PSYCHOSOCIAL FACTORS AS PREDICTORS OF SUICIDAL IDEATION AMONGST ADOLESCENTS IN THE FREE STATE PROVINCE: A CROSS-CULTURAL STUDY

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DECLARATION

I, Edwin Devon du Plessis, declare that the thesis submitted by me for the Philosophiae Doctor (Psychology) degree at the University of the Free State is my own independent work and has not previously been submitted by me at another university/faculty. In addition, I cede copyright of this thesis in favour of the University of the Free State.

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In loving dedication to my parents, Abraham and Paula whose sacrifice made this journey possible

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Abstract

The recently published National Youth Risk Behaviour Surveys highlighted an alarming increase in adolescent suicidal behaviour in South Africa. The death of a young person has a profound psychological and social effect on both the family and broader community. Moreover, the high incidence of adolescent suicides and suicide-related hospitalisations places a heavy burden on the service delivery of the South African health sector. Understanding the social-cultural context in which suicidal behaviour occurs is essential for public health efforts to reduce this behaviour amongst adolescents. The aim of this study was to investigate the role of underlying psychosocial factors in adolescent suicidal behaviour, as well as to explore ethnic differences in the stressors and resources as reported by a sample of black, white and coloured adolescents in the Free State province.

Both quantitative and qualitative methods were used to collect and analyse data. Quantitatively, a cross-sectional, correlational, and criterion-group design was used, while thematic content analysis was used for the analysis of the qualitative data. A stratified, multi-ethnic sample of 1033 Grade 11 and 12 learners was included from eighteen schools in the Free State province. The Suicidal Ideation Questionnaire for Adolescents, the Social Stressors and Resources Inventory - Youth Form, the COPE Questionnaire, the South African Acculturation Scale, and a biographical questionnaire were used to gather information from the participants. Various statistical analyses were conducted such as a multivariance of analysis to compare the ethnic groups with regard to significant differences in suicidal ideation, stressors, resources, acculturation and coping strategies. A product- term analysis was also performed to investigate the role of coping strategies in the relationship between stressors and suicidal ideation, while hierarchical regression analyses were conducted to determine the unique contributions of stressors, resources, acculturation- and coping strategies to suicidal ideation. The qualitative data was gathered through the use of two open-ended statements that required participants to identify stressors and resources in their lives. Thematic content analysis was used to analyse these responses.

The results from the quantitative study indicated that the level of suicidal ideation reported by the current sample was substantially higher than for a comparative American sample. Ethnic and gender differences were also found between groups, with coloured females reporting the highest levels of suicidal ideation. Parent-child relationship, peer relationships and financial constraints appear to be common stressors among coloured adolescents, while black adolescents reported financial constraints and romantic relationships as major sources of stress. For white adolescents, their parent-child relationship seemed to act as a major stressor. Coping strategies did not mediate the relationship between perceived life stressors and suicidal ideation amongst any of the three ethnic groups, on either the 1% or 5% level of statistical significance. Coping strategies, did, however, act as moderators in this relationship. Furthermore, coping strategies did not explain a statistically significant proportion of the variance in the suicidal ideation of either black or coloured adolescents in the current sample. The findings, however, suggested that active coping and alcohol and drug disengagement contributed significantly to the variance in suicidal ideation amongst the white adolescents. None of the acculturation scales contributed significantly to the variance in suicidal ideation for any of the three ethnic groups.

The main findings of the qualitative data suggested ethnic differences in the reported experiences of stressors and resources. In terms of stressors, participants from all three ethnic groups identified negative self-perception, poor behaviour regulation and financial difficulties as major sources of stress in their lives. Black and coloured participants identified alcohol abuse in their communities and financial problems as major stressors and white participants identified the high levels of crime. Black adolescents identified a positive self-esteem as most important resource, while white participants identified the relationship with their families, as well as material resources as main resources. Coloured adolescents, on the other hand, showed stronger identification with religion as prominent resource.

It is recommended that future research focuses on the inclusion of additional variables such as socio-economic status, as well as the use of longitudinal studies to explore the dynamics of adolescent suicidal behaviour. The implementation of programmes aimed at enhancing effective coping strategies and social skills of adolescents are also recommended.

Keywords: suicidal ideation; adolescence; stressors; resources; coping strategies; acculturation strategies; social ecological model; mediator; moderator; positive psychology; Free State province.

Opsomming

Die onlangs gepubliseerde Nasionale Jeug Risikogedragopnames beklemtoon die dramatiese toename in adolessente selfmoordgedrag in Suid Afrika. Die dood van ‘n jong persoon het ‘n diepgaande sielkundige en sosiale effek op beide die gesin en breër gemeenskap. Die hoë voorkoms van adolessente selfmoord en selfmoordverwante hospitalisasie plaas ‘n bykomende las op dienslewering binne die Suid Afrikaanse gesondheidsorgsisteem. Die verkryging van ‘n beter begrip vir die sosiokulturele konteks waarin selfmoordgedrag plaasvind, lewer ‘n belangrike bydrae tot pogings van die gesondheidsorgsisteem om selfmoordgedrag onder adolessente te verminder. Die oorhoofse doelstelling van die studie was om die rol van psigososiale faktore in die voorkoms van adolessente selfmoord te ondersoek. Voorts poog die studie ook om etniese en geslagsverskille in die rapportering van stressore en hulpbronne in ‘n steekproef van wit, swart en bruin adolessente in die Vrystaat provinsie te identifiseer.

Beide kwantitatiewe en kwalitatiewe metodes is gebruik in die insameling en analisering van data. ‘n Dwarssnit, korrelasionele en kriterium groepontwerp was gebruik in die kwantitatiewe gedeelte van die studie, terwyl tematiese inhoudsanalise gebruik is vir die analise van die kwalitatiewe data. ‘n Gestratifiseerde, multi-etniese steekproef van 1033 graad 11 en 12 leerders van 18 skole in die Vrystaat is ingesluit in die studie. Die Selfmoordideasie vraelys vir adolessente, die Sosiale Stressore en Hulpbronne vraelys – jeugweergawe, die COPE vraelys, die Suid Afrikaanse Akkulturasievraelys en ‘n biografiese vraelys was gebruik om die inligting van deelnemers in te samel. Verskeie statistiese metodes, waaronder ‘n meervoudige variansie ontleding, was gebruik om die beduidendheid van verskille tussen die etniese groepe te vergelyk met betrekking tot selfmoordideasie, stressore, hulpbronne, akkulturasie en copingstrategieë. ‘n Produkterm analise is uitgevoer om die rol van copingstrategieë in die verhouding tussen stressore en selfmoordideasie te ondersoek. ‘n Hierargiese regressie ontleding is uitgevoer om die unieke bydraes van stressore, hulpbronne, akkulturasie en copingstrategieë tot selfmoordideasie te ondersoek. Kwalitatiewe data is ingesamel deur gebruik te maak van twee oop einde stellings waarin deelnemers versoek is om die stressore en hulpbronne in hul lewens te identifiseer. Tematiese inhoudsanalise is gebruik om hierdie response te ontleed.

Die resultate van die kwantatiewe studie suggereer dat die vlak van selfmoordideasie, soos gerapporteer deur die huidige steekproef, beduidend hoër is as vir ‘n vergelykende Amerikaanse steekproef. Etniese en geslagsverskille is ook gevind tussen die groepe met bruin vroulike deelnemers wat die hoogste vlak van selfmoordideasie gerapporteer het. Ouer-kind verhoudings, portuurgroepverhoudings en finansiële beperkinge blyk algemene stressore te wees onder bruin adolessente in die huidige steekproef. Swart adolessente, daarteenoor, rapporteer finansiële beperkinge en romantiese verhoudings as hoof bronne van stres, terwyl wit adolessente ouer-kind verhoudings as ‘n algemene stressor rapporteer. In terme van hulpbronne het swart en bruin deelnemers die skoolomgewing as groter hulpbron geidentifiseer, terwyl wit deelnemers meer met vriende geidentifiseer het as primêre hulpbron. Copingstrategieë het nie die verhouding tussen stressore en selfmoordideasie op beide die 1% of 5% vlak van statistiese beduidenheid gemedieer nie. Copingstrategieë het wel as beduidende moderator gefigureer in die verhouding tussen stressore en selfmoordideasie vir al drie etniese groepe. Voorts het copingstrategieë ook nie ‘n statistiese beduidende proporsie van die variansie in die selfmoordideasie van beide die swart en bruin groepe verklaar nie. Aktiewe copingstrategieë en Alkohol- en dwelmmiddelgebruik as disfunksionele strategie het wel ‘n substansiële bydrae gelewer het tot die verklaring in die variansie van selfmoordideasie onder wit adolessente. Geen van die akkulturasieskale het enige beduidende bydrae tot die verklaring in variansie van selfmoordideasie vir enige van die drie etniese groepe gelewer nie.

Die hoofbevindinge van die kwalitatiewe data suggereer verskeie etniese verskille in die rapportering van stressore en hulpbronne. Negatiewe selfpersepsie, gebrekkige sosiale gedragsregulering en finansiële probleme is geidentifiseer as hoof stressore vir al drie etniese groepe. Swart en bruin deelnemers het die misbruik van alkohol in hul gemeenskappe en finansiële probleme as meer stresvol ervaar, terwyl die wit deelnemers die hoë vlak van misdaad as primêre stressor geidentifiseer het. Ten opsigte van hulpbronne het swart adolessente ‘n positiewe selfbeeld, wit adolessente die verhouding met hul gesin en materiële hulpbronne en bruin adolessente godsdiens as primêre hulpbronne geidentifiseer.

Dit word aanbeveel dat toekomstige navorsing fokus op die insluiting van addisionele veranderlikes soos sosio-ekonomiese status sowel as die gebruik van longitudinale studies om die dinamika van adolessente selfmoordgedrag verder na te speur. Die implimentering van programme wat fokus op die ontwikkeling van effektiewe copingstrategieë en sosiale vaardighede onder adolessente word ook aanbeveel.

Sleutelwoorde: selfmoordideasie; adolessensie; stressore; hulpbronne; copingstrategieë; akkulturasiestrategië; sosiaal ekologiese model; moderator; mediator; positiewe sielkunde; Vrystaat provinsie.

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CHAPTER 1

ORIENTATION AND PROBLEM STATEMENT

1. INTRODUCTION

In accordance with the regulations of the University of the Free State, this research report is presented in the form of five articles. Consequently, the articles should be viewed as independent, yet related. This may translate into a perception of overlap and repetition between articles. In the scientific community, however, this situation is not unusual, as several articles based on a single study are usually published independently in different scientific journals. The current chapter serves as an introduction to the five articles to provide the reader with a holistic overview of the study.

2. PROBLEM STATEMENT AND ORIENTATION

Increasingly, it is recognised that promoting the healthy development of adolescents is one of the most important and cost-effective long-term investments a society can make (Call et al., 2002). Most of the health problems of adolescents are preventable and are related to aspects such as substance abuse, accidental or violent injury, and suicidal behaviour (Wild, Flisher, Bhana, & Lombard, 2004). Identifying the personal and environmental factors that might increase or decrease the likelihood of adolescents adopting these behaviours is important for developing effective intervention programmes.

Globally, approximately one million people commit suicide annually, 10 to 20 million attempt suicide, and 50 to 120 million are profoundly affected by the suicide or attempted suicide of a family member or associate (WHO, 2008). The World Health Organization estimates that, based on current trends, approximately 1.53 million people will commit suicide by the year 2020 and 10 - 20 times more people will attempt suicide worldwide, representing an average of one death

by suicide every 20 seconds and one attempt every 1 - 2 seconds (Bertolote & Fleischmann, 2002).

The last two decades have seen a shift in suicide rates, from the elderly towards younger people (Schlebusch, 2005; WHO, 2008). Today, adolescent suicide represents a serious public health problem in many countries, developed and developing alike (Reddy et al., 2010; WHO, 2008). Global estimates suggest that at least 100 000 adolescents commit suicide each year (WHO, 2008). In the United States of America (USA) alone, suicide accounts for at least 12% of all deaths reported for adolescents annually, with an estimated ratio of 50 suicide attempts for every 1 completed suicide reported (National Institute of Mental Health, 2004).

Although several analyses of the prevalence of suicide in South Africa have been published (Burrows, Vaez, Butchart, & Laflamme, 2003; Flisher, 1999; Madu & Matla, 2003; Mhlongo & Peltzer, 1999; National Injury Mortality Surveillance System (NIMSS), 2007), very little information on non-fatal suicidal behaviour amongst adolescents is known. Available data suggest that the rate of suicide for males is about 25.3 per 100 000 and for females, 6.8 per 100 000 (NIMSS, 2007). Statistics compiled from ad hoc studies (Mashego & Madu, 2009; NIMSS, 2007; Reddy et al., 2003; Reddy et al., 2010) on adolescent suicides in South Africa reflect a steady increase in the rate of suicide, including a significant increase of suicidal behaviour amongst the under 14-year age group. Results from the two South African National Youth Risk Behaviour Surveys (Reddy et al., 2003; Reddy et al., 2010), conducted with a large multi-ethnic sample of high school learners, further support these findings. According to these two surveys, 19% of the sample reported suicidal ideation within the six months prior to the survey in 2002, compared to 20.7% in 2008, while 15.8% had a definite plan to commit suicide in 2002 compared to the 16.8% in 2008. Furthermore, the number of participants who reported having attempted suicide on one or more occasions rose from 17% in 2002 to 21.4% in 2008.

Even though previously considered to be a rare occurrence, numerous studies (Beekrum, Valjee, & Collings, 2011; Flisher, 1999; George, 2009; Madu & Matla, 2003; Mashego & Madu, 2009; Meel, 2003; Moosa, Jeenah, & Voster, 2005) now suggest that suicidal behaviour amongst South African black, coloured and Indian adolescents appears to be on the increase. A study by

Mhlongo and Peltzer (1999), conducted under predominantly black adolescents in the Limpopo province of South Africa, indicated that adolescent suicidal behaviour constitutes up to 10% of all suicidal patients referred to the Clinical Psychology sections of the province's hospitals.

Findings from several studies (Mashego & Madu, 2009; Mashego, Peltzer, Williamson, & Setwaba, 2003; Reddy et al., 2003; Reddy et al., 2010) highlight a high prevalence of adolescent suicidal behaviour in the Free State province. For example, findings from the First Youth Risk Behaviour Survey (Reddy et al., 2003), suggest that the Free State has the highest provincial prevalence of adolescent suicidal behaviour, even though it had a smaller population compared to the other participating provinces. Similarly, in a study conducted by Mashego and Madu (2009) in the Central and Eastern Free State, 12% of the 142 learners surveyed reported pervasive suicidal ideation. Currently, five to six adolescent patients (aged between 14 and 19 years) are being admitted to the Pelonomi hospital in Bloemfontein daily, following suicide attempts (N. Mosotho, personal communication, May 15, 2010).

Suicidal behaviour not only jeopardises the psychological and social well-being of adolescents, but could also seriously hamper their ability to master normal developmental tasks (Louw, Louw, & Ferns, 2007). Furthermore, understanding the political, economic and social-cultural context in which suicidal behaviour occurs is essential for public health efforts to reduce suicidal behaviour amongst adolescents (Burrows, 2005). However, given South Africa's relatively high rate of adolescent suicidal behaviour, numerous authors (Flisher, 1999; Madu & Matla, 2003; Mashego & Madu, 2009; NIMSS, 2007; Pillay & Wassenaar, 1997; Schlebusch, 2005) are in agreement that studies focusing on the causes and prevention of adolescent suicidal behaviour have received relatively little attention from South African researchers.

Suicidal behaviour is a complex phenomenon, with a wide array of explanatory models and theories reflecting its multi-dimensional and multi-causal nature (Krug, Dahlberg, Meray, Zwi, & Lozano, 2002). For example, sociologists, in their attempt to explain the causes of suicide, have focused on the impact of societal pressure and influences as important contributors to the suicidal behaviour of the individual (Durkheim, 1951). Psychological perspectives have

included psychoanalytical (Lester, 1988) (suggesting a death or life instinct), behavioural (Louw, Van Ede, & Ferns, 1998) (certain destructive behavioural patterns are learned or acquired to deal with a stressor) and cognitive (dysfunctional thought patterns or views of self, other people or the future) explanations in the aetiology of suicide. From a biological perspective, hereditary factors and neurophysiological changes in the brain are seen as pivotal processes that could pre-empt suicidal behaviour (Cantopher, 2003). At present, researchers appear to be in agreement that a complex range of psycho-social, personal and environmental factors interact to increase an adolescent's degree of vulnerability towards suicidal behaviour, while others can enhance the adolescent's ability to deal with life's stressors (Beautrais, 2000).

The Integrated Stress and Coping Model (Moos & Schaefer, 1993) served as a guiding framework for the current study. The basic assumption of this model is that personal and environmental stressors and resources, life crises and transitions experienced by the individual, as well as cognitive appraisal and coping responses interact in a bidirectional manner to determine the health and well-being of the individual. This model consists of five components (represented by five panels) which are characterised by bidirectional pathways and are mutually interactive. Panel 1 represents the Personal System which consists of personal stressors and resources. Social support, health and financial factors all form part of Panel 2, i.e. Contextual Stressors and Resources. Panel 3, Life Transitions and Life Crises, which includes developmental processes and traumas, all form an interactive part as this specific stage of development determines eventual health and well-being. Coping Style and Coping Resources, which play a potentially important moderating role in the impact of stress on the individual, constitute Panel 4, while Panel 5 represents the health-related outcome of the stress and coping process (including both positive and negative outcomes) (Moos & Schaefer, 1993). The current study focused on suicidal ideation as a health-related outcome.

Several personal and environmental factors have been associated with a significant increase in the risk for adolescent suicidal behaviour (O'Conner & Sheeney, 2001; Ulusoy & Demir, 2005). Personal factors such as self-esteem (Dutton & Brown, 1997; Mashego et al., 2003), hope (Beck, Brown, Berchick, Stewart, & Steer, 1990), as well as demographic factors such as gender, age

and ethnicity have all been found to exert an influence on adolescents' well-being and suicidal behaviour (George, 2009; Hall & Torres, 2002; Madu & Matla, 2003).

Environmental factors such as the quality of interpersonal relationships between adolescents, their family members (parents and siblings) and friends can be a major resource for adolescents, but can also serve as major stressors, especially if conflict occurs within these relationships. Stable and secure relationships with family and peers can assist adolescents in making a smooth transition into adulthood and to cope with negative life events (Cornwell, 2003; Liu, 2002; Way & Robinson, 2003). Way and Robinson (2003) suggest that the family is an essential part of the adolescent's support system. The family provides emotional support both in the family context as well as the broader community. However, environmental stressors such as parental divorce, death of a parent, interpersonal conflict between parents and siblings, pre-existing family psychiatric conditions and suicidal behaviour in the family context can all lead to an increased sense of insecurity and a risk for suicidal behaviour (Aspalan, 2003; Cassimjee & Pillay, 2000; Engelbrecht & Van Vuuren, 2000; Evans, Hawton, & Rodham, 2004; Ittel, Kretchmer, & Pike, 2010). Dunn, Slomkowski, Beardsall and Rende (1994) found that sibling support is associated with higher perceived self-competence and better adjustment. The quality of the sibling relationship affects not only adolescents' peer relationships, but their overall adjustment. Positive sibling relationships contribute to adolescent school competence, sociability, autonomy and increased self-worth (Basson & Van den Berg, 2009; Steinberg & Morris, 2001) while negative relationships can influence the development of suicidal behaviour (Conger, Conger, & Scaramella, 1997).

Relationships outside the family, namely peer and romantic relationships, have also been implicated as contributing towards suicidal behaviour. According to Sebate (1999), positive peer experiences among high school learners was identified as having a buffering effect against suicidal behaviour. Peers can help adolescents cope with stressors they are exposed to, counteract loneliness and isolation and also contribute towards the development of the adolescent's self-concept (Ary, Duncan, Duncan, & Hops, 1999; Deiner & Seligman, 2002; Jackson & Rodriguez-Tomé, 1993; Louw et al., 2007). Conflict in romantic relationships has been found to contribute significantly towards suicidal behaviour amongst adolescents. Aspalan

(2003) found that the dissatisfaction of parents with their children's choice of partners act as a trigger for suicidal behaviour in the adolescent. Similarly, a study by Engelbrecht and Van Vuuren (2000) reported that 17% of the participants in the study reported relationship problems as a reason for considering suicide.

Low school achievement which causes anxiety in the adolescent is another risk factor (Da Costa & Mash, 2008). A study conducted by Livaditis, Zaphiriadis, Fourkiot, Tellidou and Xenitidus (2002) found that adolescents who were not well integrated into their school environment were significantly more likely to report suicidal ideation than well-integrated adolescents. The risk for suicidal behaviour is also increased among individuals from socially disadvantaged backgrounds characterised by extreme poverty, unemployment, lack of social infrastructure, and the provision of inadequate educational, health, housing, recreational and transport facilities (Andrews & Lewinsohn, 1992; Govender & Killian, 2001; Ulusoy & Demir, 2005).

For South African adolescents the relatively high levels of stress that often accompany this developmental stage are further amplified by the rapid socio-political, economic and socio-cultural transitions underway in South Africa (Pillay & Wassenaar, 1997; Wassenaar, Van der Veen, & Pillay, 1998). According to Durkheim (1951), the proclivity for considering suicide is determined by the degree of social disintegration the person experiences. Thus, societal pressures and influences, such as rapid socio-political, economic and socio-cultural change have been found to play a pivotal role in the individual's engagement in suicidal behaviour (James, 2008). While the economic structure of South African society has not altered radically since 1994, many factors that influenced political socialisation under the apartheid regime have changed significantly (Dawes & Finchilescu, 2002). Contact between people from different ethnic groups has increased considerably as schools and neighbourhoods have become more integrated. However, the differences in cultural backgrounds between the ethnic groups may lead to feelings of isolation and occurrence of acculturative stress, especially among black adolescents being placed in former predominantly white schools where they are confronted with Eurocentric values and ideas (Kramers, 2000; Pillay & Wassenaar, 1997; Wassenaar et al., 1998). As South Africa is still in the process of socio-political transition, many individuals (especially from the previously advantaged groups) continue to struggle with insecurities about

their place in society (Loots, 2008). These enduring stressors can all contribute to increased levels of stress, feelings of hopelessness, helplessness, and possible suicidal ideation among adolescents (Meehan, Peirson, & Fridjhon, 2007).

Adolescence is characterised by significant cognitive, emotional, and social changes (Louw et al., 2007). The young person not only has to deal with major psychological tasks that accompany this phase of life, but also has to dramatically reduce their dependence on their parents, separating from the family and forming an adult identity (Erikson, 1968; Hines, 1997; Paley, Conger, & Harold, 2000). This developmental stage brings with it not only the advantages of greater social recognition, but also additional social challenges that adolescents have to deal with. Although many progress through this phase without any major adjustment problems, a number of adolescents find it difficult to cope with the emotional and social demands that accompany this life stage, often leading to the display of high risk behaviours such as substance abuse, promiscuous sexual behaviour and self-harm (Louw et al., 2007).

Another component of Moos and Schaefer's (1993) model includes coping strategies. The ways in which adolescents cope with stress play a potentially important moderating role in the impact of stress on individuals' current and future adjustment (Hobfoll, 1988; Hobfoll, 1998). Coping refers to the set of cognitive and behavioural strategies individuals use in their efforts to manage stressful situations (Frydenberg, 2008). The choice of coping strategies was found to influence behavioural outcomes, as adolescents who model adaptive coping skills reported a lower prevalence of suicidal ideation (George, 2009; Hobfoll, 1988; Israelashvili, Gilad-Osovitzki, & Asherov, 2006). The inability to develop effective coping skills for some adolescents who have reached levels of significant personal distress and who display health compromising choices, ultimately increases their risk of negative life outcomes such as psychiatric disorders, substance abuse and a greater propensity for suicidal behaviour (Lewis & Frydenberg, 2002).

Although it is suggested that the prevalence of adolescent suicidal behaviour in the Free State is unordinarily high (Reddy et al., 2003; Reddy et al., 2010), only a few research studies have been conducted in this province which focus on the underlying cause of this phenomenon (Mashego & Madu, 2009; Mashego et al., 2003). Findings from these studies suggest that relationship

problems between parents and adolescents (Mashego & Madu, 2009), school-related problems (Reddy et al., 2003; Reddy et al., 2010), poverty (Reddy et al., 2003; Reddy et al., 2010) and socio-cultural transition (Mashego et al., 2003) all play a contributing role in the increasing adolescent suicidal behaviour in the Free State province. However, adolescent suicidal behaviour represents a complex and multi-dimensional phenomenon which necessitates the consideration of a wide array of risk and protective factors in understanding its causes (Schlebusch, 2005). A literature search conducted on PsychLit, PsychInfo and Science Direct revealed that only a limited number of South African studies have been conducted which investigate the combined effects of psychosocial stressors, resources, socio-cultural transformation and coping on adolescent suicidal behaviour. For this reason this study aims to explore both the risk (stressors) and protective factors (resources) in an integrated manner to determine their role in adolescent suicidal behaviour in the Free State province.

3. AIMS AND OBJECTIVES

The current study aims to investigate the psychosocial stressors and resources influencing adolescent suicidal behaviour amongst a sample of black, white and coloured[1] adolescents from the Free State province in South Africa. These ethnic groups are as defined by the repealed population registration act of 1950, and do not have any anthropological or scientific validity. However, since ethnicity has been one of the major bases of division of South African life, it has frequently been considered as an important socio-demographic variable in research (Burrows, Vaez, & Laflamme, 2007). Furthermore, ethnicity is used because there are differences between the groups for many indicators of health, including the experience of stressors and resources, mediated by political and economic factors (Ellison, De Wet, Ijsselmuiden, & Richter, 1996; Vogel & Holford, 1999). In addition, the study aims to determine whether any ethnic and gender differences exists with respect to the experience of life stressors, access to resources, and utilisation of acculturation- and coping strategies.

[1] In this study the term "ethnic group" and associated references such as "black", "white", "coloured" and "Indian/Asian" are used. The use of these terms in this study does not imply any acceptance of the historically racist assumptions to which these labels might allude. Instead the use of these terms is to differentiate between conditions within these "ethnic groups" still existing in South Africa. Another reason for including "ethnic group" names is for the purpose of statistical comparison with other research data issued by statistical authorities in South Africa, e.g. Statistics SA and the National Injury Mortality Surveillance System (NIMSS).

To achieve the aims of the study, the following research objectives were formulated:

1. To determine the incidence of suicidal behaviour amongst adolescents in the Free State province. (Article 2)
2. To compare ethnic and gender differences in the level of suicidal ideation, the experience of stressors, access to resources, and acculturation- and coping strategies employed by adolescents. (Article 2)
3. To explore and describe white, black and coloured adolescents' experience of psychosocial stressors and resources. (Article 3)
4. To determine whether a relationship exists between life stressors and suicidal ideation, as well as investigating the possible influence of coping strategies, and ethnic differences on this relationship. (Article 4)
5. To investigate the influence of personal and contextual stressors and resources, as well as acculturation- and coping strategies on the suicidal ideation reported by a multi-ethnic sample of adolescents. (Article 5)

4. METHOD

The research design constituted a mixed-method approach. Both quantitative and qualitative methods were used to collect and analyse the data. This approach allowed the researcher to combine the strengths of both qualitative and quantitative research. Furthermore, both approaches represent complementary components of the research process (Leedy & Ormrod, 2005; Mouton, 1996). Using both positivistic (describing and predicting behaviour) and constructivist (understanding how people make sense of what happens) approaches, the mixed-method approach enabled a richer collection of data (Schulenberg, 2007). Even though the research report is presented in the form of 5 articles, the investigation was planned and implemented as one, integrated process.

4.1 Research design (Quantitative study)

A non-experimental, cross-sectional, and criterion-group design was used for the quantitative part of the study.

4.1.1 Participants and data gathering

A sample of 1033 Grade 11 and 12 learners in the Free State province was selected by means of a stratified, random sampling technique to ensure an equal representation of gender, age and ethnicity. The collection of data occurred on a school day identified by the Department of Education. A qualified psychologist was present throughout the collection period to deal with any issues such as the emotional impact of the questions during or after testing. Accredited language practitioners were used to translate English questionnaires into Afrikaans and SeSotho by means of the back translation method (Brislin, 1970; Foxcroft & Roodt, 2005).

4.1.2 Measuring instruments

The following questionnaires were used to gather data on the variables included in this study:

A ***biographical questionnaire*** (Appendix A) was used to gather information on the respondents pertaining to the following areas: age, gender, ethnicity, grade, home language and geographical location. Additional information such as marital status of parents, parental employment status and previous exposure to and involvement in suicidal behaviour was also gathered by means of this questionnaire.

The ***Suicidal Ideation Questionnaire for Adolescents (SIQ)*** (senior high school version) (Reynolds, 1988) measures the frequency and intensity of suicidal thoughts.

The ***Coping Orientations to the Problems Experienced Questionnaire (COPE)*** (Carver, Schreier, & Weintraub, 1989) measures participants' situational as well as dispositional coping strategies.

The ***Life Stressors and Social Resources Inventory, Youth Form*** (Moos & Moos, 1994) measures a wide range of stressors, as well as the social resources available to learners.

The ***South African Acculturation Questionnaire*** (Kramers, 2000) measures the degree of preference for a specific acculturation strategy demonstrated by an individual.

4.2 Research design (Qualitative study)

An exploratory, qualitative framework was used to capture an in-depth perspective of the participants' personal experiences of social stressors and resources. Data for the qualitative dimension of the study were collected by means of two open-ended statements. Collected data were analysed using the method of thematic content analysis (Berg, 2007). Methodologies such as the thematic content analysis approach are located within the interpretivist framework (Lynch, 2005). The ultimate aim of interpretivistic research is to analyse the situation under investigation in order to provide insight into the way in which members of a particular group of people make sense of their situation or the phenomena encountered. The interpretivistic perspective follows the assumption that human life can only be understood from within. It is therefore necessary to focus on people's subjective experiences, on how people "construct" the social world by sharing meanings, and how they interact with or relate to each other. By exploring the richness, depth and complexity of the phenomena under investigation, we can begin to understand the meanings imparted by people to phenomena and their social world.

The findings of the qualitative and quantitative parts of the study were integrated in Chapter 7 as part of the study's conclusions.

4.3 Ethical considerations

The research committee of the Humanities Faculty of the University of the Free State granted ethical approval for the research study. Permission to conduct the study was obtained from the Free State Department of Education and relevant school principals. Learners were only included in the study after informed consent (Appendix B) had been obtained from them and their parents.

All participants were informed about the purpose of the study as well as the anonymous and confidential nature of the survey. Participation in the study took place on a voluntary basis with participants being given the option of withdrawing from the research at any stage of the process. Due to the anonymity of the responses, the participants, as a group, were encouraged to approach the researcher or their teachers if they experienced any undue stress on account of the questions posed in the study, or if they required referral information to deal with emotional and personal problems.

5. CONCEPT CLARIFICATION

In facilitating a clear understanding of this study in its totality, certain core terms and concepts featured throughout the text will now be clarified:

Suicidal behaviour can be interpreted as an umbrella term which incorporates a range of self-harming or self-destructive acts precipitated by emotional discomfort and distress (Schlebusch, 2005). Suicidal behaviour can further be divided into non-fatal and fatal suicidal behaviour. Non-fatal suicidal behaviour for the purposes of this study includes the following:

a) *Attempted suicide* is viewed as an unsuccessful effort to terminate one's own life (Schlebusch, 2005).

b) *Para-suicide* is the process whereby an individual engages in self-destructive acts without the deliberate intent to terminate his/her life but rather to attract attention from significant others (Moore, 2000).

c) *Suicidal ideation* is defined as the domain of thoughts, images and ideas about committing suicide or experiencing a desire to terminate one's life without the suicidal act (Bridge, Goldstein, & Brent, 2006).

Risk factors

Stillion, McDowell and May (1989) refer to factors that increase the individual's vulnerability to suicide as risk factors. Hendin, Maltsberger, Lipschitz, Haas and Kyle (2001) define suicide risk

as the "presence of any factor empirically shown to correlate with suicidality – including age, gender, psychiatric diagnosis and past suicide attempts" (p.256).

Protective factors

Protective factors are those factors that reduce the likelihood of engaging in risk behaviours or of adverse outcomes from having engaged in them, and serve as buffers against exposure to risk factors (Jessor, 1998).

Stressors

A stressor refers to situations that the person cognitively appraises as taxing or exceeding his or her resources (DeLongis & Newth, 1998).

Coping

Coping refers to a person's perceptual, cognitive or behavioural responses that are used to defuse a stressful situation (DeLongis & Newth, 1998; Folkman & Lazarus, 1984; Moos, 1994).

Coping resources and coping strategies

According to Deiner and Fujita (1995, p.926), "resources are material, social or personal characteristics that a person possesses that he or she can use to make progress toward his or her personal goals." Coping strategies, in turn, refer to efforts used to alleviate stress by either focusing on solving the problem (problem-focused strategies), or to regulate emotional responses brought on by the stressor (emotion-focused strategies) (Judge, 1998).

Culture

Culture is defined as a highly complex, continually changing system of meaning that is learned, shared, transmitted and altered from one generation to another (Triandis, 1995).

Acculturation

Acculturation comprises those phenomena which result when groups of individuals with different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups (Berry, 1997). It describes the degree to which an individual has adopted the values, beliefs, culture and practices of the host culture.

Acculturation strategies

Acculturation strategies refer to the strategies that cultural groups and individuals in a plural society work out in learning how to acculturate. These include strategies to deal with cultural maintenance, contact and participation (Berry, 1997).

Moderator

A moderator refers to a variable that affects the direction and/or strength of the relation between a predictor and criterion variable (Baron & Kenny, 1986; Grant et al., 2006).

Mediator

A mediator is a variable that, conceptually and statistically, "accounts for the relation between a predictor and a criterion variable" (Baron & Kenny, 1986, p.1176).

6. CHAPTER EXPOSITION

This study is presented with an introductory chapter followed by the five main chapters, comprising five independent articles, leading to a concluding chapter. The seven chapters include the following:

Chapter 1: Orientation and problem statement

This chapter provided a brief background to the study and presented the aims and objectives of the research. An overview of the rest of the thesis is also provided.

Chapter 2 (Research article I): The role of personal and environmental factors in adolescent suicidal behaviour: A review and integration of literature

The first article provides a review of the literature on the risk and protective factors associated with adolescent suicidal behaviour. The aim of this article is to review existing literature on dispositional and contextual factors, including the impact of rapid socio-cultural changes, developmental aspects and coping strategies utilised, and how these impact on the suicidal behaviour of adolescents.

Chapter 3 (Research article II): Adolescent suicidal behaviour: A comparative study of psychosocial variables

The second of the articles reports on the ethnic and gender differences in the experience of life stressors, utilisation of social resources, and acculturation- and coping strategies of a sample of adolescents.

Chapter 4 (Research article III): Ethnic differences in the experience of adolescent stressors and resources

This article reports on the experience of personal and environmental stressors and resources reported by a group of black, white and coloured adolescents.

Chapter 5 (Research article IV): The role of coping in the relationship between life stressors and suicidal ideation in a cross-ethnic sample of adolescents

This article investigates the possible role of coping on the relationship between life stressors and suicidal ideation.

Chapter 6 (Research article V): An ethnic comparison of psychosocial factors influencing adolescent suicidal ideation

The fifth article investigates the influence of personal and contextual stressors and resources, as well as acculturation and coping strategies on the suicidal ideation. Hierarchical regression analyses, investigating the influence of personal and contextual stressors and resources as well as acculturation- and coping strategies on suicidal ideation are discussed separately for the white, black and coloured groups in this study.

Chapter 7: Conclusion

This chapter presents an integrated summary of the findings and the results of all five articles, highlights the contribution and limitations of the study, and provides recommendations with regard to future research and practice.

7. RESEARCHER'S COMMENT

The researcher intends to publish the findings from this study in accredited journals such as the South African Journal of Psychology, the Journal of Child and Adolescent Mental Health, Crisis and the Journal of Psychology in Africa. The American Psychological Association's reference format (6th edition) (American Psychological Association, 2010), will be used throughout this research report. However, the reader must note that all running heads of the articles have been omitted. All tables have been included in the text for the reader's convenience. Once the articles are submitted for publication the tables will be presented as an appendix and running heads of articles included. The reference lists for the introduction and conclusion to the study may be found at the end of the report.

CHAPTER 2

ARTICLE I

THE ROLE OF PERSONAL AND ENVIRONMENTAL FACTORS IN ADOLESCENT SUICIDAL BEHAVIOUR: A REVIEW AND INTEGRATION OF LITERATURE

Abstract

Traditionally viewed as a problem of mainly elderly white people, the pattern of suicidal behaviour in South Africa is changing, especially amongst young people of all ethnic backgrounds. However, only a few South African studies investigating the underlying causes of adolescent suicidal behaviour have been conducted. International studies, conducted on the aetiology of adolescent suicidal behaviour, suggest that it is a complex and multi-dimensional phenomenon, comprising an array of personal and environmental factors. The multi-faceted nature of suicidal behaviour has highlighted the need for a multi-variable approach in exploring this phenomenon, as the interaction of variables appears more plausible in explaining adolescent suicide. However, the use of a multi-factorial approach in the investigation of adolescent suicidal behaviour in South Africa has received little research attention. Using Moos and Schaefer's Integrated Stress and Coping Model as a guiding theoretical framework, this article attempts to form an impression of the combined role of a variety of psychosocial variables in adolescent suicidal behaviour.

***Keywords*:** adolescence; stressors; resources; coping responses; acculturation; suicidal behaviour.

The past decade has witnessed heightened interest in adolescent suicidal behaviour, with several studies published on this topic (Bridge, Goldstein, & Brent, 2006; Evans, Hawton, & Rodham, 2004; Wasserman, Cheng, & Jiang, 2005). This growing interest reflects not only an acknowledgement that suicidal behaviour might have a direct impact on the normal development of young people, but also provides a strong recognition for the early identification of potential risk as well as protective factors that influence adolescent suicidal behaviour (Joe, Stein, Seedat, Herman, & Williams, 2008; Louw, Louw, & Ferns, 2007). Furthermore, it is increasingly recognised that promoting the healthy development of adolescents is one of the most important and cost-effective long-term investments a society can make (Call et al., 2002; Reddy et al., 2010).

The term suicidal behaviour can be viewed as a continuum of behaviours, ranging from a person wishing him- or herself dead to the actual deed of killing themself (Bridge et al., 2006; Schlebusch, 2005). It refers to complex, multi-dimensional and multi-factorial events with different behaviourial characteristics incorporating a range of self-harming acts precipitated by emotional discomfort and distress (McLean, Maxwell, Platt, Harris, & Jepson, 2008; Schlebusch, 2005). Furthermore, suicidal behaviour can be considered in two ways, namely non-fatal and fatal suicidal behaviour. Fatal suicidal behaviour refers to completed suicidal behaviour that reflects the person's intent to die and where the person has managed to achieve the pre-determined goal. As opposed to this, non-fatal suicidal behaviour refers to suicidal behaviour that does not end the person's life and embodies several manifestations such as those seen in attempted suicide (Palmer, 2008). Suicidal ideation is defined as the domain of thoughts, images and ideas about committing suicide or a desire to terminate one's life without the suicidal act (Bridge et al., 2006; McLean et al., 2008). Although suicidal ideation is a necessary, but not sufficient determinant for suicidal behaviour, it is considered an important risk factor for completed suicide (Chamberlain, Goldney, Delfabbro, Gill, & Dal Grande, 2009).

According to the World Health Organization (WHO, 2008) at least 100 000 adolescents commit suicide each year making adolescent suicidal behaviour a serious public health problem in many countries. Although no national, systematic, mortality data collection systems currently

exist in South Africa (Schlebusch, 2005), results from ad hoc studies (Madu & Matla, 2003; Mashego & Madu, 2009; Mhlongo & Peltzer, 1999; NIMSS, 2007; Reddy et al., 2003; Reddy et al., 2010) denote that the rate of suicidal behaviour amongst adolescents of all ethnic backgrounds is on the increase. Results from the two South African National Youth Risk Behaviour Surveys (Reddy et al., 2003; Reddy et al., 2010), conducted with a multi-ethnic sample of 10 000 high school learners, suggest that suicidal thoughts amongst learners within the six months prior to the survey had increased from 19% in 2002 to 20.7% in 2008, while the percentage of learners who indicated that they had a definite suicide plan increased from 15.8% in 2002 to 16.8% in 2008. Furthermore, the number of participants who reported to have attempted suicide on one or more occasions rose from 17% in 2002 to 21.4% in 2008. However, given the relatively high rates of adolescent suicidal behaviour in South Africa, it is surprising to note that studies focusing on the causes and prevention of adolescent suicidal behaviour have received little attention from South African researchers (Joe et al., 2008; Madu & Matla, 2003; NIMSS, 2007; Pillay & Wassenaar, 1997; Schlebusch, 2005).

