure positive mood (Andresen et al., 1994). The total score ranges from 0 to 30 with higher scores indicating a more depressed mood. A score of 10 or higher out of 30 is the cut-off score to identify participants with significant depressive symptoms (Andresen et al., 1994). The CES-D 10 has empirical support as a depression screening tool among adolescents (Baron et al., 2017; Kilburn et al., 2018). Baron et al. (2017) found the CES-D-10 to be reliable among South Africans aged 15 years or older with an acceptable internal consistency (Cronbach's alphas = 0.69 – 0.89). The scale was also examined for construct validity and results show that CES-D-10 is a valid scale to use to identify adolescents at risk of depression in South Africa (Baron et al., 2017) and in other poor, disadvantaged contexts in sub-Saharan Africa (Kilburn et al, 2018). In the current study, the Cronbach's alpha was 0.72.

Studies suggest that the GAD-7 and CES-D-10 are valid measures that show promise towards fair assessment of depression and anxiety in South Africa (Baron et al., 2017; Bezuidenhout, 2018; Henn & Morgan, 2019). However, the reported cut-off scores for the CES-D-10 (Baron et al., 2017) and GAD-7 (Marlow et al., 2023) in South Africa are slightly different to the original cut-off scores used in the present study. Consequently, the GAD-7 and CES-D were scored as continuous measures. The cut-off scores used in the present study are provided for descriptive purposes only. They should be interpreted with caution and should not be used to make clinical diagnoses.

Procedure

Permission to conduct the study was requested from the Gauteng Department of Education (Appendix E) and the principals of the participating secondary schools (Appendix F). Once permission was obtained from both parties, I met with the principals who, after consultation, assigned Life Orientation (L.O.) teachers for each school to act as the primary contacts during the research. After consulting the two teachers and informing them about the purposes of the research and the data collection procedures, I was then introduced to the rest of the L.O. teachers who were also briefed about the study and agreed to offer support during the research. I was then given copies of the timetables for the L.O. classes. After reaching an agreement with the teachers on the classes that I could access, I had brief information sessions with the learners where I distributed the parent/guardian research information sheets (Appendix G), parent/guardian consent forms (Appendix H), participant research information sheets (Appendix I), and assent forms (Appendix J). The sessions also gave me the opportunity to inform the learners about the research and gave them a platform for any questions or concerns. These documents were distributed on different days during which I was present at the school for the full school day and learners who had questions or concerns about the research after the information sessions had access to me during their lunch breaks.

The learners were asked to return their consent forms during their lunch break as so not to disturb their learning hours. On the days that I was present at the school, I reminded the learners to return their consent forms if I had the opportunity to meet with them before their first period. Before the data collection began, I informed each class about the day and time they would be completing the survey and reminded those who still had not returned their forms to return them by that date if they wanted to participate. Once both parental consent and learner assent were secured, the learners completed the survey during their L.O. classes under exam conditions, with my supervision. The participants were informed that (1) they were allowed to ask questions if there was anything they did not understand and (2) there were no right and wrong responses to the coping, anxiety, and depression questionnaires. Data was collected from 8th February to 1st March 2023.

Data Analysis

The data was captured using IBM SPSS Statistics for Windows, Version 28.0. Before data analysis began, each data file was assessed to confirm whether it was captured correctly. Descriptive statistics were computed to obtain information about (1) the demographic and socio-economic characteristics of the sample, (2) the means (and standard deviations) of the symptoms of anxiety and depression for both male and female adolescents, and (3) the means (and standard deviations) of scores that the participants obtained on the specific coping strategies. To test Hypothesis 1 (whether there were gender differences in symptoms of anxiety and depression) and Hypothesis 2 (whether there were gender differences in specific coping strategies used by female and male adolescents), two separate independent samples t-tests were conducted. A Bonferroni correction was applied to the t-tests to counteract the multiple tests and control for Type 1 errors. Hierarchical multiple regression analysis was utilized to test the third hypothesis and examine whether there was a relationship between specific coping strategies and the symptoms of anxiety and depression whilst controlling for demographic and socioeconomic variables. In the first block/step of the hierarchical regression, I entered the variables that I wanted to control or hold constant because they could influence the outcomes. These consisted of the demographic (i.e., age and gender) and socio-economic variables (i.e., parental education, the asset index and food problems). In the second block/step, I entered the predictor variables (i.e., specific coping strategies) that I was truly interested in testing. To test the fourth hypothesis and assess whether there were gender differences in the association between specific coping strategies and the symptoms of anxiety and depression, the same procedure of the previous hierarchical multiple regressions was followed. However, gender was removed as a control variable and the data file was split by gender.

Missing values

The integrity of the original 20-item version of the CES-D questionnaire can be retained with up to 3 missing items by using mean imputation for the missing items and totalling the score (Berkman et al.,1986). However, because a 10-item scale was used instead of the 20-item scale, a more conservative approach was taken for the CES-D-10. Following Andresen et al. (1994), participants were considered to have completed the CES-D-10 if they completed 9 or more of the 10 items. Mean imputation was used for the missing items. The score was set to missing if 2 or more items were missing. The same approach was used for the GAD-7 scale; mean amputation was used if there was only 1 item missing and the score was set to missing if fewer than 6 items were completed. A coping subscale was considered missing if it had at least one missing value out of the two items that make up that scale. The missing values for the rest of the variables were simply coded as missing and excluded in the regressions by using pairwise deletion, so as not to lose valuable data.

Ethical Considerations

Ethical approval for this study was obtained from the Psychology Department Research Ethics Committee (Reference number: PSY2022-044) (Appendix K).

Informed Consent

Informed consent aims to ensure voluntary participation while also disclosing the study's purpose (Gravetter & Forzano, 2012). Participants received research information sheets and those who were interested in participating were required to obtain parental/guardian consent as well as to provide assent for their own participation. The consent and assent forms were only available in English because that is the medium of instruction in the schools. The parents and the learners were informed about the purpose of the study and what participating in the study would involve. They were also informed that participation was voluntary and that they could withdraw without facing any negative consequences. The potential participants were also given time to discuss their choice to participate in the study with a trusted parent/guardian and the opportunity to contact me should they require more information about the study. Learners were not allowed to participate in the study unless both parental consent and learner consent were secured.

Possible Benefits and Risks of Research Participation

There were no direct benefits to the participants in this research study. Each participant received a mini chocolate box of Nestlé Smarties as a thank-you for their time. Some of the questions asked about personal matters and may have made the participants uncomfortable. The participants were given the contact information of the South African Depression and Anxiety Group (SADAG), in case they wished to talk to someone about the feelings experienced during the study.

Confidentiality and Anonymity

To ensure that the participants' personal information remained confidential, paper materials such as consent and assent forms were collected and handled only by me and were not left unattended during the research. These documents were also immediately scanned into PDFs with double encryption and uploaded into OneDrive, and the hard copies were shredded. During data analysis, the captured data was double encrypted. To ensure anonymity, the participants' data was not linked to their names. The consent and assent forms were kept separate from the rest of the data, and no names or other identifiers appeared on the questionnaires. The completed questionnaires were each allocated a number to facilitate data analysis. Furthermore, this dissertation and any other reports of the research will only provide averaged data and will not include any information that can be used to identify individual participants or the schools.

CHAPTER 4: RESULTS

The purpose of this study was to investigate whether the specific coping strategies utilized by adolescents to overcome problems and difficulties are related to symptoms of anxiety and depression. This chapter presents the results relating to each research question obtained using the statistical tests described in the previous chapter. The chapter also describes and presents the assumptions tests that were conducted for each of the statistical tests before data analysis was conducted.

Descriptive Statistics

Socioeconomic Profile of the Participants

Descriptive statistics for parental education are presented in Table 1. Most adolescents indicated that their parents had received some schooling, with the majority having finished secondary school. About 26% of the mothers and 21% of fathers had tertiary education. Only a small percentage of the parents (2% of mothers and 3% of fathers) never attended school or received no formal education. The participants had a mean score of 8.05 out of 13 on the asset index (SD = 2.65) which indicates that, on average, the adolescents had more than half of the assets on the questionnaire. An average score of 1.50 out of 3 was reported on the food problem questionnaire (SD = 1.16) which means that most of the adolescents had some experience of not being able to afford sufficient food.

Table 1

Responses from the Parental Education Questionnaires

Variable	*n*	%
What is the highest level of schooling completed by your father?		
No formal education (never went to school)	11	3
Primary school	21	5
Secondary school	160	39
College or university	106	26
Don't know/don't have a father	114	27
Missing	3	1
What is the highest level of schooling completed by your mother?		
No formal education (never went to school)	9	2
Primary school	26	6
Secondary school	254	61
College or university	86	21
Don't know/don't have a mother	36	9
Missing	4	1

Symptoms of Anxiety and Depression

According to the cut-off scores established by Spitzer et al. (2006) and Andresen et al. (1994), the prevalence of clinically significant levels of anxiety symptoms was 58% and – on average – the participants reported moderate anxiety ($M = 10.76$, $SD = 5.22$). The prevalence of clinically significant depressive symptoms among adolescents was 65% and – on average – the participants reported significant depressive symptoms ($M = 12.99$, $SD = 6.07$). The frequencies of both the symptoms of anxiety and depression by severity are listed in Table 2.

Table 2

Symptoms of Anxiety and Depression by Severity

Variable	*n*	%
Anxiety symptoms		
None to minimal anxiety	55	13
Mild anxiety	113	27
Moderate anxiety	125	30
Severe anxiety	115	28
Missing	7	2
Depression symptoms		
Nonsignificant depressive symptoms	126	30
Significant depressive symptoms	281	68
Missing	8	2

Independent T-Test: Examining Gender Differences in Anxiety and Depression

The first objective of the study was to determine whether there were differences in anxiety and depression symptoms between female and male adolescents. I hypothesised that female adolescents would report more symptoms of anxiety and depression than male adolescents. To test this hypothesis, a two-tailed independent samples t-test was conducted. The Bonferroni adjusted alpha value was 0.025.

Assumptions

Normality.

Normality refers to when the data values are normally distributed (Allen, 2017). According to some scholars, a violation of the normality assumption should not cause major problems in a t-test with a sample larger than 30 or 40 (Ghasemi & Zahediasl, 2012; Kim &

Park, 2019). Nevertheless, the assumption of normality was tested by looking at the skewness of the descriptive data before the test was conducted. The skewness values for both anxiety and depression for both male and female adolescents were between -1 and +1. Therefore, the assumption of normality was met (Allen, 2017).

Homogeneity of Variances.

This refers to the assumption that the variance (distribution of scores) of two groups that are compared is the same or equal (Allen, 2017; Fein et al., n.d.). Levene's test was used to determine whether the variances of anxiety and depression were equal for the two gender categories. If Levene's test is significant ($p < .05$), then the assumption was violated (unequal variances assumed) while a nonsignificant test ($p > .05$) indicates that the assumption was met (equal variances assumed) (Fein et al., n.d.). In this study, the variances of anxiety were assumed to be equal for the two gender groups ($p = .084$) while the variances of depression were not assumed to be equal for the two gender groups ($p = .001$).

Results

As shown in Table 3, there were significant differences between the group means ($p < 0.025$) with the female participants reporting more symptoms of anxiety. In the same vein, female adolescents reported significantly more symptoms of depression than male adolescents. The effect sizes meet Cohen's *d* convention for medium effects. These results provide support for the first hypothesis.

Table 3

Results of T-Test Examining Anxiety and Depression Symptoms by Gender

	Male		Female		*t*	*df*	*p*	95% CI		*d*
	M	*SD*	*M*	*SD*				LL	UL	
Anxiety symptoms	8.64	4.73	11.50	5.15	-5.11	399	<.001	-3.96	-1.76	-.57
Depression symptoms	10.55	4.71	13.84	6.28	-5.70	275	<.001	-4.42	-2.15	-.56

Note: CI = confidence interval; LL = lower limit; UL = upper limit. *d* = Cohen's *d*. For anxiety symptoms, the sample included 112 boys and 289 girls. For symptoms of depression, the sample included 114 boys and 286 girls.

Independent T-Test: Examining Gender Differences in Specific Coping Strategies

The second objective of the study was to determine whether there were gender differences in the specific coping strategies used by adolescents. I hypothesised that female adolescents would use active coping, acceptance, emotional support, religion, instrumental support, planning, denial, self-blame and venting to a greater extent than male adolescents. In contrast, I predicted that male adolescents would use more substances and more humour than female adolescents. To test these hypotheses, a series of two-tailed independent samples t-tests were conducted. The Bonferroni adjusted alpha value was 0.003.

Assumptions

Normality.

The use of substances as a coping strategy was the only scale problematic for this series of t-tests because it was extremely positively skewed. Although skewness in large enough samples will not make an important difference in the analysis (Tabachnick & Fidell, 2013), the results of the t-test for substance use as a coping strategy should nevertheless be interpreted with caution.

Homogeneity of Variances.

Equal variances were assumed for all the coping strategies (Levene's test, $p > .05$) except for self-blame ($p = .017$).

Results

The group statistics and the outputs of the t-tests are presented in Tables 4 and 5 respectively. The findings presented in Table 4 suggest that female adolescents used more denial, substances, behavioural disengagement, venting, planning, religion and self-blame than male adolescents. Male adolescents used more self-distraction, active coping, emotional support, instrumental support, positive reframing, humour, and acceptance than female adolescents. However, as indicated in Table 5, the only statistically significant difference was that female adolescents used more behavioural disengagement than male adolescents. The magnitude of the difference was small. None of the hypotheses about gender differences in the use of specific coping strategies was supported by the data.

