

**RISKS, PROTECTIVE FACTORS, AND COPING STYLE IN
THE LIVES OF YOUNG PEOPLE: FINDINGS FROM A
SURVEY OF UNIVERSITY STUDENTS' HEALTH AND
WELLBEING**

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THE AUTHOR DECLARES THAT THIS THESIS, UNLESS SPECIFICALLY INDICATED TO THE CONTRARY, IS A PRODUCT OF HER OWN WORK.

A handwritten signature in black ink, appearing to read 'C. Birkett', with a long horizontal stroke extending from the bottom of the signature.

Cathie Birkett

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Abstract

Research on risk and resilience related to behaviour and poor health outcomes among young people consistently indicates the need to take greater cognisance of social and environmental factors. This is particularly true of research in developing countries. In South Africa, there is a paucity of research on these issues. This study attempts to examine risk and protective factors, as well as coping style of young South Africans at the University of Natal, Pietermaritzburg. Environmental risk and protective factors measured were related to family, peers, and financial support. Categories of risk behaviour and poor health outcomes measured were substance use, sexual behaviour, general risk behaviour and depression. Broad-based questionnaires were sent to 2000 randomly selected students aged between 18 and 24 years old, and completed by 678 students. Results indicated that there was a trend towards gender equalisation in levels of risk and poor health outcomes; that there were significant relationships between many risk behaviours and poor health outcomes; that coping styles were correlated with risk behaviour and poor health outcomes in the expected direction (avoidance coping correlated positively and approach coping correlated negatively with risk behaviour, poor health outcomes and environmental risk factors); and that environmental risk factors (low family, peer, and financial support) were associated with high levels of risk behaviour and poor health outcomes including sexual risks and depression; A contextual model was employed to explain the importance of environmental factors and coping styles in the promotion of health and wellbeing.

Chapter One

Introduction to the Study

1.1 Overview

Adolescents and young adults are a valuable social and economic resource. During this phase of life young people face specific developmental challenges associated with rapid physical, psychological and social change. The risk of engaging in health-threatening behaviours is probably greater during this phase than at any other time in the lifespan (Foxcroft, 1997). Western research in the field has attempted to describe, explain, and predict behaviour and health outcomes of young people with a view to interventions that will maximise the likelihood of them becoming healthy and productive adults. In the developing world there is less research documenting the interaction of internal and external risk and protective factors that influence social behavioural and health outcomes for young people.

1.2 Previous Research

Research in the field started out by identifying static epidemiological risk markers such as gender, IQ, genetic factors, and socio-economic status that could predict negative outcomes for young people. It soon became evident that multiple mechanisms and pathways are influential on both good and poor health outcomes during this developmental phase. Some themes in Western research include:

- a) Longitudinal research that describes development through childhood, adolescence and young adulthood examining the continuity and discontinuity of patterns of behaviour and health outcomes (Robins & Rutter, 1990)
- b) A movement from intra-individual biological and psychological processes to examine the processes of interpersonal relationships, family, community, and the wider socio-historical context that influence developmental outcomes (Bronfenbrenner, 1979; Garbarino, 1985; Garbarino & Sherman, 1980).
- c) The investigation of the interaction of both risk and protective factors in multiple contexts. Models that provide a conceptual framework for the investigation of pathways and processes of development are the biopsychosocial model (Compas, Hinden & Gerhardt, 1995) and the contextual model (Bond, Thomas, Toumbourou, Patton, & Catalano, 2000)

Common categories of risk behaviours and poor health outcomes for this age group include substance use, reckless or violent behaviour, risky sexual behaviour, academic failure or dropout, depression and suicidal behaviour. Clustering of risk factors and the cumulative nature of risk behaviours and poor health outcomes has been well documented in research (Flisher, Ziervogel, Chalton, Leger, & Robertson, 1996a; 1996b; Lerner & Galambos, 1998). Differences in behaviour patterns between young men and women have also been of interest. For example, some research has found that young women are more likely to suffer from depression and eating disorders, and that young men are more likely to engage in reckless or aggressive behaviour, sexual risk taking and substance use (Compas et al., 1995).

Research interest in resilience and coping in spite of exposure to adverse life circumstances is well-documented (Bernard, 1999; Garmezy, 1991; Garmezy & Rutter, 1983; Jessor, 1998). Differences in coping styles have been found to influence the development of resilience or engagement in risk behaviours and negative outcomes. For example, the approach coping style has generally been found to be associated with non-engagement in risky behaviour and good health outcomes while the avoidance coping style has been associated with risk behaviour and poor health outcomes (Steiner Paveleski, Pitts & Mcquivey, 1998).

Recent national surveys of young people in the USA (Udry, Bauman, Bearman, Billy, Blum, Grady, Harris, Jaccard, Resnick, Rowe, & Jones, 1998), Canada (Tonkin, Murphy, & Sidhu, 1999), and Australia (Bond et al., 2000) have emphasised environmental or contextual risk and protective factors as well as individual characteristics in the lives of young people. Aspects of family life, peer group, school, community and the wider social context have been found to operate as risk or protective factors for a wide range of risk behaviours and negative outcomes. For example, emotional connection to family members and peer group (labelled 'family or peer attachment' in the Australian study) has been found to protect against engagement in many risk behaviours. Conversely, lower levels of attachment or emotional connection have been linked to risk behaviours and negative outcomes among young people in developed countries. It is also widely documented that socio-economic status and poverty have direct effects on health outcomes for this age group even in the relatively wealthy countries of Western Europe and the USA (WHO, 1993; WHO, 1997; WHO, 2000a).

In South Africa, sexual and reproductive issues among young people are well documented (Buga, Amoko, & Ncayiyana, 1996; Richter, 1996 & 1997; South African Health Review, 1995). Also, research into risk taking behaviour of high school students in the Cape (Flisher et al., 1996a; 1996b) has revealed clusters of risk behaviour and led to the suggestion of a possible adolescent syndrome among this group. However, there has been less research on more general outcomes including the influence of environmental factors (family, school, community, and socio-economic status), coping style and protective factors among either the teenage or young adult populations of this country.

1.3 Aims of this study

This study was undertaken with the financial assistance of the World Health Organisation with the following aims:

- a) To establish baseline statistics about the health* and wellbeing of 18 to 24-year-olds studying at a South African University. Of interest are similarities and differences in patterns of risk and protective factors among different genders and population groups.
- b) To evaluate similarities and differences with Western research on patterns of risk behaviour, poor outcomes and coping style among young South Africans in this age group. Of interest are the clusters of risk behaviour and poor health outcomes that have been found to occur in developed countries and among South African adolescents at high schools.
- c) To investigate the influence of some of the environmental risk factors that have been found to influence young people's behaviour in industrialised countries.

1.4 Hypotheses

1. There is likely to be a gender effect, with more men than women involved in general risk taking, sexual risk taking and substance abuse, and more women than men suffering from depression.
2. Clusters of risk behaviours and poor health outcomes will occur.

*Throughout the study, 'health' is used holistically to refer to the physical and mental health and wellbeing of young people.

3. Different coping styles will be associated with different patterns of risk behaviour and health outcomes. Specifically, avoidance coping will be positively correlated and approach coping will be negatively correlated with risk behaviour and poor health outcomes.
4. Environmental risk factors (low family and peer support and low financial support) will be positively correlated with risk behaviours, poor health outcomes and avoidance coping strategies, and negatively correlated with approach coping strategies.

1.5 Outline of Methodology

This section briefly outlines participants, instrument development, selection of variables, and multidimensional analysis. Methodology is more fully described in Chapter 5.

1.5.1 Subjects and instrument development

A questionnaire (see Appendix B) was developed from a pilot study followed by focus group discussions, and reference to a selection of standardised and validated survey items. The questionnaire contained items on many aspects of health and wellbeing and was sent to 2000 randomly selected students between the ages of 18 and 24 years old at the University of Natal. The questionnaire was completed and returned by 678 students. Results provided information on diet, activities, relationship with family and peer group, financial status, access to health care, academic and career progress, coping style, and risk behaviours and poor health outcomes such as substance use, exposure to reckless or violent behaviour, sex related risks, and depression.

1.5.2 Selection of variables

Experimental variables were identified from a pilot study, focus group discussions, and findings from recent international studies of young people (Bond et al, 2000; Blum & Rinehart, 1999; Tonkin et al., 1999). Of interest were risk behaviours, poor health outcomes, coping style and environmental risk factors. Protective factors were documented in descriptive research but analysis of their influence on health outcomes was beyond the scope of this study. The sample was organised by gender and race (black, Indian and white).

◆ Risk behaviours and poor health outcomes

Scales to rank young people's engagement in the following risk behaviours and poor health outcomes were developed:

- a) Substance use (alcohol, tobacco, marijuana, and a range of non-prescription drugs including ecstasy, psychedelics, barbiturates, amphetamines, cocaine, and mandrax).
- b) General risks involving reckless or aggressive behaviour (motor vehicle accidents, drunk driving and being the passenger of a drunk driver, victims of aggressive or violent behaviour, sense of personal safety, and serious sporting injury).
- c) Risks related to sexual behaviour (including condom use, sexually transmitted diseases, HIV, multiple sexual partners, unwanted pregnancy/fatherhood, sexual harassment and rape).
- d) Depression and suicidal behaviour (measured using the CES-D Scale, Radloff, 1977).

◆ Coping style

Coping responses to stressful situations were investigated using the Coping Responses Inventory (Moos, 1993). Results of this scale reveal young people's preferred coping styles (approach and avoidance). Each style has different implications for the management of stress, engagement with risk behaviour, and health outcomes.

◆ Environmental risk factors

Scales to rank young people's exposure to two environmental risk factors were developed.

- a) Low family and peer support
- b) Low financial support

1.5.3 Analysis

Prevalence data was examined for differences in the risk profiles and coping styles of men and women and of black, Indian and white students. A cross-sectional analysis of the data was undertaken to test:

- a) Gender differences in the risk profile and coping style of young people.

- b) Clustering trends in the operation of risk behaviour and poor health outcomes. Correlations between the four categories of risk: substance use, general risks, sexual risks and depression were expected.
- c) The relationship between coping style, the four categories of risk, and environmental risk factors. Approach coping strategies are generally associated with better problem management, less engagement with risk behaviour, and healthier outcomes. It was expected that avoidance coping would be positively correlated and approach coping negatively correlated with the four categories of risk and with environmental risk factors.
- d) The relationship between environmental risk factors (low family and peer support, and low financial support) and the four categories of risk. It was expected that environmental risk factors would have a strong relationship with risk behaviours and poor health outcomes.

Chapter Two

Risk and Protective Factors

Reviews of patterns of risk and protective factors in the lives of adolescents and young adults reveal a number of challenges to healthy development, as well as indicating factors that mitigate against risk and promote resilience (Compas et al., 1995; Foxcroft, 1997; Lerner & Galambos, 1998). This section provides a brief description of common health problems faced by young people and outlines some of the factors that have been found to promote good developmental outcomes. The exploration of the interaction of risk and protective factors in multiple contexts including the biological, psychological, social/interpersonal, institutional, cultural and historical contexts is discussed in Chapter 4.

2.1 Risk behaviour and poor health outcomes

There has been broad agreement about patterns of risk behaviour and poor health outcomes that affect adolescents and young adults in developed countries (Bond et al., 2000; Blum & Rinehart, 1999; Tonkin et al., 1999). Research has shown that young people are vulnerable in varying degrees to health problems related to:

- a) Substance use (tobacco, alcohol, marijuana, and other non-prescription drugs).
- b) Risks and poor health outcomes related to sexual behaviour (early sexual debut, unsafe sex practices, rape and sexual harassment, STDs, HIV, teenage pregnancy, and teenage parenting).
- c) Depression and suicidal behaviour.
- d) Reckless behaviour (motor vehicle accidents and unintentional injury).
- e) Antisocial behaviour (gang membership, violence, weapons, and crime).
- f) Educational underachievement and dropout.
- g) Diet (eating disorders and obesity).

2.2 Resilience and protective factors

Protective factors that increase resilience have been found to operate in a wide range of contexts from the proximal (internal individual factors) to the distal (external sociocultural/historical factors) (Bernard, 1999; Jessor, 1998; Lerner, 1995). Factors that have all been found to promote resilience and protect against poor outcomes include:

- a) At the individual level, personality factors including perceived self-competence, coping style, social skills, academic success, and religious affiliation or belief in the moral order.
- b) At an interpersonal level, close, supportive family relationships with a sense of connectedness or attachment to family members as one of the most important protective factors.
- c) Supportive school and training environments where young people feel connected to their peers and the institution, and where there is a perceived absence of prejudice and a perception of fair treatment.
- d) Supportive and stable communities where there are rich social networks and opportunities and rewards for pro-social involvement.
- e) Social institutions that support development such as access to health care, education, training, and employment.

The above descriptive findings are well documented by Blum & Rinehart, 1999; Bond et al., 2000; Compas et al., 1995; Jessor, 1998; Lerner & Galambos, 1998; Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger & Udry, 1997; Steiner et al., 1998; Tonkin, et al., 1999; Turz, 1997; Udry, et al., 1998; WHO, 1997.

2.3 Risk factors in developing countries

In developing countries there has been less focus on adolescence as a distinct developmental period and, where statistics are available, they tend to be a part of biomedical data. Young people in the developing countries face similar hazards to those in developed countries, but also have to contend

with additional difficulties. For example in the First World, schooling problems are not usually the result of lack of resources or educational facilities, but may arise out of underachievement, failure and drop out. In the least developed countries, only 13% of girls and 22% of boys enroll for secondary education, and 8 out of 10 young people are unemployed, largely because of structural, political and economic problems (WHO, 1995). Also, in industrialised countries, health problems related to diet are obesity, eating disorders and body image concerns, while in developing countries childhood malnutrition and its sequelae are common. Also, hazards related to sexual behaviour in developing countries are affected by lower standards of health care and include unsafe abortions, maternal mortality, and higher incidence of STDs and HIV (Richter, 1997; South African Health Review, 1995; Youth Health, 1999). Of particular concern in South Africa is the extremely high risk of HIV infection among 15-25 year olds. The rate of infection at 15 years of age is low but it peaks at the age of 26 among women and 32 years among men. Reliable data from women attending ante-natal clinics throughout the country show prevalences of HIV infection between 8% in the Western Cape and 33% in KwaZulu/Natal (Williams, Gouws, & Abdool Karim, 2000). The peak prevalence is consistently about 25% higher among women than men and prevalences have reached up to 60% in some groups of 25-year-old women (Williams, Gouws, Colvin, Sitas, Ramjee & Abdool Karim, 2000).

In South Africa, young people face the additional challenge of the legacy of *Apartheid*. A disrupted education system, high levels of exposure to violence, fragmentation of families and communities, and lack of institutional support in the areas of health and welfare have taken their toll on the healthy development of young people (Turton, Straker, & Moosa, 1991).

Research in both developed and developing countries has consistently found that poverty exacerbates health problems and vulnerability to risk factors. The pervasive effects of poverty on health, education, welfare dependence, employment opportunity, and crime creates self-sustaining chains of adversity that contribute to a marked increase of poor outcomes for young people (Ammerman & Hersen, 1997, Lerner & Galambos, 1998; WHO, 1995).

2.4 Clustering of risk and protective factors

Research has consistently found that risk behaviours and poor health outcomes tend to be clustered together and that the occurrence of one risk factor increases the likelihood of the co-occurrence of others. Clustering of risk behaviours has been well documented in Western research. For example, Lerner & Galambos (1998) noted clustering of risk behaviours in a review of studies from the USA. They identified 5 broad categories of risk: Substance use, risks related to sexual behaviour, school underachievement failure and dropout, violence and delinquency, and youth poverty. They estimated that two or more of the categories of risk affected approximately 50% of young people, while approximately 10% were affected by all of the five categories. Steiner et al. (1998) also identified coherent categories of risk behaviour in a study of high school students in the USA. They found that sexual risk taking, substance use, general risk taking (including reckless behaviour), and depression clustered strongly together. Links between smoking, drinking, reckless behaviour, early sexual initiation, teen pregnancy and STDs have also been documented in research from Australia, Europe, and Canada (Bond et al., 2000; Jessor, 1998; Tonkin et al., 1999).

In South Africa, Flisher et al. (1996a; 1996b) have reported evidence of clusters of risk behaviour in a survey of 7 340 high-school students in the Cape Peninsula. Their investigation of the relationship between risk behaviours among young people led to the suggestion of an adolescent syndrome of risk behaviour. For example, they found significant relationships between many adolescent risk behaviours including substance use, sexual behaviour, exposure to violent behaviour and weapons, reckless behaviour such as walking home at night from beyond the neighbourhood, and attempted suicide.

Protective factors also occur in clusters and the occurrence of one protective factor increases the likelihood that others will be found (Blum & Rinehart, 1999; Jessor, Van Den Bos, Vanderryn, Costa & Turbin, 1995; Resnick et al., 1997). For example, in the Add Health Survey in the USA, family connectedness (closeness, caring and satisfaction with parental relationship) was associated with both the number of joint parent and adolescent activities, and a parent present in the home at key times during the day. Clusters of protective factors in family and school environments have been shown to decrease risk behaviour and poor outcomes, but it has also been found that the presence of a single protective factor reduces the likelihood of poor outcomes even when there is exposure to a number of risk factors (Bond et al., 2000).

2.5 Gender differences

Earlier research found significant gender differences in the pattern of risk behaviours and poor health outcomes. In general girls seemed more vulnerable to depression, the adverse consequences of sexual behaviour, and eating problems. Boys scored higher on general risks, substance use, sexual risk behaviour, and violent or antisocial behaviour (Compas et al., 1995; Leadbeater, Blatt & Quinlan, 1994). More recent surveys have revealed a trend towards gender equalisation in a number of risk behaviours and poor outcomes including substance use, general risk taking, sex related risks.

Nonetheless, girls appear to remain more vulnerable to depression and eating disorders (Bond et al., 2000, Tonkin et al., 1999, Udry et al., 1999). Findings on gender differences are more fully discussed in Chapter 4, Section 4.1.

Chapter Three

The history of risk and resilience research

After the Second World War, researchers in the field began the exploration of factors that might place children 'at risk', or predispose them to pathological outcomes. Stressors such as war, institutionalisation, or a parent suffering from a psychiatric disorder such as schizophrenia were investigated to see if they would predict pathology in the life of the individual child. Interest in risk factors during adolescence was stimulated by longitudinal studies. This section describes the evolution of risk factor research, explores resilience and coping, outlines research on the developmental lifespan, and concludes with a summary of four important trends that emerged in this field during this time.

3.1 The evolution of risk factor research

At first risk factor research focussed on the individual child in attempts to predict and explain psychiatric disorders. Over time there have been two conceptual shifts: a) from an intra-individual focus to a broader perspective of interpersonal and community characteristics that might put children and adolescents at risk; b) from a narrow interest in mental illness to a broader conceptualisation of poor health outcomes whereby physical and mental health and development are compromised in some way.