Numerous factors contribute to suicidal behaviour in adolescents. These factors include acculturation (Beekrum, Valjee, & Collings, 2011; Pillay & Wassenaar, 1997), socio-economic hardship (Stark et al., 2010; Reddy et al., 2003; Reddy et al., 2010), lack of social support from parents and peers (Hall & Torres, 2002; Larson, Wilson, & Mortimer, 2002; Mashego & Madu, 2009), failure to achieve academically (Stark et al., 2010), inadequate coping (Meehan, Peirson, & Fridjhon, 2007), as well as reduced levels of hope (Hall & Torres, 2002; Larson et al., 2002). However, most of the studies on adolescent suicidal behaviour offer only a restricted linear approach of one or two interacting factors as a possible explanation. Adolescent suicidal behaviour represents a complex and multi-dimensional phenomenon which necessitates the consideration of a wide array of risk and protective factors, as well as the interaction between these factors, in understanding its underlying causes (Schlebusch, 2005). A literature search conducted for the period between January 2000 and April 2011 on Science Direct, PsychLit and PsychInfo revealed that only a limited amount of South African studies have investigated the combined effects of psychosocial stressors, resources, socio-cultural transformation and coping on adolescent suicidal behaviour. Using Moos and Schaefer's Integrated Stress and Coping Model (1993) as a guiding theoretical framework, this article aims to review existing literature to

form an impression of the combined role of a variety of psychosocial variables in adolescent suicidal behaviour.

The Integrated stress and Coping Process Model

Adolescent suicidal behaviour appears to be a complex phenomenon, with a variety of personal and contextual factors being proposed as possible causes (Fergusson & Woodward, 2002; Flisher, Liang, Laubscher, & Lombard, 2004; Hall & Torres, 2002; Krug, Dahlberg, Meray, Zwi, & Lozano, 2002). Given the prominent role that these personal and environmental factors may play in adolescent suicidal behaviour, the Integrated Stress and Coping Model (Moos & Schaefer, 1993) provide a useful theoretical context for understanding and explaining adolescent suicidal behaviour. A prominent feature of this model is the developmental perspective incorporating life transitions, such as critical developmental changes, as experienced during adolescence. In addition, it also considers the coping process as a potential mediator between stressors/resources and either positive or negative health outcomes such as suicidal behaviour. The key components of the Integrated Stress and Coping Model are illustrated in *Figure 1*.

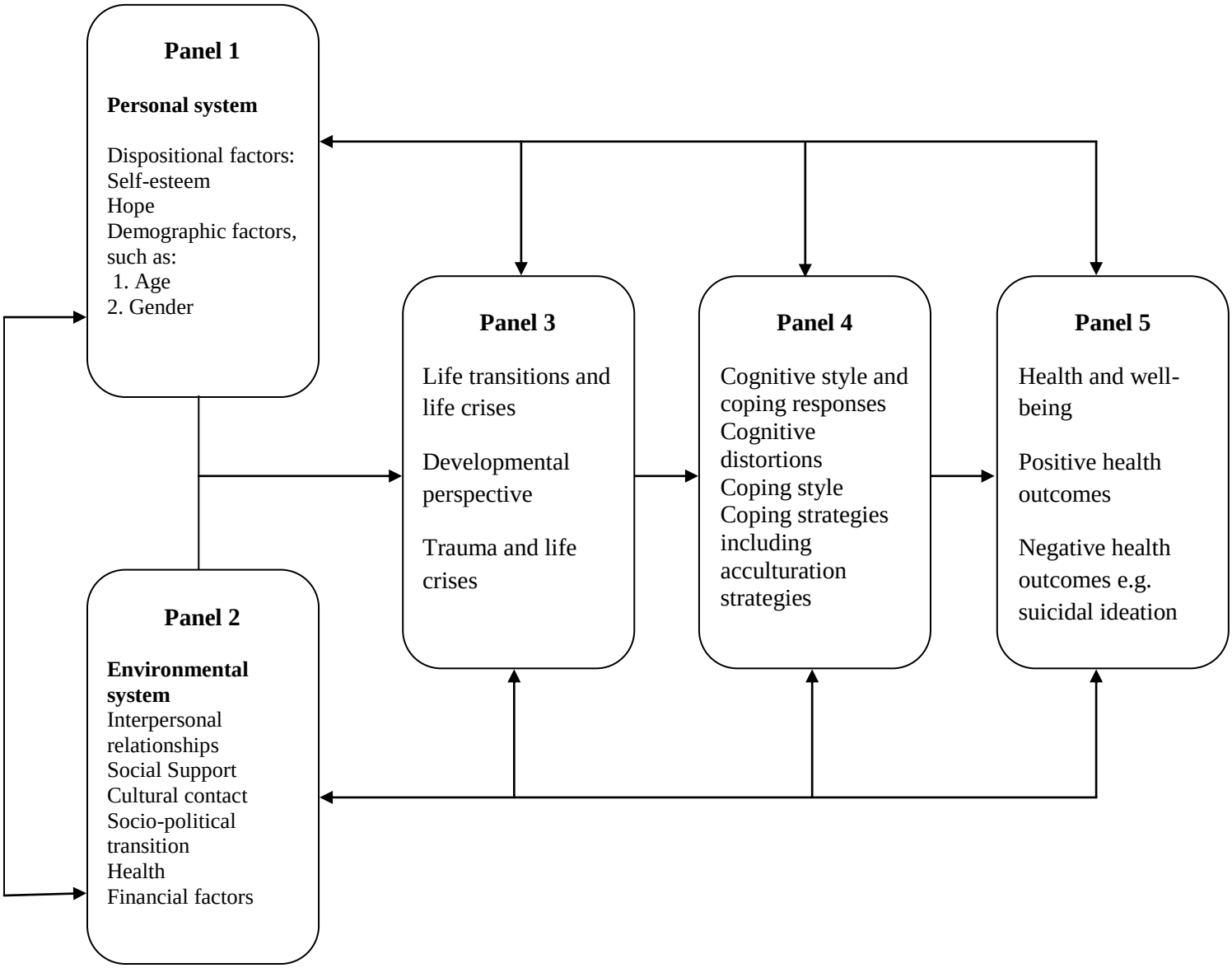

***Figure 1*: The Integrated Stress and Coping Process Model (Moos & Schaefer, 1993)**

The Integrated Stress and Coping Model of Moos and Schaefer (1993) is composed of a number of systems that are thought to function in a transactional manner. Two primary systems, namely the personal and environmental systems, form the basis of this conceptual framework. The personal system is characterised by the enduring personal characteristics of the individual that are thought to be the specific coping responses they employ. Specific components of the personal system include such aspects as self-esteem, hope and demographic factors such as age

and gender. The environmental system is made up of stable conditions outside of the adolescent such as social support networks, finances, and ongoing environmental stressors. The environmental and personal systems are hypothesised to act as a backdrop for the third component of the framework, namely transitory environmental conditions. The aforementioned components of the framework (i.e. environmental system, personal system and transitory conditions) are viewed as influencing the specific cognitive appraisals individuals make with regard to stressors, as well as impacting upon the specific coping behaviours and strategies these individuals implement, thus affecting both their immediate and long-term health and psychological well-being. Furthermore, the bidirectional pathways between all these elements depicted in *Figure 1* indicate that the processes are reciprocal and are able to influence each other (Moos & Schaefer, 1993). For example, an adolescent's personal system can exert a positive or negative influence on the environmental system, and vice versa. An adolescent's health and well-being are therefore substantially influenced by his/her exposure to stressors, as well as the availability and utilisation of personal and environmental coping resources.

According to Moos and Schaefer (1993), the personal system (Panel 1, *Figure 1*) which comprises stressors and resources, is a relatively stable disposition that influences the individual's cognitive appraisals and choice of coping processes, which in turn influences the person's emotional and behavioural outcomes. Examples of such personal traits include self-esteem, hope (or a sense of hopelessness), and the demographic characteristics (i.e. gender and ethnicity) of an individual.

Baron and Byrne (2000) note that a strong sense of self-value enables the adolescent to be more resilient in the face of adversity. However, adolescents who report feelings of low self-worth display more negative self-appraisal and are more inclined towards developing distorted perceptions of themselves and others (Dutton & Brown, 1997; Moore, 2000; Yang & Clum, 1996). Furthermore, a low self-esteem can lead to an overgeneralisation of the implications of failure, rejection and despair which appears to be strongly related to suicidal behaviour (Evans et al., 2004; Mashego, Peltzer, Williamson, & Setwaba, 2003; Wilburn & Smith, 2005). Inversely, an optimistic view (of the self, other people and the world) can function as a resource in dealing

with personal or environmental challenges and can also act as a buffer in reducing the risk of suicidal ideation and behaviour (Evans et al., 2004; Mashego et al., 2003).

Hopelessness has been reported to be an important aspect of the personal system that may significantly impact on the outcome of the adolescent coping process and subsequent suicidal behaviour. Goldston et al. (2001) found that higher levels of hopelessness correlate significantly with a higher risk of suicidal behaviour amongst adolescents. Many other dispositional factors such as hardiness (Beasley, Thompson, & Davidson, 2003), self-efficacy (Smith, 1993), and optimism (Kraaij et al., 2003) are identified in the literature as possible contributors to adolescent suicidal behaviour but were not included in this literature review.

Demographic factors such as gender and ethnicity, which have been identified as moderators of adolescent suicidal behaviour in the literature, are included in the discussion of the personal system (Panel 1, *Figure 1*). Globally, the rates of completed suicides for females are lower than those for males (WHO, 2010; Bridge et al., 2006). This pattern is also observed amongst adolescents. In most countries where data on suicide have been collected, results suggest that adolescent boys have a much higher suicide rate than girls, whereas girls have a higher prevalence of suicidal ideation and suicide attempts (Bridge et al., 2006). Similarly, Pillay and Wassenaar (1997), as well as Madu and Matla (2003) found that males outnumber females in both their level of suicidal ideation and suicide attempts. According to Bridge et al. (2006) and Miller and Eckert (2009), adolescent boys are more likely than their female counterparts to display additional risk factors for suicidal behaviour such as mood and alcohol abuse disorders. Furthermore, researchers (Blumenthal & Kupfer, 1990; Burrows, Vaez, & Laflamme, 2007; Hawton, 2000; Mashego & Madu, 2009) also believe that these gender differences in suicidal behaviour might relate to female preferences for less lethal methods of suicide, their greater tendency to engage in covert and overt help-seeking behaviour, as well as their higher rate of affective disorders, of which suicidal behaviour is a frequent symptom.

Another personal risk factor constitutes ethnic differences in the occurrence of adolescent suicidal behaviour. Traditionally viewed as a Caucasian problem, several international studies (Bridge et al., 2006; Miller & Eckert, 2009; Walker, 2007) now suggest that the rate of suicide

amongst black and indigenous groups around the world is on the increase. Amongst Native American youth aged 15–24 years, for example, the rate of suicide is the highest of any ethnic or age group in the US (Dorgan, 2010). South African research findings (Joe et al., 2008; Madu & Matla, 2003; Meehan, Peirson & Fridjohn, 2007; Meel, 2003) echo this trend, suggesting that the rate of suicidal behaviour amongst black, coloured and Indian adolescents is on the increase. Schlebusch (2004) estimated that non-fatal suicidal behaviour amongst black adolescents, for example, has seen an increase of up to 58% over the last ten years. Meel (2003), in a study in the Transkei region of South Africa, reported a dramatic increase in the rate of suicide via hanging in the last two decades, of which 64% of all reported cases were younger than 30 years. Similarly, Madu and Matla (2003) reported significant levels of suicidal behaviour amongst a predominately black adolescent sample in the Limpopo province of South Africa, while Laubscher (2003), in a study among young coloured males in the Western Cape province, found a high incidence of suicidal behaviour.

The health outcomes of adolescents are affected by more than just their internal or personal experiences. Environmental stressors and resources (Panel 2, *Figure 1*), such as social support from families and peers, the impact of contact between cultural groups, socio-political transition, health and financial factors are significant determinants in the health and well-being of adolescents.

Social support has been reported to influence the health outcome of adolescents. Secure and stable relationships with family and peers can assist adolescents in making a smooth transition into adulthood and to cope with negative life events (Cornwell, 2003; Liu, 2002; Way & Robinson, 2003). Exposure to a supportive family enhances the adolescent's development of strengths such as a healthy self-esteem, feelings of security and the provision of a psychologically and emotionally safe environment (Hunter, Hessler, & Katz, 2009; O'Donnell, O'Donnell, Wardlaw, & Stueve, 2004). As such, the family is considered vital in raising adolescents who are socially and emotionally well-adapted (Andrews & Morrison, 1997; Spruijt & De Goede, 1997).

However, the family may also have negative influences on the adolescent's psychological well-being. Family problems such as parental divorce, interpersonal conflict between parents and siblings, an over-controlling parenting style, and inadequate flexibility by parents have all been highlighted as major causes of heightened adolescent stress and ultimately suicidal behaviour (LaRue, & Herrman, 2008; Pillay & Wassenaar, 1997; Van Renen & Wild, 2008). Jackson and Nuttall (2001) note that adolescents who are affected by their parents' marital instabilities and discord report greater feelings of isolation and rejection by their parents compared to adolescents who are not affected. Adolescents with a good relationship with their parents also appear less intimidated by stressful experiences, and are better equipped to manage negative life events. Consequently, their resistance to suicidal behaviour is increased (Liu, 2002). Conversely, adolescents who perceive their relationship with their parents as problematic, report greater difficulties in forming relationships outside the family and express a negative outlook on life. Furthermore, exposure to negative experiences within the family (such as severe punishment, violence, sexual abuse, traumatic loss, and previous exposure to suicidal behaviour) was found to increase the risk of suicidal behaviour as such occurrences may exceed the adolescent's coping abilities and resources (Gutierrez, Rodriguez, & Garcia, 2001; Fergusson, Woodward, & Horwood, 2004; Roy & Janal, 2005; Yang & Clum, 1996).

Problems in relationships with peers have also been implicated as increasing the risk of suicidal behaviour among adolescents (Fritsch, Donaldson, Spirito, & Plummer, 2000; Sebate, 1999). Adolescents who are unpopular, have poor peer relations, and who are emotionally insecure amongst peers, show poor academic progress and planning abilities, which decrease their chances of achieving their goals and effectively reacting to the demands of the environment (Ary, Duncan, Duncan, & Hops, 1999; Deiner & Seligman, 2002; Jackson & Rodriguez-Tomé, 1993; Louw et al., 2007). Having a supportive social network of peers enhances the adolescent's sense of social identity, counteracts loneliness and isolation, and also contributes towards the adolescent's self-concept development, thereby protecting them against the possible development of suicidal behaviour (Erwin, 2002). Similarly, romantic relationships can act as an emotional and socially satisfying experience, while romantic problems have been reported as stressful and may lead to suicidal behaviour in adolescents (Engelbrecht & Van Vuuren, 2000;

Louw et al., 2007). According to Houston, Hawton and Shepperd (2001), disruptions in or the termination of romantic relationships are common events preceding adolescent suicidal behaviour.

Apart from familial and peer relationships, the relationship between teachers and learners also seems to be an important social resource. A supportive teacher-learner relationship can make a positive contribution by encouraging effective interpersonal, social and coping skills as a means of counteracting self-destructive behaviour in adolescents (Berk, 2002; Donald, Dower, Correa-Velez, & Jones, 2006; Fergusson et al., 2004). Furthermore, Paulson and Everall (2001) found that the support from teachers after a suicidal attempt helped adolescents ease the pain of their distress, while negative reactions made it more difficult for them to cope.

Compared to their parents, the lives of South African adolescents have drastically changed over the last sixteen years. The realities of post-apartheid South Africa have dramatically altered the formation of adolescents' cultural identity and the perception of their roles within society. Black adolescents, for example, are now required to develop identities that allow them to adjust and cope with the shift from collectivism to individualism (a move away from their more traditional cultural orientation) which often causes conflict between the adolescent and his/her parents (Mashego & Madu, 2009; Stevens & Lockhat, 1997). For the white and coloured adolescents, the socio-political change has brought about a disruption in the levels of privilege previously experienced under apartheid rule (Dawes & Finchilescu, 2002). For whites, the transformation has been from a political majority to a numerical and social minority relative to black groups (Norris et al., 2008). Previously, white adolescents were privileged with easy access to social resources. Today, however, with the government's policies of affirmative action and black empowerment, whites have to compete with increasingly better-educated black adolescents, a situation that has increased economic instability and unemployment among the white group (Norris et al., 2008). Furthermore, the unfulfilled expectations created after the demise of the apartheid system amongst the black, coloured and Indian communities has further contributed to a sense of disappointment and disillusionment

(Dawes & Finchilescu, 2002; Norris et al., 2008; Pillay & Schlebusch, 1997). Rising unemployment has also led to fierce competition for employment amongst school leavers from all ethnic groups, resulting in high levels of stress and anxiety about the future (Norris et al., 2008).

South Africa's socio-political transformation has also brought about more opportunities for inter-ethnic contact, especially for adolescents, as schools and neighbourhoods have become ethnically mixed (Beekrum, 2008; Dawes & Finchilescu, 2002). However, this increased interethnic contact, along with South Africa's diverse cultural beliefs and languages, has exposed adolescents to an environment of increasing challenges and social demands (George, 2009). Families who hoped to retain a core cultural identity in their children have found themselves increasingly faced with children who aspire to lifestyles and goals associated with other cultural groups (Stevens & Lockhat, 1997; Wassenaar, Van der Veen, & Pillay, 1998). The process of acculturation (referring to both the strategy and process of coping with multicultural contact), coupled with exposure to alternate values and ideals through education, socialisation and the media seem to be leading adolescents to develop their own personalities, values and lifestyles – some of which may conflict with the values held in their families (Beekrum, 2008). Fitting into this newly transformed social arena requires additional adjustment on the part of the adolescent that may increase the risk of negative health outcomes such as heightened stress, depression, helplessness and suicidal behaviour (Meehan et al., 2007). Furthermore, research studies (Pillay & Wassenaar, 1997; Schlebusch, 2005) suggest a decreased reliance by the adolescent on social structures such as family and religious influences which may impact on the way young people deal with future challenges.

A further contextual risk factor for suicidal behaviour is that of physical health. Retrospective studies (Evans et al., 2004; O'Cavanagh, Owens, & Johnstone, 1999) indicate that more than half of patients who committed suicide had seen a physician for either medical or psychological problems a month prior to committing suicide. Aspects of physical health that have been implicated in adolescent suicidal behaviour include the impact of HIV/AIDS and teenage pregnancy.

Although heightened sexual awareness is considered a normal part of adolescent development, it is often characterised by experimentation, which has the potential of placing adolescents at risk of unprotected sexual activity, unplanned pregnancy, and sexually transmitted infections such as HIV/AIDS (Louw et al., 2007; Reddy et al., 2003; Sigelman & Rider, 2003). According to Reddy et al. (2003), between 40% and 50% of adolescents in South Africa are sexually active. One of the consequences of this high number of sexually active teenagers in South Africa is the high HIV/AIDS infection rate. South Africa also remains one of the countries with the highest HIV/AIDS prevalence rates in the world (Maluleke, 2007). Currently, there are about 7.8 million people who are infected with HIV/AIDS in South Africa, of which a significant number (30%) comprises young people between the ages of 20 and 24 (Department of Health, 2007). A consequence of this high prevalence rate of HIV/AIDS is the increasing emergence of child- and adolescent-headed families. Between 2002 and 2007 child-headed households, i.e. households where the oldest member is not older than seventeen years, increased by more than 25% in South Africa, and by 33% in the Free State province (Free State Department of Social Development, 2010). Having the added responsibility of caring for their siblings and ailing parents increases adolescents' levels of stress and risk of suicidal ideation (Peltzer, 2008; Whiteside & Sunter, 2001). Furthermore, adolescents infected/affected by HIV/AIDS face social stigma, fear, depression and anger, further contributing to suicidal behaviour (Noor Mohamed, Selmer, & Bosch, 2004; Peltzer & Cherian, 1998).

A further consequence of the heightened sexual awareness among adolescents is the rise in unplanned teenage pregnancies (Grant & Hallman, 2008; Louw et al., 2007). According to national data, one in five 18-year-old women in South Africa has given birth, and more than 40% have become mothers by the age of 20 years (Moultrie & McGrath, 2007). Pregnant adolescents often have to drop out of school and are ostracised by their peers and the broader community, contributing to low sense of self and heightened levels of stress (Cunningham & Boult, 1996; Grant & Hallman, 2008).

Other environmental (contextual) factors included in Panel 2 (*Figure 1*), such as poverty and unemployment, appear to make a distinct contribution to suicidal behaviour, especially amongst black and coloured adolescents in South Africa (Govender & Killian, 2001; Peltzer & Cherrian, 1998; Schlebusch & Bosch, 2000). The effects of poverty, according to Goldstein and Brooks (2006), create a sense of helplessness and acceptance of circumstances which stifles adolescents' abilities to become ambitious, resilient and non-accepting of their circumstances. Children from lower-income families were found to have higher levels of depression and anti-social behaviours such as bullying, dishonesty and criminal acts, and showed a higher risk for engaging in alcohol and drug usage and other high-risk behaviour (Diekstra & Garnefski, 1995; Kuruvilla & Jacobs, 2007; Morojele, Brook, & Kachieng'a, 2006). The unemployment of parents, especially fathers, also appears to contribute to the occurrence of depression and suicidal reactions in their children (Diekstra & Garnefski, 1995).

As a transitory phase (Panel 3, *Figure 1*), adolescence appears to have a multitude of complex features and dynamics that contribute to adolescent suicidal behaviour. Adolescence constitutes a transition from childhood to adulthood, which begins at the age of about 12 or 13 years and extends right into the late teens or early twenties (Coleman & Hagell, 2007; Louw et al., 2007; Myers, 2008). It begins at puberty when the body reaches sexual maturation and ends when the individual meets the societal norms and expectations of being an adult (Jackson & Goossens, 2006; Sroufe, Egeland, Carlson, & Collins, 2009). This period of human development brings with it an unusually high number of psychological, social and physical changes that the adolescent has to negotiate (Call et al., 2002; Cummings, 1995; Seiffge-Krenke, 2000). The cumulative stress resulting from these changes is thought to tax the adolescent's emotional and coping resources, leading to an increase in mood disturbance and ultimately self-destructive behaviour (Larson & Sheeber, 2009). Not only does the broadening of adolescents' worlds subject them to more frequent distress-eliciting situations, but adolescents' increased autonomy means that they are progressively more responsible for regulating their own affective responses (Call et al., 2002).

A major aspect of the psychosocial development of the adolescent is the formation of a coherent personal identity. According to Erik Erikson's (1968) psychosocial theory of human development, the central task of the adolescent is the development of a secure identity through a process of searching and commitment. Adolescents must successfully complete the stage of Identity versus Role confusion as they define their roles and identity within society. Identity formation relies not only on society's expectations and recognition of the individual: it also depends on the individual's expectations and recognition of society (Erikson, 1968). For Erikson (1968), there is a complex relationship between the individual and community, where developing adolescents require confirmation of their place in society in order to develop ego strength. Adolescents try to figure out who they are, what they value, and who they will grow up to become (Louw et al., 2007). They try to integrate intellectual, social, sexual, and other aspects of themselves into a unified self-identity. The task facing the adolescent is to move beyond a very small interpersonal circle to find supportive relationships and become autonomous, and to cope without the support of family ties (Louw et al., 2007). As such, adolescents' interactions with their environments play a central role in their health and well-being (Call et al., 2002). The unsuccessful resolution of this task creates unhealthy adjustments and behavioural problems (Sigelman & Rider, 2003). In the domain of moral development, the adolescent's successful adjustment requires a sound personal value system that is internalised, and the refinement of moral reasoning and judgement. This area of development is of paramount importance as it acts as a guide for appropriate behaviour and supports the adolescent in the avoidance of socially and morally irresponsible behaviour (Coleman & Hagell, 2007).

The development of a sound and reliable way of coping (Panel 4, *Figure 1*) has been suggested by numerous authors (Israelashvili, Gilad-Osovitzki, & Asherov, 2006; Yang & Clum, 1996) to have an effect on the potential impact of personal and environmental stressors and resources experienced by adolescents. As such the use of coping skills by adolescents is considered to be an important mediator between the effects induced by daily life stressors and negative health outcomes such as suicidal behaviour (Hobfoll, 1988; Hobfoll, 1998; Lewis & Frydenberg, 2005; Seiffge-Krenke, 2006; Votta & Manion, 2003; Yang & Clum, 1996).

Adolescents who had not acquired adequate coping skills reported higher levels of suicidal ideation and attempted suicide (Israelashvili et al., 2006).

Lazarus and Folkman (1984) define coping as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person" (p.141). These cognitive and behavioural efforts are directed at mastering, tolerating, reducing and/or minimising environmental and internal demands and conflicts that strain an individual's resources (Schafer, 2000). Lazarus and Folkman (1984) have proposed that the way individuals appraise situations they are faced with determines the level of stress they experience. These appraisals also determine the strategies which individuals might employ in an attempt to cope with these situations. More specifically, in their theory of stress, appraisal and coping, Lazarus and Folkman (1984) contend that upon being confronted by a new situation, an individual is inclined to engage in two related appraisal processes. They refer to the first of these processes as primary appraisal. Primary appraisal involves determining the implications of the situation for one's well-being. Secondary appraisal occurs in reaction to having identified a situation as a stressor during the primary appraisal process. During secondary appraisal the individual attempts to determine the extent to which they are capable of dealing successfully with the stressor. Lazarus and Folkman (1984) suggest that if individuals judge themselves as being capable of dealing successfully with the stressor, they are more likely to engage in positive coping behaviours. However, if they perceive themselves as not possessing the necessary resources to deal effectively with the stressor, they are likely to engage in more maladaptive coping behaviours.

According to Hobfoll's (1988) Conservation of Resources theory, coping resources also play a vital role in the coping process. These coping resources include internal or personal resources such as self-esteem, hope, external resources such as the availability of social support networks as well as environmental factors such as access to health services, political and economic stability (Hutchinson, Stuart, & Pretorius, 2007). Hobfoll (1988) suggests that the availability of resources not only influences the individual's appraisal of the situation but also

determines the choice of coping strategy. Insufficient resources may lead to a more defensive, or even destructive coping style whereas adequate resources promote the use of action-orientated coping responses (Hobfoll, 1988; Hutchinson et al., 2007; Santrock, 2004). Based on this, the person may feel that the stressor is manageable or alternatively that the resource is insufficient, which may make him/her inclined towards avoidant and maladaptive coping behaviour (Hobfoll, 1998).

A distinction can be drawn between problem-focused coping strategies and emotion-focused coping strategies (Compton, 2005; Lazarus & Folkman, 1984; Caltabiano, Byrne, Martin, & Sarafino, 2002). Problem-focused coping strategies aim to alter the stressor through cognitive reasoning and purposeful action, while emotion-focused strategies help to relieve emotional distress which is caused by, or associated with, the stressful situation (Carver, Scheier, & Weintraub, 1989; Compton, 2005). The use of problem-focused coping strategies has been reported to increase the expectation of positive outcomes which allow the adolescent to be hopeful, and improve their levels of motivation and satisfaction (Lewis & Frydenberg, 2002). In contrast, emotion-focused coping involves the attempt to reduce or modify a person's emotional response to the problem either by seeking emotional support, accepting the stressor, the venting of emotions or by turning to religion (Everall, Altrows, & Paulson, 2006; Hobfoll, 1988; Lazarus & Folkman, 1984; Rothmann & Van Rensburg, 2002). Emotion-focused coping strategies, such as seeking emotional support and turning to religion, assist adolescents in dealing with stressful situations more successfully and increase their perception of being able to deal successfully with future stressful situations (Rutter & Estrada, 2006). Aspalan (2003) and Brown (2009) maintain that a strategy such as turning to religion not only acts as a protective barrier to stressful challenges, but also helps to decrease the impact of suicidal ideation. Seeking social support as an emotion-focused coping strategy, especially among female adolescents, was reported to reduce feelings of hopelessness and helplessness, created a feeling of belonging and acted as a protector against suicidal ideation (Everall et al., 2006; Meehan et al., 2007; Wissing, Claassens, & Du Toit, 1998). Venting of emotions, on the other hand, can increase feelings of alienation, insecurity and poor self-esteem which are associated with high levels of suicidal ideation (George, 2009). Carver et al. (1989) identified a third mode of coping that they referred to as dysfunctional coping. These include strategies such as denial, avoidance and alcohol or drug

disengagement. Coping strategies such as self-blame and acceptance may lead to elevated levels of anxiety and depression, which are a further risk for suicidal behaviour (Frydenberg, 2008). Emotion-focused and dysfunctional coping strategies, especially turning to religion and emotional support, denial, avoidance or mental disengagement might be effective in the initial stages of coping with stressful events as they decrease feelings of anxiety, panic and low mood (Kruger, 2010). The beneficial effects of these strategies are usually short-lived with levels of renewed anxiety and stress returning, as stressful circumstances persist (Reinecke, 2006).

Gender differences have been identified in the coping strategies used by boys and girls. Frydenberg (1997) found that boys (more than girls) use distraction as an effective coping mechanism. Boys tend to get involved in alternative activities such as sport to reduce their stress and in this way they suppress or ignore the problem more than girls do. Girls are more inclined to use social support, rely on others for approval and appraise events as more complex and negative, so they are more affected by stressful situations than boys (Frydenberg, 1997; Frydenberg, 2008). Several studies (Kausara & Munir, 2004; Wilson, Pritchard, & Revalee, 2005) also found that adolescent females reported using a broader range of coping strategies more frequently than males.

In addition to gender differences in coping approaches, the literature suggests that cultural and ethnic factors may also play a determining role in coping differences (George, 2009; Magaya, Asner-Self, & Schreiber, 2005). Magaya et al. (2005), in a study among a sample of Zimbabwean adolescents, found that cultural factors bear a significant influence on adolescents' choice of coping approaches, as adolescents are often encouraged to adopt non-confrontational and avoidant behaviours that are focused on the promotion of a harmonious and interdependent social environment. Similarly, Sheu and Sedlacek (2004), in a study investigating coping differences among a group of black, white and Asian Americans, found the Asian participants to be more pessimistic and more inclined towards using coping strategies of avoidance. According to Sheu and Sedlacek (2004), these differences are linked to the influence of collectivistic cultures that value the preservation of social relations above confrontational behaviours. A South African study (George, 2009), investigating ethnic differences in coping strategies among

a sample of adolescents, found that the modes of coping (problem-focused and emotion-focused coping) between the ethnic groups did not differ significantly. However, dysfunctional coping appeared to be used more frequently amongst the black and coloured participants in this study.

An important aspect for South African adolescents is not just how to deal with the stress brought on by daily living, but also how to manage the process of accelerated acculturation brought on by the country's rapid socio-political and economic transformation (Panel 4, *Figure 1*). According to Kosic (2004), the processes of coping and acculturation are closely related (Kosic, 2004). Acculturation refers to the changes that occur within an individual and cultural group as people from different cultural backgrounds come into constant contact with one another (Kosic, 2004). This is interpreted as a two-dimensional process, which takes cognisance of the fact that both the individual's relationship to his/her own culture, as well as the relationship with the new or dominant culture should be considered (Phinney, 1990). The negative outcomes of the process of acculturation may include adjustment problems, stress-related conditions, depression as well as other negative health outcomes such as suicidal behaviour, collectively known as acculturative stress. According to Berry, Phinney, Sam and Vedder (2006), acculturative stress refers to the challenges and stresses that individuals are confronted with as they attempt to successfully understand different cultures; knowledge of which is necessary in order to adjust to their new circumstances. It can thus be described as the negative outcome individuals experience in the process of interacting with members of another cultural group (Anderson, 1991).

Individuals make use of different acculturation strategies in dealing with the interaction of members from another cultural group, based on the attitudes held towards their own culture and that of others (Berry, Trimble, & Olmedo, 1986). According to Berry et al. (1986), individuals have various strategies available to them in dealing with this cultural contact. These include strategies such as assimilation, separation or integration. Assimilation refers to a process whereby an individual does not wish to maintain his/her cultural identity and pursues opportunities to interact with members of other cultural groups in their daily interaction (Berry,

2006). Separation is an acculturation strategy that involves holding on to your own cultural values and beliefs, and at the same time avoiding interaction with members of another cultural group. However, when there is an interest in both maintaining one's own cultural values, and being open to the values of others, the strategy of integration is being applied. This strategy appears to be the most effective and has been linked to the positive mental health and well-being of individuals (Naidoo & Mahabeer, 2006; Van Oudenhoven & Van Der Zee, 2002).

Evidence suggests that Berry's acculturation strategies are related to an individual's modes of coping (Schmitz, 1992). Findings by Schmitz (1992) suggest that integration, assimilation and separation/rejection significantly correlate with problem-focused, emotion-focused and dysfunctional coping approaches. Integration positively correlates with problem-focused coping, and assimilation correlates positively with both problem-focused and emotion-focused coping, but negatively with dysfunctional coping. However, separation positively correlates with emotion-focused and dysfunctional coping approaches.

A study conducted amongst immigrants in Canada (Berry, 1990), revealed that integration afforded the lowest level of acculturative stress. Furthermore, assimilation achieved a medium degree of acculturative stress while separation afforded the highest level of acculturative stress. In a South African study conducted amongst 348 black students, Hocoy (1999) found a clear preference towards the integration acculturation strategy. Similarly, Kramers (2000), in a study conducted among a sample of third-year nursing students, confirmed the presence of ethnic differences in the use of acculturation strategies. Kramers (2000) concluded that the black and white participants in her study, displayed greater preference toward rejection as these groups showed a greater need for maintaining their historical and cultural heritage. However, no South African studies (as reflected in an electronic search conducted on the search engines PsychLit, PsychInfo and Science Direct) could be found that have examined the use of acculturation strategies amongst adolescents.

As the Integrated Stress and Coping Model implies, the interaction of personal dispositional factors, contextual influences and developmental transitions determine which

coping strategies are used, and what the ultimate outcome (Panel 5, *Figure 1*) of the process will be. If these influences are managed correctly, a positive outcome is obtained, which includes successful implementation of coping resources and strategies. However, when coping strategies and resources are not successfully implemented, the likelihood of a negative outcome increases. In this article, the particular outcome of the interaction between stressors, resources and insufficient acculturation- and coping strategies is suicidal ideation. More specifically, exposure to personal dispositional and contextual stressors possibly influences the levels of suicidal ideation, depending on the implementation of effective acculturation- and coping strategies and resources. The level of suicidal ideation, in turn, plays a determining role in adolescents' engagement in attempted suicide. If no effective, preventative psychological interventions take place, suicidal ideation might lead to suicide attempts, and suicide attempts might lead to completed suicide.

Conclusion

There is consensus that adolescent suicidal behaviour is increasing at an alarming rate in both developed and developing countries. However, it seems that only a few South African studies have been conducted on the causes of adolescent suicidal behaviour. In addition, the vast majority of these studies have only focused on a singular variable in explaining the rise of adolescent suicidal behaviour. Thus, it seems as if an integrated approach to adolescent suicidal behaviour is less clearly understood. Furthermore, given the dearth of South African studies that incorporates an integrative approach of variables to explain adolescent suicidal behaviour, research that is specific to the South African context is called for.

Adolescent suicidal behaviour is a complex phenomenon which requires a multi-factorial approach in illumining its causes. By using the Integrated Stress and Coping Model, it is hoped that greater clarity can be obtained about the interacting role of personal and environmental stressors and resources as well as coping- and acculturation strategies in adolescent suicidal behaviour.

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CHAPTER 3

ARTICLE II

ADOLESCENT SUICIDAL BEHAVIOUR: A COMPARATIVE STUDY OF PSYCHOSOCIAL VARIABLES

Abstract

The role of stressors, acculturation- and coping strategies as contributing factors in adolescent suicidal behaviour are well established in suicide related studies. A dearth of information exists regarding the possible ethnic and gender differences of these variables within the South African context. The current study compared a multi-ethnic sample of adolescents from the Free State province with regard to their level of suicidal ideation, their experience of life stressors, perceived social resources, and acculturation- and coping strategies they employ. A non-experimental, criterion-group design was employed and 1033 adolescents were sampled from schools in the province. Participants completed the Suicidal Ideation Questionnaire for Adolescents, the youth form of the Life Stressors and Social Resources Inventory, the South African Acculturation Scale and the COPE Questionnaire.

Significant differences were found in the levels of suicidal ideation between the groups. Socio-economic factors and difficulties in romantic relationships appear to be prominent sources of stress for both coloured and black adolescents, while the school environment was identified by white participants as the biggest contributor to the stress they experience. Participants identified friendships as a major resource in their lives. Coloured females displayed a greater tendency to use integration as acculturation strategy, while significant differences were also found between the ethnic and gender groups with regard to coping strategies. Male and female black and coloured participants reported more frequent use of emotion-focused and dysfunctional coping strategies than the white participants. Further studies are recommended to explore other personal variables that could offer alternative explanations for adolescent suicidal behaviour.

***Keywords*:** adolescence; suicidal behaviour; resources; stressors; acculturation strategies; problem-focused coping; emotion-focused coping; dysfunctional coping; ethnic differences.

Worldwide adolescent suicidal behaviour has become a serious public health concern (Bridge, Goldstein, & Brent, 2006; Ramgoon, Patel, & Paruk, 2009) with at least 100 000 adolescents committing suicide annually (WHO, 2008). South African statistics also reflect this growing concern (Burrows, Vaez, & Laflamme, 2007; Mashego & Madu, 2009; Reddy et al., 2010). Recently conducted national surveys (Reddy et al., 2003; Reddy et al., 2010) suggest an increase in the suicidal behaviour of adolescents from all ethnic backgrounds. Similarly, studies (Mashego & Madu, 2009; Stark et al., 2010) conducted in the Free State province, suggest a high prevalence of adolescent suicidal behaviour. Currently, five to six adolescent patients (aged between 14 and 19 years) are being admitted to Pelonomi hospital in Bloemfontein on a daily basis, following suicide attempts (N. Mosotho, personal communication, May 15, 2010). However, given this relatively high rate of adolescent suicidal behaviour, it is surprising to note that the underlying causes and prevention of adolescent suicidal behaviour have received relatively little attention from South African researchers (Madu & Matla, 2003; Ramgoon et al., 2009).

Suicidal behaviour can be considered in two ways, namely non-fatal and fatal suicidal behaviour. Fatal suicidal behaviour refers to completed suicidal behaviour that reflects the person's intention to die and where the person has managed to achieve the pre-determined goal. As opposed to this, non-fatal suicidal behaviour refers to suicidal behaviour that does not end the person's life and embodies several manifestations such as those seen in attempted suicide (Palmer, 2008). Suicidal ideation is defined as the domain of thoughts, images and ideas about committing suicide or a desire to terminate one's life without the suicidal act (Bridge et al., 2006). Although suicidal ideation is a necessary determinant for suicidal behaviour, but is not the only sufficient factor leading to suicide, it is considered an important risk factor for completed suicide (Chamberlain, Goldney, Delfabbro, Gill, & Dal Grande, 2009).

Adolescent suicidal behaviour has been characterised as a multidimensional construct constituting a complex relationship between psychosocial and environmental components (Fergusson & Woodward, 2002; Kerr, Preus, & King, 2006). Although several personal and environmental factors, such as depression (Hildreth, 2009), previous suicidal behaviour (Joe,

Stein, Seedat, Herman, & Williams, 2008), a lack of social support (Schlebusch & Bosch, 2000; Pillay & Wassenaar, 1997), academic pressure (Wassenaar & Narboni, 2001), extreme poverty (Govender & Killian, 2001), cultural transition and acculturation (Beekrum, Valjee & Collings, 2011; Pillay & Wassenaar, 1997) as well as the use of inadequate coping strategies (Meehan, Peirson, & Fridjhon, 2007) have been identified, it appears as if the interplay of all of these factors are largely underexplored within the South African context. Consequently, the current study aims to compare a sample of male and female, black, white and coloured adolescents with regard to their level of suicidal ideation, perceived life stressors and resources as well as acculturation- and coping strategies.