Table 4

The Means and Standard Deviations of Specific Coping Strategies by Gender

Variable	Gender	*n*	*M*	*SD*
Self-distraction	Male	113	5.73	1.59
	Female	289	5.65	1.71
Active coping	Male	110	5.81	1.55
	Female	276	5.61	1.64
Denial	Male	110	4.85	1.78

Variable	Gender	*n*	*M*	*SD*
	Female	278	5.04	1.94
Substance use	Male	113	2.71	1.46
	Female	291	2.75	1.64
Use of emotional support	Male	112	5.18	1.83
	Female	277	4.86	1.86
Use of instrumental support	Male	112	5.34	1.98
	Female	285	4.83	2.00
Behavioural disengagement	Male	111	3.92	1.60
	Female	279	4.54	1.75
Venting	Male	112	4.64	1.55
	Female	286	4.74	1.69
Positive reframing	Male	109	5.74	1.70
	Female	285	5.60	1.67
Planning	Male	111	5.87	1.62
	Female	288	5.96	1.63
Humour	Male	115	4.05	2.02
	Female	285	3.60	2.07
Acceptance	Male	112	5.88	1.75
	Female	278	5.85	1.78
Religion	Male	110	5.33	1.68
	Female	276	5.58	1.82
Self-blame	Male	109	4.07	1.73
	Female	256	4.63	1.99

Table 5

Independent T-Test Examining Specific Coping Strategies by Gender

	t	*df*	*p*	95% CI		*Cohen's*
				LL	UL	*d*
Self-distraction	.41	400	.686	-. 29	.44	.05
Active coping	1.12	384	.263	-.15	-.56	.13
Denial	-.89	386	.377	-.61	.23	-.10
Substance use	-.23	402	.815	-.39	-.31	-.03
Use of emotional support	1.56	387	.121	-.09	.73	.17
Use of instrumental support	2.28	395	.012	.07	.95	.25
Behavioural disengagement	-3.25	388	.001	-1.00	-.25	-.37
Venting	-.54	396	.593	-.46	.26	-.06
Positive reframing	.76	392	.449	-.23	.51	.09
Planning	-.46	397	.643	-.44	-.27	-.05
Humour	2.01	398	.045	.01	.90	.22
Acceptance	.18	388	.860	-.35	.42	.02
Religion	-1.24	384	.216	-.64	.15	-.14
Self-Blame	-2.68	233	.008	-.96	-.15	-.29

Note: CI = CI = confidence level; LL = lower limit; UL = upper limit.

Hierarchical Multiple Regressions: The Association between Specific Coping Strategies and Symptoms of Anxiety and Depression.

The third objective of the study was to examine the associations between specific coping strategies and the symptoms of anxiety and depression. I hypothesized that adolescents who used behavioural disengagement, substances, venting, denial, and self-blame would report more symptoms of anxiety and depression. In contrast, I predicted that adolescents who used acceptance, planning, religion, and instrumental support would report fewer symptoms of anxiety and depression. To test these hypotheses, hierarchical multiple regressions were conducted with anxiety and depression as dependent variables and specific coping strategies as predictors while controlling for demographic variables.

Assumptions

Prior to conducting the hierarchical multiple regressions, the assumptions for this analysis were tested and met for each hierarchical regression.

Normality.

Normality was evaluated using the normal probability plot (Normal P-P plot). A relatively straight line suggests a normal distribution (Pallant, 2016). Figures 1 and 2 show the plots for hierarchical regression 1 (Anxiety symptoms as the dependent variable) and hierarchical regression 2 (Depression symptoms as the dependent variable) respectively. There were no major deviations from normality.

Figure 1

Normal P-P Plot of Regression Standardized Residual with Anxiety Symptoms as the Dependent Variable

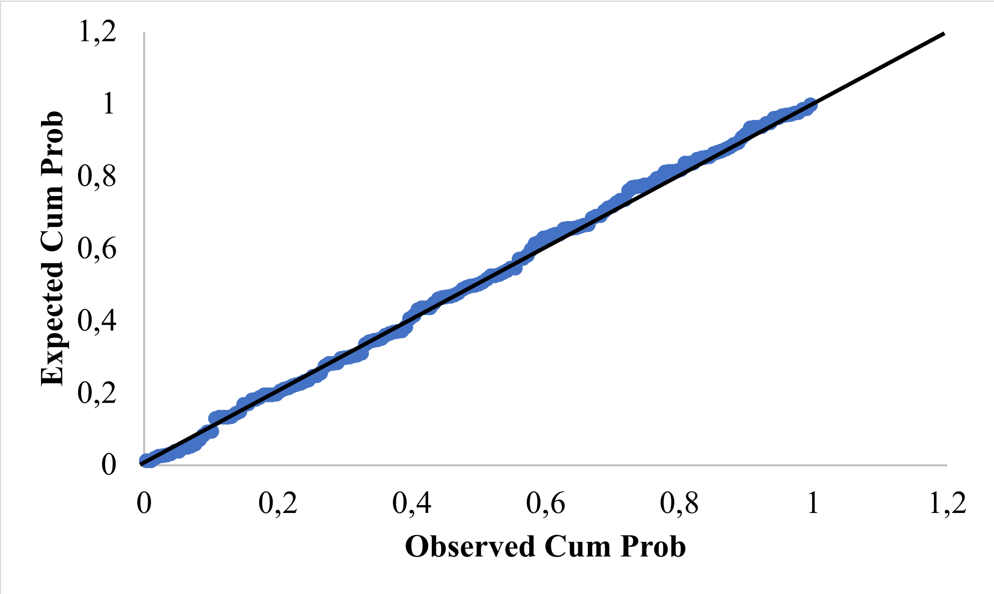
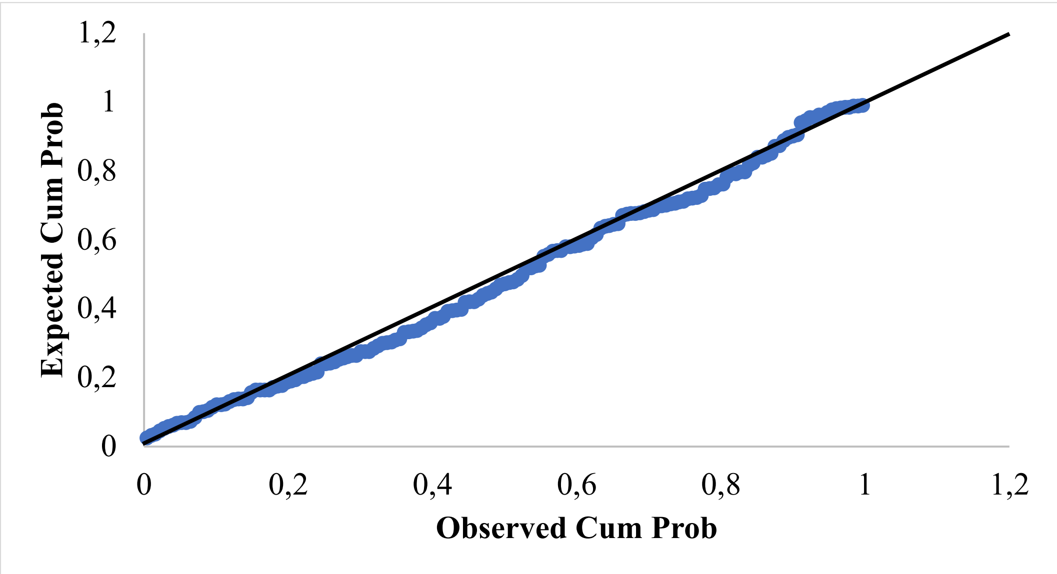


Figure 2

Normal P-P Plot of Regression Standardized Residual with Depression Symptoms as the Dependent Variable



No Multicollinearity.

Multicollinearity refers to when two or more independent variables are highly correlated with each other (Allen, 2017; Fein et al., n.d.). The reliability of the predicted regression coefficients is negatively impacted when the assumption of no multicollinearity is not met (Allen, 2017). Multicollinearity is calculated by using the Variance Inflation Factor (VIF) from SPSS. When the VIF values are above 10 then multicollinearity is suggested. The VIF values for the regressions were all less than 5. Appendix L shows the VIF values for the regressions.

Homoscedasticity.

Homoscedasticity refers to whether the variability of the residuals of the independent variables is equal at each level (Allen, 2017). This test is conducted by producing a scatterplot of standardized residual plots against the unstandardized predicted values (Fein et al., n.d.). The data points on the plot should look normally distributed without an apparent pattern. Figures 3 and 4 show the scatterplots for hierarchical regressions 1 and 2.

Figure 3

Scatterplot for Regression 1 with Anxiety Symptoms as the Dependent Variable

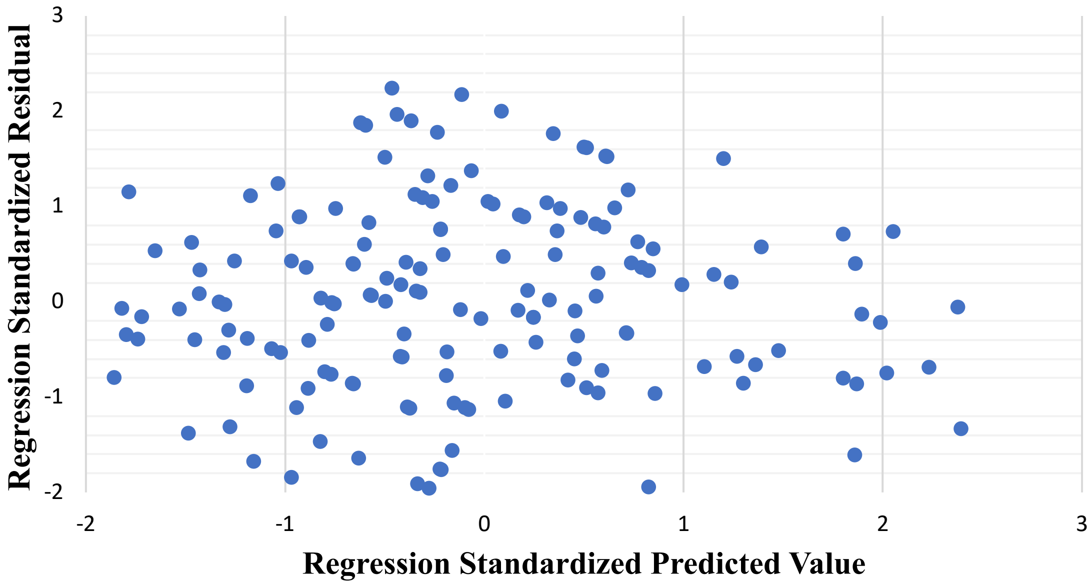
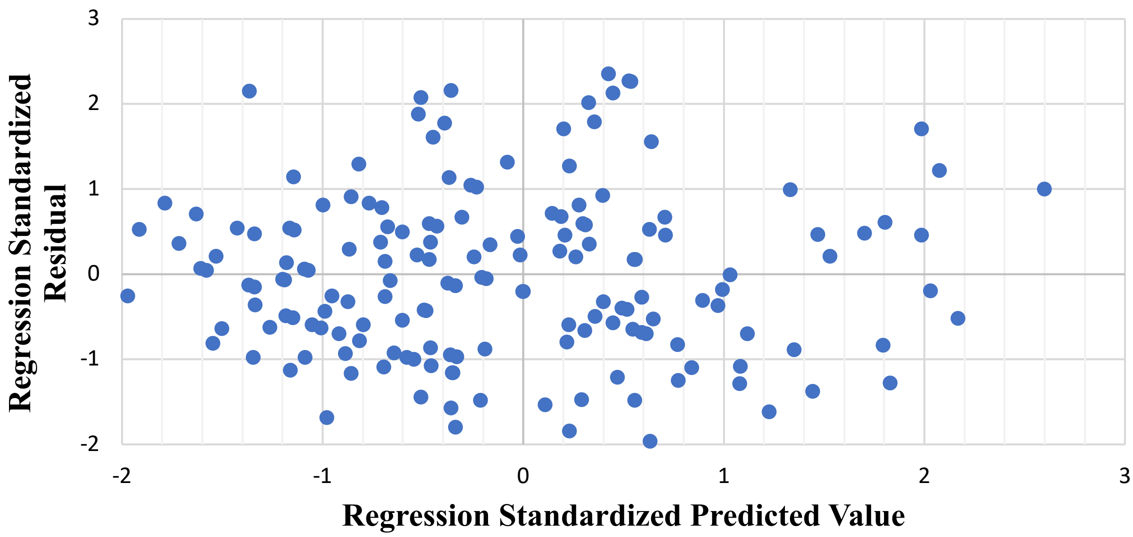


Figure 4

Scatterplot for Regression 2 with Depression Symptoms as the Dependent Variable



Multivariate Outliers.

The Mahalanobis distance test was used to assess for multivariate outliers (Tabachnick & Fidell, 2013). Cases are identified as outliers when the probability estimate is less than .001. No multivariate outliers were identified in these analyses.

Results

Hierarchical Regression 1: Anxiety Symptoms as the Dependent Variable.

Model 1 in this regression analysis controlled for age, gender, the asset index, food problems, and the mother's and father's education. As shown in Table 6, this model was statistically significant, R^2 = .103, $F(6, 252) = 4.83$, $p < .001$ and explained 10.3% of the variance in anxiety symptoms. As indicated in the table, being female and experiencing food problems were associated with more symptoms of anxiety. The entry of the coping strategies as predictors increased the variance explained by 36%. This change was significant ($p <$ .001), making the total variance explained 46.6% (R^2=.466, $F(20, 238) = 10.39$).

It is apparent from the data in Table 6 that very few of the coping variables were significant individual predictors in the model. The hypothesis that adolescents who used more denial, substances, behavioural disengagement, and self-blame would report significantly more symptoms of anxiety was supported. While the hypothesis that venting would be associated with anxiety was not supported by the data, this relationship fell just short of statistical significance. On the other hand, the hypothesis that adolescents who used acceptance, planning, religion, and instrumental support would report fewer symptoms of anxiety was not supported by the data.