During the 1960s and 70s researchers were interested in childhood stress, including the links between stressful life events and the subsequent development of a psychiatric disorder. In the field of child psychology, attachment theory and research directed investigations into the detrimental effects of institutionalization on babies and children (Bowlby, 1969). This raised the question of the effects of other types of separation and loss suffered by children. Garmezy and Rutter (1983) studied the effects of hospitalizations, bereavement, divorce and war on children. At the time, most attention was paid to the direct effects of adverse experiences in leading to overt mental health disorders. These studies attempted to track the maladaptive outcomes of individual children who had been subjected to stressful life events or had parents who suffered from various psychiatric disorders such as schizophrenia or depression. The field widened to investigate psychosocial stressors such as maternal deprivation,

family discord, parental rejection, and neglect. The concept of 'risk factors' in the lives of children and young people became well established. It became possible to identify a number of static epidemiological markers that were statistically associated with the increased incidence of psychiatric disorders. They included age, gender, IQ, family size, paternal criminality, maternal psychiatric disorder and low socioeconomic status (Garmezy, 1987; Garmezy, Masten & Tellegen, 1984; Rutter, 1985; Rutter, Tizard, Yule, Graham & Whitmore, 1976).

Serious interest in the effect of patterns of family and peer interaction on development arose. For example: a) Clark's (1983) research among minority groups in the USA showed that patterns of family and peer interaction within the family and school were important indicators of developmental outcomes; b) Rutter's (1985) work among poor inner city London children revealed the importance of supportive cohesive family units and a school environment which fosters the acquisition of both cognitive and social competencies; and c) Garmezy and his colleagues looked, not only at the personality of the individual child, but also at the family milieu and external support system (Garmezy et al., 1984).

Garbarino and Sherman (1980) were among the first researchers to use Bronfenbrenner's ecological model (1979) that takes into account family, school, community and the wider social environment on patterns of risk and resilience. They developed a theory of high-risk neighbourhoods whereby families or single parents were relatively isolated from a rich social network. They tested this concept of social impoverishment in a study which matched two neighbourhoods for socio-economic, demographic and attitudinal factors but which had markedly different rates of child abuse and neglect. They found that in the neighbourhood with the higher incidence of abuse and neglect, there was less "neighborliness" (p. 191), fewer social support networks such as scouts or school contacts between parents and teachers, and more use of institutionalized social treatment agencies. This research highlighted the importance of socially rich networks and community involvement in promoting resilience.

Garbarino (1985) went on to examine each of the systems in the ecological model that contain the child. Micro-systems are at the home level where the child typically interacts with his/her family. Meso-systems reflect relationships between contexts such as home, school, neighborhood, playgroup, or church. Exo-systems include workplace norms of the parents and educational policy in the child's school, which may impact on parents, peers or teachers, and thereby influence the social richness of the child's systems. The macro-system is the broad ideological and institutional pattern of a particular

culture or subculture that may dictate the norms of development and public support of families. The number and diversity of links in each of the systems indicate the richness of the social networks that support development. Garbarino concluded that there is a need for socially dense interconnections that provide supportive reciprocal networks. He asserted that the principle of social density applies to urban, suburban, and rural settings. Recent studies have confirmed the salience of social connectedness as a protective factor (Bond et al., 2000; Resnick et al., 1997; Tonkin, et al., 1999). The latest findings on the influence of multiple contexts are discussed Chapter 4, Section 4.3.

3.2 Review of resilience and coping research

Historically the boundaries between resilience and coping have been somewhat blurred. Coping has been defined as the cognitive and behavioural efforts made by an individual to master, tolerate or reduce stressful internal and/or external demands that are appraised as taxing or exceeding the resources of an individual responses (Compas, 1987; Lazarus & Folkman 1984; Moos & Swindle, 1990). Resilience is the result of successful coping efforts together with other protective factors that allow the individual to thrive in spite of difficult or stressful circumstances. (Garmezy & Rutter, 1983). This section outlines some of the core research into resilience and coping.

3.2.1 Resilience

During the 1970s research focussed on the question: Why some children who might be expected, on the basis of the psychosocial stressors/risk factors of their lives, to develop pathology, do not follow predicted outcomes? What could be the factors that differentiate resilient children from those in similar circumstances who do develop pathology? Four important studies explored these questions:

a) Children of the Garden Island

The 30-year longitudinal study of 698 babies born on the Hawaiian Island of Kauai had two main goals: to assess the long-term consequences of pre and peri-natal stress, and to document the effects of adverse conditions in early childhood on children's physical, cognitive and psycho-social development (Werner, 1989). Some of the risk factors identified included birth stress/trauma,

poverty, discordant families, and uneducated, alcoholic or psychiatrically disturbed parents. As the study progressed, Werner took a special interest in certain “high risk” children who overcame the adversities of their lives and went on to become healthy personalities with stable careers, good interpersonal relationships, and the desire to seize opportunities to improve themselves. Some resilience factors identified in the study included intra-individual characteristics such as temperament and IQ as well as the ability to establish an ongoing relationship with a parent or concerned adult. Interest in coping strategies that resulted in healthy outcomes in the face of high levels of psychosocial stress was stimulated.

b) Project competence

Garmezy (1987) described the research program undertaken by the University of Minnesota. This longitudinal study initially studied children who were considered to be vulnerable to the development of schizophrenia. A decade of studies with three groups of children (children of schizophrenic mothers, children of depressed mothers, and children referred for conduct disorder problems) did not show all of the expected deficit outcomes. The project was expanded to include adolescents, and to investigate “stress resistant” or “resilient” individuals from stressful backgrounds (one group of inner city children, one group of children with congenital heart problems, and one group of handicapped children). Results showed four modifying factors: gender, IQ, socio-economic status, and positive family attributes. Garmezy postulated that protective factors similar to those identified by Werner, can be broadly grouped into: factors which involve the personality of the child and his/her use of successful coping strategies; factors derived from a supportive family environment; and factors derived from an external support system which encourages and reinforces a child’s coping efforts.

c) The Isle of Wight studies

Rutter and his colleagues (Rutter et al., 1976) tracked the incidence of psychiatric disorder in children and young people on the Isle of Wight and in an inner London borough. Protective factors for children and adolescents in stressed conditions had begun to emerge. Rutter et al. (1976) focussed attention on the concept of resilience. He said:

“There is increasing interest in the phenomenon of resilience, as shown by the young people who ‘do well’, in some sense in spite of having experienced a form of ‘stress’ which in the population as a whole is known to carry a substantial risk of adverse outcome.” (p. 323)

Rutter (1985) reported three factors that were correlated with good outcomes: Successful coping strategies that resulted in the establishment of at least one stable relationship with a caring adult (even in cases of marital discord or foster care); protection from a supportive cohesive family unit; and protection from a school environment which fostered cognitive and social competencies.

d) Tracking high and low achievers in poor black families

Clark (1983) researched the role of family culture and family values in African-American families. He showed that certain patterns of interaction in the homes and schools of high achievers fostered resilience that resulted in individuals with social skills, a sense of power and self-regard, cognitive skills and goal-directed behavior. He showed that even within poor urban families differences occur in the quality of family life that families are able to provide and that family cohesiveness contributes to the development of attitudes, knowledge and skills which foster academic success.

3.2.2 Coping

Successful coping strategies have been shown to increase resilience (Garmezy & Rutter, 1983). Demands on coping processes have been shown to operate particularly during times of a focal life crisis and in periods of transition including developmental transitions such as adolescence and young adulthood (Moos & Swindle, 1990). A review of the literature on coping has shown that the rapid change that accompanies maturation may be perceived as stressful and elicits a range of coping responses. Potential stressors include biological and reproductive maturation, renegotiation of boundaries within the family, changes in school, opportunities or lack of them for tertiary training, and career development (Garmezy, 1987; Garmezy & Masten, 1990). It is well documented that coping styles can mitigate or exacerbate the impact of a stressor on personal functioning (Altshuler & Ruble, 1989; Moos & Schaefer, 1990; Moos & Swindle, 1990).

Exploration of coping style has focussed on two main conceptual processes. The first emphasised the orientation or focus of coping. That is, coping efforts intended to act on the stressor named 'problem-focussed coping', and coping efforts intended to regulate emotional states associated with the stressor named 'emotion focussed coping'. The second process emphasised the method of coping. That is, coping efforts that use either a cognitive or behavioural method (Compas, 1987; Moos & Schaefer, 1990).

Moos (1993) developed a theoretical model to explore coping responses that combines both the focus and method of coping theories. The model considers the orientation or focus of coping and divides the coping style into "Approach coping" and "Avoidance coping". It also incorporates both the cognitive and behavioural methods of coping.

- Approach coping responses that use a cognitive method are a) logical analysis (attempts to understand a stressor and its outcomes); and b) positive reappraisal (attempts to look at the problem in a positive way while still accepting the reality of the situation). Approach coping responses that use a behavioural method are a) seeking guidance and support (attempts to manage the situation by enlisting help); and b) problem solving (attempts to take action and deal directly with the problem).
- Avoidance coping responses that use a cognitive method are a) cognitive avoidance (attempts to avoid thinking realistically about the problem); and b) acceptance or resignation (attempts to accept the problem as a situation that cannot be changed). Avoidance coping responses that use a behavioural method are a) seeking alternate rewards (attempts to replace the losses involved by getting involved in other activities or finding other satisfactions); and b) emotional discharge (attempts to reduce stress by expressions of emotion or behaviours which reduce tension in the individual such as smoking, alcohol, or some form of risk taking).

Moos (1993), Moos & Schaefer (1990), and Erikson, Feldman, and Steiner (1997) have demonstrated the predictive validity of coping in relationship to mental and physical health. They showed that each coping style (approach or avoidance) has different health implications. Approach coping is generally associated with healthy outcomes, while avoidance coping shows stronger associations with poor health outcomes such as depression. Steiner et al., (1998) used the Coping Responses Inventory to test the relationship between coping style, risky behaviour

and poor health outcomes among young people at high school level. They found that approach coping correlated negatively with high risk behaviours, mental health problems and eating problems. Avoidance coping correlated positively with high-risk behaviours and mental health problems. It would appear that a fruitful line of inquiry into the behaviour and health outcomes of young people should include the coping style of the individual. It seems possible that the use of the approach coping method may have a direct effect on young people's successful efforts to establish and maintain helpful and caring relationships with both adults and peers. It is also possible that young people who have less caring relationships with family and friends may be shown to use predominantly avoidance coping methods.

3.3 Review of developmental life-span research

Together with a broader contextual focus came an interest in development and change over the whole lifespan. Thinking about pathways of development and the issues of continuity and discontinuity has shifted during the past half century. During the 1950s it was generally agreed that there was a high degree of consistency of personality across time. In the 1970s this continuity was contested and the argument for discontinuity arose. The suggestion that behaviour was constrained by situations emerged (Rutter, 1988). From the early 1990s, it has been concluded that both continuities and discontinuities in behaviour are evident (Compas et al., 1995; Rutter & Rutter, 1993; Swadener & Lubeck, 1995). While this research has an important bearing on the understanding of the development of young people, a thorough evaluation of longitudinal research is beyond the scope of this study.

3.4 Summary of research trends

From the above outline of significant studies in this field, four trends emerged:

- a) Risk factor research led to questions around the reason why some children, in spite of the number of risk factors in their lives, did not develop the expected pathological outcomes. Questions arose about the protective factors that influenced healthy development. Resilience and coping in the face of adverse circumstances had become a focus of research interest.

- b) An exploration of both proximal and distal factors that influence development began. The focus widened from individual pathology to explore risk and resilience factors within the family and then within the broader social context. The importance of psychosocial stressors and environmental factors was recognised.
- c) Longitudinal studies provoked an interest in developmental lifespan research. Adolescence and young adulthood generated interest because of the unique risk factors that seemed to characterize this turbulent period of development. Research questions explored whether there were continuities or discontinuities in patterns of behaviour first noticed in childhood and what the environments were that contributed to stability and change.
- d) Reliance on static epidemiological markers to predict pathological outcomes has been replaced by an exploration of the interaction between risk and protective factors that influence both poor and healthy developmental outcomes. Conceptual models that provide a framework for the exploration of risk and protective factors are the developmental lifespan model, the biopsychosocial model, and the contextual model. These are presented in more detail in the section to follow on conceptual frameworks.

Chapter Four

Conceptual frameworks

By 1970 it was clear that there was no linear cause and effect between static demographic markers and poor outcomes, but rather a multiplicity of pathways that could lead to poor or adaptive outcomes in the lives of adolescents. Researchers recognised that genetic mechanisms, biological substrate, cognitive and social skills, coping styles, self-esteem and self-efficacy, familial, community and broader social contexts all influenced development during adolescence. For some time research lacked a coherent conceptual or theoretical framework. However, more recently, Systems Theory has stimulated interactive models that explore pathways of adolescent development as a function of risk and protective factors and processes that interact over time within and between different environments

4.1 A biopsychosocial model

- a) *Biological processes* that were found to influence adolescent risk behaviour and poor health outcomes included the timing of biological maturation and puberty, hormonal changes, and gender differences (Brooks-Gunn & Reiter, 1990). Specific problems such as adolescent aggression and depression have been found to be associated with hormonal changes. (Brooks-Gunn, Peterson & Compas, 1994; Buchanan, Eccles & Becker, 1992; Susman, Inoff-Germain, & Chrousos 1987). Also Peterson, Sarigiani, & Kennedy (1991) and Nottelmann, Susman, Inoff-Germain, Cutler, Loriaux, and Chrousos (1987) showed that the onset of puberty early or late relative to the peer group is an important predictor of adolescent mood and behaviour.
- b) *Psychological processes* that influence risk behaviour and health outcomes were found to include personality, coping style, cognitive and social skills, self-efficacy and attribution style (Harter, 1990). Eccles, Midgley, Wigfield, Buchanan and Reuman (1993) investigated the interaction of the stage of development and the impact of the environment on adolescents' experience of family and school. This research showed that individuals, as a result of temperamental, physical and behavioural factors, evoked different responses from the environment. Poor outcomes were viewed as a function of individual-context mismatches.

- c) *Social processes* that influence healthy development were found to include parent child relationships, family factors, school and community environments, peer relationships and the wider socio-cultural context (Brown, 1990).

The following section outlines two biopsychosocial models that attempt to provide a comprehensive explanation of two of the pathological outcomes which are commonly diagnosed in young people: depression and antisocial behaviour.

4.1.1 A biopsychosocial model of depression

Depression is a significant mental health problem among the 15 to 24-year-old age group. The most significant risk factors for depression are:

- ◆ age, with significant increases in depression during mid-adolescence compared to childhood (Peterson, Compas, Brooks-Gunn, Stemmler, Ey, & Grant, 1993);
- ◆ gender, with adolescent girls at least twice as likely to develop depression compared with boys (Nolen-Hoeksema & Girgus, 1994), and a family history of depression (Cummings & Davies, 1994);
- ◆ exposure to stressful life events or circumstances (Compas, Grant, & Ey, 1994).

It is estimated that 30 – 40% of adolescents suffer from depressed moods, 5 – 6% suffer from anxious depressive syndrome, and 2 – 3% suffer from depressive disorders (Compas Ey & Grant, 1993).

Research has shown that some biological factors that may be implicated during adolescence include neuroendocrine processes, neurotransmitter dysregulation, biorhythm dysregulation (e.g. sleep patterns) and genetic risks because of family history (Brooks-Gunn et al., 1994). Jacobson and Rowe's (1999) research on sibling pairs from the Add Health Survey showed that genetic influences on depression are stronger for female adolescents. Their research ruled out sex specific genes that were thought to have been 'activated' during puberty. Instead they showed that the genetic influence on depressed mood among females was as a result of more penetrant genes that have more visible phenotypic effects among female adolescents, possibly due to hormonal influences.

4.1.2 A biopsychosocial model of anti-social behaviour

There has also been a research effort to integrate findings about adolescent aggression and antisocial behaviour. Static markers of risk factors associated with adolescent aggression and delinquency have been found:

- ◆ demographic variables (e.g. gender, low socio-economic status, and large family size);
- ◆ environmental factors (e.g. inner city crime and poor housing);
- ◆ parent behaviours (e.g. parental interaction, poor supervision, and power assertive punishment style); and
- ◆ family characteristics (e.g. paternal alcoholism and/or criminality, low maternal competence and parental absence) (Cohen, Brood, Cohen, Velez & Garcia, 1990; Farrington, Loeber, & Van Kammen, 1990; McCord, 1990; Moffit, 1993).

Various hypotheses have been generated with a view to finding an interactive model to fit the available findings. Two types of antisocial/aggressive behaviour have been proposed:

- a) Chronic aggression that develops in childhood as a result of the temperament and interactional style of the child, and persists through adolescence into adulthood (Caspi, Elder & Herbener, 1990). Moffit (1993) suggests that this behavioural style is the result of an interaction between the individual, who may have subtle congenital neuropsychological deficits, and an environment that rewards aggressive behaviour. Some support for this hypothesis has been found by Farrington et al. (1990) and Caspi & Moffit, (1991).

Jessor (1998) extended the model and proposed that problem behaviour is sustained, not only by the interaction of individual bio-genetic characteristics and the social environment, but also by the perceived environment, coping style and personality characteristics of young people. He showed that each of these factors, either combined or independent of each other, could predict aggressive or antisocial outcomes.

b) A model of transient antisocial behaviour with proximal causes has also been proposed. The person-environment fit model proposed by Eccles et al. (1993) might account for behaviour problems when school and family environments cease to support adaptive behaviour and fail to recognize and accommodate young people's increasing need for more autonomy, control, and participation in decision making. Moffitt (1993) proposed a maturity gap theory for Western adolescents, whereby most adolescent delinquency can be explained by the fact that young people in industrial countries reach biological maturity long before they receive adult status. In the model, transient antisocial behaviour may be explained as an avenue of self-definition and an expression of autonomy for some adolescents. This might be especially salient for boys. It is also possible that hormonal processes and high testosterone levels play a role in the transient expression of aggression (Inoff-Germain, Arnold, Nottelmann, Susman, Cutler, & Chousos, 1988).

Both of the above models appear to confirm gender differences in poor mental health outcomes among young people. Also of interest are the salience of family factors such as management style, and the link between coping style and depression. It is not clear however, whether it would be possible to generalise results from this mainly Western research into a Third World context because of differing individual and socio-cultural conditions. Also the research reviewed used individual pathological outcomes as the starting point for investigation. It is evident that fruitful lines of inquiry will be generated by more comprehensive surveys of normal populations of young people.

4.2 Development of the contextual model

A contextual model has evolved out of recent comprehensive surveys of young people in the USA, Europe, Australia, and Canada. The designs of these surveys were intended to provide as much information as possible about normal young people and the widely diverse contextual and environmental factors influencing them. They were also intended to accommodate individual differences that affect risk behaviour and health outcomes for young people. This section outlines the purpose and scope of each survey and gives a brief review of central findings from cross-sectional analyses of the data.