The Integrated Stress and Coping Model (Moos & Schaefer, 1993) provides the guiding framework for the current study. This model composes a number of systems that are thought to function in a transactional manner. The personal system is characterised by the enduring personal characteristics of the individual. Specific components of the personal system include aspects such as gender and ethnicity. The environmental system is made up of conditions outside of the adolescent such as social and environmental stressors and resources. Aspects such as relationships with peers, family and socio-economic factors fall under this system. The personal and environmental systems are hypothesised to act as a backdrop for the third system of the framework, namely transitory environmental conditions. The aforementioned components of the framework (i.e. environmental system, personal system and transitory conditions) are viewed as influencing the specific cognitive appraisals individuals make with regard to stressors, as well as impacting upon the specific coping behaviours and strategies these individuals implement, thus influencing the psychological well-being of adolescents. Furthermore, the bidirectional pathways that exist between all these systems indicate that the processes are reciprocal and able to influence each other (Moos & Schaefer, 1993). For example, an adolescent's personal system can exert a positive or negative influence on the environmental system, and vice versa. An adolescent's display of suicidal behaviour is therefore substantially influenced by his/her exposure to stressors and resources, as well as the availability and utilisation of personal and environmental coping resources.

In line with the Stress and Coping Model (Moos & Schaefer, 1993), marked gender differences appear in the suicidal behaviour of adolescents (Burrows & Laflamme, 2008; Meehan et al., 2007). Adolescent boys show a much higher rate of completed suicide than girls, whereas girls have a higher prevalence of suicidal ideation and suicide attempts (Bridge et al., 2006; Matzopoulos, Norman, & Bradshaw, 2004). Another aspect associated with the personal system is ethnicity (Miller & Eckert, 2009). Traditionally viewed as mainly a Caucasian problem, several studies (Bridge et al., 2006; Miller & Eckert, 2009; Walker, 2007) now suggest that the rate of suicidal behaviour amongst black and indigenous groups around the world is on the increase. Amongst Native American youth aged 15 to 24 years, for example, the rate of suicidal behaviour is the highest of any ethnic or age group in the United States of America (Dorgan, 2010). South African research findings (Joe et al., 2008; Madu & Matla, 2003; Meehan et al., 2007) echo this changing pattern, suggesting an increase in the suicidal behaviour of black, coloured and Indian adolescents, with the rate of suicidal behaviour amongst coloured adolescents being particularly high (Joe et al., 2008).

The environmental system, including aspects such as social support from family and peers (Pillay & Wassenaar, 1997; Wassenaar & Narboni, 2001), poverty (Yoder & Hoyt, 2005) and socio-cultural transition (Bridge et al., 2006; Wassenaar, Marchiene, Van der Veen, & Pillay, 1998) appears to be a significant determinant in the suicidal behaviour of adolescents. Secure and stable relationships with family and peers not only assist adolescents in making a smooth transition into adulthood, but can also help in coping with negative life events, thereby protecting them against suicidal behaviour (Cornwell; 2003; Liu, 2005; Way & Robinson, 2003). Peer connectedness (or the lack thereof) appears to strongly influence adolescent suicidal behaviour, as adolescents often judge their own value by the reactions of others (McGraw, Moore, Fuller, & Bates, 2008; Louw, Louw, & Ferns, 2007). Adolescents who are unpopular, have poor peer relations, and those who are emotionally insecure amongst their peers show poor academic progress and planning abilities (Byrne & Mazanov, 2002; McGraw et al., 2008). However, having good peer relationships can assist adolescents to cope with the stressors they are exposed to, can counteract loneliness and isolation and can also contribute towards the adolescent's development of his or her self-concept (Ary, Duncan, Duncan, & Hops, 1999; Deiner & Seligman, 2002; Jackson & Rodriguez-Tomé, 1993; Louw et al., 2007).

Factors such as poverty (Goldstein & Brooks, 2006) and socio-political transition (Wassenaar et al., 1998) exert a significant impact on the lives of adolescents and have been implicated in suicidal behaviour (Meehan et al., 2007). The effects of poverty, according to Goldstein and Brooks (2006), create a sense of helplessness and an acceptance of circumstances which stifles the adolescent's ability to become ambitious, resilient and non-accepting of their circumstances. Children from lower-income families tend to have higher levels of depression and anti-social behaviours such as bullying, dishonesty and criminal acts, and display a higher risk for engaging in alcohol and drug use and other high-risk behaviour (Diekstra & Garnefski, 1995; Kuruvilla & Jacobs, 2007).

South Africa's rapid socio-cultural transition has brought about increased opportunities for ethnic contact between adolescents as schools and neighbourhoods have become racially mixed (Beekrum, 2008; Dawes & Finchilescu, 2002). However, this increased inter-ethnic contact, along with South Africa's diverse cultural beliefs and languages, has exposed adolescents to an environment of increasing challenges and social demands. For example, black adolescents find themselves increasingly having to develop identities that allow them to cope with an ideological shift from collectivism to individualism (Erasmus & Ferreira, 2002). This process has resulted in black adolescents slowly moving away from some of the more traditional aspects of their culture, often leading to conflict between themselves and their more traditional parents (Mashego & Madu, 2009; Pillay & Wassenaar, 1997; Wassenaar et al., 1998). The instability associated with such a transition has been found to be strongly linked to suicidal behaviour (Beekrum et al., 2011; Burrows & Laflamme, 2008; Mäkinen, 2000). For white and coloured adolescents, the socio-political change has brought about a disruption in the levels of privilege previously experienced under apartheid rule (Dawes & Finchilescu, 2002). For whites, the transformation has been from a political majority to a numerical and social minority relative to black groups (Norris et al., 2008). Previously, white adolescents were privileged with easy access to economic and social resources. Today, however, with the government's policies of affirmative action and black empowerment, whites have to compete with increasingly better-educated black adolescents for limited resources (Norris et al., 2008). Rising unemployment in

South Africa has also led to fierce competition for employment amongst school leavers from all ethnic groups, resulting in high levels of stress and anxiety about the future (Norris et al., 2008).

However, adolescents' exposure to chronic life stressors does not necessarily result in the display of suicidal behaviour (Bergdahl & Bergdahl, 2002). The literature suggests that coping plays an important role in mediating the effects induced by daily stressors and negative health outcomes such as suicidal behaviour (Lewis & Frydenberg, 2002; Seiffge-Krenke, 2006). Coping refers to the cognitive and behavioural efforts an individual makes to manage an event or situation that is perceived as stressful (Folkman & Lazarus, 1984). Coping strategies can be differentiated into either emotion-focused coping or problem-focused coping (Lazarus & Folkman, 1984; Moore, 2000). Emotion-focused coping is aimed at regulating an individual's emotional responses to the stressor by using strategies such as seeking emotional and social support, positive reinterpretation, acceptance and turning to religion (Carver, Scheier, & Weintraub, 1989). Problem-focused coping aims to alleviate stressors directly and consists of different strategies, such as active coping, planning, suppression of competing activities, restraint coping and the seeking of instrumental social support. Other coping strategies identified by Carver et al. (1989) (e.g. denial, avoidance or alcohol and drug disengagement) were reported to be used less often with less adaptive outcomes, and are termed dysfunctional coping strategies.

Several South African studies (Basson & Van den Berg, 2009; Plaaitjie 2006) suggest the existence of ethnic and gender differences in the utilisation of coping strategies. Plaaitjie (2006), for example, in a study involving a multi-ethnic student population, found that black participants more often turned to religion, coloured participants used alcohol and other substances, while white participants employed acceptance as a form of coping. Frydenberg (1997) found that boys (more than girls) use distraction as an effective coping mechanism. Boys tend to get involved in alternative activities such as sport to reduce their stress and in this way they suppress or ignore the problem. Girls are more inclined to use social support, rely on others for approval and appraise events as more complex and negative so they are more affected by stressful situations than boys (Frydenberg, 1997; Frydenberg, 2008). A South African study on adolescents by

Wissing and colleagues (1998) found that female participants more often used active coping strategies such as seeking social support and emotional discharge to deal with stress.

An important aspect for South African adolescents lies not only in how to deal with the stress brought on by daily living, but also in how to manage the process of accelerated acculturation brought on by the country's rapid socio-cultural and economic transformation (Mashego & Madu, 2009; Meehan et al., 2007; Pillay & Wassenaar, 1997; Wassenaar et al, 1998). Acculturation refers to the changes that occur within an individual and cultural group as people from different cultural backgrounds come into constant contact with one another (Kosic, 2004). The negative outcomes of the process of acculturation may include adjustment problems, stress-related conditions, depression as well as other negative health outcomes such as suicidal behaviour, collectively known as acculturative stress. Individuals make use of different strategies in dealing with the interaction of members from another cultural group, based on the attitudes held towards their own culture and that of others (Berry, Trimble, & Olmedo, 1986). According to Berry et al. (1986), individuals have various strategies available to them in dealing with the cultural contact. These strategies include assimilation, separation and integration. Assimilation refers to the process where an individual wishes not to maintain his/her cultural identity and pursues opportunities to interact with members of other cultural groups (Berry, 2006). Separation is an acculturation strategy that involves holding on to your own cultural values and beliefs, while simultaneously avoiding interaction with members of another cultural group. However, when there is an interest in both maintaining one's own cultural values, and being open to values of others, the strategy of integration is being applied. This strategy appears to be the most effective and has been linked to the positive mental health and well-being of individuals (Naidoo & Mahabeer, 2006; Van Oudenhoven & Van der Zee, 2002).

Although several South African studies (Meehan et al., 2007; Pillay & Wassenaar, 1997; Stevens & Lockhat, 1997; Wassenaar et al., 1998) have alluded to the role of socio-cultural transition in adolescent suicidal behaviour, no studies investigating the role of acculturation strategies in adolescent suicidal behaviour could be found (searches conducted on PsychLit, PsychInfo and Science Direct). However, in a South African study conducted amongst 348

black students, Hocoy (1999) found a clear preference towards integration as an acculturation strategy. Similarly, Kramers (2000) in a study with a group of multi-ethnic third year nursing students, confirmed the presence of ethnic differences in the use of acculturation strategies. According to Kramers (2000), the black and white participants in her study displayed a greater preference towards rejection. Kramers (2000) concluded that these ethnic groups showed a greater need for maintaining their historical and cultural heritage.

The literature reviewed suggests that adolescent suicidal behaviour is a complex phenomenon occurring within the context of a variety of personal and environmental factors. Given the dearth of adolescent suicide-related research in South Africa, research that is specific to the South African context is called for. Subsequently, the current study aims to compare a sample of male and female, black, white and coloured adolescents with regard to their level of suicidal ideation, life stressors, resources as well as acculturation- and coping strategies.

Method

The following methods were used:

Research design

A non-experimental, cross-sectional and criterion-group research design was used to determine differences between the male and female, black, white and coloured groups with regard to their suicidal ideation, stressors, resources, acculturation- and coping strategies.

Participants

Eighteen schools, representative of all five rural and urban districts of the Free State province, were selected by means of stratified random sampling to ensure a balanced representation of ethnicity, gender and age. All available Grade 11 and 12 learners from the selected schools were included to make up a sample of 1033 learners. The sample consisted of 437 (42.3%) males and 552 (53.4%) females, with 44 (4.3%) participants not indicating their gender. The ages of the

participants ranged from 16 to 24 years (the mean age of the sample was 17.41 years with a standard deviation of 1.11). The sample included 405 black (39.2% of the sample), 427 white (41.3% of the sample) and 201 coloured (19.5% of the sample) participants.

Data gathering

The research committee of the University of the Free State's faculty of the humanities provided ethical clearance for the research. Permission to involve schools in the study was granted by the Free State Department of Education and the respective school principals. Parents and participants gave written consent prior to the inclusion of the learners in the study. All participants were guaranteed anonymity, confidentiality and the freedom to withdraw from the study at any stage.

Data was collected on a day set aside by the Department of Education. Accredited language practitioners were used to translate English questionnaires into Afrikaans and SeSotho by means of the back translation method (Brislin, 1970; Foxcroft & Roodt, 2005). Participants were given the opportunity to complete the questionnaire in any of the three languages at their respective schools. The administration of the questionnaires took place over a period of 2 hours. Questionnaires were administered by a psychometrist and psychologist who were also available to answer any questions that arose during the test administration. An opportunity was also provided to debrief learners after the administration of the questionnaires in order to address any emotional responses or questions that resulted from their involvement in the research process.

Measuring instruments

The following questionnaires were used to gather data on the variables included in this study:

The *Suicidal Ideation Questionnaire for Adolescents* (SIQ) (Reynolds, 1988) measures the frequency and intensity of suicidal thoughts experienced by the participants. The 30 items of the questionnaire are answered on a seven-point Likert scale and the total suicidal ideation score ranges from 0 to 180. An alpha coefficient of 0.97 was reported by Reynolds (1988) for a group

of 890 American adolescents, while George (2009) reported an internal consistency coefficient of 0.95 for a larger South African sample.

The youth form of the *Life Stressors and Social Resources Inventory* (LISRES) (Moos & Moos, 1994) was used to assess the stressors and resources reported by participants. The instrument consists of 209 items divided into two sections, namely Life Stressors and Social Resources. The inventory has a total of sixteen subscales, nine of which measure life stressors and seven measuring social resources. The Life Stressors subscales are: Physical Health (PH), Home and Money (HM), Parents (PAR), Siblings (SIB), Extended Family (FAM), School (SCH), Friends (FR), Boyfriend/Girlfriend (BG) and Negative Life Experiences (NLE). The Social Resources subscales are: Parents (PAR), Siblings (SIB), Extended Family (FAM), School (SCH), Friends (FR), Boyfriend/Girlfriend (BG) and Positive Life Experiences (PLE). A high score on the stressor subscales indicates that participants experience the particular variable as stressful, while a high score on the resource subscales indicate the presence of adequate resources in a specific domain. The internal consistency index varies from between 0.79 to 0.88 for the stressor subscales and 0.78 to 0.91 for the social resources subscales (Moos & Moos, 1994). A South African study, conducted by Basson and Van den Berg (2009) reported coefficients ranging from 0.70 and 0.91 for all subscales.

The *South African Acculturation Questionnaire* (SAAS) (Kramers, 2000) was used to measure preference for specific acculturation strategies. This twenty-item self-report questionnaire consists of three subscales assessing respondents' tendencies towards cultural assimilation, integration and rejection. Eight assimilation questions tapped respondents' desires to maintain relationships with other cultural groups in the absence of maintaining own-group characteristics. Seven integration questions tapped respondents' desires to maintain their own cultural identity and relationships with other cultural groups. Five rejection questions tapped respondents' desires to maintain their own cultural identity in the absence of maintaining relationships with other cultural groups. A high score on this scale is indicative of a preference for a specific acculturation strategy. In a South African study conducted amongst a sample of nursing students, Kramers (2000) reported alpha coefficients ranging from 0.56 to 0.70.

The *Coping Orientations to the Problems Experienced Questionnaire* (COPE) (Carver et al., 1989) measures participants' coping strategies. The scale consists of 53 individual items which make up 14 subscales. Items are completed on a four-point Likert scale. The subscales are grouped together into three broad categories, namely problem-focused strategies, emotion-focused strategies, and dysfunctional strategies. Problem-focused subscales include subscales such as: Active Coping, Planning, Suppression of Competing Activities, Restraint Coping and Seeking Social Support for Instrumental Reasons. The emotion-focused strategies consist of subscales such as Seeking Social Support for Emotional Reasons, Positive Reinterpretation and Growth, Acceptance, Turning to Religion and Focus on and Venting of Emotions. Dysfunctional subscales include the subscales Denial, Behavioural Disengagement, Mental Disengagement and Alcohol-Drug Disengagement (consists of only one item) (Carver et al., 1989; Wong, Reker, & Peacock, 2006). The scores on the individual subscales are calculated by adding the scores of the items per subscale. High scores indicate that the individual frequently uses the proposed strategy, whereas low scores indicate a less frequent use of the coping strategy. Carver et al. (1989) reported alpha coefficients of between 0.45–0.90 for the internal consistency of subscales as a whole. In a South African study of white, black and coloured adolescents, George (2009) reported alpha coefficients ranging from 0.58–0.93. The relatively low alpha coefficients could have been influenced by the small number of items per subscale (Anastasi & Urbina, 1997). Subsequently, a decision was taken to combine the subscales by calculating the total scores for the problem-focused, emotion-focused and dysfunctional coping subscales.

A *biographical questionnaire* consisting of 11 items was used to gather demographic information pertaining to the age, gender, race, grade, and place of residence of the participants.

Cronbach alpha coefficients were calculated for all the scales and subscales used in this study in order to determine the internal consistency. The results of this analysis are reported in Table 1**.**

Table 1: Cronbach alpha coefficients for the scales for the total sample as well as the ethnic groups independently

Scales	Alpha-Coefficients			
	Overall n=1033	White n=427	Black n=405	Coloured n=201
SIQ	0.97	0.98	0.96	0.97
LISRES: Stressors subscales				
Physical health (PH)	0.83	0.68	0.86	0.87
Home and money (HM)	0.89	0.88	0.86	0.86
Parents (PAR)	0.91	0.92	0.90	0.89
Siblings (SIB)	0.84	0.86	0.82	0.86
Family (FAM)	0.79	0.84	0.76	0.76
School (SCH)	0.81	0.84	0.77	0.83
Friends (FR)	0.77	0.82	0.73	0.75
Boyfriend/Girlfriend (BG)	0.85	0.91	0.84	0.77
Negative life experience (NLE)	0.85	0.80	0.83	0.81
LISRES: Resource subscales				
Parents (PAR)	0.91	0.93	0.88	0.90
Siblings (SIB)	0.88	0.92	0.91	0.93
Family (FAM)	0.91	0.89	0.87	0.90
School (SCH)	0.85	0.87	0.81	0.88
Friends (FR)	0.84	0.82	0.82	0.87
Boyfriend/Girlfriend (BG)	0.96	0.98	0.95	0.95
Positive life experiences (PLE)	0.74	0.72	0.74	0.78
SAAS Subscales				
Assimilation	0.70	0.72	0.65	0.71
Integration	0.79	0.78	0.75	0.81
Rejection	0.60	0.56	0.60	0.68
COPE Subscales				
Problem-focused coping	0.89	0.91	0.89	0.89
Emotion-focused coping	0.86	0.85	0.87	0.87
Dysfunctional coping	0.86	0.76	0.74	0.71

Key: SIQ: Suicide Ideation Questionnaire; LISRES: Life Stressors and Social Resources Inventory; SAAS: South African Acculturation Scale; COPE: Coping Orientations to the Problems Experienced Questionnaire

It is evident from Table 1 that all the scales and subscales, with the exception of the subscales Physical Health (LISRES) for the white participants, Assimilation (SAAS) for the black participants and Rejection (SAAS) for the total sample, the white, black and coloured

groups exhibited acceptable levels of internal consistency (≥0.70) for non-cognitive measures (Nunnally & Bernstein, 1994). However, it was decided to include all scales and subscales in further analyses although the results from subscales with alpha coefficients less than 0.70 should be interpreted with caution.

Statistical Analysis

All analyses were performed using Version 17.0 of the SPSS software (SPSS Incorporated, 2009). Descriptive statistics were calculated for all the scales. In order to compare the level of suicidal ideation, perceived stressors and resources, as well as acculturation- and coping strategies amongst a group of black, white and coloured males and females, the significance of differences in average scores were investigated by means of a Multivariate Analysis of Variance (MANOVA). A post-hoc test (Scheffé test) was used to determine subgroup differences on the dependent variables (Howell, 2007). The 1% level of statistical significance was used in this study. Effect sizes were also calculated to determine the practical significance of results.

Results

The descriptive statistics for each of the ethnic and gender groups are presented in Table 2.

Table 2: Means and standard deviations for the SIQ, LISRES, SAAS and COPE scales

Scales	Black				White				Coloured			
	Male		Female		Male		Female		Male		Female	
	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
Suicide Ideation	28.84	33.39	40.88	43.38	21.25	30.19	25.99	33.10	29.63	37.76	61.06	48.55
LISRES: Stressor subscales												
Physical Health	0.89	2.56	1.01	2.38	0.38	1.08	0.60	1.13	1.46	3.16	1.31	3.37
Home and money	10.36	7.53	12.03	8.12	5.00	5.98	4.37	5.16	10.74	8.01	11.48	7.35
Parents	7.10	5.52	7.57	6.06	7.48	5.09	8.12	5.57	7.13	5.25	7.61	5.50
Siblings	7.75	5.74	7.91	6.04	7.71	5.13	8.41	5.63	8.62	5.79	8.88	6.35
Extended Family	5.67	4.59	6.50	4.93	5.07	4.03	5.30	4.25	6.45	4.57	7.78	4.71
School	16.69	8.48	15.52	7.65	16.26	7.87	15.18	7.66	18.23	8.15	18.15	9.66
Friendships	8.10	4.74	7.12	4.83	7.22	4.62	6.02	3.95	8.79	5.15	7.67	4.64
Boyfriend/Girlfriend	4.92	5.01	5.27	4.82	3.04	4.05	3.32	4.12	4.81	4.39	4.65	4.14
Negative Life Experiences	12.97	7.27	13.74	7.89	9.77	5.94	11.17	6.49	13.04	7.12	14.51	7.38
LISRES: Resource subscales												
Parents	8.18	5.61	8.63	5.43	11.77	5.79	12.52	5.70	10.22	5.48	7.98	5.60
Siblings	10.14	6.68	10.74	7.07	12.28	5.83	13.03	6.25	11.60	6.66	10.82	6.68
Extended Family	15.09	7.44	14.47	7.92	15.75	7.21	17.72	6.82	15.87	7.63	13.29	8.50
School	10.31	5.51	11.54	5.29	8.20	4.94	8.67	5.41	10.31	5.60	9.40	5.95
Friendship	22.02	8.10	23.78	8.59	27.07	7.25	28.39	6.43	23.78	8.62	23.50	10.01
Boyfriend/Girlfriend	9.35	7.58	11.84	7.68	9.39	8.36	10.49	8.74	11.33	7.25	12.58	7.29
Positive Life Experiences	11.37	4.84	11.24	4.54	11.16	4.56	10.95	3.87	12.26	4.79	11.60	5.29
SAAS												
Assimilation	24.16	5.37	23.44	6.20	21.88	5.30	20.66	5.71	23.91	6.90	25.79	5.61
Integration	23.82	5.53	25.01	5.55	22.11	5.08	22.25	5.42	23.69	6.52	26.13	5.18
Rejection	14.60	4.28	13.94	3.99	14.41	3.81	14.03	3.59	12.69	5.01	12.78	4.22
COPE												
Problem-focused coping	56.21	11.93	58.62	11.39	53.90	9.92	52.49	11.04	53.46	11.69	55.13	10.39
Emotion-focused coping	54.94	12.07	60.00	10.29	52.89	8.83	56.62	9.99	53.71	9.88	57.38	9.57
Dysfunctional coping	31.28	7.21	32.44	7.01	28.19	6.40	29.07	6.38	30.03	6.13	31.49	6.28

Key: SIQ: Suicide Ideation Questionnaire; LISRES: Life Stressors and Social Resources Inventory; SAAS; South African Acculturation Scale; COPE: Coping Orientations to the Problems Experienced Questionnaire

According to the results reported in Table 2, the coloured female participants reported the highest average score for suicidal ideation (61.06), followed by black females (40.88). The results further indicate that both coloured males and females experience physical health as a greater concern compared to white and black participants. Black females reported a higher

average score on the stressors Home and Money (12.03) and Boyfriend/Girlfriend (5.27). The average score obtained for the stressor subscale Parents (8.12) indicates that white females experience their parents as a greater source of stress compared to the other groups. Coloured females obtained the highest average score on the stressor subscales Siblings (8.88), Extended family (7.78) and Negative Life Experiences (14.51), while coloured males reported higher average scores on the stressor subscales School (18.23) and Friendship (8.79) respectively.

The white female participants in the current study obtained the highest average scores for the resource subscales Parents (12.52), Siblings (13.03), Extended family (17.72), and Friendship (28.39), while black females reported a higher average score for the resource subscale School (11.54). Coloured female participants reported the highest average score for the resource subscale Boyfriend/Girlfriend (12.58), while coloured males reported the highest average score for the resource subscale Positive Life Experiences (12.26).

The reported average scores obtained from the South African Acculturation Scale, indicate that coloured female participants reported the highest average scores for Assimilation (25.79) and Integration (26.13). Black male adolescents obtained the highest average score for Rejection (14.60), followed closely by white male participants (14.41).

From the reported average scores of the COPE scale, it appears as if black female participants reported higher average scores for problem-focused coping (58.62), emotion-focused coping (60.00) and dysfunctional coping (32.44) compared to black males and white and coloured males and females. It would seem, therefore, that the black female participants make more frequent use of a wider range of coping strategies.

In order to investigate the possible differences in ethnicity and gender, as well as the interaction between ethnicity and gender in the reported average scores a MANOVA procedure was performed and the results are reported in Table 3. The partial *eta* squared value is presented in the last column as an indication of effect size.

Table 3: MANOVA *F*-values for the testing of main effects and interactions regarding the coping and acculturation scales

Source	F-value+	*v*	*p*	*Partial Eta squared*
Ethnicity	17.162**	46;2014	0.000	0.282
Gender	10.045**	23;965	0.000	0.193
Ethnicity**Gender	9.000**	115;4797	0.000	0.177

****p ≤= 0,01; + Hotelling's Trace was used; Effect size: 0.4 large; 0.25 medium; 0.10 small**

It is evident from Table 3 that significant differences (at the 1% level of significance) were found between the dependent variables for ethnicity and gender, as well as for the interaction of ethnicity and gender. The partial *eta* square values indicate that approximately 28.2% of the differences in the variance of average scores of the dependent variables can be explained by ethnicity, while gender explains 19.3%, and the interaction between gender and ethnicity 17.7% of the variance. Subsequently, the results will be discussed separately for the two main effects and for the interaction between ethnicity and gender.

Significance of differences between the ethnic groups

An investigation was undertaken to explore the significance of differences between the average scores obtained for the SIQ, LISRES, SAAS and COPE scales with respect to the different ethnic groups. A one-way MANOVA was performed to determine, firstly, which subscales showed significant differences, and secondly, for which groups these differences occur. The 1% level of statistical significance was used. As three groups were involved, the Scheffé test was used to indicate the differences in the average scores between the groups. The results for the subscales, together with the calculated effect sizes (f) appear in Table 4. Due to the number of variables involved, only effect sizes of 0.20 and above (medium to large effect) are discussed.

Table 4: *F*-values of the one-way MANOVA to test for differences in average scores on suicidal ideation, stressors, resources, acculturation- and coping scales for the three ethnic groups

Scales	Black (n=405)		White (n=427)		Coloured (n=201)		*F*	*P*	*f*
	$\overline{X}$	s	$\overline{X}$	s	$\overline{X}$	s			
SIQ	35.12	39.39	23.84	32.04	47.85	47.12	27.98*	0.000	0.23
LISRES: Stressors									
Physical Health	1.01	2.45	0.48	1.10	1.44	3.38	13.46*	0.000	0.16
Home and Money	11.38	7.89	4.62	5.53	11.21	7.54	116.90*	0.000	0.48
Parents	7.25	5.82	7.80	5.35	7.39	5.33	1.09	0.338	-
Siblings	7.75	5.94	8.05	5.37	8.93	6.13	2.85	0.058	-
Extended Family	6.10	4.77	5.19	4.14	7.37	4.71	16.17*	0.000	0.18
School	15.85	8.02	15.79	7.73	18.29	8.93	7.52	0.001	0.12
Friendships	7.52	4.77	6.61	4.29	8.17	4.93	8.83	0.000	0.13
Boyfriend/Girlfriend	5.13	4.86	3.17	4.06	4.65	4.24	21.46*	0.000	0.20
Negative Life Events	13.41	7.52	10.48	6.25	13.93	7.20	25.34*	0.000	0.22
LISRES: Resources									
Parents	8.32	5.51	12.12	5.74	8.97	5.69	51.51*	0.000	0.32
Siblings	10.28	6.93	12.68	6.05	11.02	6.70	14.50*	0.000	0.17
Extended Family	14.56	7.81	16.76	7.03	14.54	8.17	10.66	0.000	0.14
School	11.02	5.45	8.47	5.20	9.91	5.78	23.18*	0.000	0.21
Friendship	23.08	8.49	27.76	6.86	23.52	9.53	39.60*	0.000	0.28
Boyfriend/Girlfriend	10.68	7.71	10.01	8.57	11.97	7.42	4.07	0.017	-
Positive Life Experiences	11.29	4.62	11.06	4.22	11.93	5.03	2.51	0.082	-
SAAS									
Assimilation	23.65	5.84	21.21	5.51	24.95	6.18	34.29*	0.000	0.26
Integration	24.46	5.57	22.11	5.28	25.30	5.85	30.09*	0.000	0.24
Rejection	14.23	4.13	14.22	3.70	12.66	4.53	12.13	0.000	0.15
COPE									
Problem-focused coping	57.57	11.55	53.18	10.47	54.59	11.25	16.75*	0.000	0.18
Emotion-focused coping	57.86	11.14	54.78	9.59	55.86	10.30	9.29*	0.000	0.13
Dysfunctional coping	31.87	7.06	28.65	6.36	30.75	6.28	25.19*	0.000	0.22

***p ≤ 0.01** **Effect sizes: *f*= 0.1 (small); *f*= 0.25 (medium); *f*=0.4 (large)**

According to the results reported in Table 4, significant differences (on the 1% level of significance) were found with regard to the average suicidal ideation scores obtained for the white, black and coloured participants. The results of the Scheffé test indicate that the coloured participants reported the highest level of suicidal ideation, followed by the black and white

participants. The corresponding f-value indicates that the result has a small to medium effect size and is thus of moderate practical value.

With regard to the average scores obtained for the stressor subscales of the LISRES, seven of the scores reflected significant differences, on the 1% level of significance, for the three ethnic groups. However, only the effect sizes of the average scores obtained for the stressor subscales Boyfriend/Girlfriend (medium effect size), Negative Life Experience (medium effect size) and Home and Money (large effect size) were practically significant. Subsequently, the results of only these average scores will be discussed further. According to the results from the Scheffé test, black and coloured participants have a higher average score on the stressor subscale Home and Money than the white partcipants. Furthermore, the Scheffé test results indicate that significant differences (1% level of significance) exist in the average scores obtained for the stressor subscales Boyfriend/Girlfriend and Negative Life Experiences between the white and black group and the white and coloured group. In each case the white adolescents had a significantly lower average score on this subscale when compared to the black and coloured groups.

With regard to the average scores obtained for the resource subscales of the LISRES, five of the scores reflected significant differences, on the 1% level of significance, for the three ethnic groups. However, only the effect sizes of the average scores obtained for the resource subscales Parents, School and Friends displayed a medium effect size and are thus of moderate practical significance. According to the results of the Scheffé test, significant differences (1% level of significance) were found in the average scores obtained for the resource subscale Parents between the white and black group and between the white and coloured group. In each case the white adolescents obtained a significantly higher average score on this subscale than the black and coloured groups. Furthermore, significant differences (1% level of significance) became apparent in the average scores obtained for the resource subscales School and Friends between the white and black group and between the white and coloured group. In the case of the resource subscale School, white adolescents reported a significantly lower average score than the black and coloured groups, while displaying a significantly higher average score for the resource subscale Friends compared to the black and coloured adolescents. Consequently, it can be

deduced that the school environment acts as a greater resource for black and coloured adolescents, while white adolescents experience friends as a greater source of support.

The average scores obtained for the acculturation subscales reflect statistically significant (1% level of significance) differences for the three ethnic groups. However, only the corresponding effect sizes for the average scores obtained for the Assimilation and Integration subscales were of moderate to large effect size and displayed some practical significance. According to the results of the Scheffé test, significant differences (1% level of significance) were found in the average scores obtained for the subscales Assimilation and Integration between the white and black group and the white and coloured group. In each case the white adolescents obtained a significantly lower average score on these subscales compared to the black and coloured groups.

With regard to the average scores obtained for the COPE subscales, all three subscales reflected statistically significant (1% level of significance) differences for the three ethnic groups. However, only the corresponding effect size of the average scores for the subscale Dysfunctional Coping was of moderate effect size and displayed practically significant differences. According to the Scheffé results, significant differences exist in the average scores obtained for the subscale Dysfunctional Coping between the white group and the black and coloured groups. From Table 4 it is apparent that the white group had a significantly lower average score compared to the black and coloured groups. These results suggest that black and coloured adolescents are more likely to use dysfunctional coping strategies in dealing with their daily problems.

Significance of differences between the gender groups

An investigation was undertaken to determine which of the scales that measured suicidal ideation, stressors, resources, acculturation- and coping strategies demonstrated significant differences in the average scores for the two genders. A one-way MANOVA was performed to firstly determine which subscales showed significant differences and secondly, in which groups

these differences occur. The 1% level of statistical significance was used. The results for the subscales, together with the calculated effect sizes (f) appear in Table 5.

Table 5: *F*-values of the one-way MANOVA to test for differences in average scores on suicidal ideation, stressors, resources, acculturation- and coping scales for the two genders

Scales	Male (n=437)		Female (n=552)		*F*	*p*	*f*
	$\overline{X}$	s	$\overline{X}$	s			
SIQ	25.51	32.97	39.11	42.77	30.051*	0.000	0.17
LISRES: Stressors							
Physical Health	0.76	2.20	0.91	2.27	1.095	0.296	-
Home and Money	7.97	7.46	8.92	7.83	3.747	0.053	-
Parents	7.28	5.27	7.80	5.75	2.124	0.145	-
Siblings	7.89	5.47	8.30	5.95	1.270	0.260	-
Extended Family	5.53	4.36	6.29	4.71	6.680*	0.010	0.08
School	16.77	8.16	15.91	8.16	2.666	0.103	-
Friendships	7.82	4.79	6.80	4.50	11.831	0.001	0.11
Boyfriend/Girlfriend	4.04	4.56	4.38	4.50	1.385	0.240	-
Negative Life Experiences	11.52	6.84	12.89	7.39	8.932*	0.003	0.10
LISRES: Resources							
Parents	10.19	5.88	10.02	5.91	0.192	0.661	-
Siblings	11.38	6.36	11.65	6.76	0.404	0.525	-
Extended Family	15.54	7.36	15.50	7.83	0.004	0.948	-
School	9.35	5.36	9.99	5.62	3.287	0.070	-
Friendship	24.65	8.14	25.53	8.45	2.739	0.098	-
Boyfriend/Girlfriend	9.72	7.91	11.46	8.07	11.516*	0.001	0.11
Positive Life Experiences	11.43	4.71	11.20	4.45	0.614	0.433	-
SAAS							
Assimilation	23.07	5.73	22.83	6.20	0.414	0.520	-
Integration	23.01	5.58	24.15	5.64	10.012*	0.002	0.10
Rejection	14.17	4.26	13.74	3.91	2.701	0.101	-
COPE							
Problem-focused coping	54.66	11.05	55.52	11.35	1.421	0.234	-
Emotion-focused coping	53.78	10.32	58.15	10.11	44.586*	0.000	0.22
Dysfunctional coping	29.64	6.79	30.93	6.79	8.772	0.003	0.09

***p ≤ 0.01** **Effect sizes: *f*= 0.1 (small); *f*= 0.25 (medium); *f*=0.4 (large)**

The results in Table 5 suggest that significant differences (on the 1% level of significance) exist in the average scores of the two genders with regard to their level of suicidal ideation. In terms of its practical significance, the corresponding effect size was of small practical significance and must therefore be interpreted with caution. The female adolescents displayed a higher average score of suicidal ideation than their male counterparts. Significant differences (1% level) also exist in the average scores between the two genders with regard to one of the coping scales, namely Emotion-focused Coping. The corresponding effect size indicates that the results are of moderate practical value. From Table 5 it is evident that female adolescents reported a higher frequency use of emotion-focused coping strategies than the male participants.

Furthermore, the results in Table 5 indicate that significant differences (1% level) were found in the average scores between the two genders with regard to three of the stressor subscales (Family, Friends and Negative Life Experiences), one of the resource subscales (Boyfriend/Girlfriend), and one of the acculturation subscales (Integration). However, the corresponding effect size is small in each instance and is therefore of limited practical significance. Subsequently, these results will not be discussed further.

Interaction between ethnicity and gender

The interaction between gender and ethnicity was investigated with regard to each of the subscales by means of a MANOVA (2x3). The 1% level of statistical significance was used. The results for the subscales, together with the calculated effect sizes (f) appear in Table 6.

Table 6: *F*-values of the one-way MANOVA to test for differences in the average scores on the SIQ, LISRES, SAAS and COPE scales in the interaction between ethnicity and gender

Scales	Black				White				Coloured				*F*-value	*p*	*f*
	Male		Female		Male		Female		Male		Female				
	$\overline{X}$	s	$\overline{X}$	s	$\overline{X}$	s	$\overline{X}$	s	$\overline{X}$	s	$\overline{X}$	s			
Suicide Ideation	28.84	33.39	40.88	43.38	21.25	30.19	25.99	33.10	29.63	37.76	61.06	48.55	20.347*	0.000	0.32
Physical Health	0.89	2.56	1.01	2.38	0.38	1.08	0.60	1.13	1.46	3.16	1.31	3.37	4.708*	0.000	0.15
Home and money	10.36	7.53	12.03	8.12	5.00	5.98	4.37	5.16	10.74	8.01	11.48	7.35	44.950*	0.000	0.48
Parents	7.10	5.52	7.57	6.06	7.48	5.09	8.12	5.57	7.13	5.25	7.61	5.50	0.768	0.573	-
Siblings	7.75	5.74	7.91	6.04	7.71	5.13	8.41	5.63	8.62	5.79	8.88	6.35	1.010	0.411	-
Extended Family	5.67	4.59	6.50	4.93	5.07	4.03	5.30	4.25	6.45	4.57	7.78	4.71	7.104*	0.000	0.20
School	16.69	8.48	15.52	7.65	16.26	7.87	15.18	7.66	18.23	8.15	18.15	9.66	3.359*	0.005	0.13
Friendships	8.10	4.74	7.12	4.83	7.22	4.62	6.02	3.95	8.79	5.15	7.67	4.64	6.159*	0.000	0.18
Boyfriend/Girlfriend	4.92	5.01	5.27	4.82	3.04	4.05	3.32	4.12	4.81	4.39	4.65	4.14	8.324*	0.000	0.20
Negative Life Experiences	12.97	7.27	13.74	7.89	9.77	5.94	11.17	6.49	13.04	7.12	14.51	7.38	10.888*	0.000	0.23
Parents	8.18	5.61	8.63	5.43	11.77	5.79	12.52	5.70	10.22	5.48	7.98	5.60	21.531*	0.000	0.33
Siblings	10.14	6.68	10.74	7.07	12.28	5.83	13.03	6.25	11.60	6.66	10.82	6.68	5.174*	0.000	0.16
Extended Family	15.09	7.44	14.47	7.92	15.75	7.21	17.72	6.82	15.87	7.63	13.29	8.50	6.716*	0.000	0.18
School	10.31	5.51	11.54	5.29	8.20	4.94	8.67	5.41	10.31	5.60	9.40	5.95	10.627*	0.000	0.23
Friendship	22.02	8.10	23.78	8.59	27.07	7.25	28.39	6.43	23.78	8.62	23.50	10.01	16.944*	0.000	0.29
Boyfriend/Girlfriend	9.35	7.58	11.84	7.68	9.39	8.36	10.49	8.74	11.33	7.25	12.58	7.29	4.274*	0.001	0.15
Positive Life Experiences	11.37	4.84	11.24	4.54	11.16	4.56	10.95	3.87	12.26	4.79	11.60	5.29	1.080	0.370	-
Assimilation	24.16	5.37	23.44	6.20	21.88	5.30	20.66	5.71	23.91	6.90	25.79	5.61	15.618*	0.000	0.28
Integration	23.82	5.53	25.01	5.55	22.11	5.08	22.25	5.42	23.69	6.52	26.13	5.18	13.371*	0.000	0.26
Rejection	14.60	4.28	13.94	3.99	14.41	3.81	14.03	3.59	12.69	5.01	12.78	4.22	4.714*	0.000	0.15
Problem-focused coping	56.21	11.93	58.62	11.39	53.90	9.92	52.49	11.04	53.46	11.69	55.13	10.39	8.151*	0.000	0.20
Emotion-focused coping	54.94	12.07	60.00	10.29	52.89	8.83	56.62	9.99	53.71	9.88	57.38	9.57	12.357*	0.000	0.25
Dysfunctional coping	31.28	7.21	32.44	7.01	28.19	6.40	29.07	6.38	30.03	6.13	31.49	6.28	11.584*	0.000	0.24

***p ≤ 0.01; Effect sizes: *f*= 0.1 (small); *f*= 0.25 (medium); *f*=0.4 (large)**

The results in Table 6 indicate that significant differences (1% level of significance) exist in the average scores for suicidal ideation; the stressor subscale Home and Money; the resource subscales Parents and Friends; the acculturation subscales Assimilation and Integration; and the coping subscale Emotion-focused Coping in the interaction between ethnicity and gender.

The average scores obtained for the measurement of suicidal ideation for the white male and female groups were significantly lower than the average scores for the coloured and black male and female participants. The corresponding effect sizes indicate that the results had a medium effect size and are thus of moderate practical significance.