Table 6

Hierarchical Regression Results of Specific Coping Strategies Predicting Anxiety

Variable	B	$SE\ B$	95% CI for B LL	95% CI for B UL	β	p	ΔR^2
Model 1							.10
Constant	10.80	5.73	-.50	22.09		.061	
Age	-.27	.32	-.90	.36	-.05	.396	
Asset index	.08	.12	-.16	.33	.04	.503	
Food problem	.91	.28	.36	1.47	.20	.001	
Gender	2.69	.71	1.30	4.08	.23	<.001	
Mother's education	-.27	.58	-1.40	.87	-.03	.642	
Father's education	.43	.48	-.52	1.38	.06	.377	
Model 2							.36
Constant	3.46	4.92	-6.22	13.15		.482	
Age	-.47	.27	-1.00	.06	-.09	.079	
Asset index	-.02	.10	-.22	.18	-.01	.826	
Food problem	.47	.23	.02	.93	.11	.041	
Gender	1.54	.58	.40	2.68	.13	.008	
Mother's education	.06	.46	-.85	.97	.01	.896	
Father's education	.25	.40	-.53	1.03	.04	.531	
Self-distraction	.26	.17	-.06	.59	.08	.113	
Active coping	.11	.18	-.25	.48	.04	.542	
Denial	.31	.15	.023	.59	.11	.035	
Substance use	.40	.17	.06	.73	.12	.022	
Use of emotional support	.10	.18	-.25	.45	.04	.573	

Variable	B	$SE\ B$	95% CI for B		β	p	ΔR^2
			LL	UL			
Use of instrumental support	-.25	.164	-.58	.07	-.10	.126	
Behavioural disengagement	.65	.17	.32	.98	.22	<.001	
Venting	.32	.17	-.00	.65	.10	.051	
Positive reframing	.29	.18	-.07	.65	.10	.114	
Planning	-.12	.19	-.49	.26	-.04	.538	
Humour	-.05	.13	-.30	.20	-.02	.683	
Acceptance	-.07	.17	-.39	.26	-.02	.680	
Religion	-.10	.16	-.41	.21	-.03	.540	
Self-blame	.98	.16	.67	1.28	.36	<.001	

Note: CI = confidence level; LL = lower limit; UL = upper limit.

Hierarchical Regression 2: Depression Symptoms as the Dependent Variable.

As shown in Table 7, the control variables were entered in the first model. This model was statistically significant, R^2 = .091, F(6, 252) = 4.18, p < .001 and explained 9.1% of the variance in depression symptoms. Gender and food problems were significant individual predictors of depression. The second model explained an additional 33% of the variance in depression symptoms and the change was statistically significant, R^2 = .418, F(20, 238) = 8.55, p < .001. As indicated in Table 7, the hypothesis that adolescents who used behavioural disengagement, substances, venting and self-blame would report more symptoms of depression was supported. However, there was no evidence of an association between denial and symptoms of depression. In addition, the hypothesis that adolescents who used acceptance, planning, religion, and instrumental support would report fewer symptoms of depression was not supported by the data.

Table 7

Hierarchical Regression Results of Specific Coping Strategies Predicting Depression

Variable	*B*	*SE B*	95% CI for *B* LL	95% CI for *B* UL	β	*p*	ΔR^2
Model 1							.09
Constant	2.79	6.72	-10.44	16.02		.678	
Age	.35	.38	-.39	1.09	.06	.356	
Asset index	.06	.15	-.23	.35	.03	.681	
Food problem	.86	.33	.21	1.50	.16	.010	
Gender	3.45	.83	1.82	5.08	.26	<.001	
Mother’s education	.23	.67	-1.10	1.55	.02	.739	
Father’s education	-.04	.57	-1.15	1.08	-.01	.944	
Model 2							.33
Constant	-2.03	5.97	-13.80	9.73		.734	
Age	.11	.32	-.53	.75	.02	.735	
Asset index	-.02	.12	-.26	.22	-.01	.883	
Food problem	.34	.28	-.21	.89	.07	.220	
Gender	2.20	.70	.81	3.59	.16	.002	
Mother’s Education	.64	.56	-.46	1.74	.07	.256	
Father’s Education	-.30	.48	-1.25	.65	-.04	.530	
Self-distraction	.38	.20	-.01	.78	.11	.058	
Active coping	.06	.22	-.39	.50	.02	.807	
Denial	.27	.18	-.08	.62	.08	.126	
Substance use	.50	.20	.09	.91	.13	.017	
Use of emotional support	-.14	.22	-0.57	.29	-.04	.516	

Variable	B	$SE\ B$	95% CI for B		β	p	ΔR^2
			LL	UL			
Use of instrumental support	-.08	.20	-.47	.31	-.03	.689	
Behavioural disengagement	.50	.21	.09	.90	.14	.016	
Venting	.48	.20	.09	.87	.13	.017	
Positive reframing	-.08	.22	-.51	.36	-.02	.720	
Planning	.04	.23	-.42	.49	.01	.875	
Humour	-.17	.15	-.47	.14	-.06	.280	
Acceptance	-.12	.20	-.52	.27	-.04	.544	
Religion	-.29	.19	-.66	.09	-.08	.136	
Self-blame	1.17	.19	.79	1.54	.37	<.001	

Note: CI = confidence level; LL = lower limit; UL = upper limit.

Hierarchical Multiple Regressions by Gender: Gender Differences in the Association between Specific Coping Strategies and Symptoms of Anxiety and Depression.

The fourth objective of this study was to examine whether there are gender differences in the association between specific coping strategies and the symptoms of anxiety and depression. Based on existing literature, I hypothesised that the use of denial, self-blame, and behavioural disengagement would predict both anxiety and depression in female adolescents. In addition, venting would only predict symptoms of depression while seeking instrumental and emotional support would only predict symptoms of anxiety. In male adolescents, I hypothesised that active coping and denial would predict anxiety symptoms while seeking instrumental and emotional support would predict both depression and anxiety.

Assumptions

Prior to conducting the hierarchical multiple regressions, the assumptions for this analysis were tested and met for each hierarchical regression.

Normality.

Figures 5, 6, 7 and 8 show the normal probability plots for the hierarchical regressions by gender. Although there are minor deviations from normality in Figures 5, 6 and 7, normality was still assumed because these are not major deviations.

Multivariate Outliers.

Using the Mahalanobis distance test, no multivariate outliers were identified in these analyses ($p < .001$)

Figure 5

Normal P-P Plot of Regression Standardized Residual for Male Adolescents, with Anxiety Symptoms as the Dependent Variable

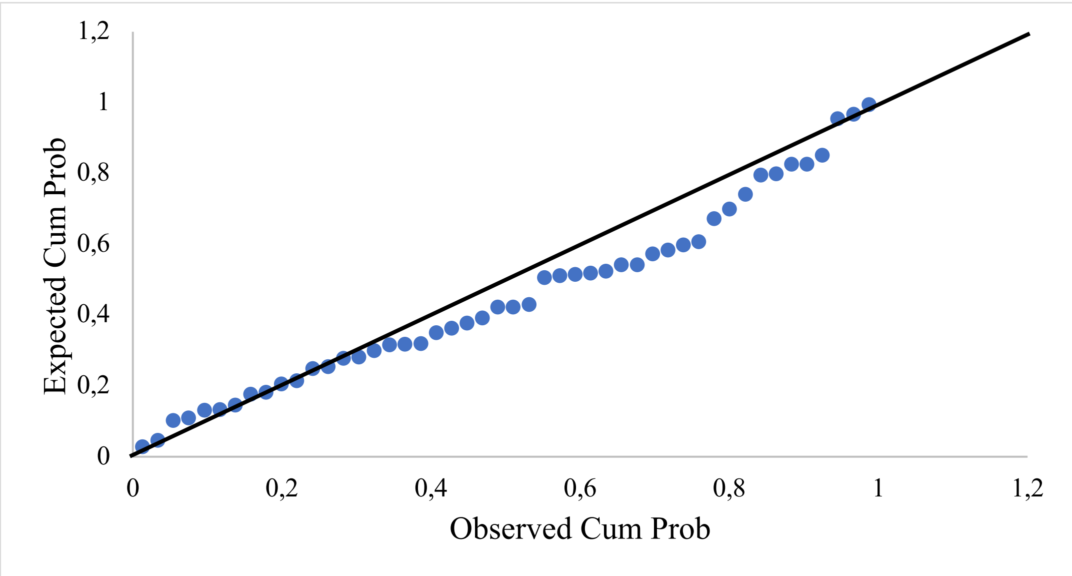


Figure 6

Normal P-P Plot of Regression Standardized Residual for Female Adolescents, with Anxiety Symptoms as the Dependent Variable

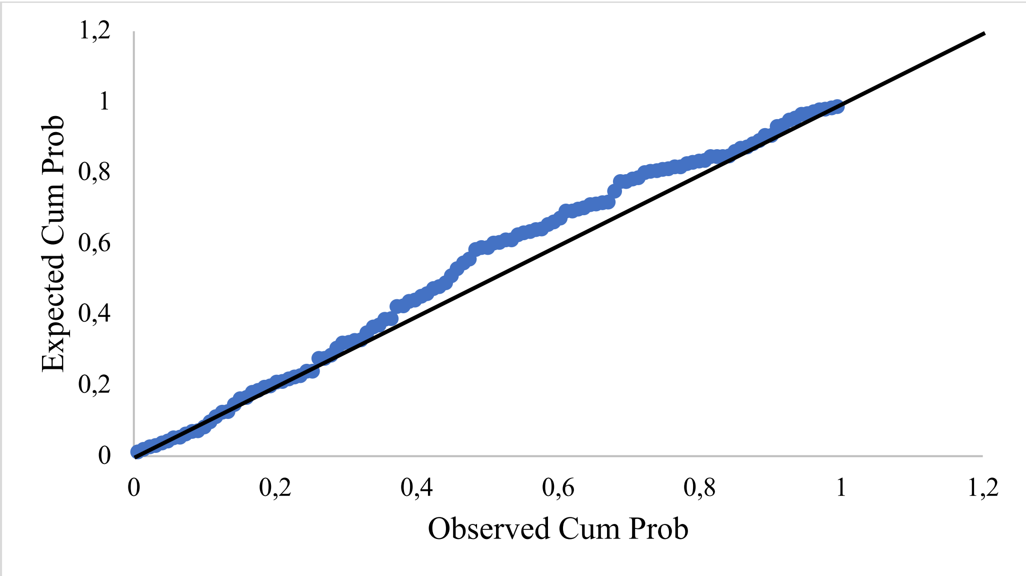


Figure 7

Normal P-P Plot of Regression Standardized Residual for Male Adolescents, with Depression Symptoms as the Dependent Variable

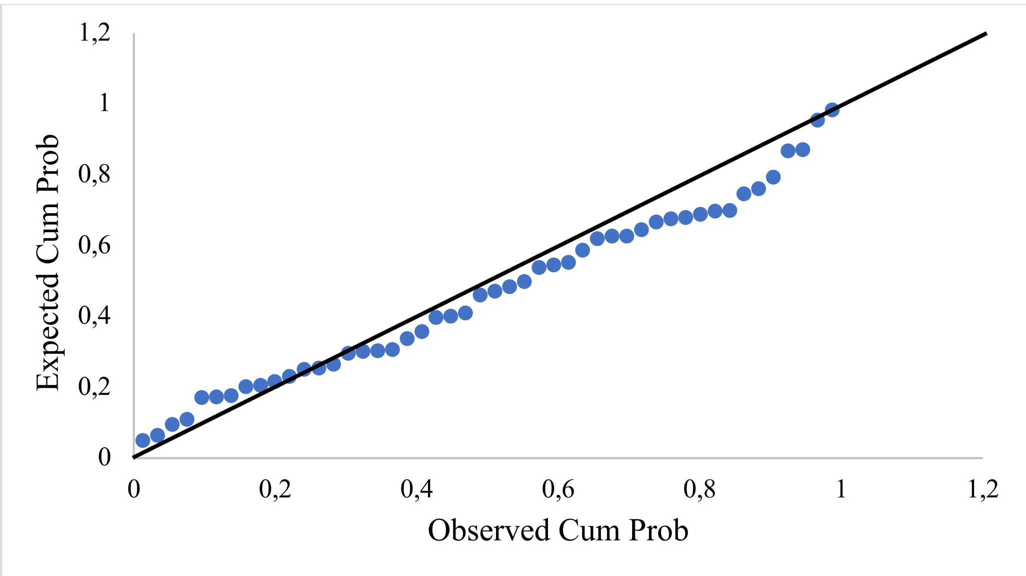
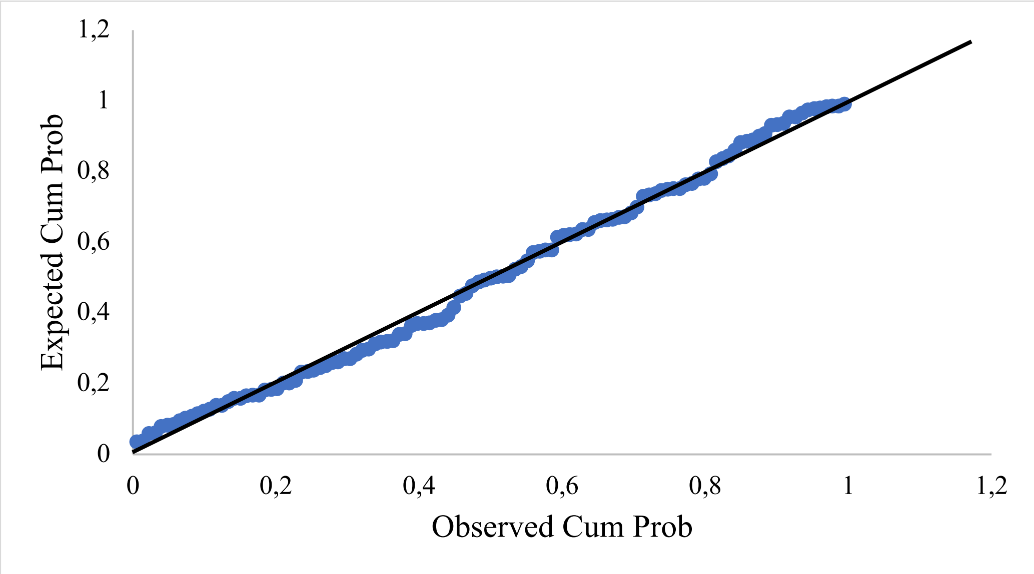


Figure 8

Normal P-P Plot of Regression Standardized Residual for Female Adolescents, with Depression Symptoms as the Dependent Variable



No Multicollinearity.

The VIF values for the hierarchical regressions by gender were all less than 5, supporting the assumption of no multicollinearity. The VIF values are provided in Appendix M.

Homoscedasticity.

Figures 9, 10, 11 and 12 show the scatterplots for the hierarchical regressions by gender. The data points on the plot look normally distributed without an apparent pattern.