4.2.1 Youth Health Survey: USA

The National Longitudinal Study of Adolescent Health: Add Health was conducted in the USA (Udry et al., 1998). This is a large nationally representative longitudinal study of adolescent health and health-related behaviours, and of the causes and consequences of these behaviours in the USA. The primary sampling frame included all high schools in the USA. A random sample of 134 high schools was selected taking into consideration enrollment size, region, school type, ethnicity and urbanicity. In 1994/1995 an in-school questionnaire was completed by over 90 000 students. Information was also acquired from school administrators regarding health services, school policies, school environments and characteristics. Subsequently a random sample of over 15 000 adolescents, stratified by grade and gender, was selected for in-home interviews that included a parent interview. These were collected in two phases during 1995 and 1996. Sub-samples for in-home interviews included samples of adolescents with disabilities, well educated African-American families, other minority racial and ethnic groups and sibling pair samples.

The main premise of the study was that the social context influences the health-related behaviours of young people and that understanding the context is essential to guide efforts to modify health behaviours in this population. The survey was designed to measure the effects of family, peer group, school, neighbourhood, religious institution and community influences on behaviours that promote good health, such as nutritious eating, exercise and seat belt use. It also assessed health risk behaviours such as tobacco, drugs and alcohol use, violence, antisocial behaviour, and sexual activity, and poor outcomes such as depression and teenage pregnancy. Because of the sheer volume of the data collected, a complete analysis of the survey is expected to take a decade or more.

Resnick et al. (1997) and Blum & Rinehart (1999), however, have reported initial findings. In a cross-sectional analysis, Resnick et al. examined the patterns of risk behaviour and measured the influence of environmental factors within the family and school contexts on common risk factors including emotional distress, suicidal thoughts and behaviours, violence, substance use (tobacco, alcohol and marijuana), and sexual behaviour. Expected clustering of risk behaviours and poor outcomes occurred. Individual characteristics that affect risk behaviour and health outcomes were diverse and to some degree context dependent. For example, violent behaviour

and substance use was linked to weapon and drug availability. The other major finding of this analysis was that adolescents who felt a sense of connectedness with their parents and their schools were less likely to indulge in risky behaviour.

Blum and Rinehart (1999) reported that the home environment emerged as central in shaping health outcomes for North American young people. The analysis controlled for the number of parents in a household, socio-economic status, race and ethnicity. They found that young people who reported feeling connected to a parent, cared for, and a sense of satisfaction with family relationships, were protected against many risk behaviours and poor outcomes including substance use, emotional distress and suicidality, violent behaviour and early sexual activity.

The school environment was examined with several measures, of which one emerged as a key protective factor. Feeling connected to the school (a sense of being fairly treated, close to peers and a part of the school) was protective against violent and aggressive behaviour, substance use, and early sexual debut (Blum & Rinehart, 1999). These findings represent a shift in focus away from the study of individual pathological outcomes as a starting point and towards an understanding of the environmental factors that influence both protective and risky health behaviour.

4.2.2 Youth Health Survey: Australia

A survey of risk and protective factors was conducted in Australia (Bond et al., 2000). Participants were 9 000 young people at ages 12, 14 and 16 years old in 150 metropolitan and 60 rural schools. The aim of the survey was to profile problem behaviour and poor outcomes, and environmental risk and protective factors, as well as to test the relationship between environmental factors and problem behaviour and poor outcomes. Problems surveyed included substance use, unprotected sex, depression, anxiety and self harm, antisocial behaviour such as bullying and aggression, and homelessness. Similar to the Add Health survey in the USA, this survey took into account the contexts in which young people operate in terms of community, school, and family factors as well as individual and peer group characteristics.

The key finding reported to date is that a strong link exists between the number of environmental risk and protective factors to which young people are exposed and their involvement in problem behaviours. The researchers also found that many diverse problems

shared risk and protective factors, and that the presence of a single protective factor reduced the likelihood of these problems even when there was exposure to a number of risk factors. The results showed that environmental factors, similar to those identified in the USA study, affected young people. “Connectedness”, labelled “attachment” in this study, was found to act as either a risk or a protective factor depending on the young person’s level of attachment to family and school.

4.2.3 Youth Health Survey: Canada

“The Adolescent Health Survey (AHS II)” was conducted in Canada (Tonkin et al., 1999). AHS II was the second survey of adolescent health conducted in the province of British Columbia. In this survey of 25 838 students in grades 7 – 11 in 1998, anonymous questionnaires to determine health status, health promoting practices, and risky behaviours were administered province-wide in randomly selected schools. In line with international trends, the second survey included questions on environmental risk and protective factors including economic status and sense of connectedness with family and school.

Some key findings from the data confirm the salience of environmental risk and protective factors and show the importance of social connections in the lives of young people. Students who reported being strongly connected to their families were less likely to engage in risky behaviours including early sexual debut and substance use. They were also less likely to experience emotional distress or attempt suicide. Conversely, students who reported weak or conflicted connections to their families were at risk for problem behaviour and poor outcomes, especially depression. Students who reported a sense of belonging and involvement with school had higher educational expectations and were less likely to be involved in risk behaviour.

4.2.4 Youth Health Surveys: Europe

The World Health Organisation in Europe has conducted four international youth health surveys in 23 European countries during 1985/6, 1989/90, 1993/4 and 1997/8. (WHO, 2000a). Core questionnaire items have included questions on general health and wellbeing, exercise and leisure activities, dietary habits, substance use and sexual behaviour over all four surveys. The

most recent survey included questions covering environmental factors such as relationship with parents, the school experience, and socioeconomic status. This is in line with the growing international awareness of the importance of environmental factors on the physical and mental health of young people.

Analysis of the most recent survey has shown the expected clusters of risky behaviour as well as associations between family and school problems and risk behaviour. One of the key findings concerned financial status and perceived wealth. It was found that, in all the European countries surveyed, greater wealth was associated with subjective happiness, confidence, not feeling helpless, perceived health and infrequent experience of physical symptoms such as headaches (WHO, 2000b).

4.3 The contextual model

Some research has criticised the construction of a model from interpretation of data on an international level because risk originates in a multiplicity of psychological, social and cultural factors. Turz (1997) outlined some of the methodological problems that are commonly encountered during conceptualization, data gathering and analysis of adolescent risk factors. She criticized the survey approach as being too superficial and rigid to identify deeper causes of observed differences. Nevertheless a contextual model of risk and poor health outcomes may provide a conceptual framework for commonalities and differences and a baseline for qualitative studies that explore the social value, meaning and utility of risk in different international settings.

It has become clear from recent national longitudinal studies that both risk and protective factors operate in many contexts and, even when demographic factors are controlled for, they are strongly linked to behaviour and health outcomes. Generic risk and protective factors may be described as those factors that appear to operate in most settings regardless of national or cultural differences, and those factors which affect the whole range of health outcomes and behavioural risks. Recent studies have confirmed that the presence of one or more risk factors in the lives of adolescents increases susceptibility to social, behavioural and health problems. The presence of one or more protective factors promotes positive social development and decreases vulnerability to social, behavioural and

health problems. In addition, for both risk and protective factors there is a cumulative effect (Blum & Rinehart, 1999; Bond et al., 2000; Resnick et al., 1997; Tonkin et al., 1999)

Certain generic risk and protective factors have been identified. For example, North American, Australian, Canadian and European research has confirmed that a sense of emotional connectedness (sometimes termed attachment) to family and school is an important protective factor. However, there are also domain-specific factors that influence health outcomes. For example, domain-specific factors that affect health outcomes include the availability of guns in certain communities in the USA, and the availability of drugs in certain areas of Australia. This section describes the contextual model that provides a framework for the operation of risk and protective factors across different contexts.

4.3.1 The wider socioeconomic and political context

The wider socio-economic and political context of young people, as outlined in Bronfenbrenner's ecological model, impacts directly on their development (Bronfenbrenner, 1979). This model was specifically taken up and tested by Garbarino (1985) who showed that the macro-system, with its broad ideological and institutional patterns of a particular culture or subculture, as well as specific government policies on health, welfare and education, has specific influences on development of young people. This is illustrated in the South African context where the *Apartheid* policy and migratory labour system resulted in the dislocation of communities and families and the social impoverishment of communities who were forced to flee violence or relocate because of government policy. (Turton et al., 1991). Social impoverishment in South Africa is compounded in many areas by economic impoverishment.

The impact of poverty may be described as a generic risk factor as it exacerbates all health problems, risk behaviours and poor outcomes for young people. All over the world, poverty is affecting more people. Even in the developed world, since 1990 more young people live in poverty than in the previous decade. For example, in the USA it is estimated that about 20% of all youth under the age of 18 years are at or below the poverty level, and that poverty disproportionately affects minority youth in the developed world. Poverty in industrialised countries is consistently associated with self-sustaining chains of substance abuse, crime, depression, conduct problems, peer conflict, severe health problems, nutrition deficits, low self-confidence and welfare dependency among young people (Lerner & Galambos, 1998).

4.3.2 The local community

Certain risk and protective factors involving community cohesiveness, mobility, and the sense of connection (sometimes called attachment) to the community may be described as generic. Garbarino's (1985) findings about the concept of social impoverishment where, after controlling for socio-economic and demographic variables, communities with sparse social connections and neighbourhood networks were high-risk environments for child abuse and neglect have been validated in recent studies. For example, in Australia low neighbourhood attachment, community disorganisation, and high number of personal transitions and mobility were all found to increase the risk of problem behaviours such as delinquency and crime. (Bond et al., 2000). In South Africa, the disruption and dislocation of communities because of the policies of *Apartheid* have led to community fragmentation in many areas. Turton et al. (1991) found that both structural community factors and the individual appraisal of threat in violent areas led to high levels of stress and disruption of social networks that support development of young people.

It is of interest that in all quoted international and local studies, community norms favourable to drug use, as well as perceived availability of alcohol and drugs and weapons, resulted in an increase in substance use and involvement in violent behaviour.

Generic protective factors include neighbourhoods that have rich social networks, high attachment levels, and opportunities and rewards for pro social involvement. (Blum & Rinehart, 1999; Bond et al., 2000).

4.3.3 The school or training institution

Generic risk and protective factors in schools may be grouped around the concept of school connectedness (Resnick et al., 1997) or attachment to the school (Bond et al., 2000). In the USA, the Add Health survey used a number of measures to understand the school environment including school type, dropout and attendance rates, class size, teacher training, parent involvement with the school, and characteristics of the student body. Of all measures examined, only a sense of connectedness to the school and the extent to which students felt that fellow

students and teachers were prejudiced were significant. A feeling of connectedness was measured by questions that asked whether students felt that their teachers treated them fairly, whether they felt close to people and school, and a sense of belonging to the school. (Blum & Rinehart, 1999). The sense of connectedness to school was consistently associated with better health, emotional wellbeing, and less engagement with risk behaviours such as substance use, violence and early sexual debut. Conversely, a low sense of connection acted as a risk factor that impacted on risk behaviour and poor health outcomes. In Australia the sense of connectedness was described in terms of commitment to the school. (Bond et al., 2000). Results from this survey also indicate that this is a protective factor. In addition, the Australian survey found that opportunities and rewards for pro-social behaviour was protective and that academic failure was a risk factor.

4.3.4 The family

The family remains the most salient social support network, and optimal adjustment occurs when adolescents engage in age-appropriate autonomous activities whilst maintaining strong ties with the family (Allen, Hauser, Bell & O Connor, 1994; Galambos & Ehrenberg, 1997; Paikoff & Brooks-Gunn, 1991). Parental style, which is authoritative rather than authoritarian or permissive, seems to encourage positive outcomes (Lerner & Galambos, 1998). The most important generic protective factor appears to be young people's sense of connectedness (attachment in the Australian survey) to their families (Bond et al., 2000; Blum & Rinehart, 1999; Resnick et al., 1997; Tonkin et al., 1999; WHO, 2000a). This was measured by questions about feelings of closeness to the family, satisfaction with family relationships, and sense of being loved and cared for. After controlling for demographic variables, this was found to be a protective factor across all health behaviours and outcomes. Other protective factors within the family setting include shared activities, parental presence at key times in the day, parental academic expectations and opportunities (Blum & Rinehart, 1999) and rewards for pro-social involvement within the family (Bond et al., 2000).

Generic risk factors appear to include low levels of family attachment, high levels of family conflict, poor family management, a family history of antisocial behaviour, and suicidal behaviour within the family (Blum & Rinehart, 1999; Bond et al., 2000; Resnick et al., 1997; Tonkin et al., 1999; WHO, 2000a). Domain specific risk factors within the family setting

include household access to guns, alcohol, cigarettes and drugs (Blum & Rinehart, 1999), and parental attitudes favourable to drug use or antisocial behaviour (Bond et al., 2000).

4.3.5 Individual characteristics

Apart from known demographic characteristics such as gender, it is not possible to speak of generic individual risk and protective factors as different national surveys have highlighted different individual characteristics and none of them affects all health and behaviour outcomes. Some common individual protective factors that have been extensively surveyed include self-esteem, social skills and academic success. These have been generally found to protect against emotional distress. Some type of religious affiliation (also called “belief in the moral order”) protects against involvement in high-risk behaviours such as substance use and antisocial behaviour (Blum & Rinehart, 1999; Bond et al., 2000; Resnick et al., 1997; Tonkin et al., 1999; WHO, 2000a).

Common individual risk factors that predict emotional distress include an appearance that is markedly older or younger than year group, academic failure, and a perceived risk of untimely death. Individual risk factors that predict involvement in violence include having been a victim or witness of violence, carrying a weapon, gang membership or interaction with antisocial peers, and selling drug (Resnick et al., 1997). Substance use is predicted by appearing older or younger than peer group, working more than 20 hours per week for pay, same sex attraction, and anticipation of an untimely death (Blum & Rinehart, 1999; Resnick et al., 1997). It has also been found that early initiation of antisocial behaviour often persists (Bond et al., 2000; Compass et al., 1995). It seems that individual differences account for scattered findings of individual risk and protective factors.

4.4 The influence of the contextual model

It has become clear that any investigation of risk and protective factors in the lives of young people must take into account the influence of different contexts including family, school or training institution, local community and the broader social and economic factors that influence their lives. The contextual model provides a framework for the examination of environmental risk factors and their

influence on risk behaviour. A thorough evaluation of family, school and community by means of qualitative research and interviews is beyond the scope of this study. However, three key environmental factors (family cohesiveness, peer support, and financial support) have been included in order to assess their relative influence on risk behaviour, health and wellbeing of students at this University.

Chapter Five

Methodology

5.1 Design

This study, the Survey of Young Adults' Health and Wellbeing, is a random sample survey. The 107-item questionnaire was designed to assess the health and wellbeing of young people between the ages of 18 and 25 years old at university in South Africa. The primary sampling frame was the total population of students at a tertiary educational institution in KwaZulu-Natal. The purpose of the survey was to provide prevalence data as well as information relating to health behaviours and outcomes in this population. A cross-sectional analysis of the data was performed to explore the relationships between risk behaviour, poor health outcomes, coping style, and environmental risk factors. Of interest were:

- ◆ Gender differences in the patterns of risk behaviours, poor health outcomes and environmental risk factors. Gender differences have been consistently found in international studies until recent research (Bond et al., 2000; Blum & Rinehart, 1999; Tonkin et al., 1999) showed a trend towards gender equalisation in the risk profiles of young men and women.
- ◆ Clustering trends between the four categories of risk behaviour and poor health outcomes: substance use, general risks including hazardous behaviour, sexual risk, depression and suicidality. Clustering, or the existence of an 'adolescent risk syndrome', has been found in both South African (Flisher et al., 1996a; 1996b) and international (Steiner et al., 1998) research.
- ◆ The relationship between the four categories of risk behaviour and the environmental risk factors (low family and peer support, and low financial support). Findings that show the importance of environmental factors and the relevance of the contextual model are reported by recent international surveys from the USA (Udry et al., 1998), Australia (Bond et al., 2000) and Canada (Tonkin et al., 1999).
- ◆ The effect of coping style on the four categories of risk and the environmental risk factors. Approach coping strategies were expected to be associated with better problem management, and lower incidence of risk behaviour and poor health outcomes. Avoidance coping strategies were expected to correlate positively with risk behaviours, poor health outcomes and environmental risk factors. Steiner et al. (1998) and Erikson et al. (1997) have shown the importance of coping style on the risk profiles of young people.

5.2 Subjects

A sample of 2000 registered students between the ages of 18 and 25 years old was randomly selected from computer generated University records. The sample excluded foreign students and students outside the age range. As long as they fell within the age range, both undergraduate and graduate students were included. In order to improve response rates, the questionnaire was posted with a personally addressed covering letter that outlined the purpose of the survey and emphasised the anonymous nature of the response. Covering letters (see Appendix A), questionnaires (see Appendix B) and reply paid envelopes were posted to students' home addresses and timed to arrive during the Michaelmas break. For purposes of analysis the sample was divided according to gender and population group (black, Indian and white).

5.3 Instrument Development

The Survey of Young People's Health and Wellbeing Questionnaire was developed in 3 phases:

◆ Phase 1

During 1998, a pilot study was undertaken with 87 young people between the ages of 18 and 25 years. Subjects in the pilot study were a convenience sample of students enrolled for courses in the School of Psychology at the University of Natal, Pietermaritzburg. Subjects completed a questionnaire consisting of 72 items covering respondent characteristics, diet, activities, social relationships, emotional state, substance use, personal and social hazards, and sexual behaviour. Items included both closed and open-ended questions. Following this, a series of focus group discussions with students as members of the target group for the study took place in order to assess the usefulness of the original questionnaire. Some important omissions from the questionnaire were uncovered in both the open-ended questions of the original questionnaire and the focus group discussions. For example, it became evident that the financial status and academic progress of students were important influences on their health and wellbeing. Comments and suggestions from participants were noted and incorporated in the final instrument.

◆ Phase 2

Pilot study questionnaires and results were circulated to staff members of the School of Psychology, the Student Counselling Centre, and the Campus Health Clinic staff for their comment and assessment. The recorded incidence of physical and mental health problems, sporting injury,

and hospitalisations from both the Campus Health Clinic and the Student Counselling Centre were incorporated into the final design of the questionnaire.

◆ Phase 3

An extensive literature review and Internet search was undertaken. Content and style of the questionnaire was measured against recent international surveys including:

- a) The Juvenile Wellness and Health Survey (Steiner et al., 1998)
- b) The National Longitudinal Study of Adolescent Health/Add Health, (Udry et al., 1998).
- c) The Survey of Risk and Protective Factors from the Centre for Adolescent Health in the state of Victoria, Australia (Bond et al., 2000).
- d) The Adolescent Health Survey: Province of British Columbia, (AHSII) (Tonkin et al., 1999)
- e) Adolescent and youth agency's publications were consulted including the World Health Organisation (1993, 1995), the World Health Organisation's surveys of adolescents in European countries (WHO, 2000a), and a South African survey, Youth Health (1999).

The final questionnaire (see Appendix B) consisted of 107 items with sections on respondent characteristics, diet, activities, family and friends, finances, substance use, personal and social hazards, academic progress, sexual activity, emotional state, use of health services, stress and coping.