With regard to the average score obtained for the stressor subscale Home and Money, the black female group's average score is significantly higher than that of the other groups. This result indicates that black female adolescents experience financial difficulties as a greater source of stress than the white and coloured male and female groups. The average score obtained for the resource subscale Parents indicates that the white male and female participants had a significantly higher average score compared to the coloured and black male and female participants. Consequently, it can be deduced that the white male and female participants experience their parents as a greater source of support than their black and coloured counterparts. The corresponding f-value indicates that these results are of medium effect size and thus of moderate practical significance.

The average scores obtained for the acculturation subscale Assimilation indicate that the score for the white males is significantly lower than the scores obtained by the other groups. This result suggests that white males in the current sample are less likely to use assimilation as an acculturation strategy. The corresponding f-value indicates a medium effect size and the results are thus of moderate practical significance. Furthermore, the average score obtained for the subscale Integration is significantly higher for black females than for any of the other groups. This indicates that black females are more likely to use integration as an acculturation strategy.

The corresponding f-value indicate a medium effect size and the results are thus of moderate practical significance.

With regard to the coping subscale Emotion-focused Coping, the black female group's average score is significantly higher than that of the other groups. The results indicate that the black females in the current sample are more likely to make use of emotion-focused coping than the white and coloured groups. The corresponding f-value indicates a medium effect size suggesting that the results are of moderate practical significance.

Discussion

The primary aim of this study was to compare a sample of male and female, black, white and coloured adolescents with regard to their level of suicidal ideation, perceived stressors and resources, as well as acculturation- and coping strategies. Results from the study suggest that all the measuring instruments used generally provided acceptable levels of internal consistency as all were above the 0.70 cut-off for non-cognitive constructs (Nunnally & Bernstein, 1994), the only exceptions being the Physical Health subscale of the LISRES for the white participants, and the Assimilation and the Rejection subscales of the SAAS for the white and black ethnic groups.

Participants in the current study reported markedly higher mean scores (double the mean score) on suicidal ideation compared to an American adolescent sample (Reynolds, 1988). The differences in mean scores may be related to the differences in life circumstances that influence the participants of the current study. However, these findings tend to support the idea that suicidal behaviour, which includes suicidal ideation, amongst South African adolescents is unordinarily high (Burrows et al., 2007; Flisher, Liang, Laubscher, & Lombard, 2004; George, 2009; Mashego & Madu, 2009; Meehan et al., 2007; Meel, 2003; Reddy et al., 2010; Schlebusch, 2004; Schlebusch, 2005). Reportedly, the occurrence of suicidal ideation is the highest for the coloured group, followed by the black group. The white participants reported lower levels of suicidal ideation. These results are consistent with the findings of George (2009), as well as Joe

et al. (2008), suggesting that suicidal behaviour is common amongst coloured adolescents. Coloured adolescents' pattern of suicidal behaviour might be representative of their levels of stressful adjustment to South Africa's rapid political and socio-economic transitions, wherein they are not experiencing growth in employment and other social opportunities they once held over blacks under apartheid (Joe et al., 2008).

Furthermore, the results of the current study suggest that statistically significant gender differences exist in the reported mean scores of suicidal ideation. Coloured females reported the highest levels of suicidal ideation followed by black females and coloured males. These findings tend to support the idea that South African females display more suicidal behaviour than males (Deonarain & Pillay, 2000). For females, the stress associated with the changing role of women in society (Burrows & Laflamme, 2008) may explain the higher levels of suicidal behaviour for females witnessed in this study. Further explanations for this finding could be the high incidence of gender violence within South African society, as well as the high occurrence of teenage pregnancies amongst coloured adolescents that contribute to the experience of stress (Hoque, Hoque & Kader, 2009). According to some recent studies (Frydenberg & Lewis, 2004; Hutchinson, Stuart, & Pretorius, 2007; Meehan et al., 2007), stressful life events such as the experience of gender violence and teenage pregnancies could be major contributors to suicidal ideation amongst adolescents.

The results also suggest ethnic and gender differences in experience of stressors and resources. The black and coloured participants in the current study appear to differ significantly from the white participants with regard to the stressors they experience. Socio-economic conditions appear to be a greater source of stress in the lives of black and coloured female adolescents than in the lives of black and coloured male adolescents as well as white males and females. A possible explanation for these differences may be that many black and coloured adolescents still come from previously disadvantaged homes where a lack of financial resources and infrastructure could be a great stressor (McLoyd, 1990). Furthermore, these results may also reflect the current economic disparities that still exist between the genders in South Africa.

When compared to other South African studies (Makola, 2007; Wissing, 1996), parents and friends are viewed by the current sample as being greater resources. In comparing the different ethnic and gender groups, white female participants reported greater support from these resources than their black and coloured participants. According to Cornwell (2003), as well as Way and Robinson (2003) stable and secure relationships with parents and peers serve as vital resources promoting positive adjustment in adulthood. The fact that the participants in the current study view friends as an important resource is consistent with the findings of Coleman and Hendry (1990), as well as Crosnoe and Needham (2004), who suggest that the increase in time spent with friends increases the impact of friendships on the adolescent's self-concept.

In discussing the interactions of stressors, resources, as well as acculturation- and coping with gender and ethnicity, significant differences were reported. From the first finding it may be deduced that males and females differ in their use of acculturation- and coping strategies. A study conducted by Phelps and Jarvis (1994) confirmed the presence of differences with regard to the utilisation and preference of coping strategies between males and females, namely that females reported greater use of emotion-focused coping strategies such as "acceptance" whereas male participants showed a greater preference for avoidance or dysfunctional coping strategies. In terms of the interaction between acculturation strategies and gender, a study by Kramers (2000) confirmed the presence of ethnic differences in the use of acculturation strategies. Kramers (2000) concluded that black and white participants showed a greater preference for "rejection" as these groups showed a greater need for maintaining their historical and cultural heritage.

The second interaction reported that different ethnic groups react differently in their use of acculturation- and coping strategies. In terms of the ethnic differences experienced by adolescents with regard to coping, George (2009) found that dysfunctional coping strategies were more frequently utilised by black and coloured adolescents than by whites. This preference for different coping approaches could be related to the influence of the past political environment (e.g. unequal access to resources), which led to the utilisation of certain coping strategies such as avoidance and denial (Chapman & Mullis, 1999; Plaaitjie, 2006).

Landrine and Klonoff (1996) found that acculturation is the most prominent predictor of suicidal behaviour amongst adolescents. This is due to the fact that it influences the coping strategy utilised by adolescents, and the impact that the stressors have on an individual. This could leave individuals vulnerable to depression, for example, which negatively impacts on the well-being of the individual. According to Kidd and Carroll (2007), as well as Lewis and Frydenberg (2002), the utilisation of appropriate coping strategies allows for a more positive outcome and consequently buffers individuals against negative health effects such as suicidal behaviour.

An exploration of the ethnic differences across coping and acculturation strategies yielded the following findings. Black participants were found to use emotion-focused and dysfunctional coping approaches more frequently than their white and coloured counterparts. The higher tendency of black adolescents to use these strategies are explained by various authors (Du Toit, 1999; George, 2009; Magaya, Asner-Self, & Schreiber, 2005; Plaaitjie, 2006; Sheu & Sedlacek, 2004) who have referred to the influence of collectivistic cultural practices that encourage harmony, non-confrontation and interdependency in social relations as well as the unequal distribution of and access to resources as well as the deprived circumstances that blacks previously lived in.

Similarly, integration as acculturation strategy was less often utilised by white participants than their coloured and black counterparts. In terms of an explanation for the differences in acculturation strategies, the findings of Kramers (2000) offer supportive evidence that white participants display lower levels of integration than black and coloured participants. According to Kramers, white participants due to their strong historical attachments and traditions, are less likely to develop more positive identification with other confronting cultures and would rather distance themselves from those interacting cultural experiences. Because of the limited amount of South African research in this area, no further evidence corroborating or disputing this behaviour for white participants could be found.

Further analysis of coping and acculturation scales with regard to ethnic differences indicated that the coloured participants in the current study less frequently used "rejection" as an acculturation strategy when compared to black and white participants. The findings of Kramers (2000) offer supportive evidence that the acculturation strategy of rejection/separation might be the strategy of choice by black and white participants in dealing with inter-ethnic contact. One possible reason, according to Kramers, is related to the fact that white and black participants are more likely to maintain historic cultural discourses than integrate with new cultural forms. In addition to the latter result, black participants were found to use assimilation most frequently, followed by the coloured and then the white participants. The current research findings do not concur with those of Kramers (2000), who could find no significant ethnic differences in terms of "assimilation" as acculturation strategy. It must be considered, however, that within the context of a democratic South African culture, assimilation as an acculturation strategy is an obvious and plausible choice of behaviour if culture is to be considered dynamic and adaptive.

Limitations and Recommendations

Although a number of studies focusing on suicidal ideation, life stressors, resources, acculturation- and coping strategies have been published in the past, very few have combined these variables or have demonstrated greater ethnic and gender distinction upon comparision. Such distinctions are deemed necessary (especially the further distinction between black and coloured participants), as it cannot be assumed that different ethnic groups within the black population will necessarily display similar behaviour. However, the results of the current study should be considered against the following limitations:

Given the fact that the sample was drawn from a specific geographical area in South Africa, generalisability of the findings is likely to be limited. The use of American measuring instruments to measure the variables has emphasised the need to develop specific instruments for the relevant ethnic groups as differences in the interpretation of the items might have contaminated the final results. Further research is needed to develop specific instruments for specific populations to enhance reliability and validity levels. Furthermore, a cross-sectional

design was used, and the results of this study might not be predictive of the longitudinal relationship between suicidal ideation, life stressors and coping strategies. Future longitudinal studies may render different results in this regard and thus be more relevant to the choice of therapeutic or preventative focus with regard to stressors and coping strategies in suicidal behaviour. The use of longitudinal studies might offer new and different insights into the dynamic interactions between different variables. Furthermore, researchers are afforded the opportunity to observe the influence of developmental changes on the variables of choice. In this way researchers will be able to differentiate between the variables that are more prevalent at different stages, thereby increasing the focus of intervention programmes for different age groups. The consideration of additional variables as part of a longitudinal study should include concepts such as self-esteem, self-efficacy and hope, hereby allowing further exploration of the impact of these concepts on adolescent suicidal behaviour.

In conclusion, the rationale for this study was twofold namely to increase the awareness of the growing incidence of suicidal behaviour amongst South African adolescents, as well as to explore the contributing role of psychosocial factors to this phenomenon. The recommendation is that future research will enable professionals to facilitate individual growth and development, and encourage adolescents to utilise more effective acculturation- and coping strategies when faced with life challenges and changes. Because South Africa will continue to experience socio-political transformation in years to come, it is of the utmost importance that the influence of such changes be taken into account when future research is conducted.

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CHAPTER 4

ARTICLE III

ETHNIC DIFFERENCES IN THE EXPERIENCE OF ADOLESCENT STRESSORS AND RESOURCES

Abstract

It is increasingly recognised that promoting the healthy development of adolescents is one of the most important and cost-effective long-term investments a society can make. Most of the health problems of adolescents are preventable and are related to aspects such as substance abuse, accidental or violent injury, and suicidal behaviour. Identifying the personal and environmental factors that might increase or decrease the likelihood of adolescents adopting these behaviours is important for developing effective intervention programmes. The current study aimed to explore and describe the ethnic differences in the experience of personal and environmental life stressors and resources amongst a sample of 1033 Grade 11 and 12 learners (201 coloured, 405 black and 427 white) from schools in the Free State province. An explorative interpretive design was employed. A total of 856 respondents provided a variety of responses relating to the experience of stressors and resources from which various themes were identified. A qualitative thematic content analysis was performed with the responses provided by the participants to two open-ended statements on factors that cause them frustration in their lives (stressors), and factors that make them feel good about themselves (resources).

The main findings of this study suggest ethnic differences in the reported experiences of stressors and resources. In terms of stressors, participants from all three ethnic groups identified negative self-perception, poor social conduct and financial difficulties as major sources of stress in their lives. Black and coloured participants identified alcohol abuse and white participants identified crime as major stressors. Black adolescents identified a positive self-esteem as their most important resource, while white participants identified the relationship with their families, as well as material resources as main resources. Coloured adolescents, on the other hand, showed a stronger identification with aspects such as religion. Intervention programmes focusing on self-esteem and which deal with social interaction and effective coping should be implemented in schools to assist adolescents in dealing with life stressors.

Keywords: adolescence, ethnic differences, suicidal ideation, stressors, resources, social ecological model

Adolescence marks a critical period of transition from childhood to adulthood and is characterised by significant physical and cognitive changes (Louw, Louw, & Ferns, 2007). The most important of these developmental changes involve the process of identity formation and a progression towards a sense of independence. Although many adolescents experience a smooth transition into adulthood with satisfactory levels of competence and resilience, a number of individuals continue to develop psychological difficulties that could ultimately increase their risk of negative health outcomes such as increased levels of stress, depression and even suicidal behaviour (Jackson & Goossens, 2006; Louw, Louw et al., 2007). However, whether someone's health is affected positively or negatively is not a simple deductive process but rather an integrative process involving the interaction of different personal and environmental factors (Moos & Schaefer, 1993). A lack of adequate resources and high levels of stress, for example, can create a situation that may predispose the adolescent to develop poor health (Peltzer, 2004). Being able to understand the nature of these risk and resource factors could enable scientists to better appreciate what adolescents are experiencing, and what is needed to help them adjust effectively (Schlebusch, 2005).

Although a number of South African studies (Madu & Matla, 2003; Peltzer, 2004) focusing on the psychosocial stressors and resources of adolescents have been published in the past, very few have focused on ethnic differences. Since ethnicity has been one of the major bases of division of South African life, it has frequently been considered as an important socio-demographic variable in studies because there are differences between the groups for many indicators of health (Burrows & Laflamme, 2005; Ellison, De Wet, Ijsselmuiden, & Richter, 1996; Vogel & Holford; 1999). Furthermore, as a result of structural inequalities access to resources within the South African environment is still largely dependent on ethnicity (Burrows & Laflamme, 2005).

Using Bronfenbrenner's Social Ecological Model (1979; 1995) as guiding framework, this article aims to explore differences in the reported psychosocial stressors and resources amongst a sample of black, white and coloured adolescents. This model (as illustrated in *Figure 2*) provides a meaningful explanatory structure that can assist in understanding the variety of

stressors and resources adolescents experience. According to this model, stressors and resources would be related to the individual, microsystem, mesosystem, exosystem and macrosystem (Bronfenbrenner, 1979; Bronfenbrenner, 1995; Louw, Louw et al., 2007).

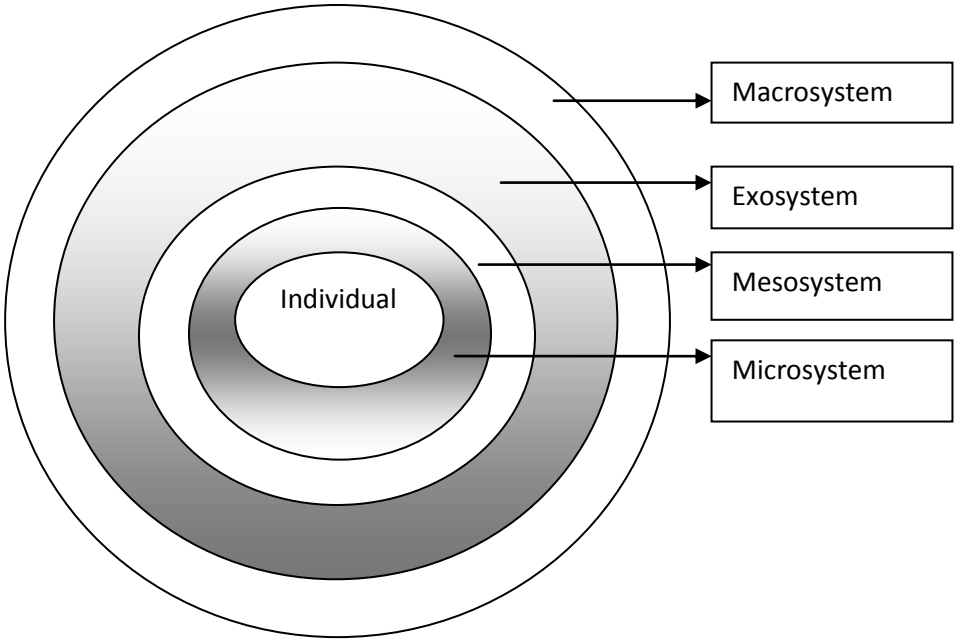


Figure 2: Bronfenbrenner's Social Ecological Model

The microsystem is any context in which the individual has direct contact and interaction with entities such as the family, the school and peer groups. The mesosystem, on the other hand, refers to the relationships between the microsystems and their influence on each other, e.g. parents and romantic partners, while the exosystem refers to those settings not directly involving the individual, but which still exert an impact on him/her. Examples of the exosystem include aspects such as parents' workplaces and socio-economic status. The macrosystem refers to the cultural values and societal regulations prevalent in the adolescent's community and include aspects such as socio-political change, crime and religion. Because this ecological model takes into account factors inherent both within an individual and within their families, school, communities and broader socio-cultural environment, it provides a contextual map to help understand the multitude of factors contributing to adolescents' experience of life stressors and resources (Beekrum, 2008; Abrams, Theberge, & Karan, 2005).

On an individual level (*Figure 2*), adolescents have to deal with a number of changes in their physical, psychological, social and moral world of interaction (Coleman & Hagell, 2007; Louw, Louw et al., 2007). Cognitively, adolescents develop a more analytical and egocentric way of thinking as well as the development of abstract thoughts (Keating, 2004; Rathus, 2003). Adolescence is also a phase of heightened emotional awareness (Louw, Louw et al., 2007). Appropriate emotional regulation allows individuals to anticipate their own, and importantly, others' emotional reactions, which assist in managing emotionally arousing situations in a manner that seeks to alleviate common stressors and adversities (Goldstein & Brooks, 2006).

The formation of a coherent personal identity and sense of belonging to a group represents major aspects of psychosocial development for the adolescent. Adolescents try to figure out who they are, what they value, and who they will grow up to become. They try to ingrate intellectual, social, sexual, and other aspects of themselves into a unified self-identity. Difficulty in accepting these changes may lead to poor self-image, raised levels of stress, poor academic achievement, poor peer relationships and poor health outcomes such as anxiety and depression (Hawton, Rodham, Evans & Weatherall, 2002; Louw, Louw et al., 2007; Myers, 2008).

Baron and Byrne (2000) note that a strong sense of self-value enables the adolescent to be more resilient in the face of adversity. However, adolescents who report feelings of low self-worth display more negative self-appraisal and are more inclined towards developing distorted perceptions of themselves and others (Dutton & Brown, 1997; Moore, 2000; Yang & Clum, 1996). Furthermore, a low self-esteem can lead to an overgeneralisation of the implications of failure, rejection and despair which appears to be strongly related to poor health outcomes such as anxiety, substance abuse and suicidal behaviour (Evans, Hawton & Rodham, 2004; Wilburn & Smith, 2005; Wild, Flisher, Bhana, & Lombard, 2004). Inversely, an optimistic view (of the self, other people and the world) can function as a resource in dealing with personal or environmental challenges (Evans et al., 2004).

The quality of interpersonal relationships between adolescents, their family members (parents and siblings) and friends (microsystem, *Figure 2*) can be a major resource for

adolescents, but can also serve as potential stressors, especially if conflict occurs within these relationships. Stable and secure relationships with family and peers can assist adolescents in making a smooth transition into adulthood and in coping with negative life events (Cornwell, 2003; Way & Robinson, 2003). Way and Robinson (2003) suggest that the family is an essential part of the adolescent's support system. The family provides emotional support, both in the family context and as launch pad into the broader community. However, environmental stressors such as parental divorce, death of a parent due to HIV/AIDS, interpersonal conflict between parents and siblings and the presence of psychiatric conditions within the family can all lead to an increased sense of insecurity and heightened stress (Aspalan, 2003; Evans et al., 2004; Ittel, Kretchmer, & Pike, 2010). Dunn, Slomkowski, Beardsall and Rende (1994) found that sibling support is associated with higher perceived self-competence and better adjustment. The quality of the sibling relationship affects not only adolescents' peer relationships, but their overall adjustment. Positive sibling relationships contribute to adolescents' school performance, sociability, autonomy and increased self-worth (Basson & Van den Berg, 2009; Steinberg & Morris, 2001), while negative relationships can lead to the experience of stress and display of suicidal behaviour (Conger, Conger, & Scaramella, 1997).

Relationships outside the family, such as peer and romantic relationships, have also been implicated as contributing stressor and resources for adolescents. Sebate (1999), for example, found that positive peer experiences among high school learners provide a buffering effect against suicidal behaviour. Peers can help adolescents cope with stressors they are exposed to, counteract loneliness and isolation and also contribute towards the development of the adolescent's self-concept (Ary, Duncan, Duncan, & Hops, 1999; Deiner & Seligman, 2002).

Romantic relationships form an integral part of normal adolescent development (Paritz & Troy, 2011; Sigelman & Rider, 2003). The development of a romantic interest is inherently linked to the task of separation and individuation from the family (Gray & Steinberg, 1999). However, disapproval by parents, conflict (including physical assault and forced sexual intercourse) in the romantic relationship, and the subsequent break-up of such relationships have

all been identified as major stressful events for adolescents (Louw, Louw et al., 2007; Nieder & Seiffge-Krenke; 2001; Swart, Seedat, Stevens & Ricardo, 2002). Furthermore, an aspect such as the heightened sexual awareness associated with this life stage has the potential of placing adolescents at risk for unprotected sexual activity, unplanned pregnancy, and sexually transmitted infections such as HIV/AIDS (Louw, Louw et al., 2007; Reddy et al., 2003; Sigelman & Rider, 2003).

High school can act as either a stressor or a resource in adolescents' lives (Byrne, Davenport, & Mazanov, 2007; Donald, Dower, Correa-Velez, & Jones, 2006; Suldo, Shaunessy, Thalji, Michalowski, & Shaffer, 2009). The types of school-related stressors that have been identified include high academic demands placed on adolescents with regard to school performance (Da Costa & Mash, 2008; Suldo et al., 2009), and the inability to balance leisure time with school demands (Suldo et al., 2009). Pressure to perform, concerns about further studies and job opportunities, harassment by peers and feeling unsafe at their schools, all contribute to the experience of the academic environment as stressful (Da Costa & Mash, 2008; Hjern, Alfven, & Östberg, 2008). However, the relationship between teachers and adolescents also seems to be an important social resource. A supportive teacher-learner relationship can make a positive contribution by encouraging effective interpersonal, social and coping skills as a means of counteracting the effects of stressful situations (Berk, 2002; Donald et al., 2006).

A further source of stress for adolescents is the impact of poverty (exosystem, *Figure 2*) (Wadsworth & Compass, 2002). Economic disadvantage places adolescents at an increased risk for exposure to conflict in the family. The unemployment of parents, especially fathers, also appears to contribute to the occurrence of depression and suicidal behaviour in their children (Diekstra & Garnefski, 1995). Furthermore, Roberts, Chen and Roberts (1997) found adolescents worrying about their family and economic situation to be related to high levels of stress in adolescents. Adolescents growing up in neighbourhoods with high levels of poverty are often exposed to greater levels of crime, substance abuse and violence, and fewer high-quality

after-school or childcare options, and they may also lack exposure to positive models or opportunities that shape their dreams and aspirations (Felner, 2006).

On a macrosystemic level (*Figure 2*), aspects such as socio-political change, high levels of crime and religious involvement have all been identified as important sources of stress and resources in the lives of adolescents (Beekrum, 2008; Colucci & Martin, 2008; Sigelman & Rider, 2003). For South African adolescents, the relatively high levels of stress that often accompany this developmental stage are amplified by the rapid socio-political, economic and socio-cultural transitions currently experienced in South Africa (Pillay & Wassenaar, 1997; Wassenaar, Marchiene, Van der Veen, & Pillay, 1998). While the economic structure of South African society has not altered radically since 1994, many factors that influenced political socialisation under the apartheid regime have changed significantly (Dawes & Finchilescu, 2002). Contact between people from different ethnic groups has increased considerably as schools and neighbourhoods have become more integrated. However, the differences in cultural backgrounds between the ethnic groups may lead to feelings of isolation and occurrence of acculturative stress, especially among black adolescents being placed in former predominantly white schools, where they are confronted with Eurocentric values and ideas (Kramers, 2000; Pillay & Wassenaar, 1997; Wassenaar et al., 1998).

Religion appears to act as an important buffer in alleviating the impact of life stressors (Barbarin, 1999; Parry, Morojele, Saban & Flisher, 2004). Being involved with religious institutions seems to offer a degree of social connectedness, social structure and supportive networks which have been identified as reducing the impact of life stressors (Hill & Frances, 2005; Peltzer, 2008). Futhermore, believing in a higher being can act as an important coping resource for adolescents. In a South African study (Alberts, Mbalo & Ackerman, 2003), 70% of participating adolescents indicated religion as an important aspect of their lives. The greater frequency of church attendance implied greater levels of exposure to certain teachings, thereby reinforcing behaviour patterns directed at the preservation of life and seeking forgiveness and

salvation as strategies for dealing with life's challenges (George, 2009; Stack, Wasserman, & Kposowa, 1994).

From the literature one can surmise that adolescents experience, and have access to, a wide variety of stressors and resources on the micro-, meso-, exo- and macrosystems. However, only a number of South African studies (Du Toit, 1999; George, 2009; Madu & Matla, 2003; Peltzer, 2004) focusing on ethnic differences in the experience of adolescent stressors and resources have been published to date. Therefore, this study sought to explore and describe ethnic differences in the reported psychosocial stressors and resources amongst a sample of black, white and coloured adolescents.

Method

The following methods were used:

Research objective

The objective of this study was to explore and describe ethnic differences in adolescents' experience of psychosocial stressors and resources.

Research design

The study was designed as a qualitative, explorative and interpretive research project, conducted amongst a representative sample of black, white and coloured adolescents. Although the qualitative approach is exploratory in nature, it can be advantageous in giving a description of the phenomena through the lived experiences of adolescents. Furthermore, this research approach attempts to describe phenomena as they are rather than to manipulate the variables (Parker, 1999).

Participants and information gathering

A total of 1033 learners from Grades 11 and 12 at eighteen different schools in the Free State province were selected by means of a stratified, random sampling technique. The mean age of the group was 17.41 years, with a standard deviation of 1.11. The gender distribution of the group was 437 (42.3%) male and 552 (53.4%) female participants, with 44 (4.3%) missing values. Black learners made up 405 (39.2%), white learners 427 (41.3%) and coloured learners 201 (19.5%) of the sample.

As part of the biographic questionnaire participants were asked to respond to the following open-ended statements: (1) *"Describe in a paragraph those factors that cause frustration and distress about yourself, your life and your future"*. (2) *"Describe in a paragraph the factors that make you feel positive/good about yourself, your life and your future".* These statements were put in Afrikaans, English and SeSotho, the official languages of the Free State province. Participants could respond to the statements in their preferred language. Two independent, registered translators translated the Afrikaans and SeSotho responses into English using the back translation method (Brislin, 1970; Foxcroft & Roodt, 2005). Of the original 1033 participants included in the study, 856 (83%) responded to the open-ended statements. Of those who responded, 299 were black, 424 white and 133 coloured.

The research committee of the Faculty of the Humanities at the University of the Free State provided ethical clearance for the research. Permission to involve schools in the study was granted by the Free State Department of Education and the respective school principals. Parents and participants gave written consent prior to the inclusion of learners in the study. The aims of the study, as well as its confidential, anonymous and voluntary nature (including permission to withdraw from the study at any time) were explained to participants. Data was gathered on a school day prearranged with the schools. Learners were assessed in small groups to maximise a sense of rapport with the interviewer. A registered psychometrist and clinical psychologist were

present during the data gathering to ensure an environment conducive to the issues of fairness, ethical behaviour and confidentiality.

Method of analysis

Collected data was analysed using thematic content analysis (Berg, 2007) in order to identify commonalities and variances in responses. This approach was chosen because the majority of participants' responses were short descriptions, which makes the inference of theoretical relationships between concepts difficult. The analysis of the data followed three main steps namely, open coding (a process of immersion, highlighting key thoughts, examining, writing down first impressions, labelling, comparing, conceptualising and sorting into categories), theoretical coding (a process of conceptual organisation of categories, creating a hierarchical structure based on relationships discovered in the data, and defining categories) and lastly, reporting the emerged central themes linking these to relevant theory or other research findings (Berg, 2007). These factors were categorised according to the dimensions of Bronfenbrenner's Social Ecological Model (1979; 1995) and are reported for each of the ethnic groups.

For the purposes of analysis, responses were divided into individual factors, microsystemic factors (which included the mesosystem), exosystemic factors and macrosystemic factors. Individual factors referred to the behavioural, emotional and emotional/behavioural regulation of individual functioning. Such factors included feelings of self-confidence, perseverance and positive self-esteem. The microsystem is any context in which the individual has direct contact and interaction, while the mesosystem refers to the relationships between the microsystems and their influence on each other. Factors such as conflictual home environments, relationship problems and school environment were included under this category. The exosystemic factors refer to those systems which do not directly involve the adolescent, but which nonetheless impact on their lives (Abrams et al., 2005). In this study, such influences included economic and financial issues. The macrosystemic factors refer to cultural values and larger societal factors that influence individuals. Aspects such as current affairs, experience of discrimination, crime, religion and future prospects were included under this domain. In order to

aid the discussion and interpretation of the results, only the most frequently reported factor in each of these domains will be discussed.

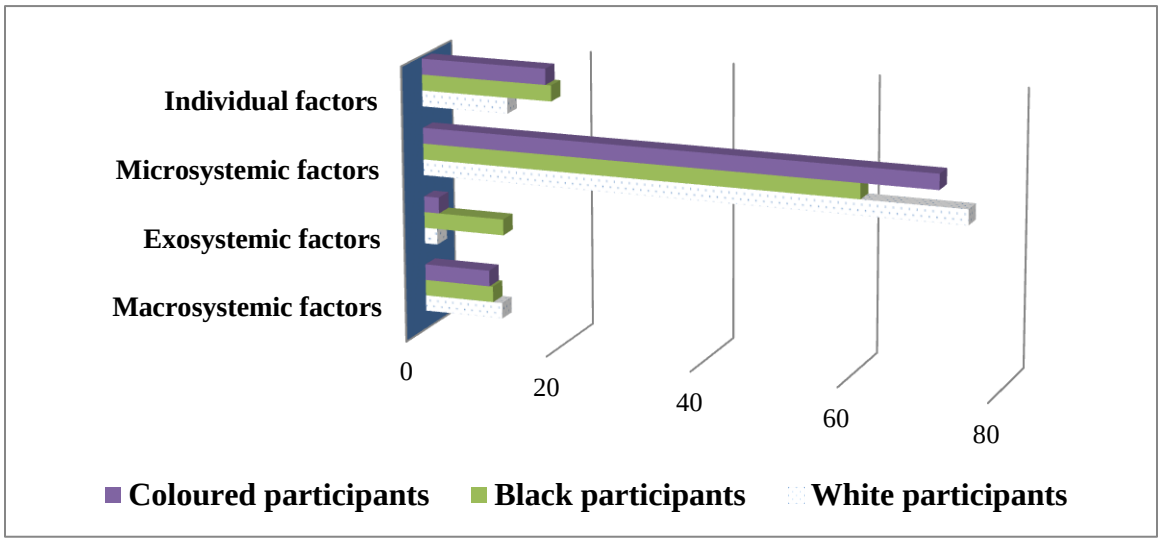
Several steps were also taken to support the trustworthiness of the analysis. An effort was made to locate and understand discrepant information that was different or challenged the conclusions made. Apart from the researcher, another independent researcher was involved in the process of identifying and merging of categories. The researchers' inferences were lessened when the extracted categories were given a text reference (own words of the participants with a unique participant number). Furthermore, the analysis was supplemented with descriptive statistics on the frequency of categories (indicating the magnitude of a theme), and characteristics of the participants.

Results and Discussion

The responses provided by the participants were expressed as a percentage of the total number of responses of a particular ethnic group. The responses were interpreted along two pathways, namely factors causing dissatisfaction (stressors), and factors causing satisfaction amongst participants (resources). The themes from each of these pathways were conceptualised using Bronfenbrenner's Social Ecological Model (1979; 1995). The results of this analysis are reported separately for the white, black and coloured groups.

According to the results in Table 1, the most commonly reported stressors were related to the microsystem, with 75% of the responses of white participants, 71% of the responses of coloured participants and 60% of the responses of black participants relating to this system.

Table 1: Reported stressors in terms of Bronfenbrenner's model (coloured n=337 responses; black n=880 responses; whites n=1024 responses)



In terms of the microsystem (Table 2) poor social conduct was experienced as the primary stressor for the coloured (62.5% of responses related to the microsystem), white (48.6% of responses related to the microsystem) and black participants (43.2% of responses related to the microsystem). Examples of statements reflecting this type of behaviour included: *"I don't like people who gossip"* (Part. 71) and *"When people laugh at me behind my back"* (Part. 117). The findings indicate that the current sample of adolescents experience interpersonal and social interaction as stressful experiences. Furthermore, it would appear as if particularly coloured adolescents found these kinds of interactions more stressful than their white and black counterparts. The findings are consistent with the literature which indicates that challenges related to developmental tasks can negatively affect participants' social relationships, which increases the experience of stress on adolescents (Louw, Louw et al., 2007; Sun, Hui, & Watkins, 2006).

Table 2: Top three stressors on each of the systems of Bronfenbrenner's Social Ecological Model

	Black	White	Coloured
Individual stressors	1.Poor self-perception	1. Poor self-perception	1. Poor self-perception
	2.Unacceptable behaviour	2. Illness	2. Unacceptable behaviour
	3.Illness	3.Unacceptable behaviour	3. Appearance
Microsystemic stressors	1. Poor social conduct	1. Poor social conduct	1. Poor social conduct
	2. Family	2. School	2. Family
	3. School	3. Family	3. School
Exosystemic stressors	1. Finances	1. Finances	1. Unemployment of parents
	2. Single parenting	2. Unemployment of parents	2. Finances
	3. Unemployment of parents	3. Not having food	3. Not having food
Macrosystemic stressors	1. Alcohol and Substance abuse	1. Crime	1. Alcohol and Substance abuse
	2. Discrimination	2. Discrimination	2. Discrimination
	3. Crime	3. Alcohol and substance abuse	3. Crime

Stressors related to the individual level (Table 1) represented 18.3% of the total number of responses for black participants, 17.5 % for coloured participants, and 12.1% for white participants. The factor most commonly associated with stress on the individual level originated from poor self-perceptions (35.6% of responses for coloured participants, 13.7% for white participants and 13.0% for black adolescents). Statements such as: *"My body, I am overweight"* (Part. 95) and *"When my performance is not as good as others I feel guilty"* (Part. 136) were reported by adolescents as reasons for their frustrations. Furthermore, more than twice as many coloured adolescents than black and white adolescents indicated poor self-image as a greater source of frustration. This finding might be indicative of coloured adolescents' stressful adjustment to South Africa's rapid socio-political transition (Joe, Stein, Seedat, Herman, & Williams, 2008). According to Baron and Byrne (2000) a strong sense of self-value enables the adolescent to be more resilient in the face of adversity. However, adolescents who report feelings of low self-worth display more negative self-appraisal and are more inclined towards

developing distorted perceptions of themselves and others (Dutton & Brown, 1997; Moore, 2000; Yang & Clum, 1996). Furthermore, a low self-esteem can lead to an overgeneralisation of the implications of failure, rejection and despair which appears to be strongly related to feelings of stress (Evans et al., 2004; Wilburn & Smith, 2005).

Stressors related to the macrosystem (Table 1) represented 11% of the total number of responses for white participants, 9.7% for black participants and 9.2% for coloured participants. Crime appears to be an important source of stress (Table 2) for white participants (26% of responses pertaining to the macrosystem). Remarks such as: *"All the farm murders and nobody is paying for it"* (Part. 300) and *"The crime in our country"* (Part. 870) highlight the frustration caused by crime for white participants. These results confirm the findings of Govender and Killian (2001) as well as Burrows, Bowman, Matzopoulos and Van Niekerk (2001), suggesting that crime is a greater source of stress for white communities than for black and coloured communities in South Africa. Coloured (42% of responses) and black participants (36% of the responses) reported the abuse of alcohol and substances by others as a greater source of stress within the macrosystem. Examples of statements reflecting this frustration include: *"Why must people always get drunk and fight?"* (Part. 65) and *"Neighbours who drink beer, because they drink every day and make noise"* (Part. 478). South Africa has a significantly higher life time prevalence of substance abuse disorders than other countries (Stein et al., 2008). The recent South African Stress and Health Study (SAAH) found a lifetime prevalence of 13.4% for substance-related disorders in a large adult sample (Stein et al., 2008). Substance abuse has been strongly associated with areas of impoverishment in which many coloured and black adolescents grow up (SA Healthinfo, 2008). Apart from the negative health outcomes, the mental health costs of substance abuse are much higher considering the devastating impact of substance abuse on family relationships due to the higher propensity of family conflict and violence, child neglect, and inconsistent parenting (Chang, 2001).

Stressors related to the exosystem represented 11.3% of the total number of responses for black participants, 2.1% for coloured participants and 1.8% for white participants. A lack of finances was experienced as the most prominent source of stress (Table 2) for the black (46% of the responses related to the exosystem) and white participants (43% of the responses related to

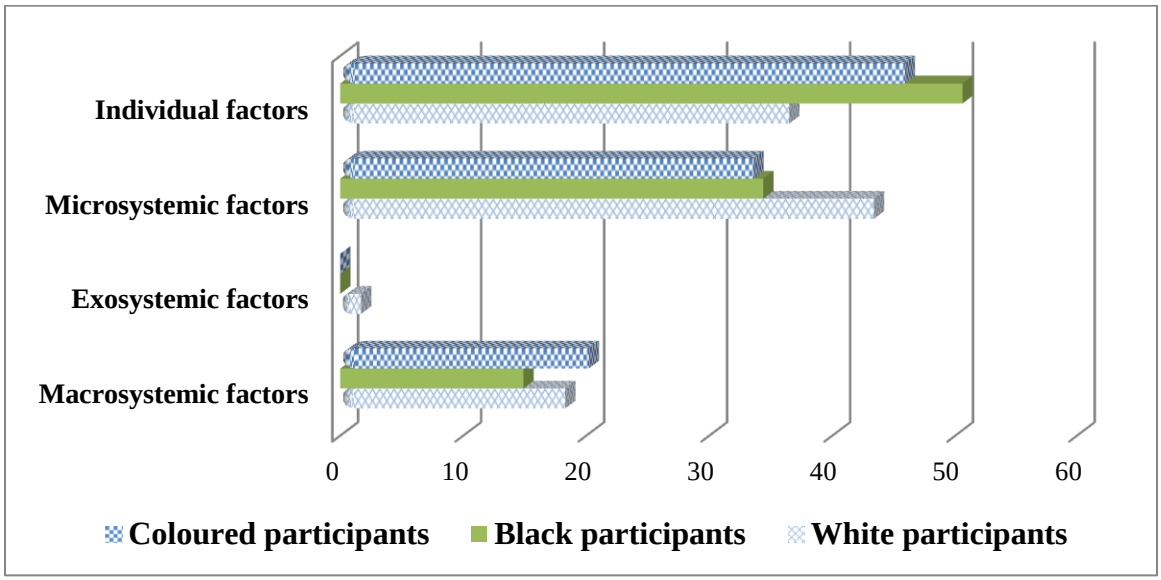
the exosystem), while coloured participants experienced the unemployment of parents as a greater stressor (57% of the responses related to the exosystem). Financial difficulties affect the lives of the participants in the current study through unfulfilled needs demonstrated in descriptions such as: *"when I don't have something to eat at home"* (Part. 320) and *"if I ask something, I don't get it"* (Part. 21). It would appear as if financial issues relating to a lack of finances and the unemployment of parents are a greater source of dissatisfaction for coloured and black participants than for white participants. This finding compares to results obtained by Basson and Van den Berg (2007) and Du Toit (1999) showing that financial aspects constituted a greater source of stress for the black and coloured groups than for the white groups in both studies. A possible explanation for these ethnic differences may be that many coloured and black adolescents still come from previously disadvantaged homes where problems stemming from a lack of financial resources and infrastructure could be a great stressor (McLoyd, 1990). Furthermore, these findings might also be reflective of the changing socio-political environment wherein coloureds are not experiencing growths oppurtunities in employment and other social opportunities they once held over blacks under apartheid (Joe et al., 2008). The debilitating effect of insufficient finances may contribute towards creating unstable home environments and hinder adolescents' access to sufficient resources (Ratele, 2007), which may in turn contribute to the experience of stress (Diekstra & Garnefski, 1995).