Figure 9

Hierarchical Regression Scatterplot for Male Adolescents, with Anxiety Symptoms as the Dependent Variable

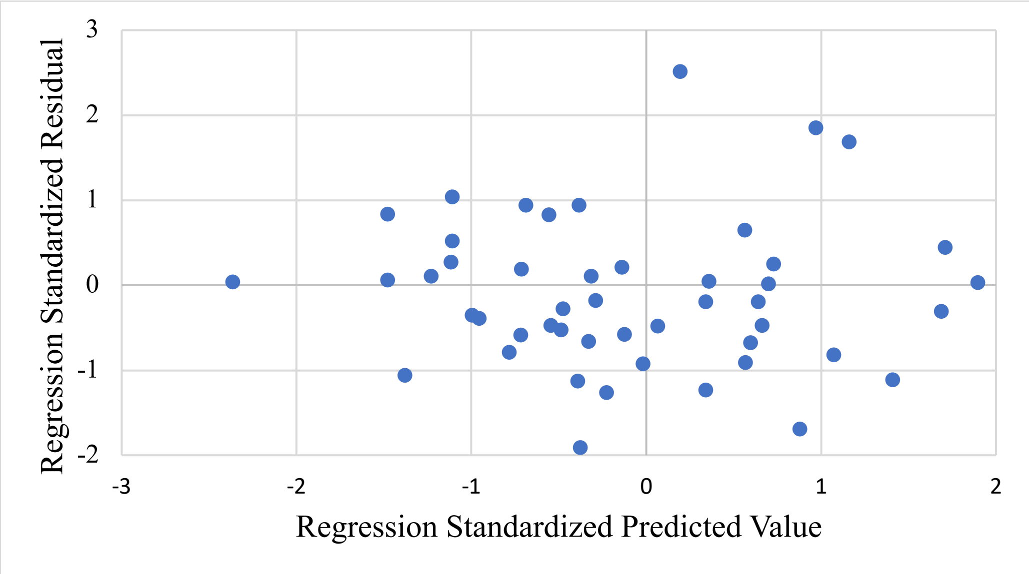


Figure 10

Hierarchical Regression Scatterplot for Female Adolescents, with Anxiety Symptoms as the Dependent Variable

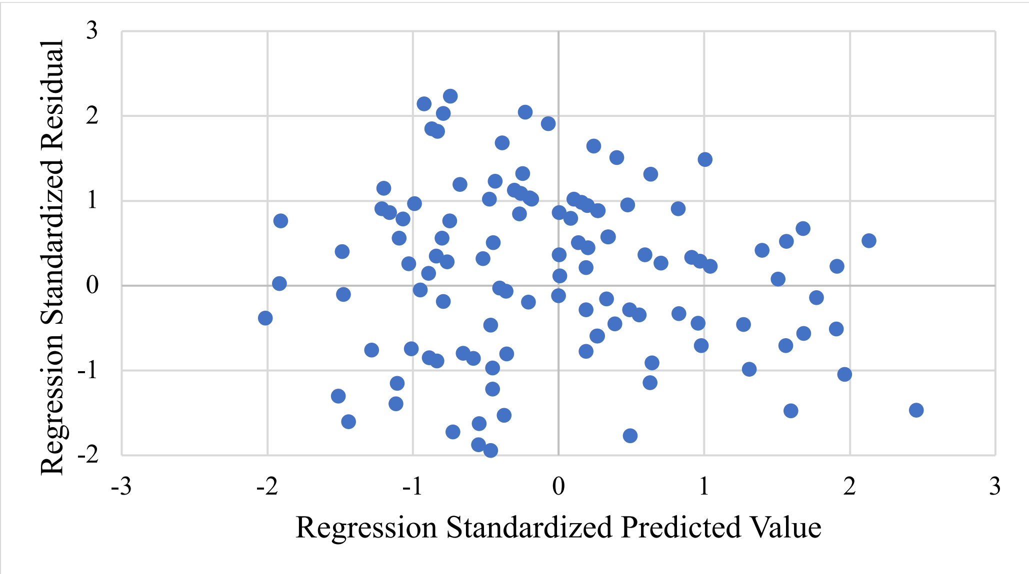


Figure 11

Hierarchical Regression Scatterplot for Male Adolescents, with Depression Symptoms as the Dependent Variable

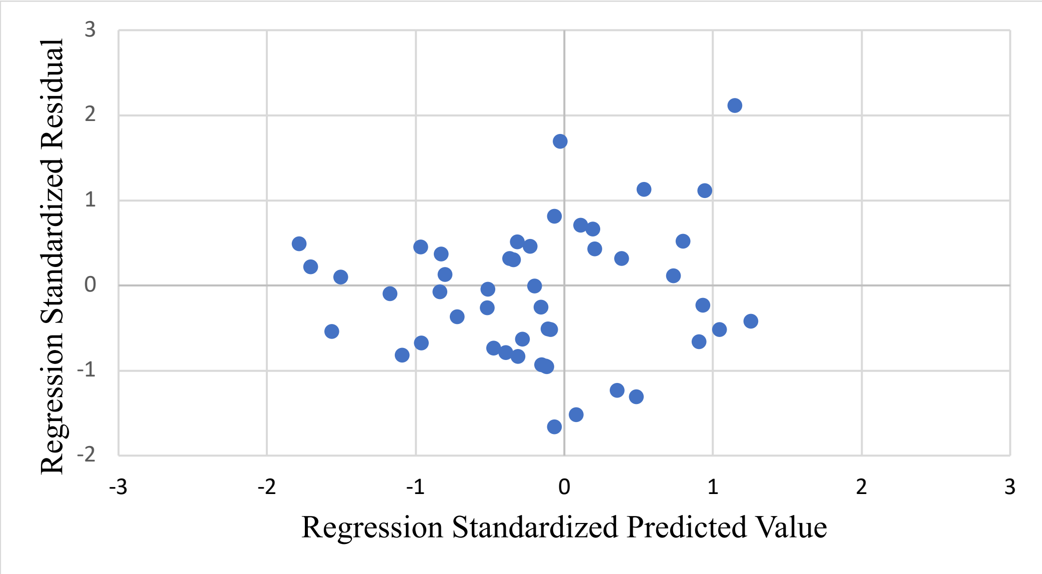
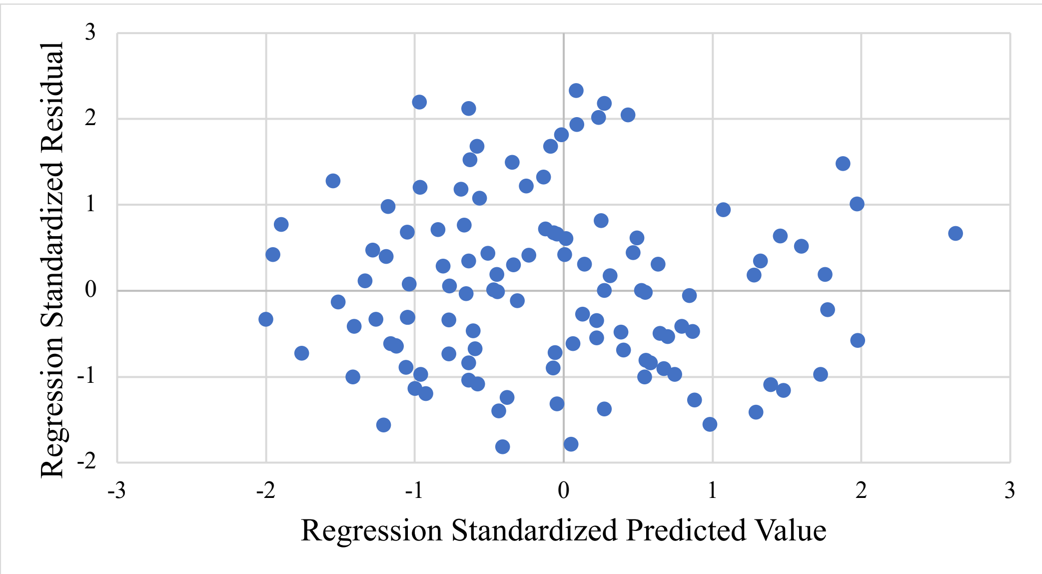


Figure 12

Hierarchical Regression Scatterplot for Female Adolescents, with Depression Symptoms as the Dependent Variable



Results

Hierarchical Regressions by Gender: Anxiety Symptoms as the Dependent Variable.

In male adolescents, the first model which controlled for age and SES explained 8.7% of the variance in symptoms of anxiety but was not statistically significant, R^2 = .087, *F*(5, 76) = 1.46, *p* = .214. Adding the specific coping strategies as predictor variables in the second model increased this variance by 39.9%. This change was statistically significant (R^2 = .487, *F*(19, 62) = 3.10, *p* < .001). In female adolescents, the first model was also not statistically significant, R^2 = .055, *F*(5, 163) = 1.89, *p* = .099 and explained only 5.5% of the variance in anxiety symptoms. The second model increased this variance by 39.4% and the change was significant (R^2 = .448, *F*(19, 149) = 6.37, *p* < .001).

As indicated in Table 8, in male adolescents, behavioural disengagement and self-blame were significantly associated with anxiety. The hypothesis that male adolescents who used active coping and denial and sought instrumental and emotional support would report more anxiety symptoms was not supported by the data. In female adolescents, the use of behavioural disengagement and self-blame predicted anxiety as hypothesised, but the use of denial fell just short of statistical significance. Seeking instrumental and emotional support did not predict symptoms of anxiety as expected (Table 9).

Table 8

Hierarchical Regression Results of Specific Coping Strategies Predicting Anxiety for Male Adolescents

Variable	B	$SE\ B$	95% CI for B LL	95% CI for B UL	β	p	ΔR^2
Model 1							.09
Constant	4.76	8.88	-12.92	22.45		.593	
Age	.17	.50	-.84	1.17	.04	.745	
Asset index	.22	.19	-.15	.60	.14	.237	
Food problem	.91	.50	-.08	1.90	.22	.070	
Mother's education	-1.8	1.02	-3.80	.27	-.23	.09	
Father's education	0.79	0.78	-.77	2.34	.13	.316	
Model 2							.40
Constant	1.85	8.68	-15.50	19.21		.83	
Age	-.33	.47	-1.27	.61	-.08	.482	
Asset index	.24	.16	-.09	.57	.16	.147	
Food problem	.81	.43	-.05	1.68	.19	.064	
Mother's Education	-1.83	.94	-3.70	.04	-.24	.055	
Father's Education	1.00	.74	-.47	2.47	.16	.180	
Self-distraction	-.07	.33	-.74	.60	-.02	.829	
Active coping	.00	.34	-.68	.69	.00	.992	
Denial	.19	.31	-.42	.80	.07	.537	
Substance use	.64	.40	-.16	1.45	.20	.115	
Use of emotional support	.22	.31	-.41	0.85	.09	.481	
Use of instrumental support	-.28	.32	-.92	.36	-.12	.385	

Variable	B	$SE\ B$	95% CI for B LL	95% CI for B UL	β	p	ΔR^2
Behavioural disengagement	.77	.35	.07	1.47	.26	.031	
Venting	.52	.32	-.13	1.16	.17	.114	
Positive reframing	.32	.32	-.32	0.96	.12	.324	
Planning	-.04	.37	-.77	.70	-.01	.918	
Humour	-.06	.25	-.55	.44	-.03	.814	
Acceptance	.10	.32	-.55	.74	.04	.762	
Religion	-.23	.35	-.92	.47	-.08	.513	
Self-blame	.66	.32	.02	1.30	.24	.042	

Note: CI = confidence level; LL = lower limit; UL = upper limit.

Table 9

Hierarchical Regression Results of Specific Coping Strategies Predicting Anxiety for Female Adolescents

Variable	B	$SE\ B$	95% CI for B LL	95% CI for B UL	β	p	ΔR^2
Model 1							.06
Constant	15.97	7.21	1.73	30.21		.028	
Age	-.47	.41	-1.28	.349	-.09	.261	
Asset index	.03	.16	-.29	.35	.01	.861	
Food problem	.96	.35	.28	1.65	.22	.006	
Mother's education	.26	.70	-1.13	1.64	.03	.714	
Father's education	.32	.61	-.89	1.53	.04	.602	
Model 2							.39

Variable	B	$SE\ B$	95% CI for B		β	p	ΔR^2
			LL	UL			
Constant	3.27	6.44	-9.45	16.00		.612	
Age	-.41	.35	-1.10	.28	-.08	.244	
Asset index	-.14	.14	-.41	.13	-.07	.300	
Food problem	.30	.29	-.28	.88	.07	.302	
Mother's Education	.61	.57	-.50	1.73	.08	.279	
Father's Education	.30	.52	-.72	1.32	.04	.564	
Self-distraction	.40	.21	-.00	.81	.13	.051	
Active coping	.17	.24	-.30	.64	.05	.470	
Denial	.34	.18	-.01	.70	.13	.056	
Substance use	.27	.21	-.15	.69	.09	.200	
Use of emotional support	.05	.23	-.40	.51	.02	.813	
Use of instrumental support	-.12	.21	-.53	.29	-.05	.567	
Behavioural disengagement	.54	.22	.11	.96	.18	.014	
Venting	.33	.21	-.08	.75	.11	.114	
Positive reframing	.17	.24	-.31	.64	.05	.485	
Planning	-.13	.24	-.60	.35	-.04	.596	
Humour	-.16	.16	-.47	.16	-.06	.333	
Acceptance	-.11	.21	-0.52	.31	-.04	.619	
Religion	-.02	.19	-.40	.36	-.01	.907	
Self-blame	1.11	.20	.72	1.51	.43	<.001	

Note: CI = confidence level; LL = lower limit; UL = upper limit.

Hierarchical Regressions by Gender: Symptoms of Depression as the Dependent Variable.

In male adolescents, neither the first model nor the second model was statistically significant. The first model explained 5.1% of the variance of the symptoms of depression, R^2 =.051, $F(5, 76) = 0.81$, $p = 0.55$. The second model explained 31.6% of the variance in the symptoms of depression, the change was not significant (R^2 =.316, $F(19, 62) = 1.51$, p = .074). In female adolescents, the first model was not significant, R^2 =.041, $F(5, 163) = 1.40$, $p = .227$ and explained 4.1% of the variance in the symptoms of depression. The second model was statistically significant, R^2 =.423, $F(19, 149) = 5.76$, $p < .001$ and explained 42.3% of the variance in the symptoms of depression. This change was significant.