5.4 Selection of Variables

The central assumption of the study is that the nature and number of internal and external risk factors, as well as coping styles that modify risk behaviour, affect young people's vulnerability to health compromising outcomes. Items used in the measurement of variables were identified from the pilot study and focus group discussions, and drew on a variety of standardised, validated instruments used in international surveys of young people. Areas were assessed as they relate to broad domains critical to the health, morbidity, and coping style of young people. Questionnaire items were selected and scales developed to measure risk factors and poor health outcomes that are widely recognised to affect young people. These included measures of substance use, general risks related to reckless behaviour, risks and poor outcomes related to sexual behaviour and depression. Avoidance and approach coping styles were measured according to the principles of The Coping Responses Inventory (Moos, 1993). Questionnaire items were selected and scales developed to measure environmental factors (family and peer support, and financial support) that have been shown to affect young people's patterns of risk behaviour.

5.4.1 Risk behaviours and poor health outcomes

Scales to measure important risk factors and poor health outcomes were developed (see Table 1)

- ◆ The substance use scale used questions 42-46 of the questionnaire, and measured the use of cigarettes, alcohol, dagga, and other drugs. Items included questions on both the frequency and quantity of substance use.
- ◆ The sexual behaviour risks scale used questions 49, 60, and 63-73 of the questionnaire and included only those respondents who had indicated that they were sexually active. Items included questions about the use of protection during sex, the number of sexual partners during the past month, pregnancy, early parenting, rape and sexual harassment, and sexually transmitted diseases including HIV.
- ◆ The general risks scale used questions 47, 49, 51, 52 and 53 of the questionnaire and included questions on personal and social hazards such as motor vehicle accidents, drunken driving, threats of physical aggression, weapon threats and sporting injuries.
- ◆ The depressed mood scale used questions 74-85 of the questionnaire that were taken from a slightly modified version of the Centre for Epidemiological Studies Depression Scale (CES-D, Radloff, 1977).

5.4.2 Approach and avoidance coping styles

Coping responses to stressful situations were measured using a modified version of the Coping Response Inventory (Moos, 1993). The CRI measures two different styles of coping: approach or avoidance coping. Sixteen questions from the total item pool of the CRI were selected (8 approach, and 8 avoidance, see Table 2). These questions were also used in the Juvenile Health and Wellness Survey (Steiner, et al., 1998) where they were selected on the basis of their Cronbach alpha scores contributing to either approach or avoidance coping.

Table 1**Risk Behaviours and Poor Health Outcomes**

Variable	Description of Variables	Number of items
Substance Use Alcohol	Had six or more alcoholic drinks in one occasion/at one sitting: ten or more times, six to nine times, two to five times.	3
Cigarettes	Smoked the following number of cigarettes/packs of cigarettes: one to 5 cigarettes per day, about half a pack per day, about a pack per day, more that one pack per day	3
Dagga	During the past month I have used dagga once, on two to six occasions, on seven to ten occasions, on more than ten occasions.	3
Other drugs	Options include: Psychedelics, (with street names such as acid, caps, LSD), barbiturates, (barbs, yellows reds, downers), amphetamines, (speed, benzies, dexxies), ecstasy, amylnitrate (poppers), cocaine, heroine. Own use and use by friends: regularly, sometimes, never.	2
Sexual behaviour risks	Use of protection first time and during the past month; two or more sexual partners during the past month; attitudes to condom use; pregnancy/fathered a child; termination of pregnancy; sexual harassment; sexual assault/rape; sexually transmitted diseases; HIV.	13
General risks	Motor vehicle accident; driven while drunk; passenger when the driver was drunk; threatened by/suffered from physical aggression/intimidation/weapons; sporting injury serious enough to require medical treatment.	6
Depression	During the past six months, have you felt: everything is an effort, caught or trapped, lonely, low in energy, had thoughts of ending your life, worried too much about things, worthlessness, cried easily, blamed yourself for things, loss of sexual interest or pleasure, blue, no interest in things, hopeless about the future.	13

Table 2**Approach and Avoidance Coping Styles**

Variable	Description of Independent Variable	Number of items
Approach Coping	On a 4 point scale (from 'not at all' to 'fairly often') describing the management of important problems	
Use of logical analysis	Tried to find some personal meaning in the situation, tried to step back from the situation and be more objective	2
Use of positive reappraisal	Reminded self of how much worse things could be, tried to see the good side of the situation.	2
Seeking guidance	Talked to a friend, looked for help from people with the same type of problem.	2
Problem solving	Worked out what needed to be done and tried hard to make it work, took things one step at a time.	2
Avoidance Coping	On a 4 point scale (from 'not at all' to 'fairly often') describing the management of important problems	
Cognitive Avoidance	Tried to forget about the whole thing, wished the problem would go away or somehow be over with.	2
Acceptance and Resignation	Accepted nothing could be done, realised that I had no control over the problem.	2
Seeking Alternative Rewards	Got involved in new activities, tried to make new friends.	2
Emotional Discharge	Took a chance and did something risky, cried to let my feelings out.	2

5.4.3 Environmental risk factors

Scales to measure two key environmental risk factors, low family and peer support and low financial support were developed (see Table 3).

- Low family and peer support scale. This five-item scale included questions on family and peer relationships, communication patterns, and emotional closeness.
- Low financial support scale. This five- item scale included questions on parental support, payment of fees, living expenses, and worry about finances. The scale was developed because focus group work in the pilot study confirmed its centrality to the general health and wellbeing of young people in South Africa.

Table 3

Environmental Risk Factors

Variable	Description of Variables	Number of items
Low Family and Peer Support	Poor relationship variables including perceived emotional closeness with family and friends and communication difficulties.	5
Low Financial Support	Students who indicated that they receive no financial support from parents but have fees and living expenses paid by bank loan, financial aid, bursary, part time work; short of money for food and clothes; worry about finances	5

5.5 Procedure

Data from this population was collected in August/September of 1999. Questionnaires were returned by a total of 710 students (response rate of 35%).

All responses were coded and entered. Questionnaires were discarded if more than 5 questions were not answered (excluding questions 60 – 69 for sexually inactive respondents). Frequency distributions by demographic variables (gender and race) were tabulated for coping style, risk behaviour and poor health outcomes, environmental risk factors, and protective factors.

5.5.1 Gender effect

Two sample t-tests were performed to compare the means between males and females on coping style, risk behaviours and poor health outcomes. Emphasis in the analysis was on gender differences so differences between population groups were tabulated but not subject to analysis.

5.5.2 Risk behaviour/poor health outcome scales, and environmental risk factor scales

From the question items selected, scales were calculated for each variable by allocating values for responses, and calculating each individual score for the variable. Low scores were benign, high scores were problematic on all dimensions.

a) Risk behaviour and poor health outcomes scales:

- ◆ For the substance use scale, values allocated were between one and three depending on the frequency or amount of substance use. For example, those students who indicated that, during the previous month, they had had 6 or more drinks at one sitting 2 – 5 times scored one, 6 – 9 times scored two, and 10 or more times scored three.
- ◆ For the general risks scale, values allocated were between one and three. For example, those students who indicated that they had driven a car after drinking more than three alcoholic drinks scored three, while those who indicated that they had never driven under the influence of alcohol did not score.
- ◆ For the sexual risk scale, values allocated were between one and three with higher scores for high-risk behaviour or poor health outcomes. For example, those students who indicated that they were never able to insist on the use of a condom scored three, those who

sometimes insisted on condom use scored two, and those who always insisted on condom use did not score.

- ◆ The depression scale was calculated according to the CES-D formula.

b) Environmental risk factor scales:

- ◆ For the low family and peer support scale, values allocated were between one and three with higher scores for poor support. For example, those students who indicated that communication difficulties occurred ‘very often’ scored three, ‘often’ scored two, and ‘rarely’ did not score.
- ◆ For the low financial support scale, values allocated were between one and three with higher scores for low financial support. For example, those students who indicated that they almost never had enough money to eat a healthy diet scored three, and those who rarely had enough money to eat a healthy diet scored two.

Standard z scores on all scales were converted to T scores by linear conversion for ease of reporting. All scales were ranked to show percentages of students by gender and race in the below average (T score 0-40) range, average (T score 41-60) range, and above average (T score > 60) range

5.5.3 Multidimensional analysis

Spearman and Wilcoxon correlations were used, where appropriate, to test associations between:

- a) Categories of risk behaviour and poor health outcomes including substance use, general risks, sexual risks, and depression.
- b) Coping style (approach and avoidance) and risk behaviours/poor health outcomes.
- c) Risk behaviour/poor health outcomes, coping style and environmental risk factors including low family and peer support, and low financial support.

Chapter Six

Results

6.1 Description of sample

Questionnaires were sent to a selected random sample of 2000 students between the ages of 18 and 25 years old, currently registered at the University of Natal, Pietermaritzburg. The distribution, by gender and race, of the selected sample is shown in Table 4. This data was taken from the primary database on students maintained by the University. As this group was randomly selected from the University records, one can assume that this distribution reflects that of the total population of students at the University. The figures are not, of course, representative of national population proportions.

Table 4
Sample by race* and gender

	Black		Indian		White		Other		Total	
	%	n	%	n	%	n	%	n	%	n
Female	17.1	341	12.9	258	23.2	465	1.3	27	54.6	1091
Male	16.7	334	8.9	177	18.9	377	1.1	21	45.4	909
Total	33.8	675	21.8	435	42.1	842	2.4	48	100	2000

*Race refers to the population registration categories regulated by Apartheid.

Questionnaires were returned by a total of 710 subjects (response rate of 35%). Questionnaires containing 5 or more unanswered questions (n = 42) were discarded from the final set. The response rate was slightly higher for female and white students than the original random sample, but the response set generally reflects the demographic profile of the University (Table 5).

Table 5
Response Set by Demographic Variables

	Black		Indian		White		Other		Total	
	%	n		n	%	n	%	n	%	n
Female	12.1	82	14.6	99	32.2	218	2.4	16	61.4	416
Male	12.2	83	7.8	53	17.6	119	1.0	7	38.6	262
Total	24.3	165	22.4	152	49.8	337	3.4	23	100	678

The focus of the analysis was on gender differences, the clustering of risk behaviours, and the influence of environmental risk factors and coping style on the risk profiles of young people, so both protective factors and population group differences have been tabulated but not subject to analysis.

6.2 Protective factors and support

The distribution of protective factors from the Survey of Young Adults' Health and Wellbeing is presented in Table 6. The prevalence data are presented as a percentage of the total sample, and by gender and race.

Table 6

Distribution of Protective Factors and Support (Percentage by Demographic Variables)

	Total	Gender		Population Group		
		M	F	Black	Indian	White
Family Support						
Emotionally close to family	96.9	96.4	97.1	75.6	95.0	98.3
Find someone with whom to talk over problems	89.3	87.5	90.3	81.9	83.4	95.7
Communication difficulties rare	68.4	71.5	66.1	68.3	65.1	71.7
In life, most influenced by family member	52.9	44.5	57.9	49.4	55.1	53.6
Peer Support						
At least one close friendship	91.3	87.7	94.1	77.5	94.2	98.3
Someone with whom to talk over problems	85.2	81.6	87.8	68.2	88.4	83.6
Spirituality						
Participate in formal religious activity: Total	56.4	52.2	61.0	63.5	76.8	41.5
Mosque	3.7	5.4	3.0	0	15.5	0
Temple	9.6	7.7	11.4	2.2	40.6	0
Church/youth group/Bible study	38.7	35.6	41.5	54.7	16.8	38.6
Sporting Activity						
Play sport either for recreation or in competition	53.2	76.9	54.9	52.2	62.8	70.9
Gym at least once a week	35.4	40.7	31.7	43.9	17.4	39.9
Academic Success						
Last semester passed all courses	75.1	71.1	78.5	56.9	75.8	85.8
Not worried about academic progress	15.4	13.7	17.1	11.5	6.4	22.2
Good chance of finishing degree	81.8	82.1	80.5	67.0	76.9	92.9

6.2.1 Family support (see Table 6)

Emotional connection to the family and high family support provide a key protective factor in the lives of young people. Three indicators of emotional connection to family were assessed (emotional closeness, good communication, and influence of a family member). Overall, 96.9% of young people indicated that they were emotionally close to their families, at least in one or more ways and only 30% of students have communication difficulties. Most students (89.3%) are able to find someone in their families to talk over difficulties, and 52.9% have a role model in their family.

Black students have relatively less support (75.6% indicated that they were emotionally close to their families as compared to 98.3% of white students and 95% of Indian students).

6.2.2 Peer support (see Table 6)

Close friendships are a key source of support for young people. Two indicators of emotional connection to peers were assessed (close personal friendships and good communication with peers). Of the total sample, 91.3% (94.1% of women and 87.7% of men) have at least one close friendship, and 85.2% are able to talk over their problems with friends. Figures for close friendships and good communication are slightly higher among women than men. Close friendships among black students, at 77.5%, were relatively lower than among the other racial groups.

6.2.3 Spirituality (see Table 6)

Participation in some form of organised religious practice is consistently found to be a protective factor for young people. Of the total sample, 56.4% participate in some formal religious activity (Mosque, Temple, Church or bible study). Relatively more Indian students (76.8%) than black (63.5%) or white (41.5%) students participated in formal religious activities.

6.2.4 Sporting activity (see Table 6)

Of the total sample, 53.2% play sport either for recreation or in competition, and 35.4% go to the gym at least once a week. Young men (76.9%) were relatively more involved in sporting activities than young women (54.9%) and all race groups were quite evenly spread in sport and gym activities.

6.2.5 Academic success (see Table 6)

Opportunities to succeed in their field of study provide higher levels of self-esteem and protection against risk behaviors and poor outcomes among young people. Of the total sample, 75.1% passed all courses in the previous semester. Among black students, 56.9% passed all courses in the previous semester, which is relatively lower than the Indian (75.8%) and white (85.8%) race groups.

6.3 Risk behaviour and poor health outcomes

The distribution of risk behaviours and poor outcomes from the Survey of Young Adults' Health and Wellbeing is presented in Tables 7 - 15. The prevalence data are presented as a percentage of the total sample, and by gender and racial group. Table 9 shows the results of a "t" test to determine the statistical significance of the differences between the mean scores for males and females.

6.3.1 Substance use (see Tables 7 and 8)

Scores for reported substance use reveal no statistically significant gender effect (see Table 9), although binge drinking was higher among men (47%) than women (28.5%). Rates of tobacco use, marijuana use and non-prescription drug use were similar between men and women.

It is notable that white students have higher reported rates of substance use, including alcohol (60.4% of white students binge drank at least once a week), tobacco (13.3% of white students smoked at least half a packet of cigarettes per month), marijuana (15.4% of white students had used marijuana during the previous month) and non-prescription drugs (16.5% of white students). Scaled scores (Table 7) that rank substance use confirm the trend towards gender equalisation for substance use (12.5% male and 11.3% female students), as well as higher reported substance use (17.8%) among white students as compared with the black (9.0%) and Indian (8.8%) students.

Table 7
T Scores for Total Substance Use (Percentage)

	T Score	Total	Male	Female	Black	Indian	White
Below Average	0 - 40	0	0	0	0	0	0
Average	41 - 60	88.1	87.5	88.7	91.0	91.2	82.2
Above average	> 60	11.9	12.5	11.3	9.0	8.8	17.8

Table 8**Distribution of Risk Behaviour: Sub categories of Substance Use (Percentage)**

	Total	Gender		Population Group		
		M	F	Black	Indian	White
Alcohol						
During the past month had 6+ alcoholic drinks at one sitting:						
one to five times	30.9	33.6	29.2	23.4	9.6	44.9
more than five times	10.3	13.4	8.0	5.1	4.1	15.5
Total:	41.4	47.0	28.5	28.5	14.7	60.4
Tobacco						
During the past month + half a pack per day:	9.3	10.9	8.5	4.4	6.3	13.3
Marijuana						
During the past month used marijuana at least once:	9.6	10.7	9.1	6.1	2.6	15.4
Non-prescription drugs						
Ever used at least one of the following: psychedelics, ecstasy, barbiturates, amphetamines, cocaine, mandrax:	10.1	9.7	10.7	4.5	3.2	16.5
Friends use the above drugs: regularly:	14.6	15.8	13.7	7.8	7.1	22.3
Sometimes:	29.0	26.9	31.0	16.1	32.1	35.1
Total number of friends use drugs:	43.6	42.7	44.7	23.9	39.2	57.4

Table 9**t Tests for Gender Differences in mean score for Risk Behaviour, Poor Outcomes and Coping Style**

Gender	Approach Coping Style		Avoid Coping Style		Substance Use		General Risk s		Depression		Sexual Risks		Low family/peer support	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Mean	48.9	50.58	46.50	52.17	50.44	49.8	50.6	49.69	47.07	52.0	50.52	49.4	50.4	49.72
Standard deviation	10.3	9.74	9.35	9.65	9.22	10.1	10.6	9.75	8.84	10.3	9.27	10.4	10.7	9.71
t score	-2.04		-7.19		0.78		0.85		-6.42		0.95		0.89	
Significance	p = 0.042		** p = 0.000		p = 0.43		p = 0.40		** p = 0.000		p = 0.34		p = 0.38	

- i) * Significant at $p < 0.05$
ii) ** Significant at $p < 0.01$

6.3.2 General risks (see Tables 10 and 11)

General risk behaviours such as motor vehicle accidents, exposure to violence and aggression, weapons and drinking and driving are generally expected to affect men more than women in this age group. In this survey there was no statistically significant difference between men and women (Table 9) which confirms the trend towards gender equalisation for general risks. Percentages for drinking and driving, and being a passenger in the car of a driver who is over the legal limit, were very similar between men and women. However, certain discreet risk behaviours such as weapons threats (10.4% male and 2.7% female), and serious sporting injuries (20.3% male and 9.5% female), affected more men than women. The white student group is at significantly higher risk for drinking and driving than other population groups (58.8% of white students had driven a car when they knew themselves to be over the alcohol limit. 81.1% of white students had been a passenger in a car where they knew the driver had drunk more than 3 alcoholic drinks).

Students were asked to indicate their sense of personal safety at a number of locations in and around the Campus and the City. High numbers of students indicated that they never, or hardly ever, felt safe in the centre of the city (48,6%). It is notable that 19,5% of women indicated a low sense of personal safety in the University residences.