The results, as reflected in Table 2, indicates a strong sense of similiarity in the reported stressors with all three ethnic groups indicating similar stressors on all the levels of Bronfenbrenner's Social Ecological Model. The only stressor on which the ethnic groups differed substantially was the reporting of appearance as prominent stressor for coloured adolescents on the individual level. A possible explanation for this result might relate to coloured communities search for identity within a changing socio-political environment (Laubscher, 2003).

It is evident from the results reported in Table 3 that the most commonly reported resources were related to the individual system with 50.6% of the total number of responses of

black participants, 45.9% of the responses of coloured participants and 36.5% of the responses of white participants involving this system.

Table 3: Reported resources in terms of Bronfenbrenner's model (coloured n=488 responses; black n=1186 responses; whites n=1273 responses)



Various individual factors (Table 4) seem to contribute to the life satisfaction of the current sample. The most common of these, for all three ethnic groups, appear to be related to a positive self-esteem (80% of responses for white participants, 63% of responses for coloured participants and 39% of responses for black participants). Statements such as *"Feeling good about myself*" (Part. 250) and "*I have confidence*" (Part. 700) emphasise the importance of self-esteem for these participants. An optimistic view (of the self, other people and the world) can function as a resource in dealing with personal or environmental challenges and can also act as a buffer in reducing the risk of suicidal ideation and behaviour (Evans et al., 2004; Mashego, Peltzer, Williamson & Setwaba, 2003).

Table 4: Top three resources on each of the systems of Bronfenbrenner's Social Ecological Model

	Black (n=880 responses)	White (n=1024 responses)	Coloured (n=337 responses)
Individual resources	1. Positive Self-esteem	1. Positive Self-esteem	1. Positive Self-esteem
	2. Hobbies	2. Hobbies	2. Health
	3. Positive outlook on life	3. Achievements	3. Positive outlook on life
Microsystemic resources	1. Family	1. Family	1. Family
	1. School	2. Friends	2. Friends
	3. Friends	3. School	3. School
Exosystemic resources	None indicated	1. Finances	None indicated
		2. Cellphones	
		3. Parents' employment	
Macrosystemic resources	1. Religion	1. Religion	1. Religion
	2. Dreams and goals	2. Further studies	2. Future prospects
	3. Career opportunities	3. Career opportunities	3. Career opportunities

Resources related to the microsystem (Table 3) represented 43% of the total number of responses for white participants, 34.4% for black participants and 33.6% for coloured participants. In terms of the microsystem (Table 4), family-related factors appear to play a prominent role in the life satisfaction of coloured (43.9% of responses related to microsystemic factors) and white participants (37% of responses related to microsystemic factors), while black participants reported both the family (28.1% of responses related to microsystemic factors) and school (28.1% of responses related to microsystemic factors) as equally important resources. Aspects like "*Having a family who stand on my side*" (Part. 150) and "*I have a wonderful family*" (Part. 15) underline the importance of family relationships for these participants. These findings are consistent with previous findings (Cornwell, 2003; Louw, Louw et al., 2007; Way & Robinson, 2003), highlighting the family as a pivotal support system for adolescents. A supportive family environment can act as a protective resource through its ability to provide the

circumstances of cohesion, warmth and absence of discord (Bynner, 2001; Catan, 2004). Positive family interaction can stimulate the growth of resources in the adolescent such as self-value, emotional stamina and relationship skills, which are important assets to the adolescent's repertoire of possible solutions for dealing with stress (Thompson et al., 2005).

However, what is perhaps surprising about the results reported for the microsystem is the equal importance black participants gave to the school and family environment as resource. Given the fact that South African black communities are traditionally characterised by a stronger collectivistic orientation as opposed to the more individual approaches in Western cultures (Alberts et al., 2003; Beukes, Walker, & Esterhuyse, 2010), one would expect a stronger identification with the family as resource under the black participants. This finding might be reflective of the changes taking place in the traditional family system of black adolescents (Stevens & Lockhat, 1997; Mashego et al., 2003). Furthermore, the rise of child-headed households, due to the impact of HIV/AIDS on the black family system, could be another explanation for this finding. Research in South Africa has found that between 1% and 2% of children between the ages of 12 and 18 years are the heads of the households in which they live (Richter, 2004). One of the consequences of child-headed households is that it forces adolescents to be more self-reliant (Louw, Duncan, Richter, & Louw, 2007).

Resources related to the macrosystem (Table 3) represented 20.2% of the total number of responses for coloured participants, 18.3% for white participants and 14.9% for black participants. Religious and spiritual aspects (Table 4) appear to act as an important resource within the macrosystem for the white (9.2% of responses related to macrosystemic factors), coloured (5.7% of responses related to macrosystemic factors) and black participants (4.6% of responses related to macrosystemic factors). A comment such as *"God makes me feel positive about myself and the way He created me"* (Part. 523) and *"That I am a child of God"* (Part. 67) underlines the importance of religion for these participants. The fact that all the ethnic groups indicated religious aspects as an important resource is perhaps indicative of a country that holds religion in high esteem (Alberts et al., 2003). These findings also support previous findings of

Plaaitjie (2006). Furthermore, church attendance and other social integrative aspects of religion can act as a buffer against the stressors of daily life (Beekrum, 2008; O'Connor & Sheeney, 2001).

Resources related to the exosystem (Table 3) represented 1.7% of the total number of responses for white participants and 0% for coloured and black participants. Aspects such "*I've got enough food and a place to stay"* (Part. 54) and *"My parents spoil me with all sorts of stuff"* (Part. 70) seems to emphasise the importance of financial issues for the white group. Although the number of respondents who indicated financial factors as a resource are relatively low, this is in line with findings by Haarmann (1999) who indicated that the income per capita in the poorest 40% of South African households is insufficient to provide for all the household members' basic needs.

Conclusions and Recommendations

The objective of this study was to explore and describe ethnic differences in the reported psychosocial stressors and resources amongst a sample of black, white and coloured adolescents. The main findings of this study suggest ethnic differences in the reported experiences of stressors and resources amongst white, black and coloured adolescents. In terms of stressors, coloured participants identified individual factors (negative self-perception), microsystemic factors (poor social conduct) and exosystemic factors (financial difficulties) as major sources of dissatisfaction in their lives. White adolescents identified macrosystemic factors such as crime as a major source of stress. For black adolescents, individual factors (which included positive self-esteem) seem to act as a greater resource than for the white and coloured participants. White participants identified microsystemic factors such as the relationship with their families as well as exostemic factors (financial issues) as greater resources. Coloured adolescents, on the other hand, showed a stronger identification with macrosystemic factors such as religion.

Although this study provides valuable insight for researchers, psychologists and other stakeholders involved in adolescent mental health, the results should be interpreted against the following limitations. Given the fact that the sample of participants was drawn from a specific region in South Africa, the generalisability of the findings is likely to be limited. Furthermore, the use of open-ended questions as the only qualitative method (instead of combining open-ended questions and focus groups) employed in the current study, probably limited the gathering of additional supportive information.

The exploratory nature of this study means that its value lies in providing pointers for future research. A deeper exploration of adolescents' experience of life stressors and resources, utilising focus groups, is recommended. The use of additional variables such as gender, the loss of self-efficacy and sense of coherence can add further value to the understanding of adolescents' experience of stressors and resources. It is further recommended that longitudinal studies be undertaken to enable researchers to observe the developmental influences that interact with different variables at specific developmental stages. Separate investigation of the role of negative self-perception, poor social conduct and socio-economic status in the experience of life stressors and resources should be undertaken, looking at these in more depth.

A number of clear priorities for prevention programmes have emerged from the current study. It would appear as if coloured adolescents might be a particularly vulnerable group in terms of the amount of stressors they reported. It is therefore suggested that intervention programmes focusing on self-esteem, and dealing with social interaction and effective coping, be implemented in schools to assist coloured adolescents in dealing with life stressors.

In conclusion, it is interesting that given South Africa's historical background and cultural diversity, differences on only a small number of variables were reported. The findings of this study suggest perhaps that there are more similiarities then differences between South African adolescents in the experience of life stressors and social resources.

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CHAPTER 5

ARTICLE IV

THE ROLE OF COPING IN THE RELATIONSHIP BETWEEN LIFE STRESSORS AND SUICIDAL IDEATION IN A CROSS-ETHNIC SAMPLE OF ADOLESCENTS

Abstract

The link between life stressors and suicidal behaviour amongst adolescents is well established within suicide-related research. However, this relationship appears to be non-linear as the way in which the adolescent copes with stressors plays an important role in determining the outcome of this relationship. The current study aimed to explore the role of coping in the relationship between life stressors and suicidal ideation amongst a sample of 1033 Grade 11 and 12 learners (201 coloured, 405 black and 427 white) from schools in the Free State province. The influence of ethnic differences on this relationship was also investigated.

A non-experimental, criterion-group design was employed. Participants completed the Suicidal Ideation Questionnaire (SIQ), the youth form of the Life Stressors and Social Resources Inventory (LISRES), as well as the Coping Orientations to Problems Experienced Questionnaire (COPE). Product-term regression analyses were conducted to investigate the moderating and mediating role of coping strategies in the relationship between perceived life stressors and suicidal ideation. Significant differences (1% level of statistical significance) in the mean scores obtained for the SIQ for the different ethnic groups were found, with the coloured participants reporting the highest mean score, followed closely by the black participants. Significant differences (1% level of statistical significance) were also found with regard to socio-economic and relationship stressors, with the black participants reporting these aspects as greater sources of stress than their white and coloured counterparts.

Black participants also reported more frequent use of dysfunctional coping strategies. Significant correlations were found between suicidal ideation and the two stressor subscales Parents and Negative Life Experiences. Furthermore, a significant correlation was found between the stressor Friends and Suicidal Ideation for the white participants, and the stressor Family and Suicidal Ideation for the white and coloured participants. Coping strategies did not mediate the relationship between perceived life stressors and suicidal ideation amongst any of the three ethnic groups. Coping strategies, however, acted as moderators in this relationship for

all three of the ethnic groups. The results suggest that ethnicity might play an influencing role in the experience of suicidal ideation and life stressors amongst South African adolescents.

Keywords**:** suicidal ideation; adolescence; stressors; coping strategies; moderator; mediator; ethnic differences.

The past decades have witnessed a dramatic increase in the incidence of adolescent suicidal behaviour worldwide. Suicidal behaviour can be defined as thoughts and actions ranging from the wish to die (suicidal ideation) to actually carrying out the deed (completed suicide) (Bridge, Goldstein, & Brent, 2006). According to the World Health Organization, at least a 100 000 adolescents commit suicide annually (WHO, 2008). In South Africa, suicide accounts for up to 10% of all non-natural deaths reported for the age group 15–29 years (NIMSS, 2009). Furthermore, results from recently conducted national youth risk surveys (Reddy et al., 2003; Reddy et al., 2010) suggest an increase in suicidal behaviour amongst South African adolescents of all ethnic backgrounds.

Adolescence is widely considered to be a period of increased stress resulting from the multilayered personal, cognitive and social development that accompanies this life stage (Louw, Louw, & Ferns, 2007; Seiffge-Krenke, 2006; Sigelman & Rider, 2010). South African adolescents, in particular, not only have to deal with these developmental changes, but are also confronted with issues such as chronic levels of poverty and violence (Barbarin & Richter, 2003; Freeman, 2007; Louw et al., 2007), high levels of family conflict (Madu & Matla, 2004), and the experience of racism and social prejudice (Louw et al., 2007). Numerous studies (Fergusson & Woodward, 2002; Flisher, Liang, Laubscher, & Lombard, 2004; Kerr, Preus, & King, 2006; Krug, Dahlberg, Meray, Zwi, & Lozano, 2002) suggest a possible link between chronic life stressors and adolescent suicidal behaviour. However, it appears as if this link is largely underexplored within the South African context as reflected in the limited results yielded in searches on PsychLit, Psych Info and Science Direct. Moreover, very few South African research studies have focused on the influence of coping strategies on the relationship between chronic life stressors and adolescent suicidal behaviour.

Using the Integrated Stress and Coping Model (Moos & Schaefer, 1993) as a guiding framework, this article aims to determine whether a relationship exists between life stressors and suicidal ideation amongst a sample of black, white and coloured adolescents, and whether this relationship is influenced by coping. More specifically, the study aims to determine the extent to which different coping strategies (emotion-focused, problem-focused and dysfunctional coping)

influence the relationship between perceived life stressors and suicidal ideation, if at all. Furthermore, the study aims to determine whether the influence of coping on the relationship between life stressors and suicidal ideation varies across ethnicity.

According to the Integrated Stress and Coping Model (Moos & Schaefer, 1993) the combined impact of dispositional and contextual factors, life crises and developmental transitions influence the choice of coping strategies utilised by individuals and ultimately results in either negative (suicidal behaviour) or positive (well-being) health outcomes. Furthermore, the bidirectional pathways that exist between all these systems indicate that the processes are reciprocal and constantly influence each other (Moos & Schaefer, 1993). For example, dispositional factors can exert a positive or negative influence on the contextual system of an adolescent, and vice versa. An adolescent's display of suicidal behaviour is therefore substantially influenced by his/her exposure to stressors, as well as the availability and utilisation of personal and environmental coping resources.

Dispositional factors such as a low self-esteem (Mashego, Peltzer, Williamson, & Setwaba, 2003; Wilburn & Smith, 2005) and a sense of hopelessness (Perry & Olason, 2008) can lead to an over-generalisation of the anticipation of failure, rejection and despair which appear to be strongly related to suicidal behaviour (Goldston et al., 2001). Conversely, an optimistic view (of the self, other people and the world) can function as a resource in dealing with personal or environmental challenges and can also act as a buffer in reducing the risk of suicidal ideation and behaviour. A strong sense of self-value and hope enables the adolescent to be more resilient in the face of adversity (Baron & Byrne, 2000; Evans, Hawton, & Rodham, 2005; Fleischman, Bertolote, Belfer, & Beautrais, 2005; Wild, Flisher, Bhana, & Lombard, 2004).

However, the suicidal behaviour of adolescents is affected by more than just dispositional factors. Contextual factors such as relational problems, academic problems, socio-economic conditions and socio-cultural transition have all been implicated in adolescent suicidal behaviour (Beautrais, 2000; Beekrum, Valjee, & Collings, 2011). A stable and functional family system can act as a potentially protective factor against suicidal behaviour. Changes in the family

structure and functioning contribute to increasing levels of stress experienced by adolescents (Baume & Clinton, 1997). Dysfunctional communication processes in the home, decreased displays of affection (Greening et al., 2008; Fite, Stoppelbein & Greening, 2009; Van Renen & Wild, 2008), high levels of rigidity and inflexibility by parents (Pillay & Wassenaar, 1997) as well as high expectations from parents (Wassenaar & Narboni, 2001) have all been highlighted as major contributors to heightened adolescent stress and ultimately suicidal behaviour.

Peer relationships have been identified as a significant source of stress for adolescents (Byrne, Davenport, & Mazanov 2007; Louw et al., 2007; McGraw, Moore, Fuller, & Bates, 2008; Suldo, Thalji, Michalowski, & Shaffer, 2009). Increased peer pressure to participate in ego-dystonic risky behaviour such as substance abuse can lead to high levels of stress during this developmental stage (Erwin, 2002). Similarly, romantic relationships can be an emotionally and socially satisfying experience for adolescents. However, these relationships also have the potential to be stressful and may lead to suicidal behaviour in adolescents especially when the relationship fails or results in intense conflict with parents, peers or the romantic partner (Engelbrecht & Van Vuuren, 2000; Louw et al., 2007).

The school environment has been implicated as a major contributor to adolescent suicidal behaviour (Byrne et al., 2007). School-related stressors that have been identified include high academic demands (Da Costa & Mash, 2008), and the inability to balance leisure time with school demands (Suldo et al., 2009). Furthermore, very high (or very low) expectations from parents to perform academically (Wasserman & Narboni, 2001), school bullying (Birkett, Espelage, & Koenig, 2009), inadequate provision of educational facilities (Meehan, Peirson, & Fridjhon, 2007) and feeling unsafe at schools (Da Costa & Mash, 2008) all contribute to the experience of the academic environment as stressful.

Poverty and unemployment appear to make a distinct contribution to the suicidal behaviour of black and coloured adolescents in South Africa (Cooper, Appleby, & Amos, 2002; Govender & Killian, 2001). Poverty takes a psychological toll on adolescents via the large

burden of stress it places on parents and the increased risk for exposure to conflict within the family (Wadsworth & Berger, 2006). The unemployment of parents, especially fathers, also appears to contribute to the occurrence of depression and suicidal reactions in their children (Diekstra & Garnefski, 1995). Furthermore, Roberts, Chen and Roberts (1997) found that adolescents worrying about their family's economic situation tend to display high levels of stress which may result in suicidal behaviour.

South Africa's current socio-cultural transition has exposed adolescents to an environment of increasing challenges and constantly changing social demands (Beekrum, 2008; Dawes & Finchilescu, 2002). The instability associated with such transition has been found to be strongly linked to adolescent suicidal behaviour (Beekrum et al., 2011; Burrows & Laflamme, 2008; Mäkinen, 2000). For example, black adolescents increasingly have to cope with an ideological shift from collectivism to individualism (Erasmus & Ferreira, 2002). This process has resulted in black adolescents slowly moving away from some of the more traditional aspects of their culture, often leading to conflict between themselves and their more traditional parents (Mashego & Madu, 2009; Pillay & Wassenaar, 1997; Wassenaar, Marchiene, Van der Veen, & Pillay, 1998). For white and coloured adolescents, the socio-political change has brought about a disruption in the levels of privilege previously experienced under apartheid rule (Dawes & Finchilescu, 2002). For whites, the transformation has been from a political majority to a numerical and social minority relative to black groups (Norris et al., 2008). Previously, white adolescents were privileged with easy access to economic and social resources. Today, however, with the government's policies of affirmative action and black empowerment, whites have to compete with increasingly better-educated black adolescents for these resources (Norris et al., 2008). Rising unemployment in South Africa has also led to fierce competition for employment amongst school leavers from all ethnic groups, resulting in high levels of stress and anxiety about the future (Norris et al., 2008). According to Joe, Stein, Seedat, Herman and Williams (2008), coloured adolescents' pattern of suicidal behaviour might reflect their levels of stressful adjustment to South Africa's rapid political and socio-economic transitions, wherein they are not given opportunities for growths in employment and other social opportunities they once held over blacks under apartheid.

The use of appropriate coping strategies is considered an important component in the relationship between the exposure to life stressors and adolescent suicidal behaviour (Hobfoll, 1988; Hobfoll, 1998; Lewis & Frydenberg, 2002; Seiffge-Krenke, 2006; Votta & Manion, 2003; Yang & Clum, 1996). Failure to cope with stress has in part been attributed to the display of suicidal behaviour amongst adolescents (Meehan et al., 2007). Lazarus and Folkman (1984) define coping as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person" (p.141). These cognitive and behavioural efforts are directed at mastering, tolerating, reducing and/or minimising environmental and internal demands and conflicts that strain an individual's resources (Schafer, 2000). Lazarus and Folkman (1984) have proposed that the way individuals appraise situations largely determines the level of stress they experience, the manner in which individuals attempt to cope with the challenges they face, and the impact that the specific situations have on their psychological well-being. Coping is therefore a process that includes an interaction between the situation and the person (Frydenberg, 1997; Latack & Havlovic, 1992), as well as depending on the person's perceived ability to manage the stressor.

A distinction can be drawn between problem-focused and emotion-focused modes of coping (Compton, 2005; Lazarus & Folkman, 1984; Caltabiano, Byrne, Martin, & Sarafino, 2002). Problem-focused coping strategies aim to alter the stressor through cognitive reasoning and purposeful action, while emotion-focused strategies help to relieve the emotional distress which is caused by or associated with the stressful situation (Carver, Scheier, & Weintraub, 1989; Compton, 2005). The use of problem-focused coping strategies has been reported to increase the expectation of positive outcomes, which then allows the adolescent to be hopeful, and improves their levels of motivation and satisfaction (Lewis & Frydenberg, 2002).

Emotion-focused coping strategies, such as seeking emotional support and turning to religion, assist adolescents in dealing more successfully with stressful situations and increase their perception of being able to deal successfully with future stressors (Rutter & Estrada, 2006). Aspalan (2003) and Brown (2009) maintain that strategies such as turning to religion not only act as protective barriers to stressful challenges, but also help to decrease the impact of suicidal

ideation. Seeking social support as an emotion-focused coping strategy, especially among female adolescents, was reported to reduce feelings of hopelessness and helplessness, creating a feeling of belonging and acted as a protector against suicidal ideation (Everall et al., 2006; Meehan et al., 2007; Wissing, Claassens, & Du Toit, 1998). The venting of emotions, on the other hand, can increase feelings of alienation, insecurity and poor self-esteem which are associated with high levels of suicidal ideation (George, 2009). Coping strategies such as self-blame and acceptance may lead to elevated levels of anxiety and depression, which act as a further risk to suicidal behaviour (Frydenberg, 2008). Emotion-focused and dysfunctional coping strategies, especially turning to religion and emotional support, denial, avoidance or mental disengagement might be effective in the initial stages of coping with stressful events as they decrease feelings of anxiety, panic and low mood. However, the beneficial effects of these strategies are usually short-lived with levels of renewed anxiety and stress returning as stressful circumstances persist (Reinecke, 2006). New demands require new ways of coping and thus no single coping strategy is effective for all types of stress (Meehan et al., 2007). A strategy that may be adaptive in one situation may be maladaptive in another.

In addition to differences in modes of coping, cultural and ethnic factors may also play a determining role in coping differences (George, 2009; Magaya, Asner-Self, & Schreiber, 2005). Possible differences between the coping strategies employed by individuals from collectivist cultures and those from more individualist cultures have been noted (Hashim, 2003; Mann et al., 1998). People from mainly individualistic cultures are more inclined to demonstrate more active forms of coping while people from collectivist cultures are more inclined to utilise avoidant coping (Beukes, Walker, & Esterhuyse, 2009; Hashim, 2003; Mann et al., 1998). Magaya et al. (2005), in a study among a sample of Zimbabwean adolescents, found that cultural factors exercise a significant influence on adolescents' choice of coping approaches, as adolescents are often encouraged to adopt non-confrontational and avoidant behaviours that are focused on the promotion of a harmonious and interdependent social environment. Similarly, Sheu and Sedlacek (2004), in a study investigating the coping differences between black, white and Asian Americans, reported Asian participants to be more pessimistic and more inclined towards using avoidant coping. Sheu and Sedlacek (2004) suggest that these differences are linked to the

influence of collectivistic cultures that value the preservation of social relations above confrontational behaviours. According to Jackson and Abosi (2007), white South African culture could generally be considered to be more individualistic, while black South African culture could be described as having a tendency to be more collectivist. Although very little research is available with regard to ethnic differences and coping within the South African context, George (2009) reported a higher usage of dysfunctional coping strategies amongst black and coloured adolescents than white adolescents. The reason for this may be related to the way that the political past shaped environments of unequal access to resources, leading to an increased use of certain coping mechanisms such as avoidance, alcohol and drug disengagement and denial (Chapman & Mullis, 2000; Du Toit, 1999; Plaaitjie, 2006).

The literature reviewed suggests that the relationship between chronic life stressors and suicidal ideation is well established within suicide-related studies. However, it would appear that this relationship is not linear and that coping strategies may determine the nature of the interaction between the experience of life stressors and suicidal ideation amongst adolescents.

Method

The following methods were used:

Research design

A non-experimental, cross-sectional design was employed in this study.

Participants

Eighteen schools, representative of all five districts of the Free State province, were selected by means of a stratified random sampling technique to ensure balanced representation of ethnicity, gender and age. All available Grade 11 and 12 learners from the selected schools were included to make up a sample of 1033 learners. The sample consisted of 437 (42.3%) males and 552

(53.4%) females, with 44 (4.3%) participants not indicating their gender. The ages of the participants ranged from 16 to 24 years (the mean age of the sample was 17.41 years with a standard deviation of 1.11). The sample composition included 405 black (39.2% of the sample), 427 white (41.3% of the sample) and 201 coloured (19.5% of the sample) participants.

Procedure

The research committee of the Faculty of Humanities at the University of the Free State provided ethical clearance for the research. Permission to involve schools in the study was granted by the Free State Department of Education and respective principals. Parents and participants gave written consent prior to the inclusion of the learners in the study. All participants were guaranteed anonymity, confidentiality and voluntary participation.

Data was collected on a day set aside by the Department of Education. Accredited language practitioners were used to translate English questionnaires into Afrikaans and Sesotho, by means of the back translation method (Brislin, 1970; Foxcroft & Roodt, 2005). Participants were given the opportunity to complete the questionnaire in any of the three languages at their respective schools. The administration of the questionnaires took place over a period of 2 hours. Questionnaires were administered by a psychometrist and psychologist who were also available to answer any questions that arose during the test administration. An opportunity was also provided to debrief learners after the administration of the questionnaires in order to address any emotional responses or questions that resulted from their involvement in the research process.

Measuring instruments

The following questionnaires were used to gather data on the variables included in this study:

The *Suicidal Ideation Questionnaire for Adolescents* (SIQ) (Reynolds, 1988) is a one-dimensional scale that measures the frequency and intensity of suicidal thoughts experienced by the participants. The 30 items of the questionnaire are answered on a seven-point Likert scale and the total suicidal ideation score ranges from 0 to 180. Good internal consistency is reported

for this scale. An alpha coefficient of 0.97 was reported by Reynolds (1988) for a group of 890 American adolescents, while George (2009) reported an internal consistency coefficient of 0.95 for a South African sample.

The youth form of the *Life Stressors and Social Resources Inventory* (Moos & Moos, 1994) was used to assess the stressors and resources reported by participants. The instrument consists of 209 items, divided into two sections, namely Life Stressors and Social Resources. The inventory has a total of sixteen subscales, nine of which measure life stressors and seven measuring social resources. The Life Stressors (SS) subscales include: Physical Health (PH), Home and Money (HM), Parents (PAR), Siblings (SIB), Extended Family (FAM), School (SCH), Friends (FR), Boyfriend/Girlfriend (BG) and Negative Life Experiences (NLE). The Social Resource subscales include: Parents (PAR), Siblings (SIB), Extended Family (FAM), School (SCH), Friends (FR), Boyfriend/Girlfriend (BG) and Positive Life Experiences (PLE). A high score indicates a high level of stress experienced or the presence of adequate resources in a specific domain. For the purpose of this study, only the Life Stressors subscales were included. Internal consistencies ranging from 0.79 to 0.88 for the Life Stressors subscales have been reported in a North American sample (Moos & Moos, 1994). Furthermore, Wissing (1996) reported Cronbach alpha coefficients ranging between 0.79 and 0.88 for the Life Stressors subscales in a sample of South African students.

The *Coping Orientations to Problems Experienced Questionnaire* (COPE) (Carver et al., 1989) measures participants' coping strategies. The scale consists of 53 individual items which make up 14 subscales. Items are completed on a four-point Likert scale ranging from 1-"I usually do not do this at all" to 4-"I usually do this quite a lot". The subscales are grouped together into three broad categories, namely Problem-focused Strategies, Emotion-focused Strategies, and Dysfunctional Strategies. The problem-focused category includes subscales such as: Active Coping, Planning, Suppression of Competing Activities, Restraint Coping and Seeking Social Support for Instrumental Reasons. The emotion-focused category consists of subscales such as: Seeking Social Support for Emotional Reasons, Positive Reinterpretation and Growth, Acceptance, Turning to Religion and Focus on and Venting of Emotions. The dysfunctional subscales are: Denial, Behavioural Disengagement, Mental Disengagement and

Alcohol-Drug Disengagement (Carver et al., 1989; Wong, Reker, & Peacock, 2006). For the purpose of this article, only the combined scales were used. The scores on the individual subscales are calculated by adding the scores of the four items per subscale except for the Alcohol and Drug Disengagement scale which consists of only one item. High scores indicate that the individual frequently uses the proposed strategy, whereas low scores indicate a less frequent use of the coping strategy. Carver et al. (1989) reported alpha coefficients of between 0.45 and 0.90 for the subscales. In a South African study of a white, black and coloured adolescents, George (2009) reported alpha coefficients ranging from 0.58 – 0.93. Similarly, Wissing (1996) reported alpha coefficients of between 0.39 and 0.90 for a student population. The small number of items per subscale probably contributed to the low reported alpha coefficients. For this reason the combination of the subscales into three subscales can improve internal consistency.

A *biographical questionnaire* consisting of 11 items was used to gather demographic information pertaining to the age, gender and ethnicity of the participants.

Given the multi-ethnic composition of the sample, internal consistency coefficients were calculated for the different groups (black, white and coloured). The results of these analyses are reported in Table 1.

Table 1: Cronbach alpha coefficients for the SIQ, LISRES Stressor and COPE subscales

Scales	Total sample (n=1033)	Black (n=405)	White (n=427)	Coloured (n=201)
Suicidal Ideation Questionnaire	0.97	0.96	0.98	0.97
LISRES Inventory Stressors Subscale				
Physical Health (PH)	0.83	0.86	0.68	0.87
Home and Money (HM)	0.89	0.86	0.88	0.86
Parents (PAR)	0.91	0.90	0.92	0.89
Siblings (SIB)	0.84	0.82	0.86	0.86
Family (FAM)	0.79	0.76	0.84	0.76
School (SCH)	0.81	0.77	0.84	0.83
Friends (FR)	0.77	0.73	0.82	0.75
Boyfriend/Girlfriend (BG)	0.85	0.84	0.91	0.77
Negative life experiences (NLE)	0.85	0.83	0.80	0.81
The COPE Scale				
Problem-focused Coping	0.90	0.89	0.91	0.89
Emotion-focused Coping	0.86	0.87	0.85	0.87
Dysfunctional Coping	0.86	0.75	0.77	0.72

Key: *SIQ: Suicidal Ideation Questionnaire; LISRES: Life Stressors and Social Resources Inventory; COPE: Coping Orientations to Problems Experienced Questionnaire*

It is evident from Table 1 that the alpha coefficients for the Suicidal Ideation Questionnaire (SIQ), the Life Stressors subscales of the LISRES as well as the COPE scale exhibit acceptable levels of internal consistency (≥0.70 for non-cognitive measures) (Nunnally & Bernstein, 1994). The data were thus considered to be sufficiently reliable for further analysis.

Statistical analysis

A one-way MANOVA was performed to investigate differences between ethnic groups with regard to all the subscales. According to Howell (2007), hierarchical regression analyses should be employed to investigate the effect of an intervening variable (three coping strategies) on the relationship between a predictor variable (life stressors) and a criterion variable (suicidal ideation). Product-term regression analyses (as illustrated in Table 2) were employed to investigate the potential effect of the three coping strategies on the relationship between perceived life stressors and suicidal ideation.

Table 2: Graphic representation of product-term regression analyses

Step	Predictor	Result	Deduction
1	Adverse condition	Significant	Direct effect on dependent variable
Alt 1	Intervening variable	Significant	Direct effect on dependent variable
2	Adverse condition	Significant	If intervening variable is significant in step 1, but non-significant in step 2 - mediator
	Intervening variable	Non-significant	
	Adverse condition	Non-significant	If adverse condition is significant in step 1, but non-significant in step 2 – confounding
	Intervening variable	Significant	
3	Product: Intervening variable & adverse condition	Significant	Moderator

***Key**: Adverse condition = Life stressors; Intervening variable = Coping (Problem-focused, Emotion-focused and Dysfunctional Coping); Dependent variable = Suicidal ideation*

***Note**: When the product term was used in step 3, deviation scores were used to prevent multicollinearity*

The literature reviewed earlier in this study suggests that ethnic differences may be apparent with regard to the occurrence of suicidal ideation. Consequently, moderated regression analyses (Kerlinger & Lee, 2000) were conducted in order to investigate the potential effect of ethnicity on the relationship between life stressors and suicidal ideation prior to testing the potential intervening effect of coping on this relationship. Two models were tested in the analyses. The first model includes the first-order effect only and the second model includes the first-order effect as well as a product-term of perceived life stressors and ethnicity. Both the 1% and 5% levels of statistical significance were utilised.

Results

The results of the one-way MANOVA are reported in Table 3. According to the results reported in Table 3, significant differences (on the 1% level of statistical significance) were found with regard to the average suicidal ideation scores obtained for the white, black and coloured participants. The results of the Scheffé test indicate that the coloured participants reported the highest level of suicidal ideation, followed by the black and white participants. The corresponding *f*-value indicates that the result has a small to medium effect size which is indicative of moderate practical value (Steyn, 1999).

Table 3: Comparison of means for the SIQ, LISRES and COPE subscales by ethnicity

Scales	Black (n=405)		White (n=427)		Coloured (n=201)		*F*	*P*	*f*	Scheffé Test
	Mean	SD	Mean	SD	Mean	SD				
Suicide Ideation Questionnaire	35.12	39.39	23.84	32.04	47.85	47.12	27.98**	0.000	0.23	3 & 1 higher 2
Stressor subscales (LISRES)										
Physical Health	1.01	2.45	0.48	1.10	1.44	3.38	13.46**	0.000		
Home and Money	11.38	7.89	4.62	5.53	11.21	7.54	116.90**	0.000	0.48	1 & 3 higher 2
Parents	7.25	5.82	7.80	5.35	7.39	5.33	1.09	0.338		
Siblings	7.75	5.94	8.05	5.37	8.93	6.13	2.85	0.058		
Extended Family	6.10	4.77	5.19	4.14	7.37	4.71	16.17**	0.000		
School	15.85	8.02	15.79	7.73	18.29	8.93	7.52**	0.001		
Friendships	7.52	4.77	6.61	4.29	8.17	4.93	8.83**	0.000		
Boyfriend/Girlfriend	5.13	4.86	3.17	4.06	4.65	4.24	21.46**	0.000	0.20	1 & 3 higher 2
Negative life experiences	13.41	7.52	10.48	6.25	13.93	7.20	25.34**	0.000	0.22	3 & 1 higher 2
COPE subscales										
Problem-focused Coping	57.57	11.55	53.18	10.47	54.59	11.25	16.75**	0.000		
Emotion-focused Coping	57.86	11.14	54.78	9.59	55.86	10.30	9.29**	0.000		
Dysfunctional Coping	31.87	7.06	28.65	6.36	30.75	6.28	25.19**	0.000	0.22	1 & 3 higher 2

**$p \leq 0.01$ *$p \leq 0.05$; Effect sizes: ±0.1 (small); ±0.3 (medium); ±0.5 (large); 1: Black; 2: White; 3: Coloured

With regard to the average scores obtained for the stressor subscales of the LISRES, seven of the scores reflected significant differences, on the 1% level of statistical significance, for the three ethnic groups. However, only the effect sizes of the average scores obtained for the

stressor subscales Boyfriend/Girlfriend (medium effect size), Negative Life Experience (medium effect size) and Home and Money (large effect size) yielded practically significant results. According to the results from the Scheffé test, black and coloured participants have a higher average score on the stressor subscale Home and Money than the white participants. Furthermore, the Scheffé test results indicate that significant differences (1% level of statistical significance) exist in the average scores obtained for the stressor subscales Boyfriend/Girlfriend and Negative Life Experiences between the white and black group and the white and coloured group. In each case the white adolescents had a significantly lower average score on this subscale when compared to the black and coloured groups.

With regard to the average scores obtained for the COPE subscales, all three subscales reflected statistically significant (1% level of statistical significance) differences for the three ethnic groups. However, only the corresponding effect size of the average scores for the subscale Dysfunctional Coping was of moderate to large practical effect. Subsequently, only this result will be further discussed. According to the Scheffé results, significant differences exist in the average scores obtained for the subscale Dysfunctional Coping between the white group and the black and coloured groups. From Table 3 it is apparent that the white group had a significantly lower average score compared to the black and coloured groups. These results suggest that black and coloured adolescents are more likely to use dysfunctional coping strategies in dealing with their daily problems.

Ethnicity as moderator in the relationship between life stressors and suicidal ideation

A hierarchical multiple regression analysis was conducted in order to determine whether the relationship between perceived life stressors and suicidal ideation is moderated by ethnicity. In order to make use of the categorical data (ethnicity), dummy variables were created. Because ethnicity comprised three categories (black, white and coloured), two dummy variables were created and the effect of these variables on the increase in R^2 was determined. The results of this analysis are reported in Table 4.

Table 4: Moderated effect of ethnicity on the relationship between life stressors and suicidal ideation

				Change statistics				
			Adjusted					Sig *F*
Model	***R***	R^2	R^2	R^2 change	***F*** change	**df1**	**df2**	**Change**
1	0.439	0.193	0.186	0.193	27.182	9	1023	0.000**
2a	0.441	0.195	0.187	0.002	2.126	1	1022	0.145
2b	0.443	0.197	0.189	0.004	4.695	1	1022	0.030*

** $p \leq 0.01$; * $p \leq 0.05$

It is apparent from Table 4 that perceived life stressors account for 19% [R^2= 0.193; $F(9;1023) = 27.182$; $p = 0.000$] of the variance in suicidal ideation in the total group of adolescents. The addition of ethnicity (model 2b) to the regression model accounts for an additional 0.4% of the variance in suicidal ideation scores [$\Delta R^2 = 0.004$; $F(1;1022) = 4.695$; $p = 0.030$]. It would thus seem that ethnicity moderates the relationship between life stressors and suicidal ideation in the current sample. Consequently, subsequent analyses involving life stressors and suicidal ideation were conducted separately for each ethnic group (black, white and coloured).

The role of coping in the relationship between perceived life stressors and suicidal ideation

Pearson's product-moment intercorrelations were calculated between life stressors, suicidal ideation and coping for the three ethnic groups respectively and the results are depicted in Table 5.

Table 5: Pearson's product-moment intercorrelations between suicidal ideation, life stressors and coping strategies for the black, white and coloured groups

	Suicidal Ideation		
	Black (n=405)	**White (n=427)**	**Coloured (n=201)**
Perceived Stressors			
Physical Health	0.03	0.01	-0.03
Home and Money	0.22**	0.21**	0.38**
Parents	0.20**	0.31**	0.34**
Siblings	0.14**	0.20**	0.18**
Family	0.15**	0.29**	0.30**
School	0.13**	0.25**	0.23**
Friends	0.20**	0.20**	0.15
Boyfriend/Girlfriend	0.18**	0.08	0.18**
Negative Life Experiences	0.31**	0.35**	0.28**
Coping strategies			
Problem-focused Coping	-0.04	-0.23**	0.04
Emotion-focused Coping	0.04	-0.20**	0.08
Dysfunctional Coping	0.12**	0.16**	0.23**

**$p \leq 0.01$

It is apparent from Table 5 that all correlations between suicidal ideation, life stressors and coping strategies with the exception of Physical Health (for all three ethnic groups), Friends for the coloured group, Boyfriend/Girlfriend for the white group, as well as problem-focused and emotion-focused coping for the black and coloured groups are significant at the 1% level of statistical significance. It can be deduced from this finding that financial problems (all three ethnic groups), stressful interactions with parents (white and coloured group), negative life experiences and the use of dysfunctional coping strategies (coloured group) are strongly associated with higher levels of suicidal ideation. However, the use of problem-focused coping strategies (white group) seems to correlate negatively with suicidal ideation. All the statistically significant correlations were indicative of a medium effect size and, as such, should be considered to be of moderate practical significance.

Life stressors were measured by nine subscales, namely Physical Health, Home and Money, Parents, Siblings, Family, School, Friends, Boyfriend/Girlfriend and Negative Life Experiences. Consequently, the role of coping strategies (problem-focused, emotion-focused and dysfunctional coping) in the relationship between suicidal ideation and each of the life stressor subscales will be investigated separately for all three ethnic groups (black, white and coloured).

The possible effect (mediator or moderator) of coping strategies in the relationship between perceived life stressors and suicidal ideation was investigated for the black group and the results of the product-term regression analyses are depicted in Table 6.

Table 6: Product-term regression analysis for the black group

Step	**Beta**		
	PAR	**DC**	**PAR X DC**
1	0.203**		
Alternative 1		0.124*	
2	0.194**	0.107*	
3			-0.111*
	NLE	**DC**	**NLE X DC**
1	0.310**		
Alternative 1		0.124*	
2	0.298**	0.072	
			-0.121*

**$p \leq 0.01$; *$p \leq 0.05$

Key: PAR = Parents; DC = Dysfunctional Coping; NLE = Negative Life Experiences;

Note: When the product term was used in step 3, deviation scores were used to prevent multicollinearity.