As indicated in Table 10, the hypothesis that seeking instrumental and emotional support would predict depression in male adolescents was not supported by the data. None of the specific coping strategies in this model predicted depression in male adolescents. The hypothesis that venting and self-blame would predict symptoms of depression in female adolescents was supported. However, the use of denial and behavioural disengagement did not predict depression symptoms as expected (Table 11).

Table 10

Hierarchical Regression Results of Specific Coping Strategies Predicting Depression for Male Adolescents

Variable	B	$SE\ B$	95% CI for B LL	95% CI for B UL	β	p	ΔR^2
Model 1							.05
Constant	-2.96	9.03	-20.93	15.02		.74	
Age	.78	.51	-.24	1.80	1.53	.13	
Asset index	.06	.19	-.31	.44	.04	.738	
Food problem	.42	.50	-.58	1.43	.10	.404	
Mother's education	-.41	1.04	-2.47	1.66	-.05	.697	
Father's education	.18	.79	-1.40	1.75	.03	.825	
Model 2							.27
Constant	-3.14	9.99	-23.11	16.83		.754	
Age	.39	.54	-.70	1.47	.09	.479	
Asset index	.13	.19	-.25	0.50	.08	.507	
Food problem	.37	.50	-.62	1.37	.09	.455	
Mother's Education	-.23	1.08	-2.38	1.92	-.03	.833	
Father's Education	.32	.85	-1.37	2.013	.05	.706	
Self-distraction	.07	.38	-.70	.84	.02	.855	
Active coping	-.12	.39	-.90	.67	-.04	.765	
Denial	.17	.35	-.53	.88	.07	.623	
Substance use	-.77	.46	-.16	1.69	.24	.103	
Use of emotional support	-.46	.36	-1.19	.26	-.18	.204	
Use of instrumental support	.144	.37	-.59	.88	.06	.698	

Variable	B	$SE\ B$	95% CI for B		β	p	ΔR^2
			LL	UL			
Behavioural disengagement	.58	.40	-.22	1.38	.20	.153	
Venting	.24	.37	-.50	.98	.08	.524	
Positive reframing	-.10	.37	-.84	.64	-.04	.792	
Planning	.19	.42	-.65	1.04	.07	.651	
Humour	-.05	.28	-.61	.52	-.02	.873	
Acceptance	-.05	.37	-.80	.69	-.02	.888	
Religion	-.16	.40	-.96	.63	-.06	.682	
Self-blame	.49	.37	-.24	1.23	.18	.185	

Note: CI = confidence level; LL = lower limit; UL = upper limit.

Table 11

Hierarchical Regression Results of Specific Coping Strategies Predicting Depression for Female Adolescents

Variable	B	$SE\ B$	95% CI for B		β	p	ΔR^2
			LL	UL			
Model 1							.04
Constant	7.92	8.86	-9.57	25.42		.373	
Age	.21	.51	-.80	1.21	.03	.687	
Asset index	.04	.200	-.36	.43	.02	.847	
Food problem	1.07	.43	.23	1.92	.20	.013	
Mother’s education	.47	.86	-1.23	2.17	.05	.587	
Father’s education	-.12	.75	-1.61	1.37	-.01	.871	
Model 2							.38

Variable	B	$SE\ B$	95% CI for B		β	p	ΔR^2
			LL	UL			
Constant	-2.06	8.03	-17.93	13.81		.798	
Age	.18	.44	-.68	1.05	.03	.675	
Asset index	-.15	.17	-.48	.18	-.06	.372	
Food problem	.26	.37	-.46	.98	.05	.481	
Mother's Education	.95	.71	-.45	2.34	.10	.181	
Father's Education	-.18	.65	-1.46	1.09	-.02	.775	
Self-distraction	.49	.26	-.02	.99	.13	.061	
Active coping	.14	.29	-.44	.72	.04	.640	
Denial	.27	.22	-.17	.71	.08	.235	
Substance use	.46	.26	-.06	.98	.12	.082	
Use of emotional support	-.05	.29	-.62	.51	-.02	.857	
Use of instrumental support	-.08	.26	-.59	.43	-.03	.757	
Behavioural disengagement	.39	.27	-.15	.92	.11	.155	
Venting	.63	.26	.11	1.14	.17	.018	
Positive reframing	-.06	.30	-.65	.53	-.02	.831	
Planning	.02	.30	-.58	.61	.00	.958	
Humour	-.32	.20	-.71	.08	-.11	.112	
Acceptance	-.22	.26	-.74	.30	-.06	.400	
Religion	-.34	.24	-.82	.14	-.10	.162	
Self-blame	1.42	.25	.93	1.92	.45	<.001	

Note: CI = confidence level; LL = lower limit; UL = upper limit.

CHAPTER 5: DISCUSSION

There is a paucity of literature that investigates the impact of specific coping strategies on mental health in at-risk adolescents from socioeconomically vulnerable communities in South Africa. The primary goal of this study was to investigate the associations between specific coping strategies and symptoms of depression and anxiety in 415 black adolescents living in a South African township. This study also sought to investigate gender differences in (1) symptoms of anxiety and depression; (2) specific coping strategies and (3) associations between coping and symptoms of anxiety and depression. This chapter discusses the results which emerged from the statistical analyses presented in the previous chapter. The limitations of the study and recommendations for future research are also presented. The chapter further outlines the practical implications of the study and concludes the study.

Symptoms of Anxiety and Depression among Etwatwa Adolescents

The prevalence rates of clinically significant levels of anxiety and depressive symptoms in this study were 58% and 68% respectively. In comparison with data from other studies, the adolescents in the present study have higher rates of depression and anxiety. For instance, Ghandour et al. (2019) reported prevalence rates of 10.5% and 6.1% for anxiety and depression respectively among United States (US) children aged 12-17 years. Das-Munshi et al. (2016) reported prevalence rates of 41% and 16% for depression and anxiety respectively among adolescents from Cape Town. The observed high prevalence rates in this study could be linked to socioeconomic disadvantage which is a risk factor for anxiety and depression (Das-Munshi et al., 2016; Duby et al., 2022; Hunt et al., 2019; Reiss, 2013). According to the hierarchical regression analyses (Tables 7 and 8), experiencing food problems was a significant predictor of both anxiety and depression for adolescents. Food insecurity, which is defined as a lack of sufficient access to food, has also been linked to depression and anxiety in previous research (Cluver et al., 2009; Dlamini et al., 2023; Fang et al., 2021; Jesson et al., 2021; Myers, 2020).

Gender Differences in the Symptoms of Anxiety and Depression among Etwatwa Adolescents

As predicted, this study found that female adolescents reported more symptoms of anxiety and depression than male adolescents. Previous studies also show the female gender as a risk factor for anxiety and depression in adolescents and adults (Altemus et al., 2014; Campbell et al., 2021; Cheng et al., 2014; Christiansen, 2015; Hankin et al., 2007; Moksnes et al., 2010; Ndungu et al., 2020; Pretorius, 2021; Salk et al., 2017; Sloan & Sandt, 2006; Tomlinson et al., 2009; Zhang et al., 2021). For example, a US survey revealed that female adolescents were 2-3 times more likely to experience depression compared to male adolescents (Avenevoli et al., 2015). In South Africa, Bach and Louw (2010) mirrored this finding and found girls to be three times more at risk of depression than boys. When it comes to anxiety disorders, a systematic review found women to be twice as likely to be affected compared to men (Remes et al., 2016). By mid-adolescence, depression is said to be twice as common in girls than in boys (Girgus & Yang, 2015). Anxiety levels, on the other hand, are reported to be twice as high in girls than in boys by the age of 6 (Christiansen, 2015).

There are several possible explanations for the gender gap in mental health. One explanation is rumination which occurs when individuals repeatedly think about the negative aspect of a stressful encounter and the negative emotions associated with it (Girgus & Yang, 2015; Spendelow & Jose, 2018; Stanisławski, 2019). This phenomenon is reported to be more common in females than in males (Christiansen, 2015; Girgus & Yang, 2015; Spendelow & Jose, 2018) and is a risk factor for depression and anxiety (Michl et al., 2013; Spendelow & Jose, 2018). Moreover, research suggests that girls go through puberty earlier than boys – on average, 1-2 years earlier (Fechner, 2002). Puberty typically begins between the ages of 8 and

13 years in girls and 9 and 14 years in boys (Breehl & Caban, 2023). The earlier onset of puberty puts girls at an increased risk of psychopathology (Girgus & Yang, 2015; Negriff & Susman, 2011).

Also, the literature indicates that female adolescents exhibit variations in pubertal timing, with some girls maturing earlier than others (Mendle et al., 2007). Those who mature earlier are more vulnerable to psychopathology compared to their on-time and late-maturing peers (Conley & Rudolph, 2009; Girgus & Yang, 2015; Marceau et al., 2011; Mendle et al., 2007; Negriff & Susman, 2011). The effects of early pubertal timing seem to be more severe for girls than for boys (Negriff & Susman, 2011). The evidence for an association between pubertal timing and negative psychological outcomes in boys is inconclusive (Conley & Rudolph, 2009; Girgus & Yang, 2015; Hoyt et al., 2020; Kaltiala-Heino et al., 2003; Marceau et al., 2011; Negriff & Susman, 2011). However, girls who have their menstrual period at an earlier age demonstrate more depressive symptoms than their on-time or later-maturing female peers (Ge et al., 2001; Mendle et al., 2007). Menarche may cause gains in weight and body fat and, regardless of the timing of puberty, this may cause weight concerns among girls (Mendle et al., 2007). However, early maturation may exacerbate these concerns, causing body dissatisfaction (Mendle et al., 2007), which in turn has been associated with more symptoms of depression in adolescent girls (Ohring et al., 2002; Stice & Bearman, 2001; Stice et al., 2000). Additionally, early pubertal time in girls is associated with early engagement in intimate sexual activities and romantic relationships, which may increase their risk of stress and depression (Girgus & Yang, 2015; Mendle et al., 2007). This may occur because early maturation in girls results in a sexually mature appearance, making them attractive to older males. Having an older boyfriend, in turn, is associated with early engagement in sexual activities and unwanted sexual activity (Marín et al., 2000). Because of fewer emotional and cognitive resources compared to grown women, early maturing girls may not be ready or prepared to deal with the power imbalance caused by the dynamics of such relationships (Mendle et al., 2007).

According to Christiansen (2015), gonadal hormones like oestrogen and progesterone may also contribute to the high prevalence of anxiety disorders in females. The fluctuations of these hormones may affect anxiety-related neurotransmitters and neurosteroids (Christiansen, 2015; Riecher-Rössler, 2017). Gender socialisation can also contribute to these differences in psychopathology because while the experience and expression of emotions like anxiety are normalised for women, men are socially expected to suppress them (Farhane-Medina et al., 2022). In South African cultures, men and boys often deny distress due to the expectation of showing strength (Bateman, 2021).

According to other research, the reason why there are gender disparities in depression is in part because females experience more interpersonal or social stressors than males do (Calvete et al., 2011; Forns-Santacana et al., 2012; Hankin et al., 2007; Helgeson, 2011; Shih et al., 2006). For instance, girls experience higher levels of peer stress which, in turn, is associated with more symptoms of depression (Hammen, 2009; Hankin et al., 2007; Rudolph, 2002). Boys, on the other hand, report more non-interpersonal stressors compared to girls (Helgeson, 2011). While both female and male adolescents encounter some type of sexual abuse, a South African study by Ward et al. (2018) indicated that more girls than boys report sexual abuse. The likelihood that females may experience more sexual trauma makes them more susceptible to anxiety (Christiansen, 2015). Additionally, a study by Fergusson et al. (2002) discovered that females reported 5 to 8 times more sexual violence than males, which contributed to the gender differences in anxiety and depression symptoms.

The transactional theory of stress and coping, which is the theoretical foundation for this study, makes use of cognitive appraisal to explain why what is threatening for one person may not be for another. Research suggests that males typically appraise situations in terms of a challenge while females appraise them as threatening (Frydenberg, 1997). Threat appraisals are accompanied by negative emotions such as fear, anxiety, and anger (Lazarus & Folkman, 1984). Challenge appraisals, on the other hand, centre on potential gain or growth from the situation and are associated with positive emotions. Girls are also said to be more reactive to stressors than boys (Hankin et al., 2007; Shih et al., 2006). For instance, research has shown that females appraise the same stressors experienced by males as four times more stressful or threatening than males do (Calvete et al., 2011).

Gender Differences in the Use of Specific Coping Strategies

The second aim of this study was to determine whether there were any gender differences in the way female and male adolescents cope. Although not hypothesised, female adolescents in this study used more behavioural disengagement than male adolescents. This finding is consistent with research among adults (Ataro et al., 2020; García et al., 2018) and university students from Poland (Guszkowska et al., 2016). Behavioural disengagement involves giving up the attempt to cope and is demonstrated in helpless behaviours (Carver et al., 1989). This coping mechanism is usually employed when people anticipate unfavourable coping results. Consistent with this view, research among adults by Sidle et al. (1969) found that women are more likely than men to expect the worst when faced with problems (as cited in Frydenberg, 1997).

Contrary to expectations, none of the hypotheses about gender differences in the use of specific coping strategies was supported by the data. This is consistent with other researchers who did not find any significant gender differences in the way adolescents used planning, humour, denial, active coping, substances, venting, instrumental and emotional support (Verma, 2019) or problem-focused and emotion-focused strategies (Adhiambo et al., 2017). However, it contradicts studies that have reported gender differences in the use of specific coping strategies. For instance, some previous studies have found that girls use denial, venting, active coping, planning, self-blame, religion, instrumental and emotional support, and acceptance to a greater extent than boys (Flannery et al., 2018; Horwitz et al., 2011; Malooly et al., 2017; Vera et al., 2012). Other studies have found that males use humour more than females do when dealing with stressors (Eisenbarth, 2019; Madhyastha et al., 2014; Phelps & Jarvis, 1994; Plancherel & Bolognini, 1995; Rose & Rudolph, 2006). More research is therefore required to resolve these discrepancies. It is also important to note that gender alone cannot define coping. According to the transactional theory of stress and coping, the stress response is influenced by interactions between the individual and their environment (Frydenberg, 1997; Lazarus & Folkman, 1984). Therefore, the coping strategies that adolescents use are influenced by what they are coping with (context) and whether they perceive the stressful situation to be within their control or amendable to change. Forns-Santacana et al. (2012) observed that when the type of the stressor is considered, the impact of gender on coping strategies is minimal. In addition, they suggested that rather than being primarily attributable to a gender-based difference, the lack of agreement regarding gender differences in coping may be related to the types of stressors that boys and girls experience.

The Brief COPE used to measure coping in the present study is a dispositional measure of coping that asks individuals what they usually do in stressful situations. It is therefore limited in providing information about the coping choices used in specific stressful contexts (Moos & Holahan, 2003). However, coping with less controllable stressors may primarily be determined by personality factors (disposition) while contextual coping responses provide better predictors of adaptation to controllable stressors (Litt et al., 2011). This suggests that dispositional coping responses such as those assessed by the Brief COPE provide better predictors of adaptation to uncontrollable stressors.

The Association Between Specific Coping Strategies and Symptoms of Anxiety and Depression

The third aim of this study was to ascertain whether the specific coping strategies predicted symptoms of anxiety and depression among adolescents. The hypothesis that adolescents who used substances, behavioural disengagement and self-blame would report more symptoms of anxiety and depression was supported by the data. This finding matches those observed in earlier studies which found symptoms of anxiety and/or depression to be predicted by behavioural disengagement (Basterfield et al., 2014; Freyhofer et al., 2021; Horwitz et al., 2011), self-blame (Basterfield et al., 2014; Fear et al., 2009; Horwitz et al., 2011) and substance use (Freyhofer et al., 2021; Skogen et al., 2014; Saban & Flisher, 2010).

Adolescence is a stage of life that often involves experimenting with risky and problematic behaviours. Using substances is just one example of such behaviour (Chassin et al., 2004). Adolescents who experience a large amount of stress often resort to using drugs or alcohol to alleviate the emotional distress that comes with it (Chassin et al., 2004). This is consistent with a study by García et al. (2018), who found a positive relationship between stress and substance use among adults. According to Baumrind and Moselle (1985), substance use during adolescence can lead to a distorted perception of reality. This can make it difficult to assess and respond to environmental stimuli, ultimately impeding the development of effective coping mechanisms (as cited in Chassin et al., 2004). Furthermore, studies indicate that the use of substances by adolescents affects their cognitive functioning, including planning, decision-making, and judgement. This can make it challenging for adolescents to respond to environmental stimuli in a goal-oriented manner (Chassin et al., 2004). This suggests that substance use prolongs stressful transactions, increasing emotional distress for adolescents. The pharmacological effects of substance use may also interfere with adolescents' further attempts at coping with the stressor, further complicating their emotional well-being (Chassin et al., 2004).

Behavioural disengagement, which involves reducing effort or giving up the attempt to cope, has been found to be associated with increased distress or life stress among adults (Langford et al., 2017). This type of coping is also evident in helplessness behaviours (Carver et al., 1989), which occur when individuals feel they have no control over a bad situation and believe there is nothing they can do to improve it (Wallston, 2015). Adolescents with more advanced cognitive and social abilities are frequently reported to perceive poverty as a source of stress and to feel a lack of control over their lives (Santiago et al., 2018). Wolff et al. (2011) and Santiago et al. (2018) argue that adolescents find the use of disengagement and withdrawal appealing in the face of poverty-related stress. Poverty-related stress hinders adolescents' ability to utilize healthy coping strategies, leading to the simple option of disengaging (Santiago et al., 2018). Though disengagement may be useful in the short term, it does not help adolescents alter or adapt to stressful encounters, and persistent stress may have detrimental consequences on adolescents' long-term mental health (Wolff et al., 2011). Santiago and Wadsworth (2008) found that disengagement coping is linked to internalizing symptoms in the long term (but not in the short term) in children coping with family conflict, a common poverty-related stressor (Wadsworth et al., 2018). Disengaging from a conflict in the short term may not have negative consequences (Santiago & Wadsworth, 2008) because it removes adolescents from the physical and emotional threats of the conflict, which they learn to avoid (Wolff et al., 2011). However, continuing to disengage instead of using other strategies such as positive distraction can worsen symptoms in the long term (Santiago & Wadsworth, 2008).

The paradoxical relationship between self-blame and psychological distress shows that adolescents who blame themselves for their problems are more likely to take action to address those problems, which may have a positive effect (Vera et al., 2012). However, at the same time, adolescents who use self-blame excessively, particularly for problems that are not under their control, may experience more emotional distress when it fails to work (Vera et al., 2012). Studies have found self-blame to predict higher stress, which could diminish levels of well-being (Bourduge et al., 2022; Gámez-Guadix et al., 2020).

As expected, using denial predicted symptoms of anxiety. This finding is consistent with previous research (Compas et al., 2017; Freyhofer et al., 2021). However, using denial did not predict depression. This is consistent with what was found in a study by Horwitz et al. (2011) but contradicts the findings of another study (e.g., Freyhofer et al., 2021). Denial sometimes emerges during primary appraisal (Carver et al., 1989) when an individual is evaluating whether a situation is either irrelevant, benign positive or stressful (Lazarus & Folkman, 1984). The association between denial and psychopathology is debatable. While it is suggested that denial can help aid coping by reducing distress at the early stages of the stressful transaction, the timing is important in determining the positive and negative effects of denial (Carver et al., 1989). Denial may be helpful and more successful in certain situations, such as the unexpected death of a loved one, when the matter cannot yet be fully confronted (Lazarus & Folkman, 1984). However, refusing to believe the reality of a situation can also create more problems, making the coping that will ultimately be necessary much harder (Carver et al., 1989).

As expected, venting predicted symptoms of depression; however, it fell just short of statistical significance when it came to predicting symptoms of anxiety. Venting predicting depression is supported by previous studies (Basterfield et al., 2014; Freyhofer et al., 2021; Malooly et al., 2017). Venting is expressing unpleasant/negative feelings (Carver, 1997; Carver et al., 1989). Venting is another strategy that can be useful at times, such as during a grieving period when individuals are suffering from the loss of a loved one. However, fixating on negative emotions can keep people from making active coping efforts which may worsen the distress (Carver et al., 1989) and amplify unpleasant feelings (Malooly et al., 2017; Stanisławski, 2019). While venting may help to lessen the immediate effects of stressful situations, doing so frequently and over time might make stress levels rise (Graves et al., 2021). This is consistent with what is reported by Vera et al. (2012): the relationship between stress and life satisfaction was not significant in adolescents who vented less frequently. However, this relationship was significant with frequent venting; that is, venting increased the negative relationship between stress and life satisfaction.

Furthermore, it is crucial to note that adolescents who already have anxiety or depression may be more likely than others to utilise these strategies. Studies have shown that depressed individuals, for example, tend to use less problem-focused strategies and use more self-blame, denial, venting, substances, and behavioural disengagement (Ho et al., 2022; Hori et al., 2014; Horwitz et al., 2018). The present study is a cross-sectional study and therefore cannot determine the direction of these associations.

The rest of the hypotheses were not supported - there were no statistically significant relationships between using acceptance, planning, religion and instrumental support and fewer symptoms of anxiety and depression. Horwitz et al. (2011) also did not find a significant inverse association between planning, use of instrumental support and depression. However, the findings of the present study contradict those of previous studies that found acceptance, planning, religion, and instrumental support to predict fewer symptoms of anxiety and depression (Carleton et al., 2008; Compas et al., 2017; Dianovinina et al., 2023; Federici & Skaalvik, 2013; Forouhari et al., 2019; Konaszewski et al., 2021; Lopes & Nihei, 2021; Malooly et al., 2017; Terreri & Glenwick, 2011). These contradictory results suggest that more research is required to validate these findings.

Some research has greatly highlighted the importance of appraisals of controllability and coping in predicting symptoms of psychopathology (Compas et al., 1988; Forsythe & Compas, 1987; Osowiecki & Compas, 1999, 1998). For instance, the use of active coping may not have positive outcomes in dealing with parental conflict, which is uncontrollable (Zimmer-Gembeck & Skinner, 2016). In this case, the use of self-distraction to alleviate the experience of stress can be more adaptive. In a similar vein, using self-distraction for situations that can be changed and where active coping may be more beneficial, like school or academic work, may not produce adaptive results (Zimmer-Gembeck & Skinner, 2016). The present study did not directly measure what the adolescents are coping with (source of stress), only that they are coping in the context of socioeconomic disadvantage (which is uncontrollable). Therefore, the associations between specific coping strategies and psychopathology may depend on the goodness of fit between the coping strategies and the particular stressors experienced.

Gender Differences in the Association Between Specific Coping Strategies and Symptoms of Anxiety and Depression

The hypotheses that active coping and denial would predict anxiety symptoms in male adolescents while seeking instrumental and emotional support would predict both depression and anxiety in male adolescents and just anxiety in female adolescents were not supported by the data.

As predicted, however, the use of behavioural disengagement predicted anxiety in female adolescents while self-blame predicted both anxiety and depression. These findings are consistent with those of previous studies (Calvete et al., 2011; Hasan et al., 2022; Kelly et al., 2008; Kleinke et al., 1982). Contrary to the hypothesis, behavioural disengagement and self-blame also predicted anxiety in male adolescents. These findings contradict those of previous studies (Calvete et al., 2011; Hasan et al., 2022; Kelly et al., 2008). However, a study by Péloquin et al. (2017) found that self-blame in adult men coping with fertility problems predicted anxiety. Although female adolescents in the present study used behavioural disengagement to a greater extent than male adolescents, this coping strategy predicted some form of psychopathology for both male and female adolescents. This is an indication that the use of behavioural disengagement may be dysfunctional or maladaptive regardless of gender.

The hypothesis that venting would predict symptoms of depression in female adolescents was also supported. This finding is supported by previous research (Malooly et al., 2017). In comparison to boys, girls are taught to express their emotions and are more inclined to communicate to others about their feelings (Frydenberg, 1997). While doing so is perfectly acceptable, excessive venting should be avoided (Visker et al., 2016) because it prevents people from active coping efforts, which leads to poorer adjustment (Carver et al., 1989). Emotional expression is beneficial; however, it should be distinguished from merely venting (Ironson & Kremer, 2011). Emotional expression simply involves the communication of one's emotions (Skinner, 2013) while venting involves the expression of emotions accompanied by a focus on these emotions (Carver et al., 1989; Trần et al., 2023). In most cases, those who focus on and vent their emotions tend to also engage in rumination (Cann et al., 2011) which in turn is a risk factor for anxiety and depression (Michl et al., 2013). A study by Trần et al. (2023) among university students revealed that venting was associated with fewer symptoms of anxiety and depression when students perceived low emotional social support, while it was harmful in the presence of very high perceived support. Trần et al. (2023) argued that individuals who vent persistently may experience unwanted unfavourable reactions from those they vent to which could damage interpersonal relationships, worsening emotional distress (Trần et al., 2023). Because there were no gender differences in the use of venting among male and female adolescents in the present study, it could be that venting predicted depression in female adolescents and not in male adolescents because, in general, women tend to report more perceived social support of different types, including emotional support (Kendler et al., 2005; Quynh, 2021; McLean et al., 2022; Rani, 2016; Rueger et al., 2008; Rueger et al., 2010; Slavin & Rainer, 1990; Tam & Lim, 2009).

The present study was not without limitations. First, this study was cross-sectional and correlational and therefore cannot determine the direction of the associations between certain coping strategies and depression and anxiety. According to some research, there is a bidirectional relationship between coping and psychological distress: while using ineffective coping mechanisms may worsen psychological distress, psychopathology can also impair effective coping behaviour (Compas et al., 2017; de Jonge-Heesen et al., 2020; Zimmer-Gembeck & Skinner, 2016). This relationship has been demonstrated by both longitudinal (de Jonge-Heesen et al., 2020; Holahan et al., 2005; Richardson et al., 2021; Zimmer-Gembeck & Skinner, 2016) and cross-sectional studies (Orzechowska et al., 2013; Türk et al., 2021) on different samples with depression and/or anxiety, including adolescents. According to these studies, depressed or anxious people use fewer adaptive coping strategies such as problem-solving and more avoidant and maladaptive coping strategies (e.g., denial, and behavioural disengagement, avoidance, social isolation) to deal with stressful events. The capacity to employ effective coping strategies may be compromised given the nature of the symptoms linked to anxiety, depression, or other psychopathologies (Zimmer-Gembeck & Skinner, 2016). Depressed people, for instance, may find it challenging to appraise stressful situations as under their control due to symptoms like hopelessness, diminished cognitive function, and diminished self-efficacy (Richardson et al., 2021; Orzechowska et al., 2013). The maladaptive cognitive schemas present in those who suffer from depression may lead to negative appraisals of their capacity to cope with stressful situations, which increases the likelihood that they will perceive events as harmful or threatening (Orzechowska et al., 2013). It is therefore important not to overlook the possible impact of emotional distress on adolescents' coping. Although longitudinal designs provide evidence that coping is associated with later psychopathology, some of these associations are weaker than those found in cross-sectional research (Compas et al., 2017; de Jonge-Heesen et al., 2020). However, this study provides a good foundation for future longitudinal research to establish the direction of these associations in South African adolescents.

Second, the Etwatwa region has a total of nine secondary schools falling under quintiles 1 to 3. Initially, three schools were randomly selected from the 9 schools, one each from the 3 different quintiles. However, the schools that agreed to take part in the study were from quintiles 2 and 3. Attempts to include a quintile 1 school were futile. Thus, the poorest adolescents were likely to have been underrepresented in the present study. Nevertheless, this does not change the fact that the Etwatwa region, independent of the area, experiences the same social and economic challenges. Third, given the context of the study, the findings of this study may only be generalisable to adolescents living in communities faced with socioeconomic disadvantage. Fourth, male adolescents were underrepresented in this study so the regression analysis for male adolescents was underpowered, increasing the risk of type II errors. Testing the moderating effects of gender in the present study would have provided a much stronger test of hypothesis 4. However, the study had insufficient power for such analysis due to the relatively small number of male participants. Detecting significant interactions requires a sample size 16 times larger than that required to estimate a main effect (Gelman et al., 2020). Additionally, adding interaction terms to the models resulted in severe multicollinearity problems (with some VIF values as high as 83) despite the centring of the predictors to reduce these problems.

Fifth, according to Lazarus and Folkman (1984), the way adolescents cope also depends on the resources that influence coping, which in turn mediates the relationship between stress and psychopathology. The current study did not account for these resources. Therefore, future studies could further explore coping strategies together with resources that can be used for coping such as problem-solving skills and positive beliefs to obtain a more in-depth understanding of the coping processes of South African adolescents. Lastly, this study did not assess appraisals because it did not directly measure a specific stressor to appraise. Cognitive appraisals are important in determining coping responses as well as understanding gender differences in coping (Frydenberg, 1997; Kerig, 1998).

Future studies could also consider (a) testing the goodness of fit between the perceived controllability of different stressors and coping strategies and their association with psychopathology; (b) directly measuring the source of stress even in the context of socioeconomic adversity; and (c) measuring coping flexibility, for example, using questionnaires that allow individuals to rate the same set of coping strategies across different stressful events. Other questions on which a consensus has not yet been reached are (a) whether there are gender differences in the use of active coping, acceptance, emotional and instrumental support, religion, planning, denial, self-blame, venting, humour, and substance use; (b) whether there is an association between using acceptance, planning, religion and instrumental support and fewer symptoms of anxiety and depression; (c) whether denial and venting are associated with more symptoms of depression and anxiety respectively; (d) whether there are gender differences in the associations between active coping, emotional support, and denial and anxiety symptoms as well as in the association between seeking emotional support and depression.

Despite its limitations, this study provides a valuable starting point for understanding the associations between specific coping strategies and symptoms of anxiety and depression in the South African context and can inform future studies in this area of study. This study provided valuable insights by investigating coping strategies independently instead of merely investigating broad categories of coping. It demonstrates and advances our understanding of the associations between some specific coping strategies and psychopathology in the context of socioeconomic disadvantage. The study also provides data on venting, denial, and humour – strategies that have been underrepresented in previous research. This data can be useful for future research. Furthermore, the study provides data on the prevalence rates of clinically significant symptoms of anxiety and depression, adding to the available prevalence rates in South Africa for a better understanding of these two mental disorders.

The findings of this study are also important because they provide specific information on coping strategies that can be targeted in the planning and delivery of psychoeducational interventions to help adolescents cope with stress while maintaining emotional well-being. Interventions aimed at reducing dependency on, or encouraging moderation in, the use of self-blame, behavioural disengagement, venting, substances, and denial could be helpful for adolescents. Such interventions could give careful consideration to female adolescents (without neglecting male adolescents) as girls are more vulnerable to mental health problems than boys. Schools remain potential sites for cost-effective interventions to improve emotional well-being and develop positive coping strategies (Barry et al., 2013). A systematic review of mental health promotion programmes in low- and middle-income countries found compelling evidence of school-based interventions significantly reducing depression and anxiety in young people and increasing their coping skills (Barry et al., 2013). One example of a universal school-based intervention is the Resourceful Adolescent Program – Adolescent version (RAP-A), which showed improvements in adaptive coping skills for Mauritian adolescents (Rivet-Duval et al., 2010). The adolescents in the program showed improvements in adaptive coping skills. The Building a Strong Identity and Coping (BaSICS) intervention specifically designed for US adolescents coping with poverty-related stress has also been shown to reduce adolescents' dependency on avoidant and disengagement coping (Wadsworth et al., 2020). In South Africa, a peer-based mental health support program for adolescents orphaned by AIDS showed an improvement in problem-solving skills when coping with HIV and AIDS issues and adapting to losing a parent (Thupayagale-Tshweneagae & Mokomane, 2014).

The RAP-A and the BaSICS interventions have not yet been implemented and evaluated in the South African context. Therefore, their utility is uncertain, considering that children in South Africa are exposed to a combination of contextual risk factors such as poverty, violence, crime, unemployment, and the high prevalence of HIV which make them more susceptible to stressors and mental health problems (Van Rooyen et al., 2014). These interventions would need significant adaptation to be contextually relevant to the realities of the South African communities where they will be implemented. Subsequent pilot testing and evaluation are necessary to assess their feasibility and acceptability before broader implementation.

The high prevalence of clinically significant levels of anxiety and depression among Etwatwa adolescents emphasises the need to strengthen mental health care for children and adolescents in South Africa. There is evidence in the literature of school-based interventions that have yielded benefits in reducing psychopathology in children and adolescents from LMICs (Adomeh, 2006; Bonhauser et al., 2005; Kumakech et al., 2009; Mabrouk et al., 2022; McMullen & McMullen, 2018; Osborn et al., 2020a; Osborn et al., 2020b; Rivet-Duval et al., 2010). In addition to improving psychological well-being, systematic reviews found that school-based interventions significantly improved outcomes such as school enrollment, attendance, discipline (Mabrouk et al., 2022) and school performance (Barry et al., 2013). With symptoms of anxiety and depression negatively impacting academic functioning and school achievement in adolescents, Etwatwa adolescents could benefit from such school-based intervention models to help them thrive and flourish.

Two interventions have recently undergone feasibility trials in South Africa. The first is a community-based intervention called "ASPIRE": a four-session counselling program adapted for adolescents at risk for depression recruited from high-unemployment communities (Sorsdahl et al., 2021). ASPIRE is administered by trained health counsellors and was found to be generally feasible and acceptable to adolescents. However, researchers suggest making modifications to the trial design and intervention delivery to improve the validity of a future definitive trial (Sorsdahl et al., 2023). The second intervention is the Health Action in Schools for a Thriving Adolescent Generation (HASHTAG) program implemented in Khayelitsha (Laurenzi et al., 2024). HASHTAG is a school-based program for mental health promotion and prevention among adolescents in South Africa. It is designed around core evidence-based components to increase translatability across LMICs while enabling country-specific tailoring to enhance feasibility. The implementation of this interview is cost-effective (very important in LMICs) as it uses a group-based delivery approach (i.e., classrooms) and non-specialist implementers (Laurenzi et al., 2024). Future research can examine whether HASHTAG can promote mental health among adolescents in South Africa.

Teachers play a crucial role in school-based programs promoting psychological well-being and improving adolescents' coping skills (Barry et al., 2013). However, a South African study found that, even after additional psychology courses, teachers still lack confidence in handling mental health problems in adolescents, demonstrating the need for improved training of teachers (Mfidi, 2017). This can be done by providing support for teachers through mental health workshops and teachers' development programmes (Mfidi, 2017).

The central question in the present study was whether the specific coping strategies utilized by adolescents to overcome problems and difficulties are related to symptoms of anxiety and depression. The findings of this study confirm previous findings and contribute additional evidence that behavioural disengagement, substance use, self-blame, venting, and denial are positively associated with some form of psychopathology. The level of use, timing and whether the strategies are used on a regular or long-term basis may all play a role in predicting emotional distress (Angelica et al., 2022; Carver et al., 1989; Lazarus & Folkman, 1984; Wadsworth et al., 2018). For instance, venting and denial may be adaptive early in a stressful transaction such as after losing a loved one, but continuing to use them as long-term coping strategies or using them excessively may be problematic (Carver et al., 1989; Graves et al., 2021; Lazarus & Folkman, 1984).

Gender was a major focus of this study and the data revealed that female adolescents reported more symptoms of anxiety and depression than male adolescents. Research attributes this discrepancy to factors such as early pubertal timing, fluctuations of gonadal hormones (oestrogen and progesterone), and the higher likelihood of experiencing sexual violence, which all contribute to making women more vulnerable to psychopathology than men. The data also revealed that female adolescents used behavioural disengagement more than male adolescents. No significant differences were found in the use of the other specific coping strategies.

When the data file was split by gender, the study demonstrated that the use of behavioural disengagement and self-blame was problematic for adolescents regardless of gender. Venting predicted more symptoms of depression in female adolescents but not in male adolescents. This may be because venting in the presence of high perceived emotional support is linked to more symptoms of anxiety and depression, and women tend to report higher perceived emotional support than men.

This study has gone some way towards enhancing our understanding of the coping strategies that are associated with symptoms of anxiety and depression. Overall, the findings of this study suggest that coping strategies may play a significant role in the development and prevention of mental health problems in children and adolescents and highlight the need for further research.

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Appendix A

Demographic and Socio-Economic Questionnaire

How old are you? _______years

What is your gender? (Please click on the box (if online) or cross with an ***X*** the answer that applies to you)

- ☐ Male
- ☐ Female
- ☐ Non-binary
- ☐ I prefer not to say.

What is the highest level of schooling completed by your mother? (Please click on the box (if online) or cross with an ***X*** the answer that applies)

- ☐ No formal education (never went to school)
- ☐ Primary school
- ☐ Secondary school
- ☐ College or university
- ☐ Don't know/don't have a mother.

What is the highest level of schooling completed by your father? (Please click on the box (if online) or cross with an ***X*** the answer that applies)

- ☐ No formal education (never went to school)
- ☐ Primary school
- ☐ Secondary school
- ☐ College or university
- ☐ Don't know/don't have a father.

Does your house/home have the following at the present time? (Please click on the box (if online) or cross with an ***X*** **all** the answers that apply)

- ☐ Electricity
- ☐ Car
- ☐ Fridge
- ☐ Microwave
- ☐ Washing machine
- ☐ Television
- ☐ DSTV
- ☐ Computer/Laptop
- ☐ Internet access
- ☐ Landline telephone
- ☐ Electric/Gas stove
- ☐ Running hot and cold water inside the house
- ☐ Flushing toilet inside the house

Does your family/house ever run out of money to buy food? (Please click on the box (if online) or cross with an ***X*** the answer that applies)

- ☐ No
- ☐ Yes

Do you ever have to eat less than you would like to because there is not enough money for food? (Please click on the box (if online) or cross with an ***X*** the answer that applies)

- ☐ No
- ☐ Yes

Do you ever have to skip meals because there is not enough money for food? (Please click on the box (if online) or cross with an ***X*** the answer that applies)

- ☐ No
- ☐ Yes

Appendix B

Brief COPE

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel when you experience stressful events. Different events bring out somewhat different responses but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items by choosing the response option that you believe applies to you. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU - not what you think "most people" would say or do. Indicate what YOU usually do when YOU experience a stressful event.

To each of the following questions, please cross with an "X" in the one box that best applies to you.

	I usually don't do this at all [1]	**I usually do this a little bit [2]**	**I usually do this a medium amount [3]**	**I usually do this a lot [4]**
1. I turn to work or other activities to take my mind off things				
2. I concentrate my efforts on doing something about the situation I'm in				
3. I say to myself "this isn't real"				

	I usually don't do this at all [1]	I usually do this a little bit [2]	I usually do this a medium amount [3]	I usually do this a lot [4]
4. I use alcohol or other drugs to make myself feel better				
5. I get emotional support from others				
6. I give up trying to deal with it				
7. I take action to try to make the situation better				
8. I refuse to believe that it has happened				
9. I say things to let my unpleasant feelings escape				
10. I get help and advice from other people				
11. I use alcohol or other drugs to help me get through it				
12. I try to see it in a different light, to make it seem more positive				
13. I criticize myself				
14. I try to come up with a strategy about what to do				
15. I get comfort and understanding from someone				

	I usually don't do this at all [1]	I usually do this a little bit [2]	I usually do this a medium amount [3]	I usually do this a lot [4]
16. I give up the attempt to cope				
17. I look for something good in what is happening				
18. I make jokes about it				
19. I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping				
20. I accept the reality of the fact that it has happened				
21. I express my negative feelings				
22. I try to find comfort in my religion or spiritual beliefs				
23. I try to get advice or help from other people about what to do				
24. I learn to live with it				
25. I think hard about what steps to take				
26. I blame myself for things that happened				
27. I pray or meditate				
28. I make fun of the situation				

Appendix C

GAD-7 Scale

Over the **last 2 weeks**, how often have you been bothered by the following problems? (Please click on the box (if online) or cross with an ***X*** the options that apply to you)

	Not at all [0]	**Several days [1]**	**More than half the days [2]**	**Nearly every day [3]**
1. Feeling nervous, anxious or on edge	☐	☐	☐	☐
2. Not being able to stop or control worrying	☐	☐	☐	☐
3. Worrying too much about different things	☐	☐	☐	☐
4. Having trouble relaxing	☐	☐	☐	☐
5. Being so restless that it is hard to sit still	☐	☐	☐	☐
6. Becoming easily annoyed or irritable	☐	☐	☐	☐
7. Feeling afraid as if something awful might happen	☐	☐	☐	☐

Appendix D

CES-D-10 Scale

Please indicate how often you have felt this way **<u>during the past week</u>** (Please click on the box (if online) or cross with an ***X*** the options that apply to you)

	Rarely or none of the past time (less than 1 day) [0]	**Some or a little of the time (1-2 days) [1]**	**Occasionally or a moderate amount of time (3-4 days) [2]**	**Most or all of the time (5-7 days) [3]**
1. I was bothered by things that usually don't bother me	☐	☐	☐	☐
2. I had trouble keeping my mind on what I was doing	☐	☐	☐	☐
3. I felt depressed	☐	☐	☐	☐
4. I felt that everything I did was an effort	☐	☐	☐	☐
5. I felt hopeful about the future	☐	☐	☐	☐
6. I felt fearful	☐	☐	☐	☐
7. My sleep was restless	☐	☐	☐	☐
8. I was happy	☐	☐	☐	☐

9. I felt lonely	☐	☐	☐	☐
10. I could not "get going"	☐	☐	☐	☐

Appendix E

Gauteng Department of Education Approval Letter

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	**03 November 2022**
Validity of Research Approval:	**08 February 2023– 30 September 2023** **2022/503**
Name of Researcher:	**Hlatshwayo BS**
Address of Researcher:	**20539 Madiba Street**
	Emaphupheni
	Daveyton
Telephone Number:	**079 3148 212**
Email address:	**busisiwewisdom@gmail.com**
Research Topic:	**Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.**
Type of qualification	**Masters**
Number and type of schools:	**3 Secondary Schools**
District/s/HO	**Gauteng East**

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.

03/11/2022

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

1. *The letter would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.*
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 the relaxation of COVID 19 regulations researchers can collect data online, telephonically, physically access schools, 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.***
4. ***The Researchers are advised to wear a mask at all times, Social distance at all times, Provide a vaccination certificate or negative COVID-19 test, not older than 72 hours, and Sanitise frequently.***
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 has been granted permission from the Gauteng Department of Education to conduct the research study.*
6. *A letter/document that outlines 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 to obtain the goodwill and cooperation of all the GDE officials, principals, and chairpersons of the SGBs, teachers, and learners involved. Persons who offer their cooperation 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 program 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 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 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. Gumani Mukatuni
Acting CES: Education Research and Knowledge Management

DATE: ....03/11/2022........................

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

Appendix F

Principal Permission Letter

Dear Principal,

RE: Permission to send research study invitation to your school

My name is Busisiwe Hlatshwayo (student number: HLTBUS004). I am currently enrolled in the Master of Social Science (Psychology) programme at the University of Cape Town. I am in the process of writing my master's dissertation entitled *Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.* I aim to investigate whether the coping strategies used by adolescents from Etwatwa put them at risk of – or protect them from – anxiety and depression. I decided to undertake this study after seeing that there is a need for additional research in this field that considers adolescents from underprivileged communities, such as Etwatwa, who face multiple challenges. The findings of this research may be used to inform future mental health and educational interventions aimed at empowering adolescents from disadvantaged backgrounds such as Etwatwa by driving adaptive coping skills to help prevent adolescent mental disorders.

I am seeking permission to send a study invitation to all the Grade 10 and 11 learners to anonymously complete an online or face-to-face survey (copies attached to the proposal). Should the data collection be online, the learners will receive the link to the survey via WhatsApp or SMS, which they may complete at any time after school or at home. The survey will take approximately 25-30 minutes to complete. However, should it be face-to-face, the learners will be required to complete the survey during one class time (at your discretion) under exam conditions and my supervision. I request that we decide on the data collection option that will work best for your school and the learners based on factors such as data constraints and the learner's access to a mobile phone or a laptop with internet access. The names of the learners will not be associated with the data collected and will be kept confidential. Also, the reports of the findings will only provide averaged data and will not include any personal information that can be used to identify individual participants or schools.

If you grant your permission, the learners will receive research information sheets (copies attached to the proposal) as well as parental consent and learner assent forms (copies attached to the proposal) to sign and return to the school. I further request that, with your assistance, a teacher or school administrator be nominated as the primary point of contact between the school and me to assist with the distribution and collection of the forms. No costs will be incurred by either your school or the individual participants.

Your permission for me to send this study invitation will be greatly appreciated. I will call you within 5 days to follow up and answer any questions or concerns you may have. Alternatively, you can contact me by email at Busisiwewisdom@gmail.com or by telephone at 0793148212). You can also contact my research supervisor, Dr Lauren Wild (Lauren.Wild@uct.ac.za, 021 650 4607).

If you agree to allow me to send the study invitation to the Grade 10 and 11 learners at your school, please sign below and email it back to me. Alternatively, I can either deliver this letter for you to sign or I can collect a permission letter on your school's letterhead, signed and dated, and specifically referring to me by name and student number (Busisiwe Hlatshwayo, HLTBUS004) and to the title of my study (*Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton)*.

I look forward to your response as soon as it is convenient.

Yours sincerely,

Busisiwe Hlatshwayo

Approved by:

____ (*name and position*)

Signed at _______________________________on this________of_______________20_____

Appendix G

Parent/Guardian Research Information Sheet

Study title: Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.

My name is Busisiwe Hlatshwayo (student number: HLTBUS004). I am currently enrolled in the Master of Social Science (Psychology) programme at the University of Cape Town. I am researching coping strategies and mental health. Research is a process used to seek new knowledge. In this study, I want to learn about the strategies that your child uses when faced with difficulties or stressful situations and whether these strategies are related to their mental health. I am asking for your permission to invite your child, who is between 15 and 19 years of age and in Grade 10 or 11, to participate in this study.

What is involved in the study? If your child chooses to participate in the study, they will be asked to complete a 25–30-minute survey during school hours. The survey will ask your child about the strategies that they use when facing problems and about symptoms of anxiety and depression.

Risks of being involved in the study: Some questions ask about personal matters and may make your child feel uncomfortable. If at any point during the study, your child wishes to withdraw from the study, they will be allowed to do so without any negative consequences. Your child can also leave out any questions they do not want to answer. If your child wishes to talk to someone about the feelings they experience during this study, they may contact the South African Depression and Anxiety Group (SADAG) helpline which provides free telephonic counselling and support at any time on 0800 456 789. They can also reach out to SADAG on WhatsApp (076 882 2775) any time from Monday to Friday between 9 am and 4 pm.

Benefits of being involved in the study: There are no direct benefits to your child for participating in this study. But the findings of the study will help us to understand the coping strategies used by adolescents and whether these are connected to their mental health. We hope that in the future, adolescents can be taught healthy coping strategies that they can use to deal with problems and help prevent mental disorders.

Participation is voluntary: Your child's participation in this study is not compulsory. They can choose if they want to take part or not, and they can withdraw from the study at any time without any negative consequences. If your child decides not to participate in this research, their relationship with their teachers will not be affected in any way.

Compensation: Your child will not be paid for participating in this study, but they will receive a mini chocolate box of Nestlé Smarties as a thank you for their time. Your child does not have to pay any money to participate in the study.

Confidentiality and anonymity: Any information collected will remain confidential (private) and only I will have access to it. Also, the documents will not be left unattended during the research. Your child's name will only be asked for on the consent and assent forms, and these forms will be separated from the survey which means that the survey will not be linked to your child's name, and I will not know which survey your child completed. The SMS/WhatsApp number that your child will provide will only be used to send the survey link and will not be linked to their completed survey. The completed survey will be entered into a laptop that is protected with a password and later transferred into NetStorage which is a safe online UCT storage. My private student ID and password are needed as permission to enter this storage. The final reports of the results will only show average results from all the participants and will not contain any personal information that can be connected to your child or the school they attend.

If you have any questions or comments or want more information, please do not hesitate to contact me or my research supervisor.

Busisiwe Hlatshwayo (Researcher)

079 314 8212

Hltbus004@myuct.ac.za

Dr Lauren Wild (Research supervisor)

021 650 4607

Lauren.Wild@uct.ac.za

If you have any questions about the rights of your child as a research participant or complaints about the research process, then please contact the Psychology Department Research Ethics Committee via Ms Rosalind Adams by email at Rosalind.Adams@uct.ac.za or call 021 650 3417.

Appendix H

Parent/Guardian Consent Form

Title of Research: Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.

Researcher: Busisiwe Hlatshwayo

Supervisor: Dr Lauren Wild

- I confirm that I have read and understood the information about the study as provided by the researcher in the research information sheet.
- I understand that my child's participation is voluntary and that they can withdraw from the study at any time without negative consequences.
- I understand that my child is invited to complete a 25–30-minute survey during school hours.
- I understand that all information my child provides for this study will be treated confidentially (will be kept private) and entered into a laptop that is protected with a password and later transferred into NetStorage, a safe online UCT storage protected with a password that only the researcher has.
- I understand that the final reports of the results will only show average results from all the participants and will not contain any personal information that can be connected to me or the school my child attends.
- I understand that my child will not benefit directly from participating in this research.
- I confirm that I have had the opportunity to ask the researcher questions about the study.

I have read and understood the above information.

I _______________________________ (*name of parent/guardian*) agree that my

child___________________________________ (*name of your child*) can be invited to

participate in this study.

___________________________   __________________

Parent/Legal Guardian Signature   Date

Signature of researcher

______________________________   Date ________________

Appendix I

Participant Research Information Sheet

Study title: Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.

My name is Busisiwe Hlatshwayo (student number: HLTBUS004). I am currently enrolled in the Master of Social Science (Psychology) programme at the University of Cape Town. I am researching coping strategies and mental health. Research is a process used to seek new knowledge. In this study, I want to learn about the strategies that you use when faced with difficulties or stressful situations and whether these strategies are linked to your mental health. I invite you, a Grade 10 or 11 learner between 15 and 19 years of age, to take part in this study.

What is involved in the study? If you choose to participate in the study, you will be asked to complete a 25–30-minute survey during school hours. The survey will ask you about the strategies that you use when facing problems and about symptoms of anxiety and depression.

Risks of being involved in the study: Some questions ask about personal matters and may make you feel uncomfortable. If at any point during the study, you wish to withdraw from the study, you will be allowed to do so without any negative consequences. You can leave out any questions you do not want to answer. If you wish to talk to someone about the feelings you experience during this study, you may contact the South African Depression and Anxiety Group (SADAG) helpline which provides free telephonic counselling and support at any time on 0800 456 789. You can also reach out to SADAG on WhatsApp (076 882 2775) any time from Monday to Friday between 9 am and 4 pm.

Benefits of being involved in the study: There are no direct benefits to you for participating in this study. But the findings of the study will help us to understand the coping strategies used by adolescents and whether these affect their mental health. We hope that in the future, adolescents can be taught healthy coping skills that they can use to deal with problems and help prevent mental disorders.

Participation is voluntary: Your participation in this study is not compulsory. You can choose if you want to take part or not, and you can withdraw from the study at any time without any negative consequences. If you decide not to participate in this research, nobody will be angry with you. Your relationship with your teachers and the school will not be affected in any way.

Compensation: You will not be paid for participating in this study, but you will receive a mini chocolate box of Nestlé Smarties as a thank you for your time. You do not have to pay any money to participate in the study.

Confidentiality and anonymity: Any information collected will remain confidential (private) and only I will have access to it. Also, the documents will not be left unattended during the research. Your name will only be asked for on the consent and assent forms, and these forms will be separated from the survey which means that the survey will not be linked to your name, and I will not know which survey you completed. The completed survey will be entered into a laptop that is protected with a password and later transferred into NetStorage which is a safe online UCT storage. My private student ID and password are needed as permission to enter this storage. The final reports of the results will only show average results from all the participants and will not contain any personal information that can be connected to you or the school you attend.

If you have any questions or comments or want more information, please do not hesitate to contact me or my research supervisor.

Busisiwe Hlatshwayo (Researcher)

079 314 8212

Hltbus004@myuct.ac.za

Dr Lauren Wild (Research supervisor)

021 650 4607

Lauren.Wild@uct.ac.za

If you have any questions about your rights as a research participant or complaints about the research process, then please contact the Psychology Department Research Ethics Committee via Ms Rosalind Adams by email at Rosalind.Adams@uct.ac.za or call 021 650 3417.

Appendix J

Participant Assent Form

Title of Research: Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.

Researcher: Busisiwe Hlatshwayo

Supervisor: Dr Lauren Wild

- I confirm that I have read and understood the information about the study as provided by the researcher in the research information sheet.
- I understand that my participation is voluntary and that I can withdraw from the study at any time without negative consequences.
- I understand that I am invited to complete a 25–30-minute survey during school hours.
- I understand that all information I provide for this study will be treated confidentially (will be kept private) and entered into a laptop protected with a password and later transferred into NetStorage, a safe online UCT storage protected by a password that only the researcher has.
- I understand that the final reports of the results will only show average results from all the participants and will not contain any personal information that can be connected to me or the school I attend.
- I understand that I will not benefit directly from participating in this research.
- I confirm that I have had the opportunity to ask the researcher questions about the study.

I have read and understood the above information.

I ______________________________ (*your name*) voluntarily agree to participate in this study.

What is your SMS/WhatsApp number? ____________________________

______________________________ ______________________________

Signature of participant Date:

Signature of researcher

______________________________ Date________________________

Appendix K

Ethics Approval Letter

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3417
Fax No. (021) 650 4104

20 October 2022

Busisiwe Sophie Hlatshwayo
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Busisiwe

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your study, *Coping and psychological well-being: Investigating the relations between specific coping strategies, anxiety, and depression among adolescents from Etwatwa, Daveyton.* The reference number is PSY2022-044.

I wish you all the best for your study.

Yours sincerely

Catherine Ward
Professor
Acting Chair: Ethics Review Committee

Appendix L

VIF Values for Hierarchical Regressions 1 and 2

Model		VIF
1	(Constant)	
	Age	1.111
	Asset index	1.104
	Food problem	1.080
	Gender	1.048
	Mother's education	1.308
	Father's education	1.278
2	(Constant)	
	Age	1.222
	Asset index	1.153
	Food problem	1.154
	Gender	1.120
	Mother's education	1.327
	Father's education	1.370
	Self-distraction	1.252
	Active coping	1.445
	Denial	1.232
	Substance use	1.212
	Use of emotional support	1.839

Model	VIF
Use of instrumental support	1.807
Behavioural disengagement	1.399
Venting	1.215
Positive reframing	1.540
Planning	1.579
Humour	1.111
Acceptance	1.392
Religion	1.293
Self-blame	1.512

Appendix M

VIF Values for Hierarchical Regressions by Gender

Gender	Model		VIF
Male	1	(Constant)	
		Age	1.088
		Mother’s education	1.459
		Father’s education	1.361
		Asset index	1.192
		Food problem	1.161
	2	(Constant)	
		Age	1.375
		Mother’s education	1.776
		Father’s education	1.761
		Asset index	1.342
		Food problem	1.283
		Self - distraction	1.525
		Active coping	1.521
		Denial	1.598
		Substance use	1.868
		Use of emotional support	1.787
		Use of instrumental support	2.194
		Behavioural disengagement	1.675
		Venting	1.357
		Positive reframing	1.608

		Planning	1.926
		Humour	1.332
		Acceptance	1.725
		Religion	1.839
		Self-blame	1.650
Female	1	(Constant)	
		Age	1.068
		Mother's education	1.262
		Father's education	1.235
		Asset index	1.081
		Food problem	1.058
	2	(Constant)	
		Age	1.207
		Mother's education	1.287
		Father's education	1.372
		Asset index	1.159
		Food problem	1.178
		Self-distraction	1.255
		Active coping	1.515
		Denial	1.218
		Substance use	1.212
		Use of emotional support	1.857
		Use of instrumental support	1.740
		Behavioural disengagement	1.461
		Venting	1.267

Positive reframing	1.627
Planning	1.564
Humour	1.113
Acceptance	1.436
Religion	1.257
Self-blame	1.639