Table 10

Distribution of Risk Behaviour: Sub categories of General Risks (Percentage)

	Total	M	F	Black	Indian	White
During the past year:						
Involved in a motor vehicle accident	18.0	20.7	16.8	11.1	18.6	21.7
In hospital for accident/injury	5.3	6.2	4.6	6.7	2.6	6.2
Threatened by physical aggression	21.6	24.5	19.6	27.1	24.8	16.6
Threatened by a weapon/s	5.5	10.4	2.7	11.3	0.9	3.4
Serious sporting injury	13.4	20.3	9.5	11.8	3.8	20.8
Victim of robbery	17.3	19.6	16.5	1.4	10.5	34.5
At some time in my life:						
Driven a car after drinking 3+ alcoholic drinks	32.9	34.1	32.4	5.5	9.6	58.8
Been a passenger in a car when I know the driver has drunk 3+ alcoholic drinks	73.3	72.9	73.0	70.0	60.9	82.1
Never/hardly ever feel safe:						
In the residences	15.3	8.3	19.5	16.0	27.3	14.3
In the Library	2.1	1.6	2.2	4.4	2.6	0.8
In campus toilets	11.9	11.3	16.4	21.8	19.6	6.5
At the Varsity Club	12.6	13.0	12.1	33.1	11.3	1.6
On the roads around campus	19.8	13.9	23.1	39.0	23.9	8.0
In the Durban Road shopping complex	19.7	20.1	28.1	41.8	19.3	9.1
In the centre of Pietermaritzburg	48.6	36.0	56.0	54.7	54.2	42.4

Table 11**T Scores for Total General Risks (Percentage)**

	T Score	Total	Male	Female	Black	Indian	White
Below Average	0 - 40	20.4	21.2	19.6	18.8	26.2	16.2
Average	41 - 60	65.8	63.7	67.9	67.4	63.1	67.0
Above average	> 60	13.8	15.1	12.5	13.8	10.7	16.8

Scaled scores for General Risks (Table 11) confirm the trend towards gender equalisation for general risks with 15.1% of men and 12.5% of women in the above average T score range. Indian students (10.7%) have the lowest percentage in the above average range and confirm lower scores for Indian students in hospitalisations, weapons threats, sporting injuries and drinking and driving risk factors. White students (16.8%) have the highest percentage in the above average range as a result of higher rates of sporting injuries, victims of robbery, drinking and driving, and being a passenger in a car where the driver is over the limit.

6.3.3 Sexual risks and poor health outcomes (see Tables 12 and 13)

Of the total sample, 54.8% indicated that they were sexually active. The following results are taken from sexually active students only. Of sexually active students, 71.3% indicated that they were currently in a stable relationship with a member of the opposite sex. Same sex relationships constituted less than 1% of the total. Although there was no overall statistically significant gender effect (Table 9), there were differences in certain sexual risk behaviours and poor outcomes between men and women.

◆ Condom use

Student's attitudes to condom use were relatively homogenous across all racial groups. High-risk behaviour was indicated by students who were too embarrassed to suggest the use of a condom, or who were unable to insist on the use of a condom. Condom use at first time of sex was indicated by 65% of sexually active students. The number of students who indicated

that they always insisted on the use of a condom was 45.5% of the total (53.3% of men and 41.1% of women). Percentage of students with high-risk behaviours and attitudes to condom use are shown in Table 12. A relatively high proportion of women, (17.9% compared with 8.1% of men) were never able to insist on the use of a condom.

◆ **Sexually transmitted diseases**

Percentage of students with high-risk behaviours and poor health outcomes are shown in Table 12. Of the total sample, 10.4% of students had received treatment for STDs. An HIV test had been taken by 17.9% of students and 20.9% of students knew of someone who was HIV positive. Among black students nearly every second student (37.3%) had a friend who was HIV positive.

◆ **Multiple sexual partners**

More men (14.9%) than women (3.3%) students indicated that they had had 2 or more sexual partners in the previous month. Also notable was the fact that nearly 20% of male black students (compared with 7.8% Indian and 1.6% white students) indicated that they had had 2 or more sexual partners in the previous month

◆ **Pregnancy history**

Of the total sample, 12.3% of women indicated that they had been pregnant, 6.2% of women had had a termination of pregnancy and 6.1% had given birth to a child. Among male students, 9.2% indicated that they had fathered a child.

◆ **Sexual harassment and rape**

Among women students, 10.2% indicated that they had been subjected to sexual harassment in the previous year, and in the previous year, 1.5% of women (n = 5) had been subjected to rape or sexual assault.

Table 12
Distribution of Risk Behaviour and Poor Outcomes: Sub categories of Sexual Risks
(Percentage)

	Total	Gender		Population Group		
		M	F	Black	Indian	White
Condom Use						
Used no protection the first time I had sex:	34.6	38.5	30.8	47.1	39.2	21.6
Used no methods of protection during sex this month:	13.7	15.1	11.8	16.0	23.0	7.7
Always too embarrassed to suggest a condom:	2.6	6.2	1.3	4.6	3.8	1.1
Sometimes too embarrassed to suggest a condom:	11.4	14.2	10.6	15.1	7.7	10.5
Never insist on the use of a condom:	14.4	8.1	17.9	9.4	25.5	15.6
Sometimes insist on the use of a condom:	40.1	38.5	41.1	41.0	39.2	39.4
Sexual Partners, STD, HIV						
Had 2 or more sexual partners in the past month:	8.0	14.9	3.3	17.3	7.8	1.6
Been treated for a sexually transmitted disease:	10.4	12.7	7.9	23.3	1.9	3.3
Friends who are H.I.V.+:	20.9	17.6	22.0	37.3	10.6	16.0
Been tested for H.I.V.:	17.9	17.2	18.6	25.7	10.7	18.5
Pregnancy History						
Been pregnant:	12.3	0	12.3	15.2	12.0	2.3
Had a pregnancy termination:	6.2	0	6.2	7.3	8.0	2.2
Given birth to or fathered a child:	7.2	9.2	6.1	18.8	1.9	0
Sexual Harassment and Rape						
Been sexually harassed during the past year:	6.8	2.5	10.2	7.8	3.8	7.3
Been raped/sexually assaulted during the past year:	1.5	0	1.5	2.1	0	1.0

Table 13

T Scores for Total Sexual Risks (Percentage)

	T Score	Total	Male	Female	Black	Indian	White
Below Average	0 - 40	9.7	3.6	15.6	0	29.5	0
Average	41 - 60	73.2	76.4	70.2	78.3	56.7	84.1
Above average	> 60	17.1	20.0	14.2	21.7	13.8	15.9

The difference between male (20%) and female (14.2%) students in the above average range of scaled scores for sexual risk taking and poor health outcomes is not statistically significant (see Table 13). Of the total sample, 17.1% of students (21.7% black, 13.8% Indian and 15.9% white) scored above 60 in the T score range, revealing that they took considerable risks with their health and wellbeing in terms of their sexual behaviour.

6.3.4 Depression (see Tables 14 and 15)

The modified version of the CES-D scale revealed results that are commensurate with the point prevalence for depression in the DSMIV (see Table 14). Expected gender differences were statistically significant (Table 9). Among women, scores for mild moderate and severe depression (11.8%, 13.0% and 12.5%) were higher than scores for men (5.1%, 7.3% and 3.8%). Suicidal ideation is also more common among women (13.7% as opposed to 7.6% of men, see Table 15). It is also notably higher among Indian students (17.3%). Other high scores were in the category of “worrying too much about things” (73% of women, 69.2% of the black students and 72.4% of Indian students) and, among black students, “feeling lonely” (64.8%)

Table 14

T Scores for Depression (Percentage)

	T Score	Total	Male	Female
Mild	55 – 59	9.2	5.1	11.8
Moderate	60 –65	10.8	7.3	13.0
Severe	>66	9.3	3.8	12.5

Table 15**Distribution of Risk Behaviour and Poor Outcomes: Sub categories of Depression****(Percentage)**

	Total	Gender		Population Group		
		M	F	Black	Indian	White
During the past six months:						
Feeling that everything is an effort:	37.5	35.9	39.2	46.7	37.2	33.7
Crying easily:	35.3	10.3	52.0	31.9	37.8	35.2
Feeling caught or trapped:	29.3	24.4	33.4	25.2	32.7	28.8
Blaming self for things:	37.7	31.3	41.3	52.7	36.5	29.7
Feeling lonely:	52.6	46.6	56.5	64.8	50.0	46.4
Loss of sexual interest or pleasure:	18.8	13.7	22.1	27.0	16.7	15.0
Feeling low in energy:	57.4	48.0	62.3	49.0	54.5	63.1
Feeling blue:	40.3	30.5	48.0	22.1	48.8	46.4
Thoughts of ending my life:	10.8	7.6	13.7	11.0	17.3	7.8
Feeling no interest in things:	29.0	28.8	29.6	29.7	32.1	25.6
Worrying too much about things:	64.7	52.3	73.1	69.2	72.4	58.2
Feeling hopeless about the future:	30.0	24.4	33.9	31.9	37.2	24.5
Feelings of worthlessness:	26.8	19.5	32.0	24.7	36.1	23.1

6.4 Coping style

The distribution of coping styles is presented in Table 16. The prevalence data are presented as a percentage of the total sample, and by gender and racial group.

6.4.1 Approach coping style

Approach coping responses concentrate on management of the problem stressor using both cognitive and behavioural methods. The approach coping style was used by high percentages of the student sample. For example, nearly 80% of young people facing a stressful situation knew what had to be done and tried hard to make things work. Over 70% were able to talk to friends about the problem or to find some personal meaning in the situation. There was no statistically significant difference between men and women in the use of the approach coping style (see Table 9).

6.4.2 Avoidance coping style

Avoidance coping responses concentrate on regulation of the emotional states triggered by the stressor, using both cognitive and behavioural methods. Avoidance coping styles were used by lower percentages of the total sample. For example, only 26.3% of young people used risky behaviour as an emotional discharge, and cognitive avoidance was used by only 37.9% of the total group. There was a statistically significant difference between men and women with more women than men using the avoidance coping style (see Table 9)

Correlation of coping styles with risk factors is reported in section 6.6.6.

Table 16

Distribution of Sub categories of Coping Styles (Percentage)

Approach Coping Style	Total	Gender		Population Group		
		M	F	Black	Indian	White
Tried to find some personal meaning in the situation	71.2	65.3	73.6	79.5	68.0	67.4
Reminded self that things could be worse	62.9	67.0	59.2	72.0	65.0	57.1
Talked to a friend about the problem	70.3	63.9	74.3	58.4	69.5	77.8
Knew what to do, tried to make things work	79.9	80.9	79.6	74.4	75.8	84.3
Tried to step back from the situation	61.5	56.9	64.5	50.0	52.3	71.9
Tried to see the good side of the situation	61.5	68.2	57.3	61.8	58.3	62.6
Looked for help from people with the same type of problem	41.8	40.0	43.1	38.0	35.8	47.5
Took things one day at a time	73.2	65.6	77.6	66.1	73.5	75.7
Avoidance Coping Style						
Tried to forget the whole thing	37.9	32.8	41.0	43.9	40.3	33.1
Accepted that nothing could be done about it	42.5	39.5	44.4	37.7	47.0	43.6
Got involved in new activities	47.0	45.0	49.6	40.5	50.9	50.3
Took a chance and did something risky	26.3	27.3	25.8	25.6	27.1	25.0
Wished the problem would go away	79.5	77.0	81.9	85.1	78.7	78.0
Realised that I had no control over the problem	56.4	51.8	60.0	55.3	55.6	57.8
Tried to make new friends	40.3	35.3	45.9	28.5	45.6	43.3
Cried to let my feelings out	51.9	24.4	96.0	52.3	53.3	51.1

6.5 Environmental risk factors

Distribution of environmental risk factors is presented in Tables 17 to 20 according to gender and racial group.

6.5.1 Low family and peer Support (see Tables 17 and 18)

Low family and peer support is an important environmental risk factor in the lives of young people. Five indicators of respondent's perceived level of connection to and support from family and peers were measured: emotional closeness to family and friends, family and friends with whom to talk over problems, and communication difficulties with family and friends. There was no statistically significant gender effect (Table 9), although more men than women report lack of emotional closeness among both family and peers. Communication difficulties within families occurred in about 30% of all respondents, but only about 3% reported lack of family emotional closeness. Of the total sample, 8.4% indicated that they had no close friendships. There were relatively low levels of peer support among black students. Lack of close friendships were reported by 22.5% of black students, and 31.8% of black students rarely had friends with whom they were able to talk over problems.

Table 17

T Scores for Total Low Family and Peer Support (Percentage)

	T Score	Total	Male	Female	Black	Indian	White
Below Average	0 - 40	15.4	14.3	16.4	16.0	8.7	21.5
Average	41 - 60	69.6	69.1	70.2	64.2	79.3	65.3
Above average	> 60	15.0	16.6	13.4	19.8	12.0	13.2

Scaled scores for low family and peer support confirm relatively lower levels of support among black students (19.8% compared with 12% Indian and 13.2% white students).

Table 18

Distribution of Environmental Risk Factors: Sub categories of Low Family and Peer Support (Percentage)

	Gender			Population Group		
	Total	M	F	Black	Indian	White
Family:						
Not emotionally close to my family:	3.5	4.2	2.9	4.4	4.5	1.7
Nobody in family to talk over problems with:	10.7	12.6	9.6	18.1	16.7	4.3
Communication difficulties in family often occur:	31.6	28.8	33.8	33.1	34.7	28.3
Peers:						
No close friendships:	8.4	12.3	6.0	22.5	5.8	1.7
Nobody among peers to talk over problems with	14.7	18.3	12.3	31.8	11.6	6.3

6.5.2 Low financial support (see Tables 19 and 20)

Students with financial problems reported that they receive no financial assistance from parents but are dependent on other sources of income (bank loan, financial aid, part time work, bursary, or combinations of the above).

Of the total sample, 34.9% were dependent on the above sources to get their academic fees paid. There was no statistically significant gender effect but it was evident that black students received less financial support than other population groups (55.8% black, 26.8% Indian, 26.3% white students were dependent on sources other than their parents to pay for academic fees). Of the total sample, 16.4% (27.6% black, 8.9% Indian, and 15.3% white) were dependent on sources other than their parents for living expenses.

It is evident that black students had financial difficulties with both the payment of their tuition and with living expenses, and a high percentage of black students reported that they were unable to afford a healthy diet (25.8%), or dress as well as most students (20.3%).

Table 19

T Scores for Total Low Financial Support (Percentage)

	T Score	Total	Male	Female	Black	Indian	White
Below Average	0 - 40	0	0	0	0	0	0
Average	41 - 60	82.9	81.0	84.5	74.5	85.2	86.5
Above average	> 60	12.0	19.0	15.5	25.5	14.8	13.5

Scaled scores for low financial support confirm relatively lower levels of support among black students.

Table 20

Distribution of Environmental Risk Factors: Sub categories of Low Financial Support (Percentage)

	Total	Gender		Population Group		
		M	F	Black	Indian	White
Academic fees:						
No parental support, fees paid by:						
Bank loan	5.8	5.4	6.0	1.7	5.1	8.1
Financial aid	10.7	13.5	8.7	33.7	5.8	0.9
Self through part time work	1.1	1.2	0.9	1.1	0.6	1.0
Bursary	10.0	8.5	10.6	11.0	7.0	10.6
Combinations of the above	7.3	7.6	7.0	8.3	8.3	5.7
Total	34.9	36.2	33.2	55.8	26.7	26.3
Living Expenses:						
No parental support, expenses paid by:						
Bank loan	0.8	0	1.4	0.5	0.6	1.2
Financial aid	4.1	5.3	2.9	15.4	0.6	0
Self through part time work	7.0	7.3	6.6	6.6	5.7	7.5
Bursary	1.8	2.3	1.5	3.3	0	1.4
Combinations of the above	2.7	1.9	3.6	1.0	2.0	5.2
Total	16.4	16.8	16.0	26.8	8.9	15.3
Other Financial Problems:						
Rarely have enough money to eat healthy food	11.9	15.3	8.6	25.8	9.7	3.8
Rarely feel as well dressed as most students	8.9	10.3	7.2	20.3	2.5	4.8
Worry about finances all the time	30.5	27.2	33.2	44.5	34.6	20.2

6.6 Multidimensional analysis of risk, support, and coping style

Multiple correlation analyses were performed on all variables, within the total sample and within male and female groups separately (see Tables 21, 22 and 23).

6.6.1 Relationships between risk behaviour and poor health outcomes

A series of Spearman correlations were performed to discover the relationships between risk behaviours and poor outcomes (see Table 21). Some of the expected clusters emerged. Significant positive correlations were found between substance use, general risks and depression. Sexual risks had the weakest relationship to the other factors. As expected among the male group, depression was not correlated with the other factors (see Table 22). However among the female group (see Table 23), general risks were correlated with both substance use and depression confirming the international trend towards higher levels of women's engagement with risk behaviours that were previously primarily associated with men.

6.6.2 Relationships between coping style and risk behaviours/poor health outcomes

Correlation analyses between coping style and risk behaviours/poor outcomes were substantially as predicted (see Tables 21, 22 and 23), as indicated below.

◆ Approach coping

Correlations for the total sample were in the expected direction (see Table 21). Weak negative correlations were found between the approach coping style, risk behaviours, and poor outcomes (substance use $r = -0.041$, general risks $r = -0.022$, sexual risks $r = -0.059$, depression $r = -0.058$), indicating that students who used approach coping are less likely to engage in risk behaviour. There was no statistically significant difference between men and women in their use of approach coping responses (see Table 9).

◆ **Avoidance coping**

For the total sample, correlations were in the expected direction (see Table 21). Statistically significant positive correlations were found between the avoidance coping style and three risk behaviours/poor health outcomes (substance use $r=0.108$, general risks $r=0.151$, depression $r=0.294$), indicating that students who use predominantly avoidance coping strategies are more likely to engage in risk behaviours and suffer negative outcomes. There was a statistically significant gender effect with more women than men using the avoidance coping style (see Table 9).

6.6.3 Relationships between environmental risk factors, risk behaviours/poor health outcomes and coping style

In view of the fact that environmental risk factors were a primary focus of the present study, correlation analysis was performed to test its relationship with each of the other variables.

◆ **Environmental risk factors and risk behaviour/poor health outcomes**

A significant positive correlation was found between the two environmental risk factors (low family support and low financial support $r=0.241$) indicating that some students were likely to lack both emotional and financial support. For the total sample, statistically significant correlations between environmental factors and risk behaviours/poor outcomes were found (see Table 21). Low family/peer support correlated positively with general risks, sexual risks and depression (r ranging from 0.127 to 0.323), indicating that students who felt a lack of family/peer support were more likely to suffer from a range of negative outcomes. Low financial support correlated positively with sexual risks ($r = 0.149$) and depression ($r = 0.184$), indicating that students with financial difficulties were likely to become depressed or engage in sexually risky activities. Low financial support was significantly negatively correlated with substance use ($r= -0.098$) which indicates that students with relatively higher disposable incomes are more likely to engage in

substance use. The strongest correlation was between an environmental risk factor and a poor health outcome was between low family/peer support and depression ($r = 0.323$).

◆ **Environmental risk factors and coping style**

Each coping style was tested for its relationship with environmental risk factors (see Tables 21, 22, and 23)

a) Approach coping

Statistically significant negative correlations were found between the approach coping style and environmental risk factors (low family/peer support $r = -0.277$, low financial support $r = -0.089$) indicating that the higher the environmental risk, the lower the likelihood that students would use the approach coping style. This result also indicates that students who use approach coping strategies may have better success in establishing and maintaining supportive relationships.

b) Avoidance coping

Among male students, a statistically significant positive correlation was found between avoidance coping and low family/peer support ($r = 0.169$) indicating that this group may have been using coping strategies that prevented them from establishing and maintaining caring and supportive relationships. Also among male students there was a statistically significant positive correlation between avoidance coping and low financial support ($r = 0.162$) indicating that avoidance coping strategies in attempts to solve financial problems had been unsuccessful.