It is apparent from Table 6 that parents (PAR) correlate significantly (1% level of statistical significance) with suicidal ideation amongst the black participants. Therefore, it can be deduced that parents have a direct and significant effect on the suicidal ideation reported by black participants. Furthermore, it appears as though dysfunctional coping exhibits a significant (5% level of statistical significance) relationship to suicidal ideation among these participants. It is also apparent that both parents (1% level of statistical significance) and dysfunctional coping

(5% level) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to dysfunctional coping. The third step of the analysis demonstrates a statistically significant (5% level of statistical significance) product term. Consequently, it is apparent that dysfunctional coping has a moderating effect on the relationship between the stressor parents and suicidal ideation in the black group.

According to Table 6, negative life experiences (NLE) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the black participants. Therefore, it can be deduced that Negative Life Experiences exercise a direct and significant effect on the suicidal ideation reported by the black participants. Furthermore, it appears as though dysfunctional coping also exhibits a significant (5% level of statistical significance) relationship with suicidal ideation among these participants. It is also apparent that only negative life experiences demonstrate a significant (1% level of statistical significance) relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to dysfunctional coping. However, the third step of the analysis yields a significant (5% level of statistical significance) product term. Therefore, it is apparent that dysfunctional coping has a moderating effect on the relationship between negative life experiences and suicidal ideation amongst the black participants.

The results for the product-term regression analyses for the white group are depicted in Table 7.

Table 7: Product-term regression analysis for the white group

Step	Beta		
	FR	**DC**	**FR X DC**
1	0.199**		
Alternative 1		0.157**	
2	0.181**	0.131**	
3			0.102*
	FAM	**EC**	**FAM X EC**
1	0.285**		
Alternative 1		-0.201**	
2	0.265**	-0.168**	
3			0.157**
	FR	**EC**	**FR X EC**
1	0.199**		
Alternative 1		-0.201**	
2	0.179	-0.181**	
3			0.120*
	PAR	**PC**	**PAR X PC**
1	0.308**		
Alternative 1		-0.227**	
2	0.283**	-0.191**	
3			0.137**
	FAM	**PC**	**FAM X PC**
1	0.285**		
Alternative 1		-0.227**	
2	0.270**	-0.206**	
3			0.161**
	FR	**PC**	**FR X PC**
1	0.199**		
Alternative 1		-0.227**	
2	0.178**	-0.209**	
3			0.135**
	NLE	**PC**	**NLE X PC**
1	0.353**		
Alternative 1		-0.227**	
2	0.335**	-0.197**	
3			0.135**

**$p \leq 0.01$; *$p \leq 0.05$

Key: FR = Friends; FAM = Family; PAR = Parents; NLE = Negative Life Experiences; DC = Dysfunctional Coping; EC = Emotion-focused Coping; PC = Problem-focused Coping

Note: When the product term was used in step 3, deviation scores were used to prevent multicollinearity.

According to Table 7, friends (FR) correlate significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. Therefore, it can be deduced that the experience of friendships as stressful have a direct and significant effect on the suicidal ideation of the white participants. Furthermore, it appears that dysfunctional coping exhibits a significant (1% level of statistical significance) relationship to the suicidal ideation in this group. It is also apparent that both friends (1% level of statistical significance) and dysfunctional coping (1% level of statistical significance) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to dysfunctional coping. The third step of the analysis demonstrates a significant (5% level of statistical significance) product term. Consequently, it is apparent that dysfunctional coping has a moderating effect on the relationship between friends and suicidal ideation amongst the white participants.

It is clear from Table 7 that family (FAM) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. It could be deduced that family have a direct and significant effect on the suicidal ideation reported by the white participants. Furthermore, it appears that emotion-focused coping exhibits a significant (1% level of statistical significance) negative relationship to suicidal ideation in this group. It is also apparent that both family (1% level of statistical significance) and emotion-focused coping (1% level of statistical significance) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to emotion-focused coping. However, the third step of the analysis demonstrates a significant (1% level of statistical significance) product term. Consequently, it is apparent that emotion-focused coping has a moderating effect on the relationship between family and suicidal ideation amongst the white participants.

Table 7 also indicates that friends (FR) correlate significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. Therefore, it can be deduced that friends have a direct and significant effect on the suicidal ideation reported by the white

participants. Furthermore, it appears as though emotion-focused coping exhibits a significant (1% level of statistical significance) negative relationship to suicidal ideation among these participants. It is also apparent that both friends (1% level of statistical significance) and emotion-focused coping (1% level of statistical significance) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to emotion-focused coping. The third step of the analysis demonstrates a significant (5% level of statistical significance) product term. Consequently, it is apparent that emotion-focused coping has a moderating effect on the relationship between friends and suicidal ideation amongst the white participants.

According to Table 7, parents (PAR) correlate significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. Therefore, it can be deduced that parents have a direct and significant effect on the suicidal ideation reported by the white participants. Furthermore, it appears as though problem-focused coping exhibits a significant (1% level of statistical significance) negative relationship to suicidal ideation reported by these participants. It is also apparent that both parents (1% level) and problem-focused coping (1% level of statistical significance) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to problem-focused coping. However, the third step of the analysis demonstrates a significant (1% level of statistical significance) product term. Consequently, it is apparent that problem-focused coping has a moderating effect on the relationship between friends and suicidal ideation amongst the white participants.

Table 7 further indicates that family (FAM) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. Therefore, it can be deduced that family have a direct and significant effect on the suicidal ideation reported by the white participants. Furthermore, it appears as though problem-focused coping exhibits a significant (1% level of statistical significance) negative relationship to suicidal ideation amongst these participants. It is also apparent that both family (1% level of statistical significance) and

problem-focused coping (1% level) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to problem-focused coping. The third step of the analysis demonstrates a significant (1% level of statistical significance) product term. Consequently, it is apparent that problem-focused coping has a moderating effect on the relationship between friends and suicidal ideation amongst the white participants.

According to Table 7, friends (FR) correlate significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. Therefore, it can be deduced that friends have a direct and significant effect on the suicidal ideation reported by the white participants. Furthermore, it appears as though problem-focused coping exhibits a significant (1% level of statistical significance) negative relationship to the suicidal ideation reported by these participants. It is also apparent that both friends (1% level of statistical significance) and problem-focused coping (1% level of statistical significance) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to problem-focused coping. However, the third step of the analysis demonstrates a significant (1% level of statistical significance) product term. Thus, it is apparent that problem-focused coping has a moderating effect on the relationship between friends and suicidal ideation amongst the white participants.

According to Table 7, negative life experiences (NLE) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the white participants. Therefore, it can be assumed that negative life experiences have a direct and significant effect on the suicidal ideation reported by the white participants. Furthermore, it appears as though problem-focused coping exhibits a significant (1% level of statistical significance) negative relationship to the suicidal ideation reported by these participants. It is also apparent that both negative life experiences (1% level of statistical significance) and problem-focused coping (1% level of statistical significance) demonstrate a significant relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to problem-focused coping.

However, the third step of the analysis demonstrates a significant (1% level of statistical significance) product term. Consequently, it is apparent that problem-focused coping has a moderating effect on the relationship between friends and suicidal ideation amongst the white participants.

The results for the product-term regression analyses for the coloured group are depicted in Table 8.

Table 8: Product-term regression analysis for the coloured group

Step	**Beta**		
	FAM	**EC**	**FAM X EC**
1	0.295**		
Alternative 1		0.075	
2	0.291**	0.055	
3			0.153*
	NLE	**EC**	**NLE X EC**
1	0.281**		
Alternative 1		0.075	
2	0.278**	0.065	
3			0.159*
	FAM	**PC**	**FAM X PC**
1	0.295**		
Alternative 1		0.039	
2	0.294**	0.015	
3			0.163*

**$p \leq 0.01$; *$p \leq 0.05$

Key: FAM = Family; NLE = Negative Life Experiences; EC = Emotion-focused Coping; PC = Problem-focused Coping

Note: When the product term was used in step 3, deviation scores were used to prevent multicollinearity.

It is evident from Table 8 that family (FAM) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the coloured participants. It could thus be deduced that family have a direct and significant effect on the suicidal ideation reported by the coloured participants. Furthermore, it appears as though emotion-focused coping exhibits no significant relationship to the suicidal ideation reported by these participants. It is also apparent that family continues to demonstrate a significant (1% level of statistical significance)

relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to emotion-focused coping. However, the third step of the analysis demonstrates a significant (5% level of statistical significance) product term. Consequently, it is apparent that emotion-focused coping has a moderating effect on the relationship between family and suicidal ideation amongst the coloured participants.

Table 8 indicates that negative life experiences (NLE) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the coloured participants. Therefore, it can be deduced that negative life experiences exercise a direct and significant effect on the suicidal ideation reported by the coloured participants. Furthermore, it appears as though emotion-focused coping exhibits no significant relationship to the suicidal ideation reported by these participants. It is also apparent that negative life experiences continue to demonstrate a significant (1% level of statistical significance) relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to emotion-focused coping. However, the third step of the analysis demonstrates a significant (5% level of statistical significance) product term. Consequently, it is apparent that emotion-focused coping has a moderating effect on the relationship between negative life experiences and suicidal ideation amongst the coloured participants.

Table 8 indicates that family (FAM) correlates significantly (1% level of statistical significance) with suicidal ideation amongst the coloured participants. Therefore, it can be deduced that family have a direct and significant effect on the suicidal ideation reported by the coloured participants. Furthermore, it appears as though problem-focused coping exhibits no significant relationship to the suicidal ideation reported by these participants. It is also apparent that family continues to demonstrate a significant (1% level of statistical significance) relationship to suicidal ideation in the second step of the analysis. No mediator effect is thus evident with regard to problem-focused coping. However, the third step of the analysis demonstrates a significant (5% level of statistical significance) product term. Consequently, it is

apparent that problem-focused coping has a moderating effect on the relationship between family and suicidal ideation amongst the coloured participants.

Discussion

The primary aim of this study was to determine whether a relationship exists between life stressors and suicidal ideation amongst a group of black, white and coloured Grade 11 and 12 learners, and whether this relationship is influenced by coping. More specifically, the study aimed to determine the extent to which different coping strategies (emotion-focused, problem-focused and dysfunctional coping) influence the relationship between perceived life stressors and suicidal ideation, if at all. Furthermore, the study aimed to determine whether coping strategies influence the relationship between perceived stressors and suicidal ideation differently across ethnicity.

Participants in the current study reported markedly higher mean scores on suicidal ideation compared to an American adolescent sample (Reynolds, 1988). The differences in mean scores may be related to the differences in life circumstances that influence the participants of the current study. However, these findings tend to support the idea that suicidal behaviour, which includes suicidal ideation, amongst South African adolescents is unordinarily high (Burrows, Vaez, & Laflamme, 2007; Flisher et al., 2004; George, 2009; Mashego & Madu, 2009; Meel, 2003; Meehan et al., 2007; Reddy et al., 2010; Schlebusch, 2005). The results indicate that suicidal ideation is the highest for the coloured group, followed by the black group. These results are consistent with the findings of George (2009), as well as Joe et al. (2008), suggesting that suicidal behaviour is common amongst coloured and black adolescents. Coloured adolescents' pattern of suicidal behaviour might be representative of their levels of stressful adjustment to South Africa's rapid political and socio-economic transitions, wherein they are not experiencing growth in employment and other social opportunities they once held over blacks under apartheid (Joe et al., 2008). Furthermore, given South Africa's political past and the resultant potential for higher levels of stress, this could explain the higher levels of

suicidal ideation reflected for black and coloured participants in this study (Hutchinson, Stuart, & Pretorius, 2007; Meehan et al., 2007).

Economic stressors appear to be a greater challenge in the lives of black and coloured respondents than in the lives of the white respondents. This could be attributed to the fact that many black and coloured participants still come from previously disadvantaged homes where problems stemming from a lack of financial resources and infrastructure could be a great stressor (McLoyd, 1990). However, this could also be attributed to adolescents experiencing less tangible parental support as was found by Addendorff (1998) amongst black South African adolescents. Furthermore, it would appear that black and coloured adolescents are more likely to use dysfunctional coping strategies in dealing with their daily problems. Notwithstanding significant social changes in the South African society, past socio-political circumstances may still exercise an influence in the choice of coping strategies utilised by the different ethnic groups (Chapman & Mullis, 2000; Goldston et al., 2001; Plaaitjie, 2006). According to Hobfoll (1988), limited or no access to needed resources could lead to increased levels of stress and a disadvantaged position. This chronic lack of resources is associated with a higher frequency in the of use of dysfunctional coping strategies.

The results of the current study also suggest that a statistically significant correlation exists between life stressors and suicidal ideation amongst the different ethnic groups. A significant correlation was found between the stressor Home and Money and suicidal ideation for all three ethnic groups (black, white and coloured). The experience of financial stressors would thus appear to significantly contribute to an increase in the prevalence of suicidal ideation among all three of the ethnic groups confirming the findings of previous studies (Diekstra & Garnefski, 1995; George, 2009; Schlebusch & Bosch, 2000). Furthermore, stressful relationships with parents, siblings, family members and peers as well as the use of dysfunctional coping strategies were also strongly associated with higher levels of reported suicidal ideation. These findings tend to support the idea that exposure to chronic life stressors, as well as the use of dysfunctional coping, could serve as a possible risk factor for suicidal ideation among adolescents (Ittel, Kretchmer, & Pike, 2010; O'Cavanagh, Owens, & Johnstone, 1999). Findings from the current study suggest that ethnicity moderated the relationship between life stressors and suicidal

ideation. It would thus seem that certain ethnic differences may be apparent with regard to the levels of suicidal ideation experienced by adolescents in the current sample, as well as with the life stressors reported by them. This appears to be consistent with previous findings by George (2009), Makola (2007) as well as Basson and Van den Berg (2009).

The regression analyses conducted revealed that parents exercise a direct and significant effect on the suicidal ideation of both the black and white participants. This suggests that an increase in the experience of parental interaction as stressful will lead to an increase in the suicidal ideation experienced by these adolescents. These findings are consistent with findings from previous studies that implicate family discord, an over-controlling parenting style and inadequate flexibility by parents as major causes for heightened adolescent stress and subsequent suicidal behaviour (Greening et al., 2008; Fite et al., 2009; Pillay & Wassenaar, 1997; Van Renen & Wild, 2008).

Furthermore, results from the current study suggest that the experience of life as negative has a direct and significant effect on the suicidal ideation of all three ethnic groups. This suggests that negative life experiences will lead to an increase in the suicidal ideation experienced by these adolescents. According to Paulson and Everall (2001), negative life experiences such as financial problems, family instability, family violence and divorce have been found to exert negative influences on health outcomes. Under such stressful conditions adolescents become trapped in a negative cognitive thought spiral, thereby raising their predisposition towards suicidal tendencies (Mayekiso, 1992; Wilson et al., 1995). Family and friends also exercise a direct and significant effect on the suicidal ideation of white and coloured adolescents. Thus, for the white and coloured adolescents, increases in the experience of relationships with friends and family as stressful appear to be accompanied by a higher level of suicidal ideation. This would appear to be consistent with literature suggesting that a healthy relationship with family and peers can have a buffering effect against the experience of suicidal thoughts by adolescents (Beautrais, 2000; Buame & Clinton, 1997; Greening et al., 2008).

Coping strategies (emotion-focused coping, problem-focused coping and dysfunctional coping) did not appear to mediate the relationship between life stressors and suicidal ideation in the current study. However, twelve ethnically-specific moderation effects were apparent. Dysfunctional coping was found to moderate the relationship between suicidal ideation and parents as well as negative life experiences for the black participants. These results imply that the use of dysfunctional coping strategies by black adolescents in dealing with stressful parental interaction and negative life experiences contribute to their experience of suicidal ideation. The higher tendency of black adolescents to use these strategies has been explained by various authors (Du Toit, 1999; George, 2009; Magaya et al., 2005; Plaaitjie, 2006; Sheu & Sedlacek, 2004) by referring to the influence of collectivistic cultural practices that encourage harmony, non-confrontation and interdependency in social relations as well as the unequal distribution of and access to resources and deprived circumstances that blacks previously lived in.

Dysfunctional coping was also found to moderate the relationship between suicidal ideation and friends for the white participants. Emotion-focused coping was found to moderate the relationship between suicidal ideation and family for the white participants and coloured participants, while moderating the relationship between suicidal ideation and friends for the white participants. Furthermore, problem-focused coping was found to moderate the relationships between suicidal ideation, parents, family, friends and negative life experiences for the white participants and suicidal ideation and family for the coloured participants.

Limitations and Recommendations

Shortcomings are apparent in the current study. The use of American measuring instruments to measure the variables has emphasised the need to develop specific instruments for the relevant ethnic groups as differences in the interpretation of the items might have contaminated the final results. Further research is needed to develop specific instruments for specific populations to enhance reliability and validity levels.

A cross-sectional design was used in the current study and the results might not be predictive of the longitudinal relationship between suicidal ideation, life stressors and coping strategies. Future longitudinal studies may render different results in this regard and thus be more relevant to the choice of therapeutic or preventative focus with regard to stressors and coping strategies in suicidal behaviour. The use of longitudinal studies might also offer new and different insights into the dynamic interactions between different variables. Furthermore, researchers are afforded the opportunity to observe the influence of developmental changes on the variables of choice. In this way researchers will be able to differentiate between the variables that are more prevalent at different stages, thereby increasing the focus of intervention programmes for different age groups. The consideration of additional variables as part of a longitudinal study should include concepts such as satisfaction with life and the degree of self-efficacy, hereby allowing further exploration of the impact of these concepts on adolescent suicidal behaviour.

The main findings of this study suggest that significant differences exist in the reported suicidal ideation of black, white and coloured adolescents. It would appear as if coloured adolescents might be a particularly vulnerable group with their level of suicidal ideation suggestive of a possible stressful adjustment to South Africa's rapid political and socio-economic transitions. It is suggested that intervention programmes, focusing on effective coping be implemented in schools to assist adolescents in dealing with life stressors.

Suicide is a complex and multi-dimensional phenomenon with a complex relationship between psychosocial and environmental components. With regard to adolescents, it is recommended that suicidal behaviour be explored with additional variables such as personality factors, self-efficacy, locus of control and sense of coherence with a special focus on the combination of risk and protective factors as determinants of suicidal behaviour. Studying those who have attempted suicide may also offer a deeper understanding of the dynamics involved in the build-up to suicidal ideation.

In conclusion, research on experience of future stressors and coping strategies should be conducted on a regular basis, as the data are of crucial importance to every aspect of youth work. The data are also valuable as a barometer of societal development and well-being. The need for such a barometer is particular strong in South Africa, in view of the high incidence of violent crime, poverty, unemployment and HIV/AIDS.

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CHAPTER 6

ARTICLE V

AN ETHNIC COMPARISON OF PSYCHOSOCIAL FACTORS INFLUENCING ADOLESCENT SUICIDAL IDEATION

Abstract

The inability of adolescents to cope with personal and environmental changes may predispose them to stress and suicidal behaviour. The current study aimed to investigate the influence of personal and contextual stressors and resources, as well as acculturation- and coping strategies on the suicidal ideation of a sample of black, white and coloured adolescents in the Free State province.

A cross-sectional, correlational design was employed. Participants completed the Suicidal Ideation Questionnaire (SIQ), the youth form of the Life Stressors and Social Resources Inventory, the South African Acculturation Scale as well as the Coping Orientations to Problems Experienced Questionnaire (COPE). The predictor variables in combination explained between 22.2% and 41.2% of the variance in suicidal ideation for the three ethnic groups. Further findings indicated that the resource subscales Parents, Family, Positive Life Events and the stressor subscales Home and Money, Parents, Siblings, Family, School, Friends, and Negative Life Events contributed significantly to the variance in suicidal ideation for the black adolescents. The resource subscales Parents and Positive Life Events and the stressor subscales Home and Money, Parents, Siblings, Family, School and Negative Life Events contributed significantly to the variance in suicidal ideation for the white adolescents. The resource subscale Parents and the stressor subscales Home and Money, Parents, Family, School and Negative Life Events contributed significantly to the variance in suicidal ideation of the coloured adolescents. Active Coping and Drug Disengagement contributed significantly to the variance in suicidal ideation for the white participants. Further studies are recommended to explore other variables that may offer alternative explanations for suicidal ideation.

Keywords: suicidal ideation; adolescence; stressors; resources; coping strategies; acculturation strategies; ethnic differences.

Adolescent suicidal behaviour in South Africa is increasing at an alarming rate (Mashego & Madu, 2009; Ramgoon, Patel, & Paruk, 2009; Reddy et al., 2003; Reddy et al., 2010; Schlebusch, 2005). Between 6000 and 8000 South Africans commit suicide annually, with 33% of all cases hospitalised after an unsuccessful suicide attempt being those of children and adolescents (Pauw, 2009). Studies conducted in the Free State province suggest a high prevalence of adolescent suicidal behaviour in the province (Mashego & Madu, 2009; Mashego, Peltzer, Williamson, & Setwaba, 2003; Stark et al., 2010). Currently, five to six adolescent patients (aged between 14 and 19 years) are being admitted daily following suicide attempts at Pelonomi hospital in Bloemfontein (N. Mosotho, personal communication, May 15, 2010). Suicidal behaviour can be defined as thoughts and actions ranging from the wish to die (suicidal ideation) to actually carrying out the deed (completed suicide) (Bridge, Goldstein, & Brent, 2006). Although suicidal ideation is a necessary, but not sufficient determinant for suicidal behaviour, it is considered an important risk factor for suicide attempt (Chamberlain, Goldney, Delfabbro, Gill, & Dal Grande, 2009).

Given the complex nature of adolescent suicidal behaviour, many different personal and environmental factors have been identified as potential aetiological factors in the past. These include depression (Hildreth, 2009; Mashego & Madu, 2009), previous suicidal behaviour (Joe, Stein, Seedat, Herman, & Williams, 2008), a lack of social support (Pillay & Wassenaar, 1997), academic pressures (Wassenaar & Narboni, 2001), extreme poverty (Govender & Killian, 2001; Reddy et al., 2003; Reddy et al., 2010), cultural transition and acculturation (Beekrum, Valjee & Collings, 2011; Mashego et al., 2003; Pillay & Wassenaar, 1997) and the use of inadequate coping strategies (Meehan, Peirson, & Fridjhon, 2007). However, it appears as if the interplay of all of these factors is largely underexplored within the South African context. Consequently, the current study aim to investigate the role of personal and contextual stressors and resources, as well as acculturation- and coping strategies in the suicidal ideation of a sample of black, white and coloured adolescents.

Moos and Schaefer's (1993) Integrated Stress and Coping Model were used as a guiding theoretical model for this study. The model considers both personal and social stressors and

resources as important contributors towards adolescent suicidal behaviour. The basic premise of this model is that personal and environmental stressors and resources interact with one another and with life-crises and developmental transitions. The combined impact of these three elements determines the coping strategies utilised by the individual and ultimately results in either a negative (e.g. suicidal behaviour) or positive (e.g. well-being) health outcome. The bidirectional pathways between all these factors indicate that the processes are reciprocal. An adolescent's health and well-being are therefore substantially influenced by his/her exposure to stressors, as well as the availability and utilization of personal and environmental coping resources.

Personal stressors such as low self-esteem and hopelessness play a significant role in the display of adolescent suicidal behaviour as these factors often lead to an overgeneralisation of the implications of failure, rejection and despair (Goldston et al., 2001; Mashego et al., 2003; Wilburn & Smith, 2005). Inversely, an optimistic view (of the self, other people and the world) can function as a resource in dealing with personal or environmental challenges and can also act as a buffer in reducing the risk of suicidal behaviour. A strong sense of self-value and hope enables the adolescent to be more resilient in the face of adversity (Baron & Byrne, 2000; Evans, Hawton, & Rodham, 2004; Fleischmann, Bertolote, Belfer, & Beautrais, 2005; Wild, Flisher, Bhana & Lombard, 2004).

The environmental system, which includes aspects such as the family and peers (Pillay & Wassenaar, 1997; Wassenaar & Narboni, 2001), poverty (Yoder & Hoyt, 2005) and socio-cultural transition (Bridge et al., 2006; Wassenaar, Marchiene, Van der Veen, & Pillay, 1998) appears to be a significant determinant of adolescent suicidal behaviour. The function and impact of the family plays a significant role in the adolescent's life. Discord between family members, lack of affection, an over-controlling parenting style, and inadequate flexibility by parents are all aspects that have been highlighted as a major causes of adolescent suicidal behaviour (Greening et al., 2008; Pillay & Wassenaar, 1997; Van Renen & Wild, 2008). Furthermore, the quality of peer relationships is a strong predictor of adolescent well-being, as adolescents often tend to judge their own value by the reactions of others (McGraw, Moore, Fuller, & Bates, 2008; Louw, Louw, & Ferns, 2007). Adolescents who are unpopular, have poor peer relations, and who are emotionally insecure amongst peers show poor academic progress

and planning abilities, which decreases their chances of achieving their goals and effectively reacting to the demands of the environment. Similarly, romantic relationships can be an emotionally and socially satisfying experience, while they have also been identified as constituting an important risk factor for suicidal behaviour in adolescents (Engelbrecht & Van Vuuren, 2000; Louw et al., 2007).

Factors such as poverty (Goldstein & Brooks, 2006; Yoder & Hoyt, 2005) and socio-political transition (Bridge et al., 2006; Wassenaar et al., 1998) pervade every aspect of the adolescent's life, restrict access to necessary resources and increase the risk for suicidal behaviour (Meehan et al., 2007). Although South Africa's rapid socio-political transformation has brought about more opportunities for inter-ethnic contact (Beekrum, 2008; Dawes & Finchilescu, 2002), it has exposed adolescents to an environment of increasing challenges and social demands (George, 2009). Fitting into this newly transformed social arena requires additional adjustment on the part of the adolescent that may increase their risk for developing negative health outcomes such as heightened stress, depression, helplessness and suicide behaviour (Meehan et al., 2007). Other environmental factors, namely socio-economic stressors (such as unemployment, high levels of violence, poor physical health and access to healthcare) appear to make a distinct contribution to suicidal behaviour, especially among the black and coloured adolescents (Cooper, Appleby, & Amos, 2002; Govender & Killian, 2001; Peltzer & Cherian, 1998).

The outcome of the stress and coping process is also influenced by the coping strategies used to deal with stressful situations Coping refers to cognitive and behavioural efforts by an individual to manage an event or situation that is appraised as potentially harmful or stressful (Folkman & Lazarus, 1984). Utilising the description of Carver, Scheier, & Weintraub (1989), coping can be divided into problem-focused coping, emotion-focused coping and dysfunctional coping. Problem-focused coping is focused on directly alleviating stressors and includes strategies such as planning and active coping, while emotion-focused coping is aimed at regulating an individual's emotional responses to the stressor by using strategies such as seeking

of emotional support, positive reinterpretation, acceptance, turning to religion and venting of emotions (Carver et al., 1989). Carver et al. (1989) described coping strategies associated with less adaptive outcomes as dysfunctional coping strategies (e.g. denial, mental and behavioural disengagement as well as alcohol and drug disengagement). The choice of coping strategies employed by adolescents has been associated with suicidal behaviour. Functional coping strategies can enable the adolescent to be resilient and serve as a buffer against stress and suicidal behaviour (Goldston et al., 2001; Moore, 2000; Smith, 1993), while dysfunctional coping strategies can lead to vulnerability and distress with a risk of developing suicidal behaviour as a negative health outcome (Frydenberg, 2008).

An important aspect for South African adolescents lies not only in how to deal with the stress brought on by daily living, but also in how to manage the process of accelerated acculturation brought on by the country's rapid socio-cultural transformation (Mashego & Madu, 2009; Meehan et al., 2007; Pillay & Wassenaar, 1997; Wassenaar et al., 1998). Acculturation refers to the changes that occur within an individual and cultural group as people from different cultural backgrounds come into constant contact with one another (Kosic, 2004). The negative outcomes of the process of acculturation may include adjustment problems, stress-related conditions, depression as well as other negative health outcomes such as suicidal behaviour, collectively known as acculturative stress (Berry, 2006). Individuals make use of different strategies in dealing with the interaction of members from another cultural group, based on the attitudes held towards their own culture and that of others (Berry, Trimble, & Olmedo, 1986). According to Berry et al. (1986) individuals respond to the process of acculturation using any of three strategies namely assimilation, separation and integration. Assimilation refers to a process where an individual wishes to maintain his/her cultural identity and pursues opportunities to interact with members of other cultural groups in their daily interaction (Berry, 2006). Separation is an acculturation strategy that involves holding on to your own cultural values and beliefs, and at the same time avoiding interaction with members of another cultural group. However, when there is an interest in both maintaining one's own cultural values, and being open to values of others, the strategy of integration is being applied. This strategy appears to be

the most effective and has been linked to the positive mental health and well-being of individuals (Naidoo & Mahabeer, 2006; Van Oudenhoven & Van der Zee, 2002).

Although several South African studies (Meehan et al., 2007; Pillay & Wassenaar, 1997; Stevens & Lockhat, 1997; Wassenaar et al., 1998) have alluded to the role of socio-cultural transition in adolescent suicidal behaviour, no studies investigating the role of acculturation strategies in adolescent suicidal behaviour could be found (searches conducted on PsychLit, PsychInfo and Science Direct). However, in a South African study conducted with 348 black students, Hocoy (1999) found a clear preference towards integration as an acculturation strategy. Similarly, Kramers (2000) in a study with a group of multi-ethnic third-year nursing students, confirmed the presence of ethnic differences in the use of acculturation strategies. According to Kramers (2000), the black and white participants in her study displayed a greater preference towards rejection. Kramers (2000) concluded that these ethnic groups showed a greater need for maintaining their historical and cultural heritage.

The literature reviewed suggests that adolescent suicidal behaviour is a complex phenomenon, occurring within the context of a variety of personal and environmental factors. However, the interplay of these factors in the South African environment is largely underexplored and therefore the current study aims to investigate the role of personal and contextual stressors and resources, as well as acculturation- and coping strategies in the suicidal ideation of a sample of black, white and coloured adolescents.

Method

The following methods were used:

Research design

A cross-sectional research design, and more specifically a correlational design was used to establish the relationship between suicidal ideation as a criterion variable and personal and environmental factors, as well as acculturation- and coping strategies, as predictor variables. The correlational design does not attempt to explain the relationship between the criterion and predictor variables and, therefore, no inferences can be made about the causal relationship between the different variables (Gravetter & Forzano, 2009).

Participants

Eighteen schools, representative of all five districts of the Free State province, were selected by means of stratified random sampling to ensure balanced representation of ethnicity, gender and age. All available Grade 11 and 12 learners from each selected school were included to make up a sample of 1033 learners. The sample consisted of 437 (42.3%) males and 552 (53.4%) females, with 44 (4.3%) participants not indicating their gender. The ages of the participants ranged from 16 to 24 years (the mean age of the sample was 17.41 years with a standard deviation of 1.11). The sample composition included 405 black (39.2% of the sample), 427 white (41.3% of the sample) and 201 coloured (19.5% of the sample) participants.

Data gathering

The research committee of the Faculty of the Humanities (University of the Free State) provided ethical clearance for the research. Permission to involve schools in the study was granted by the Free State Department of Education and respective school principals. Parents and participants gave written consent prior to the inclusion of the learners in the study. All participants were guaranteed anonymity, confidentiality and freedom to withdraw from the study at any stage.

Data was collected on a day set aside by the Department of Education. Accredited language practitioners were used to translate English questionnaires into Afrikaans and Sesotho,

by means of the back translation method (Brislin, 1970; Foxcroft & Roodt, 2005). Participants were given the opportunity to complete the questionnaire in any of the three languages at their respective schools. The administration of the questionnaires took place over a period of 2 hours. Questionnaires were administered by a psychometrist and a psychologist who were also available to answer any questions that arose during the test administration. An opportunity was also provided to debrief learners after the administration of the questionnaires in order to address any emotional responses or questions that resulted from their involvement in the research process.

Measuring instruments

The following questionnaires were used to gather data on the variables included in this study:

The *Suicidal Ideation Questionnaire for Adolescents* (SIQ) (Reynolds, 1988) measures the frequency and intensity of suicidal thoughts experienced by the participants. The 30 items of the questionnaire are answered on a seven-point Likert scale and the total suicidal ideation score ranges from 0 to 180. An alpha coefficient of 0.97 is reported by Reynolds (1988) for a group of 890 American adolescents, while George (2009) reported an internal consistency coefficient of 0.95 for a group of South African adolescents.

The youth form of the *Life Stressors and Social Resources Inventory* (LISRES) (Moos & Moos, 1994) was used to assess the stressors and resources reported by participants. The instrument consists of 209 items divided into two sections, namely Life Stressors and Social Resources. The inventory has a total of sixteen subscales, nine of which measure life stressors and seven measuring social resources. The Life Stressors subscales are: Physical Health (PH), Home and Money (HM), Parents (PAR), Siblings (SIB), Extended Family (FAM), School (SCH), Friends (FR), Boyfriend/Girlfriend (BG) and Negative Life Experiences (NLE). The Social Resources subscales are: Parents (PAR), Siblings (SIB), Extended Family (FAM), School (SCH), Friends (FR), Boyfriend/Girlfriend (BG) and Positive Life Experiences (PLE). A high score on the stressor subscales indicate that the participant is experiencing the particular variable as stressful, while a high score on the resource subscales indicates the presence of adequate resources in a specific domain. The internal consistency index varies from between 0.79 to 0.88

for the stressors subscales and 0.78 to 0.91 for the social resources subscales (Moos & Moos, 1994). South African studies, conducted by Basson and Van den Berg (2009) as well as Wissing (1996) reported coefficients ranging from 0.70 and 0.91 for all subscales.

The *South African Acculturation Questionnaire* (SAAS) (Kramers, 2000) was used to measure preference for specific acculturation strategies. This twenty-item self-report questionnaire consists of three subscales assessing respondents' tendencies towards cultural assimilation, integration and rejection. Eight assimilation questions tapped respondents' desires to maintain relationships with other cultural groups in the absence of maintaining own-group characteristics. Seven integration questions tapped respondents' desires to maintain their own cultural identity and relationships with other cultural groups. Five rejection questions tapped respondents' desires to maintain their own cultural identity in the absence of maintaining relationships with other cultural groups. A high score on this scale is indicative of a preference for a specific acculturation strategy. In a South African study conducted amongst a sample of nursing students, Kramers (2000) reported alpha coefficients ranging from 0.56 to 0.70.

The *Coping Orientations to Problems Experienced Questionnaire* (COPE) (Carver et al., 1989) measures participants' coping strategies. The scale consists of 53 individual items which make up 14 subscales. Items are completed on a four-point Likert scale ranging from 1-"I usually do not do this at all" to 4-"I usually do this quite a lot". The subscales are grouped together into three broad categories, namely Problem-focused Strategies, Emotion-focused Strategies, and Dysfunctional Strategies. The problem-focused category includes subscales such as: Active Coping, Planning, Suppression of Competing Activities, Restraint Coping and Seeking Social Support for Instrumental Reasons. The emotion-focused category consists of subscales such as: Seeking Social Support for Emotional Reasons, Positive Reinterpretation and Growth, Acceptance, Turning to Religion and Focus on and Venting of Emotions. The dysfunctional subscales are: Denial, Behavioural Disengagement, Mental Disengagement and Alcohol-Drug Disengagement (Carver et al., 1989; Wong, Reker, & Peacock, 2006). For the purpose of this article, only the combined scales were used. The scores on the individual subscales are calculated by adding the scores of the four items per subscale except for the Alcohol and Drug Disengagement scale which consists of only one item. High scores indicate

that the individual frequently uses the proposed strategy, whereas low scores indicate a less frequent use of the coping strategy. Carver et al. (1989) reported alpha coefficients of between 0.45 and 0.90 for the subscales. In a South African study of white, black and coloured adolescents, George (2009) reported alpha coefficients ranging from 0.58 – 0.93. Similarly, Wissing (1996) reported alpha coefficients of between 0.39 and 0.90 for a student population.

A *biographical questionnaire* consisting of 11 items was used to gather demographic information pertaining to the age, gender, race, grade, and place of residence of the participants.

Cronbach alpha coefficients were calculated for all the scales and subscales used in this study in order to determine the internal consistency. The results of this analysis are reported in Table 1. According to Nunnally and Bernstein (1994), coefficients of 0.70 and above are considered acceptable for non-cognitive constructs. The alpha coefficients for all the scales and subscales, with the exception of the Rejection subscale of the South African Acculturation Scale for the white (0.56) and black adolescents (0.60), reflect high internal consistency. Furthermore, the alpha coefficients for the individual COPE subscales were considerably lower ranging from 0.33 to 0.87 with the majority of the alphas ranging between 0.33 and 0.69. The low alpha coefficients of the COPE scale might be related to the small number of items (four) per subscale (Anastasi & Urbina, 1997). However, it was decided to include all subscales in further analyses, although it must be noted that any significant results pertaining to the subscales with low alpha coefficients, should be interpreted with caution.

Statistical Analysis

The SPSS Software (SPSS Incorporated, 2009) was used to perform the analysis. Descriptive statistics such as means and standard deviations were calculated for all variables. Inter-correlation between the variables was determined with Pearson-product moment correlation coefficients. A hierarchical regression analysis was computed to determine the extent to which the variance in suicidal ideation in the group of adolescents can be attributed to the predictor variables. In terms of the statistical significance of the inter-correlations and hierarchical regression analysis, the 1% level of significance ($p \leq 0.01$) was used. Effect sizes (Steyn, 1999)

were used to determine the practical significance of the findings of the inter-correlations. A cut-off point of 0.30 (medium effect) was set for the practical significance of correlation coefficients (Cohen, 1988).

Results

Descriptive statistics were calculated for each of the ethnic groups and are presented in Table 1.

Table 1: Means, standard deviations and Cronbach alpha coefficients for the different groups

Scales	BLACK n=405			WHITE n=427			COLOURED n=201		
	$\overline{X}$	SD	α	$\overline{X}$	SD	α	$\overline{X}$	SD	α
Suicidal Ideation Questionnaire	35.12	39.39	0.96	23.84	32.04	0.98	47.85	47.12	0.97
LISRES Stressor Subscales									
Physical Health (PH)	1.01	2.45	0.86	0.48	1.10	0.68	1.44	3.38	0.87
Home and money (HM)	11.38	7.89	0.86	4.62	5.53	0.88	11.21	7.54	0.86
Parents (PAR)	7.25	5.82	0.90	7.80	5.35	0.92	7.39	5.33	0.89
Siblings (SIB)	7.75	5.94	0.82	8.05	5.37	0.86	8.93	6.13	0.86
Family (FAM)	6.10	4.77	0.76	5.19	4.14	0.84	7.37	4.71	0.76
School (SCH)	15.85	8.02	0.77	15.79	7.73	0.84	18.29	8.93	0.83
Friends (FR)	7.52	4.77	0.73	6.61	4.29	0.82	8.17	4.93	0.75
Boyfriend/Girlfriend (BG)	5.13	4.86	0.84	3.17	4.06	0.91	4.65	4.24	0.77
Negative life events (NLE)	13.41	7.52	0.83	10.48	6.25	0.80	13.93	7.20	0.81
Resources subscales									
Parents (PAR)	8.32	5.51	0.88	12.12	5.75	0.93	8.97	5.70	0.90
Siblings (SIB)	10.28	6.93	0.91	12.68	6.05	0.92	11.02	6.71	0.93
Family (FAM)	14.56	7.82	0.87	16.76	7.04	0.89	14.54	8.17	0.90
School (SCH)	11.02	5.45	0.81	8.47	5.20	0.87	9.91	5.78	0.88
Friends (FR)	23.08	8.49	0.82	27.76	6.86	0.82	23.52	9.53	0.87
Boyfriend/Girlfriend (BG)	10.68	7.71	0.95	10.01	8.57	0.98	11.97	7.42	0.95
Positive life experiences (PLE)	11.29	4.62	0.74	11.06	4.22	0.72	11.93	5.04	0.78
South African Acculturation Scale									
Assimilation	23.65	5.84	0.65	21.21	5.51	0.72	24.95	6.18	0.71
Integration	24.46	5.57	0.75	22.11	5.28	0.78	25.30	5.85	0.81
Rejection	14.23	4.13	0.60	14.22	3.70	0.56	12.66	4.53	0.68
COPE Scale									
Active Coping	11.70	2.74	0.64	10.76	2.56	0.73	11.10	2.82	0.68
Planning	11.91	2.81	0.65	11.18	2.64	0.77	11.28	2.84	0.71
Suppression of competing activities	11.54	2.74	0.61	10.47	2.31	0.60	10.68	2.38	0.46
Restraint Coping	11.33	2.80	0.61	10.34	2.30	0.59	10.95	2.61	0.55
Seeking Soc Support for Instr. R.	11.10	2.97	0.64	10.43	2.79	0.73	10.58	2.81	0.65
Seeking Soc Supp for Emot. R	11.44	2.98	0.67	10.50	3.01	0.77	10.74	2.98	0.70
Positive reinterpretation and growth	12.02	2.83	0.65	11.33	2.67	0.72	11.51	2.42	0.53
Acceptance	11.51	2.89	0.63	11.17	2.49	0.68	10.99	2.65	0.61
Turning to religion	12.55	2.90	0.69	12.44	3.31	0.87	12.48	2.74	0.71
Venting of Emotions	10.33	2.87	0.57	9.34	2.79	0.71	10.17	2.55	0.59
Denial	9.80	2.91	0.59	8.15	2.67	0.71	9.32	2.59	0.54
Behavioral Disengagement	9.70	2.85	0.53	8.72	2.40	0.51	9.13	2.34	0.33
Mental Disengagement	10.80	2.66	0.47	10.15	2.45	0.49	10.62	2.52	0.42
Alcohol- Drug Disengagement	1.58	0.96	-	1.63	0.99	-	1.68	0.94	-

Alcohol and drug disengagement has only one item

According to the results reported in Table 1, the coloured participants reported the highest mean score for suicidal ideation ($\overline{X}$ 47.85; *SD* 47.12) followed by the black ($\overline{X}$ 35.12;

SD 39.39) and white participants ($\overline{X}$ 23.84; *SD* 32.04). The results further indicate that coloured participants experience physical health as a greater concern compared to white and black participants. Coloured participants also obtained the highest average score on the stressor subscales Siblings ($\overline{X}$ 8.88; *SD* 6.13), Family ($\overline{X}$ 7.78; SD 4.71) School ($\overline{X}$ 18.29; *SD* 8.93) Friends ($\overline{X}$ 8.17; *SD* 4.93) and Negative Life Events ($\overline{X}$ 14.51; *SD* 7.20). Black participants reported the highest average score on the stressor subscales Home and Money ($\overline{X}$ 11.38; *SD* 7.89), and Boyfriend/Girlfriend ($\overline{X}$ 5.13 *SD* 4.86), while the white participants reported Parents ($\overline{X}$ 7.80; *SD* 5.35) as a greater source of stress compared to the other groups.

The white participants in the current study obtained the highest average scores for the resource subscales Parents ($\overline{X}$ 12.12; *SD* 5.75), Siblings ($\overline{X}$ 12.68; *SD* 6.05), Family ($\overline{X}$ 17.72; *SD* 7.04), and Friends ($\overline{X}$ 27.76; *SD* 6.86), while black participants reported a higher average score for the resource subscale School ($\overline{X}$ 11.02; *SD* 5.45). Coloured participants reported the highest average score for the resource subscales Boyfriend/Girlfriend ($\overline{X}$ 11.97; *SD* 7.42) and Positive Life Experiences ($\overline{X}$ 11.93; *SD* 5.04).

The reported average scores obtained for the South African Acculturation scale, indicate that coloured participants reported the highest average scores for Assimilation ($\overline{X}$ 24.95; *SD* 6.18) and Integration ($\overline{X}$ 25.30; *SD* 5.85). Black participants obtained the highest average score for Rejection ($\overline{X}$ 14.23; *SD* 4.13), followed closely by the white participants ($\overline{X}$ 14.41; *SD* 3.70).

The results of the COPE scale will be presented in the 3 broad categories of Problem-focused subscales, Emotion-focused subscales and Dysfunctional subscales. Black participants reported higher mean scores in all the Problem-focused subscales, Emotion-focused subscales and 3 of the Dysfunctional coping subscales, namely Denial, Behavioural Disengagement and Mental Disengagement. Coloured participants reported the highest mean score for Alcohol and Drug Disengagement ($\overline{X}$ 1.68; *SD* 0.94).

Inter-correlations between the predictor and criterion variables were calculated for the three ethnic groups under study and are presented in Tables 2, 3 and 4. A large number of statistically significant inter-correlations were found between suicidal ideation and the stressor, resources, acculturation- and coping subscales. Due to the large number of variables involved in this correlation matrix, only correlations between the criterion variable and predictor variable significant at the 1% level of statistical significance and with a medium effect size of above 0.30, have been discussed in this section.

The following stressor subscales correlated positively at the 1% level of significance with suicidal ideation: Home and Money for the coloured group (0.38), Parents for the white group (0.31) and coloured group (0.37), Family for the coloured group (0.30), and Negative Life Events for the black (0.31) and white (0.35) groups. It can be inferred from this finding that higher levels of stress related to financial problems, relationships with parents and extended family as well as negative life events are strongly associated with higher levels of suicidal ideation. None of the acculturation subscales correlated significantly with suicidal ideation, while only the coping strategy Alcohol/Drug disengagement correlated positively with suicidal ideation for the coloured group. This indicates that coloured respondents with a higher level of suicidal ideation reported more frequent use of alcohol/drug disengagement as a coping strategy.

In the light of the differences found with the inter-correlations of the white, black and coloured adolescents, the hierarchical analysis was computed separately for each group. The results of the hierarchical analysis for the black, white and coloured groups are presented in Tables 5, 6 and 7.

Table 2: Intercorrelations between the different variables for the black group

	SI	Assi	Integr	Rej	Stress PH	Stress HM	Stress Par	Stress Sib	Stress Fm	Stress Sch	Stress Fr	Stress B/G	NLE	Res-Par	Res Sib	Res Fam	Res Sch	Res Fri	Res B/G	PLE	Act. Cop	Planning	Pos. Rein	Rest. Cop	Ssoc Inst	Ssoc Em	Suppr Co	CopeAc	Turn toR	Vent	Denial	Beh Disen	Men Dis	AlcDrugs
SI	-	0.15 xx	0.13	0.12	0.03	0.22 xx	0.20 xx	0.14 xx	0.15 xx	0.13 xx	0.20 xx	0.18 xx	0.31 xx	-0.08 xx	-0.06 xx	-0.01 xx	-0.02	-0.02	0.09	0.02	0.04	-0.04	0.12 x	-0.01	-0.01	0.01	-0.03	0.03	0.04	0.09	0.08	0.12	0.08	0.10
Assi		-	0.40 xx	0.57 xx	0.03	0.12 x	0.15 xx	0.09	0.01	0.12 x	0.11 x	0.14 xx	0.16 xx	0.12	-0.11 x	0.02	0.04	-0.12	0.11 x	0.09	0.13 x	0.13 xx	0.11 x	0.20 xx	0.12 x	0.12 x	0.16 xx	0.21 xx	0.09	0.20 xx	0.28 xx	0.29 xx	0.29 xx	0.24 xx
Integr			-	0.27 xx	-0.03	0.02	0.07	0.06	0.02	0.06	-0.02	0.10 x	-0.02	0.01 x	0.11 x	0.20 xx	0.23 xx	0.19 xx	0.13 x	0.13 xx	0.32 xx	0.31 xx	0.33 xx	0.32 xx	0.23 xx	0.26 xx	0.32 xx	0.29 xx	0.28 xx	0.24 xx	0.16 xx	0.19 xx	0.22 xx	0.03
Rej				-	0.06	0.04	0.10 x	0.03	-0.05	0.07	0.15 xx	0.10 x	0.11 x	0.08	-0.11 x	0.01	0.04	-0.03	0.02	0.05	0.18 x	0.13 x	0.08	0.23 xx	0.20 xx	0.17 xx	0.17 xx	0.16 xx	0.15 xx	0.25 xx	0.31 xx	0.32 xx	0.23 xx	0.29 xx
StressPH					-	0.05	-0.02	0.05	-0.02	0.04	0.04	0.08	0.10	0.02	0.04	0.01	0.10x	0.04	0.07	0.10x	0.05	-0.05	0.01	0.05	0.02	-0.01	-0.04	-0.04	0.05	0.02	0.03	0.04	0.03	0.01
StressHM						-	0.17 xx	0.14 xx	0.16 xx	0.13 xx	0.17 xx	0.07	0.25 xx	-0.12 x	-0.04	-0.05	0.07	-0.04	0.00	-0.05	0.01	-0.01	0.01	0.14 xx	-0.00	-0.02	0.06	0.00	0.03	0.04	0.13 x	0.07	0.06	-0.01
StressPr							-	0.35 xx	0.19 xx	0.35 xx	0.34 xx	0.30 xx	0.38 xx	0.45 xx	0.12 x	0.01 x	0.04	0.12 x	0.20 x	0.27 xx	-0.06	-0.01	-0.04	0.03	0.04	0.03	0.00	0.07	0.00	0.11 x	0.05	0.08	0.06	0.09
StressSib								-	0.24 xx	0.29 xx	0.23 xx	0.22 xx	0.26 xx	0.17 xx	0.31 xx	0.07	0.08	0.18 xx	0.09	0.21 xx	0.00	-0.05	-0.01	0.06	0.01	0.05	0.01	-0.03	0.04	0.05	0.16 xx	0.08	0.10 x	0.08
StressFm									-	0.41 xx	0.27 xx	0.20 xx	0.23 xx	0.07	0.08	0.19 xx	0.09	0.15 xx	0.02	0.12 x	0.07	0.07	0.08	0.05	0.08	0.04	0.06	0.13 x	0.13 x	0.08	0.12 x	0.05	0.03	-0.02
StressSch										-	0.50 xx	0.25 xx	0.28 xx	0.18 xx	0.16 xx	0.12 x	0.16 xx	0.20 xx	0.03	0.17 xx	0.07	0.04	0.05	0.06	0.06	0.06	0.05	0.10	0.04	0.15 xx	0.18 xx	0.06	0.10 x	0.09
StressFr											-	0.38 xx	0.28 xx	0.09	-0.01	-0.01	0.11 x	0.17 xx	0.09	0.10 x	0.02	-0.05	-0.06	-0.02	0.03	0.03	-0.00	0.02	0.02	0.06	0.15 xx	0.04	0.09	0.08
Stress B\G												-	0.31 xx	0.09	0.07	0.00	0.10 x	0.14 xx	0.52 xx	0.30 xx	0.00	0.02	0.07	0.05	0.09	0.09	0.08	0.08	0.06	0.17 xx	0.14 xx	0.11 x	0.13 xx	0.08
NLE													-	0.05	0.03	-0.00	0.05 x	0.01	0.14 xx	0.42 xx	-0.10 x	-0.11 x	-0.08	-0.03	-0.02	-0.04	-0.02	-0.04	-0.04	0.04	0.11 x	0.16 xx	0.12 x	0.13 x
Res Par														-	0.30 xx	0.18 xx	0.13 xx	0.12 x	0.12 x	0.30 xx	0.15 xx	0.11 x	0.11 x	0.09	0.12 x	0.11 x	0.06	0.16 xx	0.16 xx	0.15 xx	0.07	0.08	0.07	-0.04
Res Sib															-	0.21 xx	0.12 x	0.21 xx	0.10 x	0.19 xx	0.20 xx	0.12 x	0.10 x	0.15 xx	0.08	0.13 xx	0.11 x	0.14 xx	0.11 x	0.06	0.04	0.04	0.06	-0.03
Res Fam																-	0.26 xx	0.33 xx	0.15 xx	0.28 xx	0.21 xx	0.11 x	0.12 x	0.05	0.16 xx	0.20 xx	0.14 xx	0.17 xx	0.15 xx	0.02	0.09	0.03	0.08	0.00
Res Sch																	-	0.35 xx	0.26 xx	0.19 xx	0.23 xx	0.18 xx	0.26 xx	0.16 xx	0.23 xx	0.20 xx	0.22 xx	0.21 xx	0.28 xx	0.12 x	0.11 x	0.04	0.14 xx	-0.06
Res Fr																		-	0.27 xx	0.20 xx	0.21 x	0.19 xx	0.24 xx	0.14 xx	0.25 xx	0.27 xx	0.16 xx	0.17 xx	0.25 xx	0.11 x	0.07	-0.00	0.11 x	-0.06
Res B\G																			-	0.35 xx	0.15 xx	0.14 xx	0.17 xx	0.10 x	0.20 xx	0.19 xx	0.12 x	0.16 xx	0.18 xx	0.20 xx	0.17 xx	0.14 xx	0.11 x	0.02
PLE																				-	0.13 x	0.08	0.11 x	0.07	0.13 xx	0.14 xx	0.06	0.16 xx	0.10 x	0.16 xx	0.05	0.06	0.13 xx	-0.05
Active C																					-	0.65 xx	0.63 xx	0.59 xx	0.56 xx	0.57 xx	0.65 xx	0.58 xx	0.48 xx	0.46 xx	0.37 xx	0.31 xx	0.39 xx	0.02
Planning																						-	0.65 xx	0.60 xx	0.61 xx	0.56 xx	0.66 xx	0.62 xx	0.55 xx	0.40 xx	0.33 xx	0.30 xx	0.38 xx	-0.07
Pos Rei																							-	0.59 xx	0.54 xx	0.55 xx	0.62 xx	0.58 xx	0.51 xx	0.47 xx	0.37 xx	0.28 xx	0.40 xx	-0.04
Rest. Cop																								-	0.51 xx	0.49 xx	0.61 xx	0.54 xx	0.46 xx	0.48 xx	0.45 xx	0.44 xx	0.47 xx	0.07
SsocInstr																									-	0.70 xx	0.52 xx	0.55 xx	0.52 xx	0.47 xx	0.38 xx	0.35 xx	0.38 xx	0.07
SsocEmo																										-	0.50 xx	0.48 xx	0.51 xx	0.54 xx	0.37 xx	0.35 xx	0.39 xx	0.04
SupprC																											-	0.53 xx	0.47 xx	0.44 xx	0.38 xx	0.34 xx	0.41 xx	0.03
CopeAc																												-	0.48 xx	0.43 xx	0.36 xx	0.33 xx	0.36 xx	0.03
Turn to R																											-		-	0.40 xx	0.32 xx	0.28 xx	0.48 xx	-0.14 xx
Vent																														-	0.45 xx	0.48 xx	0.46 xx	0.14 xx
Denial																															-	0.49 xx	0.45 xx	0.23 xx
Beh Disen																																-	0.44 xx	0.29 xx
Men Dis																																	-	0.13 xx
AlcDrugs																																		-

*p ≤ 0.05 **p ≤ 0.01 *f*(Effect size) 0.1 small; 0.3 medium; 0.5 = large

Table 3: Intercorrelations between the different variables for the white group

	SI	Assi	Integ r	Rej	PH	HM	SPar	SSib	SFam	SSch	SFr	SB/G	NLE	RPar	RSib	RFa m	RSch	ResF r	ResB/ G	PLE	CopA ctive	CopP lan	PosR	Rest C	CopI nstrS	CopE moSu	CopS uppr	CopA ccept	CopR elig	CopV entÉ	CopD enial	BehD is	Men Dis	AlcD rugs
SI	-	0.05	-0.09	-0.02	0.01	0.21 xx	0.31 xx	0.20 xx	0.29 xx	0.25 xx	0.20 xx	0.08	0.35 xx	-0.31 xx	-0.24 xx	-0.23 xx	-0.16 xx	-0.16 xx	-0.05	-0.15 xx	-0.25 x	-0.23 x	-0.23 xx	-0.12	-0.21 xx	-0.22 xx	-0.11	-0.16 xx	-0.15 xx	0.10	0.15 xx	0.05	0.08	0.29 xx
Assi		-	0.57 xx	0.11 x	-0.03	0.12 x	0.01	0.05	0.06	0.16	0.10 x	-0.05	0.07	-0.15 xx	-0.05	-0.07	-0.04	xx-0.15	-0.01	-0.03	0.09	0.02	0.04	0.18 xx	0.04	0.07	0.18 xx	0.06	-0.17 xx	0.17 xx	0.22 xx	0.23 xx	xx0.17	xx0.22
Integr			-	-0.12 x	0.00	-0.02	0.01	-0.00	-0.05	0.04	-0.00	-0.16 xx	-0.07	0.10 x	0.11 x	0.07	0.09	0.11 x	-0.05	0.01	0.20 xx	0.18 xx	0.26 xx	0.24 xx	0.24 xx	0.22 xx	0.20 xx	0.17 xx	0.04	0.12 x	0.01	0.06	x0.12	0.03
Rej				-	0.00	0.00	-0.03	0.05	-0.03	0.08	0.06	0.04	0.03	0.05	0.03	0.01	-0.05	0.06	0.07	0.02	0.07	0.07	0.04	0.12 x	0.08	0.12 x	0.18 xx	0.11 x	0.17 xx	0.16 xx	0.24 xx	0.22 xx	xx0.16	x0.12
StressPH					-	0.02	0.10 x	0.11 x	0.11 x	0.08	0.07	0.07	0.10 x	-0.01	-0.05	-0.04	0.03	0.03	-0.08	-0.03	0.01	0.08	0.02	0.08	0.04	-0.03	0.05	0.03	0.06	0.04	-0.09	-0.13 xx	0.07	-0.04
StressH M						-	0.15 xx	0.18 xx	0.20 xx	0.12 x	0.12	0.05	0.25 xx	-0.30 xx	-0.21 xx	-0.13 xx	-0.12 x	-0.18 xx	0.01	-0.08	-0.10 x	-0.8	-0.11 x	-0.08	-0.15	-0.12 x	-0.07	-0.06	-0.10 x	-0.01	0.13 xx	0.02	0.05	0.03
Stress Par							-	0.41 xx	0.34 xx	0.32 xx	0.26 xx	0.16 xx	0.39 xx	-0.07	-0.18 xx	-0.16 xx	-0.08	-0.09	-0.05	-0.03	-0.14 xx	-0.14 xx	-0.13 xx	-0.06	-0.08	-0.07	-0.10 x	-0.09	-0.18 xx	0.10 x	0.06	0.03	0.09	xx0.13
Stress Sib								-	0.36 xx	0.31 xx	0.29 xx	0.19 xx	0.31 xx	-0.15 xx	-0.20 xx	-0.12 xx	-0.06	-0.09	0.02	-0.04	-0.08	-0.08	-0.13 xx	-0.01	-0.06	-0.09	-0.01	-0.07	-0.10 x	0.14 x	0.13 xx	0.03	0.08	0.03
Stress Fam									-	0.31 xx	0.30 xx	0.24 xx	0.34 xx	-0.29 xx	-0.16 xx	-0.24 xx	-0.09	-0.12 x	0.04	0.03 x	-0.08	-0.09	-0.14 xx	-0.00	-0.12 x	-0.13 xx	-0.01	-0.06	-0.12 x	0.06	0.13 xx	0.08	0.05	x0.11
Stress Sch										-	0.61 xx	0.24 xx	0.38 xx	-0.12 x	-0.04	-0.09	-0.14 xx	-0.07	-0.07	0.04	-0.08	-0.11 x	-0.14 xx	-0.03	-0.13 xx	-0.17 xx	-0.01	-0.10 x	-0.13 xx	0.10 x	0.15 xx	0.12	xx0.15	x0.11
Stress Fr											-	0.21 xx	0.30 xx	-0.17 xx	-0.09	-0.14 xx	-0.05	-0.13 xx	-0.11 x	-0.02	-0.09	-0.12 x	-0.15 xx	-0.06	-0.13 xx	-0.17 xx	-0.01	-0.10	-0.06	0.09	0.14 xx	0.04	x0.11	xx0.16
Stress B/G												-	0.27 xx	-0.12 x	-0.12 x	-0.16 xx	-0.07	-0.13 xx	0.42	0.14 xx	-0.09	-0.12	-0.09	0.03	-0.01	-0.06	0.01	-0.07	-0.01	0.10 x	0.20 xx	0.16 xx	0.09	xx0.14
NLE													-	-0.18 xx	-0.10 x	-0.11 x	-0.19 x	-0.03	0.13 xx	0.33 xx	-0.11 x	-0.12 x	-0.18 xx	-0.03	-0.05	-0.09	-0.05	-0.02	-0.09	0.18 xx	0.18 xx	0.16 xx	xx0.16	xx0.23
Res Par														-	0.38 xx	0.37 xx	0.24 xx	0.27 xx	-0.02 x	0.26 xx	0.19 xx	0.22 x	0.27 xx	0.18 xx	0.25 xx	0.27 xx	0.14 xx	0.22 xx	0.22 xx	-0.03	-0.08	-0.06	0.01	x-0.12
RSib															-	0.42 xx	0.28 xx	0.30 xx	0.01 x	0.20 xx	0.19 xx	0.17 xx	0.16 xx	0.25 xx	0.17 xx	0.19 xx	0.07	0.16 xx	0.11 x	-0.06	-0.05	-0.00	-0.03	-0.06
Res Fam																-	0.33 xx	0.33 xx	0.06	0.23 xx	0.23 xx	0.21 xx	0.24 xx	0.18 xx	0.25 xx	0.26 xx	0.19 xx	0.18 xx	0.22 xx	0.05	0.04	-0.01	0.02	xx-0.14
ResSch																	-	0.28 xx	-0.00	0.18 xx	0.17 xx	0.17 xx	0.19 xx	0.25 xx	0.18 xx	0.19 xx	0.15 xx	0.13 xx	0.16 xx	-0.02	-0.05	-0.03	-0.04	-0.08
ResFr																		-	0.02	0.24 xx	0.22 xx	0.26	0.26 xx	0.08	0.25	0.25 xx	0.17 xx	0.26 xx	0.20 xx	0.04	-0.09	-0.03	-0.01	x-0.10
RBG																			-	0.32 xx	-0.02	0.04	0.01	0.20 xx	0.08	0.05	0.06	-0.04	0.07	0.01 x	0.13 xx	0.14 xx	0.07	0.01
PLE																				-	0.17 xx	0.19 xx	0.14 xx	0.58 xx	0.20 xx	0.17 xx	0.17 xx	0.18 xx	0.15 xx	0.11 x	0.06	0.06	0.09	-0.00
ActiveC																					-	0.77	0.64 xx	0.61 xx	0.58 xx	0.41 xx	0.70 xx	0.61 xx	0.27 xx	0.21 xx	0.06	0.28 xx	xx0.18	-0.04
Planning																						-	0.67 xx	0.56 xx	0.61 xx	0.43 xx	0.68 xx	0.60 xx	0.32 xx	0.20 xx	0.08	0.21 xx	xx0.18	-0.07
Pos Rei																							-	0.59 xx	0.54 xx	0.55 xx	0.62 xx	0.58 xx	0.51 xx	0.47 xx	0.37 xx	0.28 xx	0.40 xx	-0.04
Support																							-	0.53 xx	0.56 xx	0.48 xx	0.57 xx	0.62 xx	0.34 xx	0.16 xx	0.06	0.17 xx	xx0.16	x-0.12
RestrCop																								-	0.53 xx	0.43 xx	0.62 xx	0.48 xx	0.26 xx	0.33 xx	0.28 xx	0.34 xx	xx0.26	0.08
SsocInstr																									-	0.71 xx	0.52 xx	0.44 xx	0.32 xx	0.41 xx	0.15 xx	0.31 xx	xx0.31	-0.01
SsocEmo																										-	0.39 xx	0.40 xx	0.31 xx	0.45 xx	0.15 xx	xx0.30	xx0.27	-0.04
SupprC																											-	0.60 xx	0.31 xx	0.28 xx	0.25 xx	xx0.37	xx0.29	0.07
CopAc																												-	0.28 xx	0.15 xx	0.09	xx0.22	xx0.20	-0.03
Turn to Religion																													-	0.10 x	-0.00	0.09	xx0.22	xx-0.18
Vent																														-	0.42 xx	xx0.48	xx0.45	xx0.24
Denial																															-	0.49	xx0.41	xx0.33
BehDis																																-	xx0.41	xx0.28
Men Dis																																	-	xx0.23
AlcDrug																																		-

*p ≤0.05 **p ≤ 0.01 *f*(Effect size) 0.1 small; 0.3 medium; 0.5 = large

Table 4: Intercorrelations between the different variables for the coloured group

	SI	Assi	Integr	Rej	StressPH	StressHM	StressPar	StressSib	StressFam	StressSch	StressFr	StressBG	NLE	ResPar	ResSib	ResFam	ResSch	ResFr	ResBG	PLE	ActiveC	Planning	PositiveReI	RestraintC	SeekingsocIns	SeekingsocE	Suppr of	Accept	Turning to R	Vent	Denial	Beh Diseng	Ment Diseng	Alc+Drugs
SI	-	x0.17	0.12	0.04	-0.03	xx0.38	xx0.37	xx0.18	xx0.30	xx0.23	x0.15	x0.17	xx0.28	x-0.15	-0.02	-0.14	0.03	0.01	0.13	0.06	0.05	0.06	0.02	0.10	-0.06	-0.01	0.02	0.04	0.10	0.15	xx0.20	0.13	xx0.23	0.04
Ass		-	xx0.55	xx0.54	-0.02	0.10	0.13	0.12	0.01	0.07	0.13	0.05	0.06	-0.12	-0.05	-0.03	x0.15	0.03	0.04	-0.00	xx0.28	xx0.26	xx0.20	xx0.26	xx0.29	xx0.21	xx0.30	xx0.26	xx0.20	xx0.32	xx0.26	xx0.29	xx0.24	0.13
Integr			-	xx0.34	-0.13	0.05	Xx0.18	0.10	0.10	0.03	0.07	-0.07	-0.02	0.01	0.05	0.03	xx0.22	0.07	0.05	0.02	xx0.32	xx0.41	xx0.32	xx0.25	xx0.33	xx0.19	xx0.37	xx0.32	xx0.32	xx0.25	xx0.26	0.09	x0.17	-0.10
Rej				-	0.05	0.10	0.07	0.06	0.09	0.05	0.07	0.05	0.05	-0.11	-0.10	-0.02	0.06	-0.09	-0.04	-0.03	xx0.29	xx0.23	0.13	xx0.20	xx0.28	xx0.26	xx0.27	xx0.29	x0.15	xx0.29	xx0.34	xx0.33	xx0.23	x0.17
StressPH					-	-0.05	-0.06	0.01	0.05	-0.03	-0.04	0.04	0.11	-0.01	-0.08	-0.07	-0.09	-0.04	-0.08	0.01	-0.05	x-0.18	xx-0.21	xx0.19	-0.03	xx-0.19	x-0.16	x-0.14	-0.13	-0.01	-0.11	-0.04	-0.04	0.00
StressHM						-	xx0.28	0.25	xx0.22	xx0.32	xx26	0.04	xx0.33	-0.11	0.05	-0.08	x0.15	0.07	0.07	-0.02	-0.02	0.00	-0.05	-0.01	-0.11	-0.08	-0.03	0.06	-0.08	0.11	0.07	0.13	0.07	0.06
StressPar							-	xx0.41	xx0.28	xx0.34	xx0.34	xx0.20	xx0.33	xx0.29	0.12	0.07	0.11	0.07	x0.17	x0.18	x0.16	x0.15	0.13	x0.16	0.10	0.05	xx0.18	0.12	x0.16	xx0.26	0.03	0.04	x0.17	-0.05
StressSib								-	xx0.53	xx0.37	xx0.30	x0.16	xx0.27	0.09	x0.15	x0.16	xx0.33	xx0.20	xx0.24	xx0.20	-0.00	0.08	0.02	0.05	0.08	-0.06	0.05	-0.07	0.11	0.13	-0.01	0.06	x0.17	x-0.14
StressFam									-	xx0.33	xx0.40	xx0.25	xx0.38	0.03	xx0.19	xx0.20	xx0.34	xx0.29	xx0.28	xx0.30	0.12	0.05	0.07	0.09	0.01	-0.00	0.09	0.05	0.06	0.10	0.03	0.04	xx0.23	-0.05
StressSch										-	xx0.47	xx0.32	xx0.34	0.06	xx0.21	xx0.19	xx0.26	xx0.32	xx0.19	xx0.18	0.08	0.12	0.09	-0.01	-0.03	-0.04	0.08	0.04	0.00	xx0.19	0.11	0.09	0.13	0.10
StressFr											-	xx0.47	xx0.38	0.09	0.12	xx0.22	xx0.25	xx0.34	xx0.29	xx0.26	0.10	0.04	0.03	0.02	0.06	-0.02	0.07	0.05	0.00	0.11	0.02	0.07	0.12	0.07
StressBG												-	xx0.26	0.05	0.10	0.07	0.10	xx0.23	xx0.39	xx0.24	0.11	0.06	x0.15	0.07	0.07	0.10	0.10	0.07	-0.03	0.11	0.09	xx0.23	x0.14	0.10
NLE													-	0.08	0.08	0.13	0.10	xx0.26	xx0.21	xx0.48	-0.01	-0.05	0.02	-0.01	-0.06	-0.02	0.01	0.03	-0.02	0.14	0.04	0.09	x0.15	0.13
ResPar														-	xx0.39	xx0.37	xx0.27	xx0.23	xx0.21	xx0.38	0.11	x0.17	0.07	-0.01	x0.17	0.11	0.08	0.05	xx0.21	0.01	-0.03	-0.02	0.10	-0.08
ResSib															-	xx0.35	xx0.32	xx0.38	xx0.21	xx0.29	0.02	0.03	0.07	-0.03	0.03	0.01	0.07	0.10	0.04	-0.05	-0.00	-0.03	0.05	-0.07
ResFam																-	xx0.46	xx0.51	xx0.27	xx0.39	0.13	x0.14	0.11	0.03	x0.16	xx0.22	0.13	0.02	x0.17	0.01	-0.06	-0.07	0.04	-0.10
ResSch																	-	xx0.44	xx0.36	xx0.25	x0.18	xx0.23	0.11	0.10	xx0.20	x0.17	xx0.25	0.12	x0.15	0.06	0.09	0.06	xx0.21	-0.09
ResFr																		-	xx0.46	xx0.47	0.06	0.08	0.12	0.05	0.12	0.11	0.08	0.05	0.06	-0.02	0.00	-0.04	0.10	-0.02
ResBG																			-	xx0.44	xx0.18	xx0.21	0.09	0.10	x0.18	x0.17	0.13	0.12	0.14	0.05	0.04	0.08	xx0.22	-0.10
PLE																				-	0.08	0.10	0.10	0.04	0.12	x0.15	0.11	0.07	0.09	0.06	-0.01	0.06	xx0.19	-0.01
ActiveC																					-	xx0.68	xx0.62	xx0.62	xx0.67	xx0.62	xx0.69	xx0.61	xx0.47	xx0.52	xx0.38	xx0.38	xx0.44	-0.09
Planning																						-	xx0.63	xx0.56	xx0.68	xx0.57	xx0.61	xx0.64	xx0.59	xx0.48	xx0.41	xx0.30	xx0.49	-0.08
PositiveR																							-	xx0.62	xx0.59	xx0.59	xx0.67	xx0.63	xx0.48	xx0.49	xx0.47	xx0.38	xx0.40	-0.01
RestraintC																								-	xx0.50	xx0.51	xx0.60	xx0.53	xx0.45	xx0.50	xx0.48	xx0.38	xx0.45	-0.01
SesocInstr																									-	xx0.65	xx0.62	xx0.60	xx0.48	xx0.46	xx0.39	xx0.28	xx0.46	-0.10
SesocEmo																										-	xx0.50	xx0.56	xx0.42	xx0,50	xx0.33	xx0.27	xx0.45	0.07
SupprC																											-	xx0.58	xx0.53	xx0.52	xx0.45	xx0.35	xx0.51	-0.05
Accept																												-	xx0.46	xx0.49	xx0.50	xx0.37	xx0.49	-0.05
TurningR																													-	xx0.38	xx0.33	xx0.22	xx0.44	xx0.20
Vent																														-	xx0.43	xx0.47	xx0.47	0.14
Denial																															-	xx0.45	xx0.54	x0.15
BehDisen																																-	xx0.41	xx0.28
MentDis																																	-	x0.15
Alc+Drugs																																		-

p ≤ 0.05 **p ≤ 0.01 *f*(Effect size) 0.1 small; 0.3 medium; 0.5 =

Results of the Hierarchical Regression Analysis

The results of the hierarchical regression analysis for the **black group** are presented in Table 5. Together, the predictor variables accounted for 22.2% (R^2 = 0.222) of the variance in suicidal ideation amongst the black adolescents [$F_{33;371}$ = 3.216], which is significant at the 1% level. The contribution of the set of acculturation variables was significant at the 1% level and accounted for 2.50% of the variance in suicidal ideation amongst the black group, but the effect size of 0.03 indicates that the result is of small practical value.

The results further indicate that the contribution of the set of resource variables was significant at the 1% level and explained 4.5% of the variance in suicidal ideation ($F_{7;370}$ = 3.06; $p \leq 0.01$). From Table 5 it becomes clear that three of the resource variables namely Parents 1.9% [$F_{1;376}$=8.89], Family 1.6% [$F_{1;376}$=7.45], and Positive Life Events 1.9% [$F_{1;376}$= 8.89] contributed significantly to the variance in suicidal ideation of the black group. However, the corresponding effect sizes are all small and the result is of limited practical value.

The contribution of the stressor variables was found to be significant at the 1% level of significance and explained 12.7% of the variance insuicidal ideation ($F_{9;371}$ = 6.73, $p \leq 0.01$). The corresponding effect size indicates that the results are of moderate practical value. Seven of the stressor variables, namely Home and Money 4.2% [$F_{1;379}$=18.44], Parents 5.2% [$F_{1;379}$=23.10], Siblings 1.7% [$F_{1;379}$=7.26], Family 3.0% [$F_{1;379}$=12.99], School 1.9% [$F_{1;379}$=8.13], Friends 3.1% [$F_{1;379}$=13.44] and Negative Life Events 8.9% [$F_{1;379}$=41.34] contributed significantly to the variance in suicidal ideation of the black group.

Table 5: The contributions of the predictor variables to the variance in suicidal ideation (R^2) for the black participants

Variable for the analysis	R^2	Contribution to R^2	*F*	f^2
1. [coping] +[stressor]+[resour]+[cult]	0.222	1-5 = 0.025	3.96**	0,03
2. [coping] + [stressor]+[resour]+assimilation	0.200	2-5 = 0.003	1.40	
3. [coping] + [stressor]+[resour]+integration	0.221	3-5 = 0.024	11.46**	0,03
4. [coping] + [stressor]+[resour]+rejection	0.202	4-5 = 0.005	2.33	
5. [coping] + [stressor]+[resour]	0.197			
6. [coping]+ [stressor]+[cult]+[resour]	0.222	6-14 = 0.045	3.06**	0.06
7. [coping] + [stressor] + [cult] + parents	0.196	7-14 = 0.019	8.89**	0.02
8. [coping] + [stressor] + [cult] + siblings	0.181	8-14 = 0.004	1.84	
9. [coping] + [stressor] + [cult] + family	0.193	9-14 = 0.016	7.45**	0.02
10. [coping] + [stressor] + [cult] + school	0.182	10-14 = 0.005	2.30	
11. [coping] + [stressor] + [cult] + friends	0.177	11-14 = 0.000	0.0	
12. [coping] + [stressor] + [cult] + boyfriend/girlfriend	0.177	12-14 = 0.000	0.0	
13. [coping] + [stressor] + [cult] + positive life events	0.196	13-14 = 0.019	8.89**	0.2
14. [coping] + [stressor] + [cult]	0.177			
15. [coping] + [cult] + [resour] + [stressor]	0.222	15-25 = 0.127	6.73**	0.16
16. [coping] + [cult] + [resour] + physical health	0.096	16-25 = 0.001	0.42	
17. [coping] + [cult] + [resour] + home/money	0.137	17-25 = 0.042	18.44**	0.05
18. [coping] + [cult] + [resour] + parents	0.147	18-25 = 0.052	23.10**	0.07
19. [coping] + [cult] + [resour] + siblings	0.112	19-25 = 0.017	7.26**	0.02
20. [coping] + [cult] + [resour] + family	0.125	20-25 = 0.030	12.99**	0.03
21. [coping] + [cult] + [resour] + school	0.114	21-25 = 0.019	8.13**	0.02
22. [coping] + [cult] + [resour] + friends	0.126	22-25 = 0.031	13.44**	0.04
23. [coping] + [cult] + [resour] + boyfriend/girlfriend	0.109	23-25 = 0.014	5.96*	0.02
24. [coping] + [cult] + [resour] + negative life events	0.184	24-25 = 0.089	41.34**	0.11
25. [coping] + [cult] + [resour]	0.095			
26. [cult] + [resour] + [stressor] + [coping]	0.222	26-41 = 0.022	0.75	
27. [cult] + [resour] + [stressor] + positive reinterpretation	0.200	27-41 = 0.000	0.00	
28. [cult] + [resour] + [stressor] + mental disengagement	0.200	28-41 = 0.000	0.00	
29. [cult] + [resour] + [stressor] + instrumental support	0.200	29-41 = 0.000	0.00	
30. [cult] + [resour] + [stressor] + emotional support	0.200	30-41 = 0.000	0.00	
31. [cult] + [resour] + [stressor] + denial	0.200	31-41 = 0.000	0.00	
32. [cult] + [resour] + [stressor] + venting of emotions	0.201	32-41 = 0.001	0.48	
33. [cult] + [resour] + [stressor] + planning	0.202	33-41 = 0.002	0.96	
34. [cult] + [resour] + [stressor] + active coping	0.200	34-41 = 0.000	0.00	
35. [cult] + [resour] + [stressor] + turning to religion	0.200	35-41 = 0.000	0.00	
36. [cult] + [resour] + [stressor] + behavioural disengagement	0.200	36-41 = 0.000	0.00	
37. [cult] + [resour] + [stressor] + alcohol and drug	0.200	37-41 = 0.000	0.00	
38. [cult] + [resour] + [stressor] + restraint coping	0.204	38-41 = 0.004	1.92	
39. [cult] + [resour] + [stressor] + acceptance	0.200	39-41 = 0.000	0.00	
40. [cult] + [resour] + [stressor] + suppression competing act	0.204	40-41 = 0.004	1.92	
41. [cult] + [resour] + [stressor]	0.200			

Key: [cult=acculturation variables; assimilation; integration; rejection]; [resour=resources; par=parents; sib=siblings; fam=family; sch=school; fr=friends; bg=boyfriend/girlfriend; ple=positive life experiences]; [stressor=stressor variables; par=parents; sib=siblings; fam=family; sch=school; fr=friends; hm=home/money; bg=boyfriend/girlfriend; nle=negative life experiences]; [coping=coping variables]

** $p \leq 0.01$ * $p \leq 0.05$

However, all statistically significant relationships, with the exception of Negative Life Events (medium effect size), had a small effect size. The set of coping variables did not explain a statistically significant proportion of the variance in the suicidal ideation of the black participants.

The results of the hierarchical regression analysis for the **white group** are presented in Table 6. The combination of predictor variables account for 34.9% [$F_{33;393}$ = 6.383] of the variance in suicidal ideation for white adolescents (1% level). The results indicate that the set of acculturation variables explained 0.4% (R^2 = 0.004) of the variance in suicidal ideation for white adolescents. However, this contribution is not significant at the 1% level of significance.

The results further indicate that the combined set of resource variables explain 4.5% (R^2 = 0.045) of the variance in suicidal ideation for white adolescents. The calculated R^2 – value was found to be significant at the 1% level [$F_{7;392}$ = 3.87], while the corresponding effect size reflects a medium effect size. When the contribution of individual resource variables was investigated, it is clear that two of these resource variables namely Parents (2.1% $F_{1;398}$ = 12.38] and Positive Life Experiences (3.2% $F_{1;398}$ = 19.18) contributed significantly at the 1% level to the variance in suicidal ideation among the white adolescents. However, all the *F*-values have a small effect size.

The combined set of stressor variables explains 10.4% (R^2 = 0.104) of the variance in suicidal ideation among white adolescents. The calculated R^2 – value is significant at the 1% level [$F_{9;393}$ = 6.98] and the corresponding effect size (0.16) is of medium practical significance. When looking at the individual stressor variables, it is clear that, with the exception of Physical Health, all the other stressors significantly contribute to the total model of suicidal ideation for the group of white adolescents.

Table 6: The contributions of the predictor variables to the variance in suicidal ideation (R^2) for the white participants

Variable for the analysis	R^2	Contribution to R^2	*F*	f^2
1. [coping] +[stressor]+[resour]+[cult]	0.349	1-5=0.004	0.80	
2. [coping] + [stressor]+[resour]+assimilation	0.347	2-5=0.002	1.21	
3. [coping] + [stressor]+[resour]+integration	0.346	3-5=0.001	0.60	
4. [coping] + [stressor]+[resour]+rejection	0.347	4-5=0.002	1.21	
5. [coping] + [stressor]+[resour]	0.345			
6. [coping]+ [stressor]+[cult]+[resour]	0.349	6-14=0.045	4.87**	0.10
7. [coping] + [stressor] + [cult] + parents	0.325	7-14=0.021	12.38**	0.03
8. [coping] + [stressor] + [cult] + siblings	0.314	8-14=0.010	5.81**	0.01
9. [coping] + [stressor] + [cult] + family	0.312	9-14=0.008	4.63*	0.01
10. [coping] + [stressor] + [cult] + school	0.306	10-14=0.002	1.15	
11. [coping] + [stressor] + [cult] + friends	0.306	11-14=0.002	1.15	
12. [coping] + [stressor] + [cult] + boyfriend/girlfriend	0.307	12-14=0.003	1.72	
13. [coping] + [stressor] + [cult] + positive life events	0.336	13-14=0.032	19.18**	0.05
14. [coping] + [stressor] + [cult]	0.304			
15. [coping] + [cult] + [resour] + [stressor]	0.349	15-25=0.104	6.98**	0.16
16. [coping] + [cult] + [resour] + physical health	0.245	16-25=0.000	0.00	
17. [coping] + [cult] + [resour] + home/money	0.255	17-25=0.010	5.38*	0.01
18. [coping] + [cult] + [resour] + parents	0.289	18-25=0.044	24.82**	0.06
19. [coping] + [cult] + [resour] + siblings	0.255	19-25=0.010	5.38*	0.01
20. [coping] + [cult] + [resour] + family	0.271	20-25=0.026	14.30**	0.04
21. [coping] + [cult] + [resour] + school	0.269	21-25=0.024	13.17**	0.03
22. [coping] + [cult] + [resour] + friends	0.249	22-25=0.004	2.14	
23. [coping] + [cult] + [resour] + boyfriend/girlfriend	0.245	23-25=0.000	0.00	
24. [coping] + [cult] + [resour] + negative life events	0.313	24-25=0.068	39.69**	0.11
25. [coping] + [cult] + [resour]	0.245			
26. [cult] + [resour] + [stressor] + [coping]	0.349	26-41=0.069	2.97**	0.11
27. [cult] + [resour] + [stressor] + positive reinterpretation	0.283	27-41=0.003	1.69	
28. [cult] + [resour] + [stressor] + mental disengagement	0.282	28-41=0.002	1.13	
29. [cult] + [resour] + [stressor] + instrumental support	0.284	29-41=0.004	2.26	
30. [cult] + [resour] + [stressor] + emotional support	0.285	30-41=0.005	2.83	
31. [cult] + [resour] + [stressor] + denial	0.288	31-41=0.008	4.55*	0.01
32. [cult] + [resour] + [stressor] + venting of emotions	0.284	32-41=0.004	2.26	
33. [cult] + [resour] + [stressor] + planning	0.286	33-41=0.006	3.40	
34. [cult] + [resour] + [stressor] + active coping	0.294	34-41=0.014	8.03**	0.02
35. [cult] + [resour] + [stressor] + turning to religion	0.280	35-41=0.000	0.00	
36.[cult] + [resour] + [stressor] + behavioural disengagement	0.281	36-41=0.001	0.56	
37. [cult] + [resour] + [stressor] + alcohol and drug	0.319	37-41=0.039	23.19**	0.06
38. [cult] + [resour] + [stressor] + restraint coping	0.281	38-41=0.001	0.56	
39. [cult] + [resour] + [stressor] + acceptance	0.283	39-41=0.003	1.69	
40. [cult] + [resour] + [stressor] + suppression competing act	0.280	40-41=0.000	0.00	
41. [cult] + [resour] + [stressor]	0.280			

Key: [cult=acculturation variables; assimilation; integration; rejection]; [resour=resources; par=parents; sib=siblings; fam=family; sch=school; fr=friends; bg=boyfriend/girlfriend; ple=positive life experiences]; [stressor=stressor variables; par=parents; sib=siblings; fam=family; sch=school; fr=friends; hm=home/money; bg=boyfriend/girlfriend; nle=negative life experiences]; [coping=coping variables]

** $p \leq 0.01$ * $p \leq 0.05$

It is apparent from Table 6 that Home and Money contribute 1.0% [$F_{1;401}$ = 5.38], Parents 4.4% [$F_{1;401}$ = 24.82], Siblings 1.0% [$F_{1;401}$ = 5.38], Family 2.6% [$F_{1;401}$ = 14.30], school 2.4% [$F_{1;401}$ = 13.17], and Negative Life Experiences 6.8% [$F_{1;401}$ = 39.69] to variance in the suicidal ideation score of the group of white adolescents. All the corresponding *F*-values, with the exception of Negative Life Events (0.11) are small.

The results further indicate that the combined set of coping variables explained 6.9% (R^2 = 0.069) of the variance in the suicidal ideation score of white adolescents. The corresponding R^2 –value has been found to be significant at the 1% level [$F_{14;392}$ = 2.97] and the effect size (0.11) is of moderate practical value. When investigating the contribution of the individual coping variables it is clear that two coping variables, namely Active Coping (1.4% *F*1;405 = 8.03) and Alcohol and Drug Disengagement (3.9% *F*1;405 = 23.19) contribute significantly at the 1% level to the variance in suicidal ideation among the white adolescents. However, the contributions indicate a small effect size and are thus of small practical value.

The results of the hierarchical regression analysis for the **coloured group** are presented in Table 7. These results indicate that all the predictor variables explained 41.2% (R^2=0.412) of the variance in suicidal ideation of the coloured adolescents. The calculated R^2 –value was significant on the 1% level of significance [$F_{33;167}$ = 3.542]. The combined set of acculturation variables explain 2.1% (R^2 = 0.021) of the variance in suicidal ideation score of the coloured adolescents. However, this contribution is not significant at the 1% level. None of the acculturation variables contribute significantly at the 1% level to the variance in suicidal ideation score of the coloured adolescents.

Table 7: The contributions of the predictor variables to the variance in suicidal ideation (R^2) for the coloured participants

Variable for the analysis	R^2	Contribution to R^2	*F*	f^2
1. [coping] +[stressor]+[resour]+[acult]	0.412	1-5=0.021	1.98	
2. [coping] + [stressor]+[resour]+assimilation	0.399	2-5=0.008	2.24	
3. [coping] + [stressor]+[resour]+integration	0.394	3-5=0.003	0.83	
4. [coping] + [stressor]+[resour]+rejection	0.394	4-5=0.003	0.83	
5. [coping] + [stressor]+[resour]	0.391			
6. [coping]+ [stressor]+[cult]+[resour]	0.412	6-14=0.047	1.89	
7. [coping] + [stressor] + [cult] + parents	0.401	7-14=0.036	10.34**	0.06
8. [coping] + [stressor] + [cult] + siblings	0.366	8-14=0.001	0.27	
9. [coping] + [stressor] + [cult] + family	0.380	9-14=0.015	4.16*	0.02
10. [coping] + [stressor] + [cult] + school	0.372	10-14=0.007	1.92	
11. [coping] + [stressor] + [cult] + friends	0.371	11-14=0.006	1.64	
12. [coping] + [stressor] + [cult] + boyfriend/girlfriend	0.365	12-14=0.000	0.00	
13. [coping] + [stressor] + [cult] + positive life events	0.366	13-14=0.001	0.27	
14. [coping] + [stressor] + [cult]	0.365			
15. [coping] + [cult] + [resour] + [stressor]	0.412	15-25=0.195	6.15**	0.33
16. [coping] + [cult] + [resour] + physical health	0.218	16-25=0.001	0.22	
17. [coping] + [cult] + [resour] + home/money	0.304	17-25=0.087	21.88**	0.13
18. [coping] + [cult] + [resour] + parents	0.329	18-25=0.112	29.21**	0.17
19. [coping] + [cult] + [resour] + siblings	0.227	19-25=0.010	2.26	
20. [coping] + [cult] + [resour] + family	0.265	20-25=0.048	11.43**	0.07
21. [coping] + [cult] + [resour] + school	0.242	21-25=0.025	5.77*	0.03
22. [coping] + [cult] + [resour] + friends	0.230	22-25=0.013	2.95	
23. [coping] + [cult] + [resour] + boyfriend/girlfriend	0.232	23-25=0.015	3.42	
24. [coping] + [cult] + [resour] + negative life events	0.264	24-25=0.047	11.18**	0.06
25. [coping] + [cult] + [resour]	0.217			
26. [cult] + [resour] + [stressor] + [coping]	0.412	26-41=0.081	1.63	
27. [cult] + [resour] + [stressor] + positive reinterpretation	0.333	27-41=0.002	0.54	
28. [cult] + [resour] + [stressor] + mental disengagement	0.346	28-41=0.015	4.11*	0.02
29. [cult] + [resour] + [stressor] + instrumental support	0.332	29-41=0.001	0.27	
30. [cult] + [resour] + [stressor] + emotional support	0.331	30-41=0.000	0.00	
31. [cult] + [resour] + [stressor] + denial	0.352	31-41=0.021	5.80*	0.03
32. [cult] + [resour] + [stressor] + venting of emotions	0.331	32-41=0.000	0.00	
33. [cult] + [resour] + [stressor] + planning	0.332	33-41=0.001	0.27	
34. [cult] + [resour] + [stressor] + active coping	0.331	34-41=0.000	0.00	
35. [cult] + [resour] + [stressor] + turning to religion	0.343	35-41=0.012	3.27	
36.[cult] + [resour] + [stressor] + behavioural disengagement	0.333	36-41=0.002	0.54	
37. [cult] + [resour] + [stressor] + alcohol and drug	0.331	37-41=0.000	0.00	
38. [cult] + [resour] + [stressor] + restraint coping	0.331	38-41=0.000	0.00	
39. [cult] + [resour] + [stressor] + acceptance	0.334	39-41=0.003	0.81	
40. [cult] + [resour] + [stressor] + suppression competing act	0.335	40-41=0.004	1.08	
41. [cult] + [resour] + [stressor]	0.331			

Key: [cult=acculturation variables; assimilation; integration; rejection]; [resour=resources; par=parents; sib=siblings; fam=family; sch=school; fr=friends; bg=boyfriend/girlfriend; ple=positive life experiences]; [stressor=stressor variables; par=parents; sib=siblings; fam=family; sch=school; fr=friends; hm=home/money; bg=boyfriend/girlfriend; nle=negative life experiences]; [coping=coping variables]

** $p \leq 0.01$ * $p \leq 0.05$

The results further indicate that the combined set of resource variables explained 4.7% ($R^2 = 0.047$) of the variance in the suicidal ideation score of the coloured adolescents. However, this contribution is not significant on the 1%. When the contribution of individual resource variables are investigated, it is clear that Parents contributed 3.6% ($R^2 = 0.036$) of the variance in the suicidal ideation score of the coloured adolescents. The calculated R^2 – value has been found to be significant on the 1% level ($F_{1;172} = 10.34$). However, the *F*-value corresponds with a small effect size.

The combined set of stressor variables explained 19.5% ($R^2 = 0.195$) of the variance in the suicidal ideation score of the coloured adolescents. The calculated R^2 – value was found to be significant at the 1% level [$F_{9;167} = 6.15$] and the effect size (0.33) is of a large practical value. When looking at the individual stressor variables, it is clear from Table 7 that Home and Money explain 8.7% ($R^2 = 0.087$), Parents 11.2% ($R^2 = 0.112$), Family 4.8% ($R^2 = 0.048$) and Negative Life Events 4.7% ($R^2 = 0.047$) of the variance in the suicidal ideation score for the coloured adolescents. The corresponding effect sizes for the stressor variables Home and Money (0.13) and Parents (0.17) both indicate both a medium effect size and are therefore of moderate practical value.

The combined set of coping variables explained 8.1% ($R^2 = 0.081$) of the variance in suicidal ideation of coloured adolescents. However the corresponding R^2 – value is not significant at either the 1% or 5% level.

Recapitulation and Discussion

The primary aim of this study was to investigate the influence of personal and contextual stressors and resources, as well as acculturation- and coping strategies on the suicidal ideation reported by a group of black, white and coloured adolescents. Results from the study suggest that the majority of the subscales of the measuring instruments provided reasonable levels of internal consistency, except the Physical Health subscale of the LISRES for the white participants and the Rejection subscale of the SAAS for the white and black groups. The alpha coefficients for the COPE subscales ranged from 0.33 – 0.89 which is lower than the proposed value. Nevertheless, when one considers the small number of items per subscale, it compares well with the alpha coefficients that were reported by Pienaar and Rothmann (2005) in a South African population. For this reason all the subscales were retained in the analysis of the data.

Participants in the current study reported markedly higher mean scores on the suicidal ideation questionnaire compared to an American adolescent sample (Reynolds, 1988). The differences in mean scores may be related to the differences in life circumstances that influence the participants of the current study. However, these findings tend to support the idea that suicidal behaviour, which includes suicidal ideation, amongst South African adolescents is ordinarily high (Burrows, Vaez, & Laflamme, 2007; Flisher, Liang, Laubscher, & Lombard, 2004; George, 2009; Mashego & Madu, 2009; Meel, 2003; Meehan et al., 2007; Reddy et al., 2003; Reddy et al., 2010; Schlebusch, 2005). Reportedly, the occurrence of suicidal ideation is the highest for the coloured group, followed by the black group. The white participants reported the lowest levels of suicidal ideation, yet this was still higher than a comparative adolescent sample (Reynolds, 1988). These results are consistent with the findings of George (2009), as well as Joe et al. (2008), suggesting that suicidal behaviour (which include suicidal ideation) is common amongst coloured adolescents. Furthermore, these results might be indicative of the coloured adolescents' stressful adjustment to South Africa's rapid socio-political transition, wherein the coloured group experience the erosion of resources such as better employment opportunities and other social privileges they once held over blacks under apartheid (Hutchinson, Stuart, & Pretorius, 2007; Joe et al., 2008; Meehan et al., 2007).

Black and coloured adolescents appear to differ from White adolescents with regards to the stressors they experience. Financial issues appear to be a greater stressor in the lives of black and coloured adolescents than their white counterparts. This could be attributed to the fact that many black and coloured adolescents still come from previously disadvantaged homes where problems stemming from a lack of financial resources and infrastructure could be a great stressor (McLoyd, 1990). Furthermore, all the adolescents in the current sample identified the school as a great source of stress. This finding is consistent with findings by Louw et al. (2007), as well as Walsh and Eggert (2008) who suggest that academic problems, as well as interpersonal relationships with teachers can contribute to stressful life events that precede suicide attempts. With regard to resources, adolescents from all three ethnic groups reported that their families and friends are important resources. These findings are consistent with literature that emphasises that the family unit and friends can be viewed as pivotal support systems that can aid adolescents in becoming well-adjusted adults (Cornwell, 2003; Liu, 2002).

In terms of the coping strategies utilised, it appears that black adolescents make greater use of emotion-focused and problem-focused coping strategies such as positive reinterpretation and growth, turning to religion, planning and suppression of competing activities when compared to white and coloured adolescents. According to Magaya, Asner-Self and Schreiber (2005), the preference for emotion-focused coping strategies by black adolescents could be related to the influence of collectivistic cultural practices that encourage harmony, non-confrontation and interdependency in social relations, as well as the unequal distribution of and access to resources.

Continued investigations indicated that in terms of the acculturation strategies utilised by the current sample, both the black and coloured adolescents reported a greater preference towards integration as a strategy to deal with cultural differences. This finding is consistent with previous findings of Kramers (2000) and Hocoy (1999). According to Kramers (2000), white adolescents due, to their strong historical attachments and traditions were less likely to develop more positive identification with other confronting cultures, but would rather distance themselves from those interacting cultural experiences. Because of the limited amount of South

African research in this area, no further evidence corroborating or disputing this behaviour for white adolescents could be found.

Significant positive correlations at the 1% level of significance were found between suicidal ideation and the stressor subscales Home and Money for the coloured group (0.38), Parents for the white (0.31) and coloured group (0.37), Family for the coloured group (0.30), and Negative Life Events for the black (0.31) and white (0.35) groups, while the resource subscale Parents (-0.31) correlated negatively with suicidal ideation for the white group. It can be inferred from this finding that higher levels of stress related to financial problems, relationships with parents and extended family as well negative life events are strongly associated with higher levels of suicidal ideation. These findings are supported by Larson, Wilson and Mortimer (2002), who reported the family as having a pivotal supportive role as provider of a safe and health-enhancing environment. Further support from Paulson and Everall (2001) concludes that family stability makes a significant contribution towards reducing the occurrence of suicidal behaviour in adolescents. Another dimension of family stability, namely a poor home environment and financial difficulties, significantly contributes to an increase in the prevalence of suicidal ideation. According to Diekstra and Garnefski (1995), socio-economic difficulties experienced by parents exercise a direct influence on the prevalence of suicidal ideation in their children.

The contribution made by the individual variables stressors, resources and coping strategies was found to explain 22.2% of the variance in suicidal ideation for the black adolescents, 34.9% for the white adolescents and 41.2% for the coloured adolescents. The set of stressor variables explained a combined 12.7% of the variance in suicidal ideation among the black adolescents, 10.4% among the white adolescents and 19.5% among the coloured adolescents. On further investigation it appears that the stressor subscales Parents (5.2% for black adolescents, 4.4% for white adolescents and 11.2% for coloured adolescents), Negative Life Events (8.9% for black adolescents, 6.8% for white adolescents and 4.7% for coloured adolescents) and Home and Money (4.2% for black adolescents and 8.7% for coloured

adolescents) made the most significant contribution in explaining suicidal ideation among all three ethnic groups. These findings concur with previous findings by Larson et al. (2002), and Paulson and Everall (2001) who concluded that parents who are positive, responsive and accommodating serve as an important protective influence against suicidal thoughts in their adolescents.

Limitations and Recommendations

The aim of this study was to investigate the influence of stressors, resources, acculturation- and coping strategies on adolescent suicidal ideation. The study was based on the components of Moos and Schaefer's (1983) Integrated Stress and Coping Model. However, the variables covered in this study only included four components of the stress and coping process model, namely contextual stressors and resources, life transitional stage (adolescence), coping and health outcome (suicidal ideation). Personal stressors and resources such as hope, sense of coherence and self-esteem were not included in this study. Inclusion of these variables might have highlighted additional contributions to suicidal ideation.

Although a number of studies focusing on suicidal ideation, stressors, resources, acculturation- and coping strategies have been published in the past, very few have combined these variables or show greater ethnic distinction upon comparison. Such distinctions are deemed necessary (especially the further distinction between black and coloured participants), as it cannot be assumed that different ethnic groups within the black population will necessarily display similar behaviour. The main findings of this study suggest that significant ethnic differences exist in the reported suicidal ideation of black, white and coloured adolescents. It would appear as if coloured adolescents might be a particularly vulnerable group with their level of suicidal ideation suggestive of a possible stressful adjustment to South Africa's rapid political and socio-economic transitions. It is suggested that intervention programmes focusing on effective coping be implemented in schools to assist adolescents in dealing with life stressors.

The use of non-South African measuring instruments to measure the variables has emphasised the need to develop specific instruments for the relevant ethnic groups as differences in the interpretation of the items might have contaminated the final results. More research is needed to develop specific instruments for specific populations to enhance levels of reliability and validity.

A cross-sectional design was used, and the results of this study may thus not be predictive of the longitudinal relationship between suicidal ideation, stressors, resources, acculturation- and coping strategies. Future longitudinal studies may render different results in this regard and thus be more relevant to the choice of therapeutic or preventative focus with regard to stressors, resources and acculturation- and coping strategies in suicidal behaviour. Furthermore, the study focused on learners in general rather than those who had a previous suicide attempt, the latter constituting a focus which may have contributed to a better understanding of the dynamics of suicidal ideation.

It is recommended that suicidal ideation be explored with additional variables such as gender, self-efficacy and sense of coherence with a special focus on the combination of risk and protective factors as determinants of suicidal ideation. It is further recommended that longitudinal studies be undertaken to enable researchers to observe the developmental influences that interact with different variables at specific developmental stages.

Based on the research findings, it appears that coping with life stressors are areas that adolescents may be struggling with. The implementation of school-based workshops and programmes might assist adolescents with skills such as problem-solving, positive reinterpretations and positive visualisation that could empower teenagers when they are confronted with difficult challenges. The need to raise awareness about risk factors concerning suicide should be encapsulated within a suicide prevention programme, which could be incorporated into life-orientation subjects in order not only to raise awareness, but simultaneously to make these socially taboo issues a topic of discussion within the correct milieu to ensure timeous identification of individuals who may be at risk for suicidal behaviour.

In conclusion, the rationale for this study was twofold, namely to increase the awareness of the growing incidence of suicidal behaviour among South African adolescents of all ethnic groups, as well as to explore the influence of stressors, resources, acculturation- and coping strategies. Promoting the healthy development of adolescents is one of the most important and cost-effective long-term investments a society can make and it is hoped that the findings of this research will establish a basis upon which further research could be done.

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CHAPTER 7

CONCLUSION

This chapter serves as an integrated summary of the findings of the study. Significant conclusions based on the findings presented in the five articles are summarised and the limitations of the study are highlighted. Recommendations are made for future research and practice.

7.1 SUMMARY OF LITERATURE

A review of the available literature was presented in Article 1 of this study, offering a more detailed theoretical exploration of adolescent suicidal behaviour. This literature review allowed the researcher to establish the theoretical nuances and trends that global and local research on adolescent suicidal behaviour has shown over the last two decades. Although adolescent suicidal behaviour is a well-explored field of study, the review highlighted a dearth of available studies focusing specifically on suicidal ideation. Furthermore, only a handful of studies could be found exploring the role of ethnic differences in adolescent suicidal behaviour.

What is apparent from the literature review is the growing recognition by researchers of the complex nature of adolescent suicidal behaviour (Krug, Dahlberg, Meray, Zwi, & Lozano, 2002). Numerous contributing factors to adolescent suicidal behaviour have been identified in the past. These include aspects such as acculturation (Beekrum, Valjee, & Collings, 2011; Pillay & Wassenaar, 1997), socio-economic hardship (Stark et al., 2010; Reddy et al., 2003; Reddy et al., 2010), a lack of social support from parents and peers (Beautrais, 2000; Larson, Wilson, & Mortimer, 2002; Mashego & Madu, 2009), failure to achieve academically (Stark et al., 2010), inadequate coping (Meehan, Peirson, & Fridjhon, 2007), as well as reduced levels of hope (Larson et al. 2002). However, most of the studies on adolescent suicidal behaviour offer only a restricted linear approach of one or two

interacting factors as possible explanation. Adolescent suicidal behaviour represents a complex and multi-dimensional phenomena which necessitates the consideration of a wide array of risk and protective factors, as well as the interaction between these factors in order to understand its underlying causes (Schlebusch, 2005). In order to answer to this requirement, the researcher utilised Moos and Schaefer's (1993) Integrated Stress and Coping Model to structure this study. This model postulate that personal and contextual factors, developmental transitions and crises, as well as coping strategies, all interact to determine a health outcome such as suicidal behaviour.

An important question that flows from the literature review is whether ethnic differences exists within the South African context with regards to the level of adolescent suicidal ideation, life stressors and resources. Gaining clarity about these differences could have significant implications for both researchers and adolescent communities in South Africa as it may impact on the knowledge of what resources are available, what resources are needed, and how these resources can be utilised in assisting communities in dealing with the increase in adolescent suicidal behaviour.

7.2 SUMMARY OF EMPIRICAL FINDINGS

The overarching aim of the study was to investigate the role of psychosocial stressors and resources in adolescent suicidal behaviour amongst a sample of black, white and coloured adolescents from the Free State province. In addition, the study aimed to determine whether any ethnic and gender differences existed with respect to the experience of life stressors, access to resources, and utilisation of coping and acculturation strategies.

To achieve the aims of the study, the following research objectives were formulated:

Objective 1: To determine the incidence of suicidal behaviour amongst adolescents in the Free State province.

Objective 2: To compare ethnic and gender differences in the level of suicidal ideation, the experience of stressors, access to resources, and acculturation- and coping strategies employed by adolescents.

Objective 3: To explore and describe white, black and coloured adolescents' experience of psychosocial stressors and resources.

Objective 4: To determine whether a relationship exists between life stressors and suicidal ideation, as well as investigating the possible influence of coping strategies and ethnic differences on this relationship.

Objective 5: To investigate the influence of personal and contextual stressors and resources, as well as acculturation- and coping strategies on the suicidal ideation reported by a group of adolescents.

Subsequently, a summary of the empirical findings will be presented along each of these formulated objectives.

7.2.1 **Suicidal ideation**

In terms of formulated goals 1 and 2 of the current study, the following results were obtained: Coloured female participants reported the highest mean score for suicidal ideation ($\overline{X}$ 61.06; *SD* 48.55) followed by the black females ($\overline{X}$ 40.88; *SD* 43.38), coloured males ($\overline{X}$ 29.63; *SD* 37.76), black males ($\overline{X}$ 28.84; *SD* 33.39), white females ($\overline{X}$ 25.99; *SD* 33.10) and white males ($\overline{X}$ 21.25; *SD* 30.19). The scores achieved by the current sample were significantly higher than those obtained by participants in an American study conducted by Reynolds (1988) where a mean of 17.60 and a standard deviation of 20.76 were reported. This indicates that the participants in the current study reported a generally higher degree of suicidal ideation. However, compared to another South African study (George, 2009), the mean scores obtained for suicidal ideation were slightly lower for black and white adolescents. A possible explanation for these differences in mean scores might be the fact that participants in George's study were purposively selected, which might have influenced the mean scores obtained.

7.2.2 **Stressors and resources**

7.2.2.1 **Integration of quantitative and qualitative findings**

A review of both methodological approaches indicates that ethnic differences exist in the reporting of stressors and resources. Poor sibling-, family and peer relationships as well as financial factors appear to be common stressors among coloured adolescents in both the qualitative and quantitative studies. Coloured participants obtained the highest average score on the stressor subscales Siblings ($\overline{X}$ 8.88; *SD* 6.13), Family ($\overline{X}$ 7.78; SD 4.71), School ($\overline{X}$ 18.29; *SD* 8.93) Friends ($\overline{X}$ 8.17; *SD* 4.93) and Negative Life Events ($\overline{X}$ 14.51; *SD* 7.20). In terms of qualitative responses, coloured participants identified individual factors (negative self-perception), microsystemic factors (poor social conduct) and exosystemic factors (financial difficulties) as major sources of dissatisfaction in their lives. Black participants reported the highest average score on the stressor subscales Home and Money ($\overline{X}$ 11.38; *SD* 7.89), and Boyfriend/Girlfriend ($\overline{X}$ 5.13 *SD* 4.86), indicating that financial factors and romantic relationships constitute major sources of stress in the lives of black participants in the current study. For white participants, parent-child relationships as well as crime seem to constitute major stressors. White participants reported Parents ($\overline{X}$ 7.80; *SD* 5.35) as a greater source of stress compared to the other groups.

The white participants in the current study obtained the highest average scores for the resource subscales Parents ($\overline{X}$ 12.12; *SD* 5.75), Siblings ($\overline{X}$ 12.68; *SD* 6.05), Family ($\overline{X}$ 17.72; *SD* 7.04), and Friends ($\overline{X}$ 27.76; *SD* 6.86). Coloured participants reported the highest average score for the resource subscales Boyfriend/Girlfriend ($\overline{X}$ 11.97; *SD* 7.42) and Positive Life Experiences ($\overline{X}$ 11.93; *SD* 5.04). In terms of resources, parents, family, romantic relationships and friendships appear to be major resources for white and coloured participants. White participants identified microsystemic factors such as the relationship with their families, as well as exosystemic factors (financial issues) as greater resources. Coloured adolescents, on the other hand, showed a stronger identification with macrosystemic factors such as religion. Black participants reported a higher average score for the resource subscale School ($\overline{X}$ 11.02; *SD* 5.45). Furthermore, individual factors (which include positive self-esteem) seem to represent a greater resource for the black participants in the current study than for the white and coloured participants.

7.2.3 **Acculturation strategies**

The reported average scores obtained by means of the South African Acculturation Scale, indicate that coloured female participants have reported the highest average scores for Assimilation (25.79) and Integration (26.13). These findings suggest that coloured females either do not wish to maintain their cultural identity and pursue opportunities to interact with members of other cultural groups (Berry, 2006), or have an interest in both maintaining their own cultural values, but are open to the values of others. These findings confirmed previous findings by Laubscher (2003), suggesting that coloured communities are in a process of transition as they try to find their unique identity within a new socio-cultural environment. Black male adolescents obtained the highest average score for Rejection (14.60), followed closely by white male participants (14.41).

7.2.4 **Coping**

According to the results, significant ethnic and gender differences were present in the use of coping strategies amongst the current sample. Significant differences were found in the average scores obtained for the subscale Dysfunctional Coping between the white group and the black and coloured groups. Dysfunctional coping appears to be used more frequently as a coping strategy by black and coloured participants. The reason for this may be related to the way that South Africa's political past shaped environments of unequal access to resources, leading to an increased use of certain coping mechanisms such as dysfunctional coping (Chapman & Mullis, 2000, Du Toit, 1999; George, 2009). With regard to the coping subscale Emotion-focused Coping, the black female group's average score were significantly higher than that of the other groups. The result indicates that the black females in the current sample were more likely to make use of emotion-focused coping strategies such as turning to religion and seeking emotional support. This finding supports those from previous studies (Snyder & Lopez, 2007; Magaya, Asner-Self, & Schreiber, 2005), suggesting that collectivistic cultures seemed to be more emotion-focused. Cultural factors such as the encouragement of emotionally dependent relationships in unmarried children, an emphasis on respect for elders as decision-makers, the encouragement of non-confrontational behaviour and the use of avoidance strategies such as wishful thinking, social distancing and self-blame, could potentially play a role in this respect (Du Toit, 1999; George, 2009; Magaya et al., 2005).

The coping subscales contributed 8.1% (coloured), 6.9% (white) and no statistically significant proportion of the variance in suicidal ideation for black adolescents. For the coloured participants, alcohol and drug disengagement showed a significant positive relationship with suicidal ideation, indicating that coloured participants with a high level of suicidal ideation also reported frequent alcohol and drug usage to cope with challenging situations. The use of alcohol and substance disengagement by the coloured participants in the current study confirms previous findings (George, 2009; Plaaitjie, 2006) suggesting that coloured adolescents are more prone to the use of alcohol and drugs as a way of coping with stressful situations. Dysfunctional coping strategies, such as alcohol and drug disengagement, are considered to be less effective coping mechanisms (Carver, Scheier, & Weintraub, 1989) which limit the individual's ability to obtain necessary resources, thereby aggravating the experience of the stressful circumstances (Israelashvili, Gilad-Osovitzki, & Asherov, 2006).

7.2.5 **Discussion of hierarchical regression analysis**

The overarching aim of this study was to determine the extent to which a number of variables (including personal and environmental stressors and resources, developmental crises, acculturation- and coping strategies) contribute to the variance in suicidal ideation between black, white and coloured adolescents. The results indicated that for the black group, only one of the 33 variables, namely negative life experiences were positively related to suicidal ideation. All the variables collectively accounted for 22.2% of the variance in suicidal ideation amongst the black adolescents, which is significant at the 1% level. Negative Life Experiences accounted for 8.9% to the variance of suicidal ideation of the black group. The positive relationship negative life experiences shares with suicidal ideation confirms findings from previous studies (Engelbrecht & van Vuuren, 2000; Larson et al., 2002), indicating how negative life experiences can increase adolescents' level of suicidal ideation.

For the white group, two of the 33 variables namely parents (stressor) and negative life experiences were positively related to suicidal ideation, while parents (resource) were negatively related to suicidal ideation. All variables collectively accounted for 34.9% of the

variance in suicidal ideation for white adolescents (1% level). Negative Life Experiences (6.8%) made the largest contribution to the variance in suicidal ideation of the white group.

Furthermore, the results indicated that for the coloured group, three of the 33 variables, namely home and money, parents (stressor) and family (stressor) were positively related to suicidal ideation. All the variables collectively accounted for 41.2% of the variance in suicidal ideation of the coloured adolescents (1% level). Parents (stressor) made the largest contribution to the variance in suicidal ideation of the coloured group. This finding confirms those from previous studies (Greening et al., 2008; Pillay & Wassenaar, 1997; Van Renen & Wild, 2008) suggesting that interpersonal conflict between adolescents and parents, an over-controlling parenting style, as well as inadequate flexibility by parents all contribute to heightened adolescent stress and ultimately suicidal behaviour.

None of the acculturation scales contributed significantly at the 1% level to the variance in suicidal ideation for any of the three ethnic groups. This result is perhaps surprising, since several authors (Beekrum, 2008; Stevens & Lockhat, 1997; Wassenaar, Van der Veen, & Pillay, 1998) have suggested that acculturation might play a significant role in adolescent suicidal behaviour. A possible explanation for this result might be found in the value participants placed on acculturation strategies as a way of dealing with ethnic contact. Seventeen years of a democratic South Africa might have influenced how participants experience ethnic relationships within the school environment. Furthermore, the still unequal access to financial and material resources amongst the different ethnic groups in South Africa might also have affected the value participants in the current study placed on acculturation strategies. However, notwithstanding the reasons for this finding, further research is indicated.

The set of coping variables did not explain a statistically significant proportion of the variance in the suicidal ideation of black and coloured adolescents in the current sample. The findings, however, suggest that active coping and alcohol and drug disengagement contributed significantly at the 1% level to the variance in suicidal ideation among the white adolescents. This finding provides evidence that, in the case of white adolescents, the choice

of coping strategies plays a role in how adolescents experience suicidal ideation (George, 2009; Israelashvili et al., 2006).

7.3 CONTRIBUTIONS OF THIS STUDY

Although it is suggested that the prevalence of adolescent suicidal behaviour in the Free State is unordinarily high (Reddy et al., 2003; Reddy et al., 2010), only a few research studies (Mashego & Madu, 2009; Mashego, Peltzer, Williamson, & Setwaba, 2003) focusing on the underlying cause of this phenomenon have been conducted in this province, and even less in South Africa as a whole. Moreover, these studies have all adopted a more linear approach in exploring adolescent suicidal behaviour. The current study makes a unique contribution in that it is the first formal investigation of its kind in the Free State province. The number of participants involved (n=1033), as well the fact that schools from all the five districts of the province were included in the study, made for a more representative sample.

The emphasis on ethnic and gender differences provides valuable information for researchers and psychologists alike. Although a number of South African studies focusing on adolescent suicidal ideation, life stressors, resources, and coping strategies have been published in the past, very few have combined these variables or have showed ethnic and gender distinction upon comparsion. Such distinctions are deemed necessary (especially the further distinction between black and coloured participants), as it cannot be assumed that different ethnic groups within the black population will necessarily display similar behaviour. The use of a qualitative research methodology proved valuable as it allowed participants' own voices to be heard and assisted in the triangulation of research results. Furthermore, the holistic view to suicidal behaviour, as influenced by personal and environmental risk and protective factors, developmental aspects and life transitions as well as coping strategies utilised, has proven valuable in explaining the multi-faceted nature of this complex phenomenon. The findings from this study made a valuable contribution to the fields of Clinical Psychology, Positive Psychology and suicidology. Furthermore, the results of this study provided a better understanding of coping resources and coping strategies within the South African environment. Finally, the emphasis on acculturation has provided valuable insight into the way South African adolescents are coping with the current socio-political

transformation underway in their communities. Although exploratory in nature, the focus on acculturation has provided a basis for further research.

7.4 **LIMITATIONS**

It is important to consider that the results of this study must be interpreted in the light of its limitations. The use of American measuring instruments to measure the variables might have affected the final results as the different ethnic groups might have interpreted items differently. A cross-sectional design was used in the current study, and the results might not be predictive of the longitudinal relationship between suicidal ideation, stressors, resources, acculturation- and coping strategies. Furthermore, the use of open-ended questions as the only qualitative method employed (as oppose to a combination of perhaps open-ended statements and focus groups), probably limited the gathering of additional supportive information.

This study relied exclusively on the self-report method of data collection, which is subject to intentional distortion. Because suicide is a relatively sensitive subject which is also regarded as taboo by different cultural, ethnic and religious populations, participants could have given normative responses in an attempt to provide a different impression of them. Another limitation could be related to the fact that the sample of participants was drawn from a specific region in South Africa which makes the generalisability of the findings difficult. The decision to include only learners within the general school system rather than also those who were directly involved in suicide attempts may have denied this study valuable information regarding the dynamics of suicidal behaviour. Furthermore, the exclusion of adolescents from Indian descent (due to the limited numbers involved) limits the generalisation of results to all ethnic groups.

7.5 **RECOMMENDATIONS**

It is recommended that future research continues to follow a similarly integrated approach to explore the complexities of adolescent suicidal behaviour. The inclusion of additional variables such as sense of coherence, hope and self-esteem might add additional value to future studies. Future longitudinal studies may render different results in this regard and thus be more relevant to the choice of therapeutic or preventative focus with regard to stressors,

resources, acculturation- and coping strategies in adolescent suicidal behaviour. Longitudinal studies might offer new and different insights into the dynamic interactions between different variables. Furthermore, researchers are afforded the opportunity to observe the influence of developmental changes on the variables of choice. In this way researchers will be able to differentiate between the variables that are more prevalent at different stages, thereby increasing the focus of intervention programmes for different age groups.

The use of more than one qualitative method may benefit the data-gathering process, as such methods can complement each other and further enrich the thickness of data. It is also recommended that future qualitative studies be undertaken with adolescents who have previously attempted suicide. This might add valuable information regarding the dynamics of adolescent suicidal behaviour.

The main findings of this study suggest that significant ethnic and gender differences exist in the reported suicidal ideation of black, white and coloured adolescents. It would appear as if particularly coloured and black adolescents might be vulnerable groups with their level of suicidal ideation suggestive of a possible stressful adjustment to South Africa's rapid political and socio-economic transitions. It is recommended that an intervention programme be developed and implemented in schools to assit adolescents in improving their emotional and behavioural regulation, improving their coping skills and helping with social and life skills.

In conclusion, this study provided further evidence of an increase in the incidence of suicidal behaviour among South African adolescents of all ethnic backgroups. Because a country's adolescents form the backbone of a future society, it is vital that their health and well-being is promoted.

REFERENCE LISTS

ORIENTATION AND PROBLEM STATEMENT

&

CONCLUSION

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Appendix A

Biographical Questionnaire

						Office use only
SECTION 1: PERSONAL INFORMATION						
1.	School: ……					
2.	Grade: ……...					
3.	Age: ……					
4.	Gender:	Male		Female		
5.	Race	Black	White	Coloured	Asian	
6.	Indicate the place where you live (please write places' name): a) town/village …… b) suburb/township …….. c) farm district (if you live on a farm) …….....					
7.	Home language (mark the one your family uses most at home): English Afrikaans Xhosa Zulu SeSotho Setswana Other (Specify) ……					
8.	Parents' Education. How far did they study? Eg. Highest grade passed or university degree. a) Mother: …….. b) Father: ……					
9.	Marital status of parents: Married Divorced Single parent Separated Common law marriage					
10.	Employment status of parents:					
	FATHER: Permanent employment					
	Temporary employment					
	Self employed indicate formal or informal sector					
	Unemployed					
	If unemployed, state previous occupation					
	MOTHER: Permanent employment					
	Temporary employment					
	Self employed indicate formal or informal sector					
	Unemployed					
	If unemployed state previous occupation					

		Office use only
11.	Do you know anybody who has committed suicide Yes ☐ No ☐ If **YES**, what was your relation to the person (e.g. brother or friend)……	
12.	Have you ever attempted suicide? Yes ☐ No ☐	
13.	Have you lost one or more of your parents or guardians (through death)? Yes ☐ No ☐	
14.	Is there somebody in you immediate family who attempted suicide (unsuccessfully)? Yes ☐ No ☐ If **YES**, who? …….	
15.	Is there somebody in your immediate family who committed suicide? Yes ☐ No ☐ If **YES,** who? …….	
16.	Has one of your friends attempted suicide (unsuccesfully)? Yes ☐ No ☐ If **YES**, when? …… If **YES**, how? …….. If **YES**, why? ……..	
17.	Has one of your friends committed suicide? Yes ☐ No ☐ If **YES**, when? ……..… If **YES**, how? ……... If **YES**, why? ……...	

18. State your religious affiliation:

e.g. Christian	Pentecostal	Tick where applicable
Christian		
Traditional religion		
Other (specify)		
No affiliation		

		Office use only
19.	If applicable, how often do you attend religious ceremonies (tick where applicable) a) weekly or more b) monthly c) occasionally d) not at all	
20.	Describe in a paragraph the factors that make you feel positive/good about yourself, your life and your future. …… …… …… …… ……	
21.	Describe in a paragraph those factors that cause frustration and distress about yourself, your life and your future. …… …… …… …… ……	
NB: Please wait for instructions before continuing with the next questionnaire.		

Appendix B

Participant Consent Form

I_____ have been completely informed regarding the nature of this study, as well as my participation in it. I hereby consent to participate in the research that is to be conducted by Edwin du Plessis, a PhD student in Clinical Psychology, under the supervision of Dr. Henriëtte Van den Berg and Dr Stephan Walker, from the University of the Free State. I understand that by taking part in this study I incur no risk of harm to myself and that I have a right to withdraw at any given time during the study, without any negative consequences.

Signed: _____ Date: _____