Table 21

Correlation Matrix for Total Sample

	Substance Use	General Risks	Sexual Risks	Depression	Low Family Support	Low Financial Support	Approach Coping	Avoidance Coping
Substance Use	—	0.330**	-0.101	0.096	0.022	-0.098*	-0.041	0.108**
General Risks	0.330**	—	-0.028	0.226**	0.127**	0.059	-0.022	0.151**
Sexual Risks	-0.101	-0.028	—	-0.024	0.131*	0.149**	-0.059	-0.008
Depression	0.096*	0.226**	-0.024	—	0.323**	0.184**	-0.058	0.294**
Low Family/Peer Support	0.022	0.127**	0.131*	0.323**	—	0.241**	-0.277**	0.070
Low Financial Support	-0.098*	0.059	0.149**	0.184**	0.241**	—	-0.089*	0.070
Approach Coping	-0.041	-0.022	-0.059	-0.058	-0.277**	-0.089*	—	—
Avoidance Coping	0.108**	0.151**	-0.008	0.294**	0.070	0.015	—	—

- i) * Significant at $p < 0.05$
- ii) ** Significant at $p < 0.01$

Table 22
Correlation Matrix for Male Group

	Substance Use	General Risks	Sexual Risks	Depression	Low Family Support	Low Financial Support	Approach Coping	Avoidance Coping
Substance Use	—	0.363**	-0.079	0.066	0.087	-0.141*	-0.024	0.059
General Risks	0.363**	—	-0.081	0.120	0.144*	0.058	-0.081	0.174*
Sexual Risks	-0.079	-0.081	—	0.064	0.270**	0.264**	-0.081	0.119
Depression	0.066	0.120	0.064	—	0.321**	0.208**	-0.070	0.221**
Low Family/Peer Support	0.087	0.144*	0.270**	0.321**	—	0.226**	-0.283**	0.169*
Low Financial Support	-0.141*	0.058	0.264**	0.208**	0.226**	—	-0.041	0.162*
Approach Coping	-0.024	-0.081	-0.079	-0.070	-0.283**	-0.041	—	—
Avoidance Coping	0.169*	0.174*	0.119	0.221**	0.059	0.162*	—	—

- iii) * Significant at $p < 0.05$
iv) ** Significant at $p < 0.01$

Table 23
Correlation Matrix for Female Group

	Substance Use	General Risks	Sexual Risks	Depression	Low Family Support	Low Financial Support	Approach Coping	Avoidance Coping
Substance Use	—	0.326**	-0.093	0.125*	-0.034	-0.075	0.093	0.147**
General Risks	0.326**	—	-0.028	0.315**	0.126*	0.068	0.020	0.179**
Sexual Risks	-0.093	-0.028	—	-0.045	0.131*	0.149**	-0.089	-0.106
Depression	0.125*	0.315**	-0.045	—	0.349**	0.178**	-0.084	0.254**
Low Family/Peer Support	-0.034	0.126*	0.131*	0.349**	—	0.222**	-0.284**	0.071
Low Financial Support	-0.075	0.068	0.149**	0.178**	0.222**	—	-0.113*	-0.062
Approach Coping	-0.093	-0.020	-0.089	-0.084	-0.284**	-0.113*	—	—
Avoidance Coping	0.147**	0.179**	-0.106	0.254**	0.071	-0.062	—	—

- i) * Significant at $p < 0.05$
ii) ** Significant at $p < 0.01$

Chapter Seven

Discussion

7.1 Prevalence of risk factors in South Africa compared with international findings

This section highlights areas of concern in research into the risk factors and poor health outcomes among young people. Gender and race differences are of interest and where possible details of international trends have been included. All percentages quoted, except where they are separately referenced, are from international studies of the 18-year-old age groups in the studies reviewed (Blum & Rinehart, 1999; Bond et al., 2000; Resnick et al., 1997; Tonkin et al., 1999).

7.1.1 Substance use

Smoking and the use of drugs and alcohol may not have immediately visible health consequences, yet all have long term health risks for young people. Measures of substance use are not standardised across international studies but some comparison of trends is possible. This study has shown that the international trend towards gender equalisation in substance use is also in evidence among South African young people, although it would appear that more men (47%) than women (28%) are binge drinkers (see Table 8). However the percentage of both men and women binge drinkers is high by international standards.

Of note are the significantly higher figures for all categories of reported substance use among white students as compared to other population groups (above average scaled scores: 17.8% white, 8.4% black and 8.5% of Indian students, see Table 7). The statistically significant negative correlation between low financial support and substance use (see Table 21) suggests that this difference may be partially explained by the higher amounts of disposable income available to white students. A similar trend has been observed in the USA where young people who work more

than 20 hours per week for pay have higher rates of substance use. It would appear that the use of drugs, tobacco, and alcohol is a risk factor that affects only relatively affluent young people.

◆ **Alcohol**

Consumption of alcohol had been shown to increase with age and worldwide comparisons suggest that highest rates of drinking are among 18-24-year-olds. Binge drinking (more than six alcoholic drinks at one sitting at least once a month) among white students in the sample was 60% (see Table 8). Binge drinking rates are lower in the USA (10%), but comparable with Australia (67%) and various parts of Europe (Wales 50%, Denmark 42%, Greece 43% and England 40%).

◆ **Tobacco**

After a brief decline in the early 1990s, tobacco use seems to be increasing among young people in all countries surveyed. Regular smokers of around 10% of young South Africans (see Table 8) are comparable with figures from the USA (13%), Australia (24%), Canada (37%) and Europe (from 6% in Lithuania to 56% in Greenland). Currently around 9% of young South African women are regular smokers. It is important to note that this figure may increase due to the targeting of young black women by cigarette advertising companies.

◆ **Marijuana**

Figures for marijuana use among South African young people during the previous month was 10% (see Table 8), which compares with 16% in the USA, 16% in Australia, and 10% in Canada.

◆ **Non-prescription drugs**

Although a relatively low percentage (10%) of young people in this survey, indicated that they had ever used at least one of a number of popular non-prescription drugs such as ecstasy, psychedelics, barbiturates, amphetamines, cocaine or mandrax, a higher percentage (43.6% in total) reported that they had friends who used drugs. The discrepancy might be explained by under-reporting of drug use. International comparisons are difficult to make, but in Australia 5% of all young people had used non-prescription drugs during the previous month and in the USA, the National Survey results on drug use indicate that there were declines in the use of a number of these substances

during the 1980s. However, since 1992 there has been an increase in the use of cocaine, LSD, and other hallucinogens amongst 8th graders and an overall increase in recreational drug use among college students in the USA (Johnston, O'Malley, & Bachman, 1996). More recently, preventative approaches to this risk factor, which take into account environmental factors, have had some promising results (Kim, Crutchfield, Williams & Hepler, 1998).

7.1.2 General risks

The trend towards gender equalisation in general risk taking and exposure to violence is evident in this study (see Table 9). Percentages of reckless behaviour and threats of physical aggression were similar for both young men and women although more men than women had been threatened by weapons or had suffered a serious sporting injury.

Drinking and driving among white students appears to be the area of greatest risk as figures show that 60% of young white students had driven a car under the influence of alcohol, and 82% of young white students had been a passenger in a car when they knew the driver was over the legal limit.

International comparisons for violent behaviour indicate that 21% of South African young people (see Table 10) have been threatened by physical aggression compared with 24% of young people in the USA. In the Australian survey, 9% of young people indicated that they had attacked someone during the previous year. In this study weapon threats were recorded by 6% of young people (see Table 10). Figures for weapon carrying during the previous month are higher in the USA (12% of students) and in Australia (16%). However, high levels of anxiety about personal safety affect South African young people; 17% had been the victim of a robbery, over half the young women felt unsafe in the centre of town and one in five young women felt unsafe in their residence (see Table 10). It would appear that the incidence of exposure to violence is comparable between the USA, Australia, and South Africans at the University of Natal, but that the perceived sense of safety is very low among young South Africans at this tertiary institution. This probably contributes to high levels of anxiety and worry reflected in the section on depression.

7.1.3 Risk factors related to sexual behaviour

This study explored South African young people's use of condoms, number of sexual partners, incidence of STDs and HIV, pregnancy history/parenting, sexual harassment and rape.

◆ Condom Use

Worldwide there seems to be a slowly increasing trend towards condom use both at first time of sex and in general. Condom use at first sexual encounter was 75% of young people in this study (see Table 12) compared with 76% in the USA. However, young South Africans still lag behind in percentage of regular condom use compared to the developed world. Figures for regular condom use among sexually active young people are as follows: 45% in South Africa (see Table 12); 69% in the USA; 50% in Australia; 63 to 87% of males and 55 – 86% of females in Europe; and 60% in Canada.

◆ HIV and sexually transmitted diseases

The adolescent and young adult populations, particularly in developing countries, are vulnerable to infection by STDs and HIV. Globally, more than half of all new HIV infections are among the 15-24-year-old age groups and most of this is in developing countries. Most seriously affected are the young people of sub-Saharan Africa where about two-thirds of all new HIV infections occur with infections of women outnumber men between two and six to one (Williams, Milligan & Odemwingie, 1997). For example, in Zambia 4.5% of urban young men compared with 12.3% of young women between the ages of 15 and 25 were HIV positive (WHO, 1997). In South Africa, previous research has shown the rate of infection among both males and females at 15 years is close to zero. It rises rapidly to peak at about 26 years among women and 32 years among men with prevalence rates countrywide between 8 and 32% (Williams et al., 2000).

Results from this study indicate that about one in five young people were concerned about their vulnerability to HIV infection and had taken an HIV test. Nearly a quarter of the total sample had friend/s who were HIV+ (see Table 12). In view of supposedly high levels of awareness and continuing education around this topic at tertiary institutions, the high number of black students who take sex-related risks and suffer the consequent poor health outcomes is particularly worrying. For example, nearly every second black student has a friend who is HIV+; nearly one quarter have

been treated for a sexually transmitted disease; 17% of black students had had two or more sexual partners the previous month; and approximately 20% of black students have either given birth to or fathered a child; and (see Table 12). Qualitative research is needed to explore the social and personal dynamics of behaviour that gives rise to these disturbing figures.

◆ **Gender differences**

The international trend towards gender equalisation of sex-related risks appears to be confirmed by this study as no statistically significant gender differences were found (see Table 9). However it is disturbing, particularly in view of their vulnerability to infection, that 18% of women compared with 8% of men are never able to insist on the use of a condom. Also, in spite of ongoing education and awareness programmes run by the Student Counselling Centre, one in ten young women had suffered from sexual harassment during the previous year (see Table 12). Higher numbers of men (15%) than women (3%) had had more than one sexual partner during the previous month

◆ **Pregnancy and early parenting**

In most parts of the developed world, the incidence of teenage pregnancy is slowly dropping. In the USA there has been a steady decline in the teen birth rate since the early 1990s (dropping from 62.1 births per 1000 in 1991 to 51.1 per 1000 in 1998). In Australia the birth rate to women between the ages of 15 and 19 has also dropped from 55.5 births per 1000 in 1970 to 20 per 1000 in 1995 (Centre for Adolescent Health, 2000). In Europe the rate of teenage pregnancy is dropping except in Britain, where it is possible that early pregnancy is associated with other social factors (Turz, 1997).

In the developing world the pattern is less optimistic. In 1990 the Department of Health in South Africa estimated the pregnancy rate to be 330 per 1000 women under the age of 19. According to the World Health Organization more than 10% of births worldwide are to women between 15 and 18 years of age. Among women in this age group, 14% in sub-Saharan Africa give birth, compared to 6% in more developed countries and 3% in industrialised countries (WHO, 1997). In another South African survey 48% of black, 17% of coloured, 30% of Indian and 17% of white women gave birth to a child before the age of 20 (Youth Health, 1999). In this study among students at a

tertiary institution the rate was lower. Nevertheless, nearly one in five black students had either given birth to or fathered a child (see Table 12).

7.1.4 Depression and suicidal behaviour

Depression remains a risk factor that affects more women than men. Results from this study show that around 13% of young women and 4% of young men were depressed (see Table 14). This is commensurate with the point prevalence in the DSMIV but lower than figures from young people in First World countries. Rates of depression in the USA were 20% of young women and 15% of young men; in Canada 14% of young people; and in Australia 18% of young people were depressed.

Suicidal thinking was reported by 11% of young South Africans (see Table 15) compared with 9% in the USA and 5% in Australia. Of concern was the high incidence of suicidal thinking among Indian students (17%). This is in line with findings of other South African research (Pillay & Wassenaar, 1997) and indicates underlying psychosocial factors that puts young Indian people at risk.

7.2 Clustering of risk behaviours and poor health outcomes

Findings indicate that young people in South Africa face similar problems to those in developed countries in both categories of risk and the cumulative nature of risk factors. In this study significant positive correlations between three broad categories of risk (substance use, general risks, and depression) were found (see Table 21). This is consistent with research findings from developed countries (Lerner & Galambos, 1998; Steiner et al., 1998) and previous research in South Africa (Flisher et al., 1996a). The analysis in this study concentrated on associations *between* the various categories of risk, for example, general risk taking, substance use, and depression. Associations *within* categories, for example smoking and alcohol consumption were not analysed but assumed, because these are robust findings in all previous research.

One discrepancy with previous research was found in the area of risks associated with sexual behaviour. Links between sexual risk behaviour, general risks, and substance use have been

consistently found in research from the developed world but sexual risks were not significantly correlated with any other category of risk in this study (see Table 21). It is probable that this was caused by using one scale for both sexual risk behaviour (condom use and multiple sexual partners) and poor health outcomes (STDs, HIV, and unwanted pregnancy or early parenting). A fruitful line of enquiry might separate the two and test for associations between them: For example, a test of the association between condom use and STDs/ HIV and between multiple partners and STDs/HIV. Because of the issue of power relations between sexual partners in South Africa, it would also be important to separate the men and women of each racial group, and then to test the associations between sexual risk behaviour and poor health outcomes: For example, the association between condom use among young black women and the incidence of STDs and HIV.

7.3 The relationship between coping style, risk behaviour and poor health outcomes

Coping styles were found to interact with risk behaviour and poor health outcomes in the expected directions. That is approach coping correlated negatively and avoidance coping correlated positively with risk behaviour and poor health outcomes.

◆ Approach coping style

Research from the First World has shown that approach coping is generally associated with low risk behaviour and healthy developmental outcomes. This study found that approximately three-quarters of South African students in this sample favour the use of the approach coping style. This is consistent with findings for socio-demographic correlates by Billings and Moos (1984) who found that better educated respondents were more likely to use approach coping strategies. Thus, while this figure may not represent South African youth in general, the finding does have positive implications regarding this protective factor against risk behaviour and poor health outcomes.

Weak negative correlations were found between approach coping and substance use, general risks, sexual risks, and depression (see Table 21). Although they were not statistically significant they were in the expected direction which suggests that young people who use predominantly approach

coping are less likely to engage in risky behaviour. However the weakness of the correlations suggests other ameliorating factors, and the fact that coping style alone cannot account for engagement with risk and poor health outcomes. Thus, while coping style is important in predicting health outcomes, these findings again indicate the significance of other factors, such as environmental stressors. The approach coping style in itself is not a sufficient protective factor, for example, in the absence of social support.

◆ **Avoidance coping style**

Research in developed countries has shown that the avoidance coping style is generally associated with risky behaviour and poor health outcomes. In this study fewer students used the avoidance coping style but it was used by more women (38%) than men (15%) which represents a statistically significant difference (see Table 9). This is consistent with findings by Billings and Moos (1984) who found that younger unmarried women reported more reliance on avoidance coping strategies.

Statistically significant positive correlations were found between the avoidance coping styles and substance use, general risks and depression (see Table 21) which confirm previous research from the First World. These results are interesting in the light of the aforementioned findings regarding approach coping styles which suggest that avoidance coping places young people at greater risk for poor health outcomes, while approach coping styles do not necessarily protect against engagement with risk behaviour and poor health outcomes. This could be because some of the risk behaviours such as substance abuse and reckless behaviour may be classified as avoidance coping mechanisms commonly employed by young people who may be resisting confronting their problems and emotional distress.

Associations between coping style and environmental risk factors are discussed in the section below.

7.4 The relationship between environmental risk factors and risk behaviour/poor health outcomes and coping style

Research from industrialised countries has consistently linked environmental risk factors such as low emotional support from families and financial difficulties with risk behaviour and poor health outcomes among young people. The cumulative nature of both environmental and other risk factors among young South Africans surveyed has been confirmed in this study. Risk behaviour, poor health outcomes and environmental risk factors cluster together and are compounded by the use of poor coping strategies.

◆ Low family and peer support

Low family and peer support indicated by lack of emotional connection to significant others have been found to be a key risk factor in Western research. In this study almost all young people reported feeling emotionally close to family and around 90% had at least one close friendship (see Table 6). This is positive, given the finding by Bond et al. (2000) that the presence of one protective factor increases the likelihood that others will be found.

In this study the 4% of students who are report low family attachment and the 9 – 15% of students who have no close supportive friendships are most at risk. Western research has found significant associations between lack of emotional connection (attachment) to family/friends and all categories of risk. This finding was confirmed in this study from South African young people. Significant positive correlations were found between low family/peer support and general risks, sexual risks, and depression indicating that this environmental risk factor contributes significantly to problems for young people (see Table 21). This result gives rise to particular concern for young people in South Africa, many of whom have faced family and community dislocation as a result of political unrest. The lack of stable family and school environments may still be affecting young people's resilience as about one in five black students were above average in scaled scores showing lack of support. This was particularly noticeable for peer support with 23% of black students (compared with 6% Indian and 2% white) who reported having no close friendship (see Table 18). There are many possible reasons for such a finding. It is well known that the black population in South Africa suffered extreme levels of oppression, violence and poverty during *apartheid*. This included

political violence in most black communities, particularly in KwaZulu/Natal, disruption of schooling, and social fragmentation at a family and community level. Moreover, many black students at this University are from rural areas and from relatively traditional African households. The move to this urban centre and training institution, where predominately Western norms apply, has been noted to leave some students feeling isolated and alienated. This is disturbing, given robust findings from the USA, Australia, and Canada that a sense of connectedness (attachment) to peers and school or training institution is a significant protective factor in the lives of young people. These initial speculations warrant further investigation in order to make sense of this worrying discrepancy. Analysis of the sample according to term address (residence, digs, or staying at home) may prove a fruitful line of inquiry. Results of further study may be useful in giving rise to intervention strategies with this group.

One hypothesis of this study was that coping style might have a direct effect on young people's successful efforts to establish and maintain helpful and caring relationships with both family and friends. Specifically it was suggested that approach coping strategies would be negatively correlated with low family and peer support, and that avoidance coping strategies would be positively correlated with low support. This was found to be the case for approach coping which was negatively correlated with low family and peer support in the total sample (see Table 18) indicating that approach coping is associated with the establishment of close and caring relationships. Conversely among young men in particular, avoidance coping was positively correlated with low family and peer support (see Table 22) which suggests less success in the establishment of close relationships by young men who use avoidance coping strategies. A person with an avoidance coping style may be less likely to access social support, even if this is perceived to be available. For example, talking to a friend is an approach style mechanism that is unlikely to be employed by an avoidant person, even if such a friend is available.

◆ **Low financial support**

In this study financial difficulties were indicated by students who received no financial support from parents for academic fees and living expenses but were dependent on financial aid and other sources of income. More than one third of young South Africans surveyed (56% black, 27% Indian,

and 26% white) were dependent on financial aid and other sources for payment of fees. For living expenses 16% of all students (28% black, 27% Indian, and 15% white) were dependent on financial aid (see Table 20). Of particular concern was more than a quarter of black students (compared with 10% Indian and 4% white) who reported that they rarely had enough money to eat a healthy diet. Also there were high levels of anxiety about finances (45% black, 35% Indian and 20% white) among all young people surveyed (see Table 20). Results confirm that this environmental risk factor contributes significantly to problems faced by students.

Financial difficulties have been found, even in the relatively wealthy countries of Europe and the USA, to impact significantly on the health and wellbeing of young people. In this study low financial support was positively correlated with sexual risks and depression indicating that this environmental risk factor compounds risk behaviour and poor health outcomes among young people surveyed. This result is alarming given that the sample in this study would be considered amongst the more affluent within the broader South African population. In a country with estimated unemployment exceeding 50% and high poverty levels this finding has disturbing implications for groups of young people who have not been able to access tertiary training.

The hypothesis that different coping styles might be correlated with financial difficulties was confirmed in this study. Approach coping was negatively correlated with low financial support (see Table 21) which indicates that the problem solving strategies of this style are associated with better financial outcomes. Conversely, among young men, avoidance coping was positively correlated with low financial support (see Table 19) indicating that higher environmental risks are associated with the use of avoidance coping strategies.

7.5 Limitations of this study

◆ Protective factors

This research has concentrated on the incidence and interaction of risk factors including environmental risks, risk behaviours, poor health outcomes, and coping styles. It has been beyond the scope of this study to examine the interaction of protective factors reported in the descriptive research. However, previous research has found that risk and protective factors are often linked and operate to modify diverse health related behaviours. Therefore an analysis of the percentage of the variance explained by protective factors and a study of the interaction of risk, protective factors and behaviour should prove a fruitful line of enquiry.

◆ Underlying causes

This correlational analysis has demonstrated links between risk behaviour, poor health outcomes, coping style, and environmental risk factors. It has made no attempt to explore the underlying causes of health-related behaviour. Further qualitative studies could examine the social meaning and utility of certain risk behaviours as well as explore causes. For example, the perceptions of social support and accessing this support, and the dynamics underlying alcohol consumption and risky sexual behaviour could be further explored through more qualitative methodologies.

◆ Developmental life-span

This cross-sectional study has not attempted to examine risk behaviour over time or in age groups other than the 18-24-year-old sample. Further study could examine the age of initial onset of risk behaviour and continuity of risk behaviours and poor health outcomes over time as it has been shown in First World research that early onset of certain risk behaviours can result in persistence and poorer health outcomes.

◆ **The sample**

Generalisation of results from studies conducted at tertiary institutions should be done with caution. This is particularly true in sub-Saharan Africa where students at tertiary institutions are nearer the top end of the socioeconomic scale and probably not subject to severe environmental risk factors such as poverty and lack of access to health care. It would be interesting to extend this research to other populations within South Africa: For example, young rural populations who may be affected more by poverty but possibly protected by the richness of their social network; populations in areas affected by political violence; and urban townships.

7.6 Concluding remarks

Findings from this survey indicate that South African young people face difficulties and challenges that are similar in many ways to young people from the First World. However there are some additional factors in the South African context, such as poverty and the AIDS epidemic, which increase concern about the healthy development and resilience of young South Africans. This study has demonstrated that the social context and environmental risk factors influence the health-related behaviours of young people surveyed and that an understanding of context is essential to guide efforts to modify health behaviour. The interactive contextual model provides a useful framework for speculation on findings of this study, the need for further research, and possible intervention strategies.

◆ **The Individual**

The possibility of a causal link between coping strategy and poor outcomes cannot be ignored. It is possible that an avoidant coping style exacerbates problems for young people. Risky behaviour and difficulty in accessing social support are compounded by the use of poor coping strategies that appear to result in a cycle of adversity and poor outcomes. On the other hand, the approach coping style is associated with more positive outcomes in terms of financial security and access to social and emotional support. Possible interventions in terms of life-skills training suggest themselves.

◆ **The Family**

Close and supportive family relationships remain one of the most important protective factors in the lives of young people. This study did not quantify or compare students who are still living within the family system and students who have left home and live in University residences or independent accommodation. Further research may find that relatively low levels of family and peer support among black students, many of whom live in residences, could be explained by the relatively impersonal living circumstances in large residences. The dislocation and fragmentation of families during *Apartheid* and the migratory labour system may also be a factor in this regard. Western research findings about the importance of emotional connectedness, attachment or a sense of belonging in the lives of young people suggest that intervention in terms of peer counselling training and group work is important for young people who feel alienated from family and friends.

◆ **The training institution or school**

Research from the developed world has shown how important it is for young people to feel a sense of emotional connectedness to their schools. This is revealed in a sense of being fairly treated, access to teachers, and a perceived absence of prejudice. The challenge for schools and institutions which have been rooted in a deeply divided past in South Africa is enormous. Australian research that shows the protective benefits of opportunities and rewards for pro-social involvement suggests one possible intervention strategy.

◆ **The community**

This study has only touched on the importance to young people of stable, socially rich networks in communities. By the nature of its size, a tertiary institution becomes a community in itself. Further research into the efficacy of the social networks in terms of support for young people in residences, academic departments, and support services is needed.

The difficulties and challenges of the transitional period between childhood and adulthood are successfully negotiated by millions of young people worldwide. The risks associated with the health of young people are closely linked to behaviour. Research efforts to describe, explain, predict and support

behavioural choices of young people in developing countries are very important in the face of the enormous challenges faced by them. This study has shown some of the links between risky behaviour, poor health outcomes, environmental risk factors and coping style. Qualitative research is necessary to untangle causes and the dynamics of both the protective and risky choices made by young people.

List of References

- Allen, J.P., Hauser, S.T., Bell, K.L., & O'Connor, T.G. (1994). Longitudinal assessment of autonomy and relatedness in adolescent family interactions as predictors of adolescent ego development and self-esteem. Child Development, 65, 179-194.
- * Altshuler, J. L., & Ruble, D. N. (1989). Developmental changes in children's awareness of strategies for coping with uncontrollable stress. Child Development, 60 (6), 1337 – 1349.
- Ammerman, R.T., & Hersen, M. (Eds.). (1997). Handbook of prevention and treatment with children and adolescents: Intervention in the real world context. New York: John Wiley and Sons.
- Bernard, B. (1999). Turning it around for all youth: from risk to resilience [Online]. Available: <http://www.ed.gov/databases/ERIC~Digest/ed412309.html> [2000, June 17]
- Billings, A., & Moos, R. (1984). Coping, stress and social resources among adults with unipolar depression. Journal of Personality and Social Psychology, 94, 140-153.
- Blum, R.W., & Rinehart, P. M. (1999). Reducing the Risk: Connections that make a difference in the lives of Youth. Minneapolis: Division of General Pediatrics and Adolescent Health, University of Minnesota.
- Bond, L., Thomas, L., Toumbourou, J., Patton, G., & Catalano, R. (2000). Improving the Lives of Young Victorians in Our Community: A Survey of Risk and Protective Factors [Online]. Available: <http://www.dhs.vic.gov.au/commcare> [2000, August 25].
- Bowlby, J. (1969). Attachment and Loss: Vol. 1. Attachment. New York: Basic Books.
- Bronfenbrenner, U. (1979). The Ecology of Human Development. Cambridge: Harvard University Press.

- Brooks-Gunn, J., Petersen, A. C., & Compas, B. E. (1994). What role does biology play in childhood and adolescent depression? In I. M. Goodyer (Ed.), Mood Disorders in Childhood and Adolescence (pp. 180 – 208). New York: Cambridge University Press.
- Brooks-Gunn, J., & Reiter, E.O. (1990). The role of pubertal processes. In S.S. Feldman & G.R. Elliott (Eds), At the Threshold: the Developing Adolescent (pp.16 – 53). Cambridge, MA: Harvard University Press.
- Brown, B.B., (1990). Peer groups and peer cultures. In S.S. Feldman & G.R. Elliott (Eds), At the Threshold: the Developing Adolescent (pp.171 - 196). Cambridge, MA: Harvard University Press.
- Buchanan, C.M., Eccles, J.S., & Becker, J. B. (1992). Are adolescents the victims of raging hormones: Evidence for the activational effects of hormones on moods and behavior of adolescence. Psychological Bulletin, *111*, 62 – 107.
- Buga, G., Amoko, D., & Ncayiyana, D. (1996). Sexual behaviour, contraceptive practice and reproductive health among school adolescents in rural Transkei. South African Medical Journal, *86*, 523 –527.
- Caspi, A., Elder, G.H., Herbener, E.S. (1990) Childhood personality and the prediction of life-course patterns. In L.N. Robins & M. Rutter (Eds.), Straight and Devious Pathways from Childhood to Adulthood (pp.13 - 35). New York: Oxford University Press.
- Caspi, A., Moffit, T.E. (1991). Individual differences are accentuated during periods of social change: the sample case of girls at puberty. Journal of Personality and Social Psychology, *61*, 157 – 168.
- Centre for Adolescent Health: Youth Health Facts. (2000). [Online]. Available: <http://www.rch.unimelb.edu.au/adolescent/> [2000, August 26].

- Clark, R.M. (1983). Family Life and School Achievement: Why poor Black Children Succeed or Fail. Chicago: University of Chicago Press.
- Cohen, P., Brood, J.S., Cohen, J., Velez, C.N., & Garcia, M. (1990). Common and uncommon pathways to adolescent psychopathology and problem behavior. In L.N. Robins & M. Rutter (Eds.), Straight and Devious Pathways from Childhood to Adulthood (pp.242 – 258). New York: Oxford University Press.
- ☞ Compas, B.E. (1987). Coping with stress during childhood and adolescence. Psychological Bulletin, 101(3), 393-403.
- ✱ Compas, B.E., Ey, S., & Grant, K.E. (1993). Taxonomy, assessment and diagnosis of depression during adolescence. Psychological Bulletin, 114, 323 – 344.
- Compas, B.E., Grant, K.E., & Ey, S. (1994). Psychosocial stress and child-adolescent depression: Can we be more specific? In W.M. Reynolds & H. Johnston (Eds.), Handbook of Depression in Children and Adolescents (pp.225 – 267). New York: Plenum.
- ✱ Compas, B.E., Hinden, B.R., & Gerhardt, C.A. (1995). Adolescent development: Pathways and processes of risk and resilience. Annual Review, Psychology, 46, 265-293
- Cummings, E.M., & Davies, P.T. (1994). Maternal depression and child development. Journal of Child Psychology and Psychiatry, 35, 73 – 112.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C.M., & Reuman, D. (1993). Development during adolescence: the impact of stage-environment fit on adolescents' experiences in schools and families. American Psychologist, 48, 90 – 101.
- Erikson, S., Feldman, S., & Steiner, H. (1997). Defence reactions and coping strategies in normal adolescents. Child Psychiatry and Human Development, 27, 4 – 14.

- Farrington, D., Loeber, R., Van Kammen, W.B. (1990). Long-term criminal outcomes of hyperactivity-impulsivity-attention deficit and conduct problems in childhood. In L.N. Robins & M. Rutter (Eds.), Straight and Devious Pathways from Childhood to Adulthood (pp.62 - 81). New York: Oxford University Press.
- Flisher, A.J., Ziervogel, C.F., Chalton, D.O., Leger, P.H., Robertson, B.A. (1996a). Risk-taking behaviour of Cape Peninsula high-school students: Evidence for a syndrome of adolescent risk behaviour. South African Medical Journal, 86, (9), 1088 – 1091.
- Flisher, A.J., Ziervogel, C.F., Chalton, D.O., Leger, P.H., Robertson, B.A. (1996b). Risk-taking behaviour of Cape Peninsula high-school students: Multivariate relationships among behaviours. South African Medical Journal, 86, (9), 1094 –1098.
- Foxcroft, D.R. (Ed). (1997). Adolescent Health [Special Issue]. Journal of Adolescence, 20.
- Galambos, N.C. & Ehrenberg, M.F. (1997). The family as health risk and opportunity: a focus on divorce and working families. In J. Schulenberg, J.L. Maggs & K Hurrelmann (Eds.), Health Risks and Developmental Transitions during Adolescence (pp. 139-160). Cambridge: Cambridge University Press.
- Garbarino, J., (1985). Habitats for Children: An Ecological Perspective. In J. F. Wohlwill & W. von Vliet (Eds.), (1987). The Impacts of Density. (pp.125 – 143). New Jersey: Lawrence Erlbaum Associates.
- Garbarino, J., & Sherman, D. (1980). High-risk neighborhoods and high-risk families: The human ecology of child maltreatment. Child Development, 51, 188 – 198.
- Garnezy, N. (1987). Stress competence and development: Continuities in the study of schizophrenic adults, children vulnerable to psychopathology, and in the search for stress-resistant children. American Journal of Orthopsychiatry, 57, 159-174.

- Garnezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. American Behavioral Scientist, 34(4), 416-430.
- Garnezy, N., & Masten, A.S. (1990). The adaptation of children to a stressful world: Mastery of fear. In L.E. Arnold (Ed.), Childhood Stress (pp. 461-473). New York: John Wiley & Sons.
- Garnezy, N., & Masten, A.S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. Child Development, 55, 97-111.
- Garnezy, N., & Rutter, M. (Eds.). (1983). Stress, Coping and Development in Children. New York: McGraw-Hill.
- Harter, S., (1990). Self and identity development. In S.S. Feldman & G.R. Elliott (Eds.), At the Threshold: the Developing Adolescent (pp.352 - 387). Cambridge, MA: Harvard University Press
- Inoff-Germain, G., Arnold, G.S., Nottelmann, E.D., Susman, E.J., Cutler, G.B., & Chousos, G.P. (1988). Relations between hormone levels and observational measures of aggressive behaviour of young adolescents in family interactions. Developmental Psychology, 24, 129 – 139.
- Jacobson, K.C., & Rowe, D.C. (1999). Genetic and environmental influences on the relationships between family connectedness, school connectedness, and adolescent depressed mood: Sex differences. Developmental Psychology, 35(4), 926-939.
- Jessor, R. (Ed.). (1998). New Perspectives on Adolescent Risk Behavior. Cambridge: Cambridge University Press.

- Jessor, R., Van Den Bos, J., Vanderryn, J., Costa, M., & Turbin, M.T. (1995). Protective factors adolescent problem behavior: Moderator effects and developmental change. Developmental Psychology, 31, 923 – 933.
- Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1996). National Survey results on drug use from the Monitoring the future study, 1975 – 1994. Washington, DC: US Department of Health and Human Services.
- Kim, S., Crutchfield, C., Williams, D., Hepler, N. (1998). Toward a new paradigm in substance abuse and other problem behavior prevention for youth: Youth development and empowerment approach. Journal of Drug Education, 28 (1) 1 – 17
- Lazarus, R.S., & Folkman, S. (1984). Stress, Appraisal, and Coping. New York: Springer
- Leadbeater, B.J., Blatt, S.J., & Quinlan, D.M. (1994). Gender linked vulnerabilities to depressive symptoms, stress, and problem behaviours in adolescence. Journal of Research on Adolescence, 23, 51 – 63.
- Lerner, R.M., (1995). America's Youth in Crisis: Challenges and Options for Programs and Policies. Thousand Oaks, CA: Sage.
- Lerner, R.M., & Galambos N.I. (1998). Adolescent development: challenges and opportunities for research, programs and policies. Annual Review of Psychology, 49, 413 – 46.
- Mcord, J. (1990). Long-term perspectives on parental absence. In L.N. Robins & M. Rutter (Eds.), Straight and Devious Pathways from Childhood to Adulthood (pp. 116-134). New York: Oxford University Press.
- Moffitt, T.E., (1993). Adolescence-limited and life-course persistent antisocial behavior: a developmental taxonomy. Psychological Review, 115, 674 – 701.

- Moos, R. H. (1993). Coping Responses Inventory - Adult Form: Professional Manual. Psychological Assessment Resources: Florida.
- Moos, R. H., & Schaefer, J. (1990). Coping resources and processes: Current concepts and measures. In L. Goldberger & S. Breznitz (Eds.), Handbook of stress: Theoretical and Clinical Aspects (2nd ed.). New York: Macmillan.
- Moos, R.H., & Swindle, R. (1990). Stressful life circumstances: Concepts and measures. Stress Medicine 6, 171 – 178.
- Nolen-Hoeksma, S., & Girgus, J.S. (1994). The emergence of gender differences in depression during adolescence. Psychological Bulletin, 115, 424 – 443.
- Nottlemann, E.D., Susman, E., Inoff-Germain, G., Cutler, G., Loriaux, D., & Chrousos, G. (1987). Developmental processes in early adolescence: Relationships between adolescent adjustment problems and chronological age, pubertal status and puberty-related serum hormone levels. Journal of Paediatrics, 110, 473 – 480.
- Paikoff, R.I., & Brooks-Gunn, J. (1991). Do parent-child relationships change during puberty? Psychological Bulletin, 110, 47 – 66.
- Peterson, A.C., Compas, B.E., Brooks-Gunn, J., Stemmler, M., Ey, S. & Grant, K.E. (1993). Depression during adolescence. American Psychologist, 48, 155 – 168.
- Peterson, A.C., Sarigiani, P.A., & Kennedy, R.E. (1991). Adolescent depression: Why more girls? Journal of Youth and Adolescence, 20, 247 – 271.
- Pillay, A.L., & Wassenaar, D.R., (1997). Recent Stressors and family satisfaction in suicidal adolescents in South Africa. Journal of Adolescence, 20, 155-162

- Radloff, L.S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.
- Resnick, M.D., Bearman, P.S., Blum, R.W., Bauman, K.E., Harris, K.M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M., Bearinger, L.H., Udry, J.R. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study of Adolescent health. Journal of the American Medical Association, 278(10), 823-832.
- Richter, L. (1996). A survey of reproductive health issues among urban black youth in South Africa. Pretoria: Medical Research Council.
- Richter, L. (1997). A survey of reproductive health issues among urban black youth in south Africa. Follow up 1995 – 1997. University of Natal: Pietermaritzburg.
- Robins, L.N., & Rutter, M. (1990). Straight and Devious Pathways from Childhood to Adulthood. New York: Oxford University Press.
- Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. British Journal of Psychiatry, 147, 598 – 611.
- Rutter, M. (1988). Pathways from childhood to adult life. Journal of Child Psychology and Psychiatry, 30(1), 23-51.
- Rutter, M., & Rutter, M. (1993). Developing Minds: Challenge and Continuity across the Life Span. New York: Basic Books.
- Rutter, M., Tizard, J., Yule, W., Graham, P. & Whitmore, K. (1976). Isle of Wight Studies 1964 – 1974. Psychological Medicine, 6, 313 – 332.
- South African Health Review. (1995). Published jointly by the Health Systems Trust and the Henry J. Kaiser Family Foundation.

- Steiner, H., Pavelski, R., Pitts, T., McQuivey, R., (1998), The Juvenile Wellness and Health Survey (JWHS-76): A school based screening instrument for general and mental health in high school students. Child Psychiatry and Human Development, 29(2), 141 – 155.
- Susman, E.J., Inoff-Germain, G., & Chrousos, G.P. (1987). Hormones, emotional dispositions, and aggressive attributes in young adolescents. Child Development, 58, 1114 - 34
- Swadener, B., & Lubeck, S. (Eds.). (1995). Children and families “at promise.” Deconstructing the discourse of risk. Albany: State University of New York Press.
- Tonkin, R., Murphy, A., & Sidhu, A. (1999). Adolescent Health Survey (AHS) II [Online]. Available: <http://www.mcs.bc.ca/> [2000, August 25].
- Turton, R.W., Straker, G., Moosa, F. (1991). Experiences of violence in the lives of township youths in ‘unrest’ and ‘normal’ conditions. South African Journal of Psychology, 21 (2), 77 – 89.
- Turz, A. (1997). Problems in conceptualising adolescent risk behaviours: International comparisons. Journal of Adolescent Health, 21, 116 – 127.
- Udry, J.R., Bauman, K.E., Bearman, P.S., Billy, J.O., Blum, R.W., Grady, W.R., Harris, K.M., Jaccard, J. J., Resnick, M.D., Rowe, D.C., Jones, J. (1998). The National Longitudinal Study of Adolescent Health. [Online]. Available: <http://www.cpc.unc.edu/projects/addhealth/html> [2000, August 16]
- Werner, E.E. (1989). Children of the Garden Island. Scientific American April: 76 –81.
- Williams, B.G., Gouws, E., & Abdool Karim, S.S. (2000). Where are we now? Where are we going? The demographic impact of HIV/AIDS in South Africa. South African Journal of Science, 96, 297 – 300.

- Williams, B.G., Gouws, E., Colvin M., Sitas, F., Ramjee, G., & Abdool Karim, S.S. (2000). Patterns of infection: using age prevalence data to understand the epidemic of HIV in South Africa. South African Journal of Science, 96, 305 – 312.
- Williams, G., Milligan, A., & Odemwingie, T. (1997). A Common Cause: Young People, Sexuality, HIV and AIDS in Three African Countries. UNAIDS: Geneva.
- World Health Organisation. (1993). The Health of Young People: A Challenge and a Promise. WHO: Geneva.
- World Health Organisation. (1995). A Picture of Health? A review and annotated bibliography of the health of young people in developing countries. WHO: Geneva
- World Health Organisation. (1997). Fact Sheet Number 186. [Online]. Available: <http://www.who.ch/> [2000, August 31].
- World Health Organisation. (2000a). Health Policy for Children and Adolescents. WHO: Geneva
- World Health Organisation. (2000b). Sex Drugs and Potato Crisps. (Press release Euro 01/00). [Online]. Available: <http://www.who.dk/cpa/htm> [2000, August 10]
- Youth Health. (1999). Health Systems Trust Update, 44. Published jointly by the Health Systems Trust and the Henry J. Kaiser Family Foundation.

Appendix A



UNIVERSITY OF NATAL
Pietermaritzburg



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School of Psychology

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20 September, 1999

Dear Gemma

Survey of Young Adults' Health and Wellbeing

To enable the University to respond more effectively to student needs, and as part of a wider project on youth issues, the School of Psychology is undertaking a survey of the health and wellbeing of students.

Your name has been randomly selected by a computer from a list of all currently registered students. We would be most grateful if you would complete the enclosed questionnaire. Please be assured of the complete confidentiality of your responses because no names or identifying details appear anywhere on the questionnaire. As the survey is anonymous, and you are NOT required to give your name, we would like you to be as honest as possible. Please do not discuss your responses with anyone.

It is very important that all of the students to whom we send the questionnaires, return them with all sections completed. Incomplete return is a major source of bias, in all surveys, and we request your help in making this a representative sample of UNP students.

It would be helpful if you could complete and return the questionnaire in the reply paid envelope as soon as possible after receiving it.

Thank you for your cooperation.

Yours sincerely

Cathie Birkett.
(Project Coordinator)

Professor Linda Richter (PhD)
(Head: School of Psychology)

Survey of Young Adults' Health and Wellbeing

Please try to answer all sections and all questions. Questions are printed on both sides of the page. Where more than one alternative applies, tick or cross all applicable responses.

Respondent Characteristics

1. Age _____ years
2. Population Group: Black Indian White Other
3. Gender: Male Female

Diet

4. Where I stay :
Meals are provided.....
I need to cook/help cook
I buy ready-made food.....
5. I had breakfast this morning: Yes No
6. I consider my diet to be healthy:
Most of the time Some of the time Hardly ever
7. My approximate height is: _____metres _____centimetres
8. My approximate weight is: _____kgs
9. In my estimation I am:
Underweight.....
Average weight.....
Overweight.....
10. I am currently on a diet.....Yes No
11. I have been on a diet this year Yes No
12. I know someone who has suffered from anorexia or bulimia. Yes No
13. I don't have enough time to buy and prepare healthy food... Yes No

Activities

14. My sleeping pattern in the last weeks has left me generally feeling:
Usually refreshed and alert.....
Sometimes refreshed and alert.....
Hardly ever refreshed.....
Mostly tired.....
15. I currently play sport:
Not at all.....
For recreation
In competition/team.....
16. I currently go to gym:
Not at all.....
At least once a week.....
Three/more times a week...
17. My usual form of transport is:
Car/motorbike Bicycle Taxi Hitch Walk
18. The daily time I spend doing chores such as cleaning, gardening and repairs is usually:
Less than 1 hour 1 - 2 hrs 2 - 3hrs more than 3 hours
19. The daily time I spend studying, (excluding lecture time) is usually:
Less than 1 hour 1 - 2 hrs 2 - 3hrs more than 3 hours

- 20 The daily time I spend playing sport or in other leisure activities is usually:
 Less than 1 hour 1 – 2 hrs 2 - 3hrs more than 3 hours
- 21 I participate in the following formal religious activities:
- None.....
 - Mosque.....
 - Temple.....
 - Church/youth group/bible study...
 - Other (Please specify) _____

Family and Friends.

- 22 I live: Alone.....
 Board.....
 With friends....
 With family.....
- 23 My mother is still alive. Yes No
- 24 My father is still alive. Yes No
- 25 I have: Older sibling/s.....
 Younger sibling/s....
 No siblings.....
26. I consider myself to be emotionally close to my family:
 Yes.....
 In some ways.....
 No.....
27. In my family, there is someone with whom I can talk over my problems:
 Yes.....
 Sometimes.....
 No.....
28. In my family, communication difficulties occur:
 Very often.....
 Often.....
 Rarely.....
 Almost never....
29. I feel pressured to succeed/achieve by my parents:
 Often Sometimes Never
30. In my life I have been most influenced by:
 A member of my community.....
 A member of my family.....
 My friends.....
 A celebrity.....
 Other.....
31. I have at least one close friendship: Yes No
32. Among my friends, there is someone with whom I can talk over my problems:
 Very often.....
 Often.....
 Rarely.....
 Almost never.....

Finances

33. My academic/study fees are paid by: (Please mark every option which applies to you)

- | | | | |
|---------------------|--------------------------|------------------------------------|--------------------------|
| Bank loan..... | <input type="checkbox"/> | Myself, through part-time work ... | <input type="checkbox"/> |
| Parents..... | <input type="checkbox"/> | Bursary | <input type="checkbox"/> |
| Financial Aid | <input type="checkbox"/> | | |

34. My living expenses are paid by: (Please mark every option which applies to you)

- | | |
|--------------------------------|--------------------------|
| Bank loan | <input type="checkbox"/> |
| Parents..... | <input type="checkbox"/> |
| Financial Aid | <input type="checkbox"/> |
| Bursary..... | <input type="checkbox"/> |
| Myself, through part-time work | <input type="checkbox"/> |

35. My medical expenses are paid by: (Please mark every option which applies to you)

- | | | | |
|------------------|--------------------------|------------------------|--------------------------|
| Myself | <input type="checkbox"/> | My parents/family..... | <input type="checkbox"/> |
| Medical Aid..... | <input type="checkbox"/> | State Aid..... | <input type="checkbox"/> |

36. I have enough money to eat what I think is a healthy diet:

- | | |
|----------------------|--------------------------|
| All of the time..... | <input type="checkbox"/> |
| Some of the time.... | <input type="checkbox"/> |
| Rarely..... | <input type="checkbox"/> |
| Almost never..... | <input type="checkbox"/> |

37. In an average week I spend on food for myself:

- | | |
|------------------|--------------------------|
| Under R20..... | <input type="checkbox"/> |
| R20 – R60..... | <input type="checkbox"/> |
| R60 – R 100..... | <input type="checkbox"/> |
| R100 – R150..... | <input type="checkbox"/> |
| R150 – R200..... | <input type="checkbox"/> |
| Over R200..... | <input type="checkbox"/> |

38. I feel that I am as well dressed as most students:

- | | |
|----------------------|--------------------------|
| All of the time..... | <input type="checkbox"/> |
| Some of the time.... | <input type="checkbox"/> |
| Rarely..... | <input type="checkbox"/> |
| Almost never..... | <input type="checkbox"/> |

39. During the past month I have paid for/purchased:

(Please mark every option which applies to you)

- | | | | |
|-------------------------|--------------------------|-----------------------------|--------------------------|
| Telephone account | <input type="checkbox"/> | Movies..... | <input type="checkbox"/> |
| Cell phone account..... | <input type="checkbox"/> | Sport/gym..... | <input type="checkbox"/> |
| Taxis..... | <input type="checkbox"/> | Alcohol..... | <input type="checkbox"/> |
| Petrol..... | <input type="checkbox"/> | Other leisure activities... | <input type="checkbox"/> |
| Cigarettes..... | <input type="checkbox"/> | | |

40. I worry about finances:

- | | |
|------------------------|--------------------------|
| All of the time | <input type="checkbox"/> |
| Some of the time | <input type="checkbox"/> |
| Rarely | <input type="checkbox"/> |
| Almost never | <input type="checkbox"/> |

Substance Use

41. During the past month I have had an alcoholic beverage such as beer, wine, or spirits.
Yes No
42. During the past month, I have had 6 or more drinks on one occasion/at one sitting:
10 or more times
6 to 9 times
2 to 5 times
Once
Never
43. During the past month, I have smoked the following number of cigarettes/packs of cigarettes:
None.....
1 – 5 cigarettes.....
About half a pack per day.....
About a pack per day.....
More than a pack per day.....
44. During the past month I have used dagga:
Not at all.....
Once.....
3 – 6 occasions.....
7 – 10 occasions.....
More than 10 occasions.....
45. At some time in my life, without a doctor telling me to, I have used the following drugs:
(Please mark every option which applies to you)
- Psychedelics (LSD, acid, caps, microdots, impregnated stamps).....
 - Barbiturates (barbs, yellow, reds, blues, sleepers, downers, goof balls)
 - Amphetamines (speed, benzie, dexies).....
 - Combinations (purple hearts, speed balls)
 - Amylnitrate (poppers).....
 - Ecstasy (E, Eve, Adam, doves, hearts,)
 - Cocaine (coke, candy, happy dust,).....
 - Mandrax/white pipe.....
 - Heroine/morphine/pethadine.....
 - Inhalants (Glue, tippex, aerosols, petrol).....
 - I have never used any of these drugs.....
46. I know that one/some of my friends use/s the above drugs:
Regularly.....
Sometimes.....
Never.....

Personal and Social Hazards

47. During the past year, I was involved in a motor vehicle accident:
 Yes No

48. During the past year, I was admitted to hospital:
 For a routine procedure (e.g. wisdom teeth).....
 For an emergency (e.g. accident/injury).....
 For a serious illness (in hospital for 3 or more days)
 I was not admitted to hospital

49. During the past year, I was threatened by/suffered from:
 Physical aggression/intimidation.....
 Sexual harassment.....
 Date rape.....
 Sexual assault/rape.....
 Weapons e.g. guns/knives.....
 Robbery.....
 Other (Please specify) _____

50. The following is a list of my personal sense of safety:

	Safe at all Times	Sometimes safe	Hardly ever safe	Never safe
• In the residences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• In the UNP library	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• In lecture halls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• In campus toilets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• In the student refectory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• On the sports' fields	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• At the Varsity Club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Walking between the upper/lower/ campus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Durban Rd shopping complexes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• The centre of Maritzburg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

51. At some time in my life, I have driven a car after drinking more than 3 alcoholic beverages (e.g. 3 glasses of wine, 3 cans of beer)
 Yes No

52. At some time in my life, I have been a passenger in a car where I know that the driver has drunk more than 3 alcoholic beverages (e.g. 3 glasses of wine, 3 cans of beer)
 Yes No

53. In sporting activities during the past year, I have been injured seriously enough to need the attention of a nursing sister/doctor
 Yes No

Academic Progress

54. Last semester I:
 Passed all my courses..... Failed three courses.....
 Failed one course..... Failed four or more courses.....
 Failed two courses.....
55. I worry about my academic progress
 Most of the time Sometimes Rarely Never
56. Given my academic progress and my level of financial support, my hopes of finishing my degree are:
 Very good..... Poor.....
 Good..... Very Poor...
 Average.....
57. When I finish my degree, I think that my prospects of employment are:
 Very good..... Poor.....
 Good..... Very Poor...
 Average.....
58. I feel that I have a say in deciding the important things of my life:
 Almost all the time.... Rarely.....
 Quite often..... Almost never....

Sexual Activity

59. I have voluntarily had sexual intercourse. Yes No
 If you answered YES please complete this section.
 If you answered NO please skip to question 71
60. The first time I had sex, either my partner or I used protection.. Yes No
61. I am currently in a sexual relationship with a partner of the opposite sex..... Yes No
62. I am currently in a sexual relationship with a partner of the same sex..... Yes No
63. During the past month, I have had sex with two or more different partners..... Yes No
64. During the past month, either my partner or I have used one or more of the following methods of protection: (Please tick every method which applies)
 None..... Diaphragm.....
 Pill/injection..... IUD/Coil.....
 Condom..... Rhythm/Safe period.....
 Foam/jelly..... Withdrawal/pulling out.....
65. I am too embarrassed to use or suggest the use of a condom with my sexual partner/s:
 Always Sometimes Never
66. I insist on the use of a condom with my sexual partner/s:
 Always Sometimes Never
67. I have been pregnant..... Yes No
66. I have had a termination of pregnancy..... Yes No
67. I have given birth to/fathered a child..... Yes No
68. I have more than one child..... Yes No
69. I have been treated for a sexually transmitted disease. Yes No
 If YES, please indicate which one/s
 Syphilis Gonorrhoea Chlamydia
 Herpes Genital warts Bacterial vaginosis
71. I know that one/more of my friends have been treated for a sexually transmitted disease.
 Yes No
72. I have been tested for HIV..... Yes No
73. I know someone who is HIV positive..... Yes No

Emotional State

Do any of these statements apply to how you have been feeling during the past six months?
(Please mark every option which applies.)

- | | | | |
|--|--------------------------|--|--------------------------|
| 74. Feeling everything is an effort..... | <input type="checkbox"/> | 75. Crying easily..... | <input type="checkbox"/> |
| 76. Feeling caught or trapped..... | <input type="checkbox"/> | 77. Blaming myself for things..... | <input type="checkbox"/> |
| 78. Feeling lonely..... | <input type="checkbox"/> | 79. Loss of sexual interest or pleasure..... | <input type="checkbox"/> |
| 80. Feeling low in energy | <input type="checkbox"/> | 81. Feeling blue..... | <input type="checkbox"/> |
| 82. Thoughts of ending my life..... | <input type="checkbox"/> | 83. Feeling no interest in things..... | <input type="checkbox"/> |
| 84. Worrying too much about things... | <input type="checkbox"/> | 85. Feeling hopeless about the future.. | <input type="checkbox"/> |
| 86. Feelings of worthlessness..... | <input type="checkbox"/> | 87. None of these apply..... | <input type="checkbox"/> |

Use of Health Services

88. When I am worried about any aspect of my health or wellbeing, I know whom to approach for help. Yes No

89. During the past year, I have used the following health services:

(Please mark every option which applies)

- The Campus Health Clinic, where I saw the Nursing Sister.
Once Twice Three times More than three times
- The Campus Health Clinic, where I saw the University Doctor
Once Twice Three times More than three times
- My own private Doctor
Once Twice Three times More than three times
- A local clinic (e.g. Berg St)
Once Twice Three times More than three times
- The Student Counselling Centre on Campus
Once Twice Three times More than three times
- My own private psychologist
Once Twice Three times More than three times
-
- Other, please specify _____
- I have not used any health service

90. I have found the health services which I have used to be:

(Please mark every option which applies)

- | | | | |
|--|--------------------------|-------------------------------------|--------------------------|
| Easily accessible..... | <input type="checkbox"/> | Unapproachable and unconcerned..... | <input type="checkbox"/> |
| Difficult to find/make appointments for..... | <input type="checkbox"/> | Affordable..... | <input type="checkbox"/> |
| Informative..... | <input type="checkbox"/> | Friendly and helpful..... | <input type="checkbox"/> |
| Uninformative..... | <input type="checkbox"/> | | |

91. During the past year, when I have been concerned about my studies/academic progress, I have consulted with:

(Please mark every option which applies)

- My friends.....
- My parents.....
- A Lecturer/tutor.....
- The Student Counselling Centre.....
- Nobody, as I try to work out things for myself.....
- I have not been concerned about my studies./academic progress.....

Stress and Coping

This section contains questions about how you manage important problems that come up in your life. Please think about the most important problem or stressful situation you have experienced **in the last year** (for example, troubles with a relative or friend, the illness or death of a relative or friend, an accident or illness, financial or study problems). Briefly describe the problem in the space provided below. If you have not experienced a major problem, describe a minor problem that you have had to deal with. Then answer each of the questions about the problem or situation you have described in the questions that follow.

Describe the problem or situation:

N = Not at all

O = Once or twice

S = Sometimes

F = Fairly often

- | | N | O | S | F |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 92. I tried to find some personal meaning in the situation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 93. I reminded myself how much worse things could be. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 94. I talked to a friend about the problem. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 95. I knew what had to be done and I tried hard to make things work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 96. I tried to forget the whole thing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 97. I accepted that nothing could be done about it. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 98. I got involved in new activities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 99. I took a chance and did something risky. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 100. I tried to step back from the situation and be more objective. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 101. I tried to see the good side of the situation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 102. I looked for help from people with the same type of problem. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 103. I took things one day at a time, one step at a time. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 104. I wished the problem would go away or somehow be over with. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 105. I realised that I had no control over the problem. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 106. I tried to make new friends. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 107. I cried to let my feelings out. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |