

**SUBSTANCE ABUSE AND PSYCHOLOGICAL WELL-BEING OF
SOUTH AFRICAN ADOLESCENTS IN AN URBAN CONTEXT**

**BY
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SYNOPSIS

Title: Substance abuse and psychological well-being of South African adolescents in an urban context.

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This research aimed at identifying patterns of substance abuse among South African adolescents and exploring the relationship between psychological well-being and substance abuse. A thorough understanding of the numerous aetiologies suggested to account for substance abuse were set out at the beginning of the study, as these are crucial to the effective understanding of any high risk behaviour. Psychological well-being was examined as a psychological construct so as to allow for a proper understanding of the term. In this study, 1 918 learners from 13 schools in the Tshwane area participated. The sample consisted of learners from 12 to 19 years of age, 802 males and 1 005 females, from Indian, Coloured, White and Black cultural groups. The students completed a life skills questionnaire that comprised of a Psychological Well-Being Scale, the Life Satisfaction Questionnaire as well as various questions regarding high risk behaviours including substance use.

A factor analysis was used to explore characteristics of the Psychological Well-Being Scale. It was found to be a reliable measure for this sample group. Self-report substance abuse patterns of the respondents were recorded. It was found that substance abuse (drinking, binge drinking, drug use) increases with age and that nearly twice as many male adolescents abuse substances. Culture was found to be a determining factor with regard to drinking and binge drinking, however, it was not found to influence drug use. In multifactorial analyses of variance it was found that both psychological well-being and life satisfaction had a significant relationship with drug abuse although no causality can be attributed from the results.

Engel's Biopsychosocial Model and Bronfenbrenner's Ecological Model were used to explain the complexity of the relationship between psychological well-being and substance abuse. Both models highlighted that in order to understand the adolescent, it is crucial to examine his or her cultural and familial behaviours that support their high risk activities.

Keywords: psychological well-being; substance abuse; comorbidity; adolescents; high risk; behaviours; life satisfaction; gender; age; language; culture; Emotional Quotient Inventory; Life Satisfaction Questionnaire; Ecological Theory; Biopsychosocial Model.

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CHAPTER ONE

INTRODUCTION

1.1 Formulating the problem

1. *“Young people are often enticed by drug lords to become pedlars and consumers of illegal substances. We must help empower them to become part of the solution instead of the problem”* (Nelson Mandela, National Drug Master Plan, 1999).

Mandela specifically singled out alcohol and drug abuse among the social pathologies that needed to be combated (National Drug Master Plan, 1994-2004). More recently Thabo Mbeki maintained that *“our country is...confronted by the serious problem of drug and alcohol abuse”* and that *“some among us have lost the possibility to think and act rationally as a result of drug and alcohol abuse”*.

Substance abuse is an important social and health problem in almost all of the countries in the world including South Africa. However, over the past few years much of the research conducted has been focused on the devastating aspects surrounding HIV and AIDS. History has shown that when a country experiences general and dramatic socio-economic changes, these frequently resound within the sphere of alcohol and drug intake. Although South Africa has been a democracy for 10 years now, the country is still going through a period of transition and it seems that various substance related problems have developed and escalated as a result of this transition.

Data from around the world suggests that substance use often starts between the ages of 14 and 15 (Pretorius, 1998 in Burger, Gouws & Kruger, 2000). There are numerous reasons given to account for this fact. However, the predominant reason seems to involve the fact that adolescence is a period of transition, in which individuals seem to be more impulsive, reckless and non-conforming than during other developmental stages of their lives (Madge & Harvey,

1999). Many adolescents engage in substance use activities, which they do perceive as risky, but as somehow acceptable within their peer groups. As a result risk behaviours (including substance abuse) during the adolescent years are of major concern in South Africa today.

Furthermore, comorbidity appears to be common among adolescents and young adults (Beitman, Adlaf, Douglas, Atkinson, Young, Johnson, Escobar & Wilson, 2001). Available data suggests that adolescents in the community who are substance abusers have a higher risk of developing other psychiatric disorders compared with their adult counterparts. It has also been shown that comorbid adolescents have a more chronic course, greater impairments in global role functioning, poorer prognoses, and tend to be less responsive to treatment compared with single disorder cases (Beitman et al., 2001). As a result the financial burden experienced by adolescents who suffer from substance use disorders and poor psychological well-being is overwhelming. Problems associated with substance abuse such as AIDS, violent crimes, child abuse and neglect, and unemployment weaken the social fabric of society, costing in lost productivity and destruction of families and individual lives (Blum, 1993 in Lewis, Dana and Belyins, 1994). Furthermore several authors (Flisher, Ziervogel, Charlton, Ledger and Robertson, 1993a and Lewis et al. 1994) maintain that some of the many adverse implications caused from adolescent substance use include increased risk of injury and death from interpersonal car accidents or violence, as well as drownings, increased probability of engaging in sexual activities as well as increased risk for suicidal behaviour and suicide ideation. In the United States of America, an estimated \$177 billion is spent each year by the Research Triangle Institute in a combat to reduce substance related problems (Lewis et al., 1994). Similarly, vast amounts of money are spent each year on substance abuse prevention and treatment programmes in South Africa. According to findings from the South African Community Epidemiology Network on Drug Use (SACENDU) projects, these costs are on the increase as can be seen by the greater demand for substance abuse treatment services for adolescents (Parry, Pluddemann, Bhana, Matthysen, Harker, Potgieter & Gerber, 2002). Clearly the use and abuse of substances places a massive burden on South Africa's health and social systems.

2.

The indicators of psychological well-being will be related to substance abuse.

However, although the study will focus predominantly on the individual or micro-level of

analysis, namely psychological well-being and substance use factors of individuals, the study can't be seen in isolation from the larger social, political, cultural and economic environment or macro-level environment in which it occurs. As a result the meso-level analysis will attempt to link the two levels or to operate as an intermediate level. As already mentioned, it seems that South African society at large (macro-level) is still being affected by the transition of its political system. Furthermore, the transition has also undoubtedly led to the change in certain beliefs, feelings and subjective experiences of well-being that vary significantly across different cultures. As such, the macro-level analysis does affect the micro-level analysis. It should be mentioned that this is a dissertation of limited scope and as such the findings of the study will provide information about the individual, who is largely influenced by their larger social, cultural and political context.

1.2 Definitions

1.2.1 Substance abuse

Substance Abuse can be defined as *“a maladaptive pattern of substance use leading to clinically significant impairment or distress, manifest by one or more of the following symptoms within a 12 month period: recurrent substance use in situations that cause physical danger to the user, recurrent substance use in the face of obvious impairment in school or work situations, recurrent substance use despite resulting legal problems, or recurrent substance use despite social or interpersonal problems”* (Diagnostic and Statistical Manual of Mental Disorders [DSM-IV-TR], 2000).

The National Drug Master Plan (1999-2004) maintains that the term substance abuse includes both the misuse and abuse of legal substances such as nicotine, alcohol, over-the-counter drugs, prescribed drugs, alcohol concoctions, indigenous plants, solvents, inhalants, as well as the use of illicit drugs. Simply put, substance abuse can be used to refer to any substance that when taken by a person modifies perception, mood, cognition, behaviour or motor functions (DSM-IV-TR, 2000).

As the focus of this research will be on substance abuse, it should be noted that most researchers agree that virtually any substance use among children and adolescents up to the age of 16 (18 in South Africa) constitutes a form of abuse (Newcomb & Bentler, 1989). The reasons for this are threefold. Firstly adolescents are still growing at this age and thus their nervous systems may be particularly susceptible to the negative effects of drugs. Secondly, because even alcohol and cigarettes are not legal for the majority of adolescents, any substance use may expose them to potential problems with the law, at school, or with their families. And finally, substance use in children and adolescents has been linked to other serious behavioural problems, such as truancy, school dropout, delinquent activities and precocious sexual activities (Newcomb & Bentler, 1989). The Penguin Dictionary of Psychology maintains that substance abuse is simply the improper use of substances and elaborates that this may include the excessive, irresponsible or self-damaging use of addictive substances (Reber & Reber, 2001). With this definition in mind, substance abuse in individuals younger than 18 therefore includes both substance oriented and substance seeking behaviour. As a result, it is particularly useful to look at patterns of substance abuse in the adolescent age group, because many adolescents engage in substance abuse regardless of the fact that even the more common substances such as alcohol are not legally permitted for persons under the age of 18. Therefore, for the purpose of this study, only questionnaires from adolescents who fall within the 13-19 age group will be used and thus any form of adolescent substance use will be classified as abuse.

1.2.2 Psychological well-being

Psychological well-being appears to be a relatively broad concept. According to Bar-On (1988) the most important reliable factorial components of psychological well-being are self regard, interpersonal relationships, independence, problem solving, assertiveness, reality testing, stress tolerance, self-actualisation and happiness. The Random House Dictionary of the English Language (1967) on the other hand defines well-being as a good or satisfactory condition of existence, a state characterised by health, happiness and prosperity. The term psychological well-being is often used interchangeably with the term “mental health” and when done so it designates one who is functioning at a high level of behavioural and emotional adjustment and adaptiveness, and not one who is simply not ill (Reber & Reber, 2001). However, for the purpose

of this research the term “psychological well-being” as opposed to mental health is the preferred option and it refers to one’s overall psychological health.

1.2.3 Adolescence

An adolescent is defined by the World Health Organisation as a person between 10 and 19 years of age (World Health Organisation (WHO), 2000-2004). Adolescence is further defined as a developmental period marked at the beginning by the onset of puberty and at the end by the attainment of physiological or psychological maturity (Ruber & Ruber, 2001). It should be noted that this period surrounding adolescence, bridging childhood and adulthood has blurred upper and lower boundaries and the term is therefore much less precise than it appears. This is due to the fact that the onset, rate of progression and chronological age at which biological maturation is completed varies significantly across individuals (Tarter, 2002). Furthermore, attainment of maturity is effectively unfeasible to specify. In the majority of cultures however, the age of 12 years has been seen to be a point where the child changes his or her status within the society he or she inhabits (Krantz, 1994). Crockett and Crouter (1995) describe the period of adolescence as a turning point, a time for change in a number of life’s domains. According to Crockett and Petersen (1999) adolescence is a period of cognitive, biological, physiological and psychological transition. Furthermore they argue that adolescence is a period in which one’s existing behavioural orientations have a chance of becoming enduring traits.

1.3 Aims of the study

Before proceeding to the body of research it is necessary to provide an explanation of the research aims that will be guiding this study. The aims of this study are threefold:

- To report on the psychometric properties of selective items from the Emotional Quotient Inventory and the Life Satisfaction Questionnaire within a South African context.
- To relate indicators of psychological well-being to substance use of adolescents.
- To relate substance use and psychological well-being to subgroups such as gender, age and cultural groups.

1.4 Overview of the study

Chapter two will begin by examining the notion of adolescence. The chapter will focus more specifically on behavioural and physical changes that take place during adolescence and will also look at psychological variables that affect the adolescent developmental period. A brief look at the many high risk behaviours in which adolescents take part will provide a bridge to enable a closer look at substance abuse within the adolescent population. Thereafter, global as well as South African statistics will be reviewed and various theories will be put forward to explain why certain people become substance abusers and certain people manage to avoid becoming involved in these high risk activities.

Chapter three will then focus directly on psychological well-being. It will examine Bar-On's development of this concept and identify the various constructs that make up its totality. The chapter will look at the relationship between the two constructs, namely substance abuse and psychological well-being. It will not aim to provide information about causality: whether factors relating to psychological well-being contribute to substance abuse or whether psychological well-being is an effect of substance abuse. Rather, the relationships will merely be investigated.

Chapter four will focus on the specific research approaches, perspectives and theories that have been used in the study. The chapter will begin with a look at Bronfenbrenner's (1979, 1989, 1994) Ecological Theory of Human Development and will then continue to examine Engel's (1977) Biopsychosocial Theory. The chapter will review why these particular models have been employed and with what success.

Chapter five will provide an account of the methodology used in this research. This will include an explanation of how the research was practically conducted, the various measuring instruments used and statistical procedures.

Chapter six consists of the research results, and a discussion of the results and conclusions will be put forward in chapter seven.

CHAPTER TWO

ADOLESCENCE

2.1 Introduction

One in every five people in the world is an adolescent (WHO, 2000-2004). Adolescents are generally thought to be healthy individuals because they have already survived the diseases of early childhood, and the health problems associated with aging are still numerous years away (WHO, 2000-2004). Yet, many adolescents lose their lives during this adolescent period. The World Health Organisation reported that an estimated 1.7 million adolescents die every year mostly through accidents, suicide, violence, pregnancy related complications, substance abuse and high risk behaviours or illnesses that are either preventable or treatable.

2.2 Adolescence as a developmental period

Lawson and Lawson's (1992) definition of adolescence as a time characterised by rapid and intensive life changes and adaptations, lends itself to the possibility of many stressors accompanying the occurring transitions. These stressors are often the result of the profound physical, psychological and social developmental changes that take place during this time. However, it should be noted that the original psychoanalytical views of adolescence as a time inevitably characterised by stress and turmoil as proposed by G. Stanley Halls and others alike, are outdated ones. Their ideas that this turmoil is desirable and a necessary part in the developmental process lead to undesirable consequences such as either ignoring serious problems that arise during this period and/or overreacting with regards to small developmental problems, ultimately creating self-fulfilling prophecies which lead to inhibition of growth through restriction of freedom (Micucci, 1998). Different studies have shown that it is the accumulation of multiple stressors that may be particularly detrimental to the psychological well-being of the adolescent (Forehand, in MacMahon & Peters, 1990). That is, while adolescents may be capable of continuing to function well with the presence of one or possibly two stressors,

when these stressors build up, functioning and psychological well-being may deteriorate rapidly (Forehand, in MacMahon & Peters, 1990).

In order to fully understand the impact of these stressors on the adolescent it is important to review them in more detail.

Physical changes

For many years adolescence has been associated with a time of major physical changes including the adolescent growth spurt, in which the size and shape of the body becomes markedly different while the differences between boys and girls become even further accentuated (Rice, 1975). For girls changes usually begin at about 10 years or even earlier. When the girl's body begins to mature, curves develop, the breasts begin to grow and hair sprouts in the pubic area and under the arms. This too is when the cycle of menstruation begins. Puberty in boys however, begins about 12-18 months later than the girl counterparts (Newman & Newman, 1997). Onset may begin with a change in voice, with growth of hair on the face, followed by hair on the chest, body and pubic region. Boys also experience the occasional erections and "wet dreams" where they involuntarily ejaculate at night. All of these changes in girls and boys are a normal developmental process. If adolescents are ignorant to such developments, this may become a very stressful and uncertain time for them.

Psychological changes

There are marked psychological changes during the adolescent period. Perhaps the most significant change is the development of an integrated and internalised sense of identity (Edmonds & Wilcocks, 2000). In a sense this means drawing apart from older family members, developing more intense relationships with peers and taking on more important decisions. Negativism becomes an attempt on the adolescent's behalf to tell the parents and world that they have minds of their own. Similarly, thinking usually becomes more abstract, conceptual and future orientated during this time. According to Mussen, Canger, Kagan and Huston (1984) a young person's cognitive abilities continue to develop both quantitatively and qualitatively during the adolescent years. These cognitive changes play an important role in helping the adolescent to deal with the more complex demands that they are faced with.

The adolescent is in a time of transition and unless individuals have the advice and social support that is so evidently needed during this crucial time, stressors may build up and affect their overall functioning. As a result, adolescence is often described in terms of increased emotional variability, moodiness and emotional outbursts. These emotions are of huge significance because they affect one's behaviour in relation to others. Under ideal circumstances the physical and psychological transitions during this time are synchronous. When they do not occur simultaneously, as they often do not, adolescents must cope with the imbalance and therefore added stress.

Behavioural changes

Adolescence is a period when young people start to look beyond their relationships with their parents and families and begin to form more intense relationships with peers and adults within their environments. These relationships are often characterised by phases of acceptance and rejection that further intensifies the emotional conflicts already being experienced (Binger, 1994). Also adolescence is often the time in which there is a gradual movement from involvement with groups of the same sex to mixed groups and the possibility of sexual pairings (Edmonds & Wilcocks, 2000). This obviously exposes them to new influences and experiences as well as pressures to experiment with new behaviours, some of which are often classified as risk behaviours. Risk taking behaviour takes many forms, including promiscuous sexual behaviour that is particularly dangerous due to the possibility of contracting AIDS; accident prone behaviour such as sky diving; fast driving and substance use.

2.3 Adolescent substance abuse

The multitude of changes associated with adolescence often contributes to the engagement in numerous high risk behaviours. The reasons for risk taking are numerous and they involve the fear of inadequacy; and personal, developmental dynamics and group dynamics such as peer pressure (Kaplan & Sadock, 2002). Furthermore, as adolescents seek to establish a personality and identity separate from their family unit, they may reject their parents' values, expressing their individuality through their clothes, music and rebellious behaviours. One of the most common of these behaviours involves the abuse of substances. Substance use and abuse

represents major threats to the health of adolescents and it is the cause of emotional, social, familial and occupational problems. Nonetheless, increasingly it seems adolescents find a source of both rebellion and comfort in substances.

2.3.1 Epidemiology

Despite ongoing research, which provides information about the devastating effects substance abuse has on individuals, adolescents continue to misuse and abuse these substances. In 1997 it was found that 11.4% of 12-17 year olds reported current drug use (Substance Abuse and Mental Health Services Administration [SAMHSA], in Weinberg, 2001) and at least 5% of American adolescents met the criteria for a diagnosis of a substance use disorder (Tarter, 2002). More recently, a British survey carried out by the National Centre for Social Research found that 45% of 15 year olds had tried using substances at some point in their lives and that 36% had used substances in the past year (Williams, 2004). In America, adolescent substance abuse is no less prevalent. The 2003 Pride Survey showed that 24% of adolescents admitted to using substances in the 2002-3 school year, which remained consistent with their past five year average of roughly 25% of adolescents admittedly using substances (Williams, 2004). More local research has found that substance abuse is recognised as one of the most significant health and social problems in the South African community (Weir-Smith, 2001). Alcohol abuse and abuse of other substances will be discussed in the following paragraphs.

2.3.2 Statistics related to alcohol use

Alcohol is regarded as the most widely abused substance. Research has shown that one in every 13 individuals throughout the world abuse alcohol or are in fact alcoholics (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2000). Weinberg (2001) reported that drinking alcohol is a significant problem for 10-20% of the adolescent population. Furthermore, in the age range of 13-18 years in the United States there are approximately three million problem drinkers (Weinberg, 2001). In a study done by SAMHSA, it was found that approximately 7-8% of young adolescents (12-13 years); 20-21% of adolescents (13-15 years); and 33% of older adolescents (16-18 years) reported the use of alcohol within the preceding month. This suggests that initiation into alcohol use starts at a very young age and it progresses with age. About 10% of women and 20% of men have met the diagnostic criteria for alcohol

abuse sometime during their lives and males tend to binge drink more than females (Kaplan & Sadock, 2003).

However, international research shows that although males tend to drink more than females, the gap between male and female alcohol consumption is narrowing (Degenhardt, Hall & Linskey, 2001). In terms of culture, past research suggests that Whites drink more than other cultural groups, and that in terms of alcohol abuse there are no statistically significant differences by culture (Degenhardt, Hall & Lewinsky, 2001).

Results from the 2003 National Survey on Drug Use and Health conducted by SAMHSA in the USA serve as an effective way to highlight the epidemiology of alcohol use as their findings are consistent with the literature put forward. The table points to gender, cultural and age group differences with regard to alcohol use.

Table 1: Results from SAMHSA’s National Survey on Drug Use and Health

2003 survey	% who currently drink	% who are binge drinkers	% who are heavy drinkers
Age groups			
Youths aged 12-13	4.5	1.6	0.1
Youths aged 14-15	17.0	9.4	2.2
Youths aged 16-17	31.8	21.2	5.5
All youths aged 12-17	17.7	10.6	2.6
Gender (aged 12-17)			
Male	17.1	11.1	2.9
Female	18.3	10.1	2.3
Race/ethnicity (aged 12-17)			
White	20.5	12.8	3.5
Black/African American	10.1	4.6	0.5
American Indian/Alaska Native	16.3	12.4	1.7
Asian	8.7	3.2	1.2
2 or more races	17.0	10.8	0.8
Hispanic/Latino	16.2	9.4	1.7

The results of this study confirm that alcohol use tends to increase with age. Males were more likely than females to report current use of alcohol, binge drinking and heavy drinking however, within the 12-17 year age group the gap between the two was very narrow. Cultural

differences were also evident as Asian and Black youths had the smallest rates of alcohol use. White youths had the greatest rate of use.

South African statistics also reported that alcohol was the dominant substance of abuse (SACENDU, 2002). In five major studies done amongst the South African young people (Flisher, Ziervogel, Chalton, Leger & Robertson, 1993a; Parry, Flisher, Evans, Lombard & Muller, 1998; Rocha-Silva, de Miranda & Erasmus, 1995; Weir-Smith, 2001; Parry, Myers, Morojele, Flisher, Bhana, Donson & Pluddeman, 2004) a fair degree of risk proneness with regard to the development of alcohol related problems was found:

- Flisher *et al.* (1993a) found in their study with a sample of 7 340 learners from 16 secondary schools in the Cape Peninsula, coming from both historically advantaged and disadvantaged communities, that 53% had previous experience of drinking alcohol.
- Rocha-Silva *et al.* (1995) found that 42% of the respondents, who were black youths from urban and rural areas, reported that they had had a drink of liquor at some time in their lives, while 34% of the sample reported current drinking patterns (in the 12 months preceding the survey). Current drinkers were more common in the urbanised areas, and more amongst males than amongst females. They also found that regular use of alcohol (at least once a week) was common among the older age group (18-21 years).
- From the school survey of the South African Community Epidemiological Network on Drug Use, involving 6 000 learners in Grade 8 and 11 in 39 schools in the Cape Town area, it was found that the highest prevalence of substance use was in the Grade 11 male group where 50% reported current alcohol use and 36% reported binge drinking (more than five drinks per occasion) (Flisher *et al.*, 1998).
- In a sample of 300 young people in Gauteng and Limpopo provinces, 50% of the young people in the rural area reported current alcohol use. In the urban area females reported current use of wine (68%) and males used mainly malt beer (80%), hard liquor and home made liquor (67%). Alcohol was mainly used in the company of friends to socialise (Weir-Smith, 2001).
- In a survey among 1 318 Grade 10 learners in Southern rural KwaZulu Natal high-schools conducted by Taylor, it was found that overall 52% of the learners had used

alcohol at least once and that at least 13% of those learners were weekly drinkers (SACENDU, 2002).

The South African data in these studies shows a progressive increase in the use of alcohol during the past decade. More recently, SACENDU has confirmed that trends indicate that alcohol is widely misused by South African adolescents. Although alcohol was cited as only the second most common primary substance of abuse after cannabis within treatment centres, binge drinking is the most common form of substance misuse among school going youth of both genders. In keeping with international findings, it appears that the prevalence rate for binge drinking is much lower in females and that within both genders the prevalence increases with age (Parry et al. 2004).

2.3.3 Statistics related to other substance use

Due to the fact that the questionnaire utilised, grouped cannabis and other illegal substances together, they will be reviewed together at large, however this does disable inferences to be made about specific illicit drugs. Illicit drugs are most widely used by individuals aged 18-26 and use is lowest among individuals 50 years and older. Males are twice as likely to use illicit drugs than their female counterparts. In terms of cultural differences, it seems that differences vary according to the type of illicit drug used (Degenhardt, Hall & Lewinsky, 2001).

SAMHSA (2001) found that 4% of the young adolescents (12-13 years), 11% of the age group 14-15 years and 16% of the older adolescents (16-18 years) reported the use of marijuana (cannabis), cocaine, crack, inhalants, hallucinogens or heroin in the preceding month (SAMHSA, 2001). American statistics show that marijuana remains the most common illicit drug used by adolescents with the level of other illicit substances significantly lower (Gullota, Adams & Montemayor, 1995).

Concerning the use of other drug use in a South African context, the major studies have found interesting results. It seems that a number of studies point to cannabis as the most common substance of abuse among South African youth besides alcohol, over-the-counter-medicine and

tobacco (Van der Berg, 1975, 1984; Du Toit, 1991; Flisher et al., 1993a; Rocha-Silva et al., 1996):

- Rocha-Silva *et al.* (1996) found that 3,8% of the black youth in their research group, admitted that they had used dagga (marijuana), 7,4% said that they had sniffed glue or petrol at some time in their lives, while 2% reported that they had smoked "white pipe".
- In the school study reported by Parry et al. (1998) it was found that 3% of the Grade 8 and 16% of the Grade 11 males reported current dagga use, while 1,6% and 5,7% of these age groups respectively, reported the usage of mandrax.
- Weir-Smith (2001) reported that over-the-counter drugs were especially popular among females (63% in the rural area and 53% in the urban area), while marijuana was the preferred substance of choice by males who fell into the substance abusing category (82% males in the rural area and 71% in the urban area).

Parry et al. (2004) also concluded that cannabis is the most common substance of use for which adolescents seek treatment. Furthermore, cannabis remains the illicit substance most likely to be consumed by high school students. Such a finding mirrors past South African as well as international studies (Parry et al. 2004).

More recent research points to a sudden increase in the number of individuals having methamphetamine ("Tik") as a primary or secondary drug of abuse since the second half of 2003, with over half of the users being under the age of 20. This prevalence is especially noticeable in the Western Cape.

Much of the research conducted in South Africa has been conducted for specific research purposes and as a result studies have been relatively restricted in terms of the many dimensions of substance abuse. However, the studies that do exist provide an excellent framework from which to base new information.

In a study conducted by Parry et al. (2004) which provided information about the extent and consequences of alcohol and other drug use by adolescents for three sentinel sites in South Africa (Cape Town, Durban and Gauteng), statistics regarding the use of methaqualone, heroin,

cocaine and ecstasy show that geographics play a significant role in substance use patterns. It is reported that methaqualone is particularly prevalent in the Western Cape region where it is linked to the prevalent gang culture. Heroin and cocaine on the other hand seem to be substances causing problems to emerge within the larger metropolitan areas in Cape Town and Gauteng. The rave party attendees in multiple areas of the country are also a subgroup in which adolescents tend to engage in cocaine related activities. Finally, the results show that although ecstasy related problems remain low within treatment centres, the use of the substance is reflected in both rave attending and school going adolescents.

Substance abuse in adolescents can be associated with other high risk behaviours such as drinking and driving, participation in devious peer groups, interpersonal violence, and destruction of private property (Boyd, 1995). Substance use is also related to decreased inhibitions and thus an increased probability of engaging in high risk sexual behaviours, placing the adolescent at risk for both unwanted pregnancies and sexually transmitted diseases including HIV (SACENDU, 1998). Substance abuse can also contribute to an increased risk for suicide ideation and behaviour and it increases the probability for psychiatric disorders, including conduct, mood and anxiety disorders. Furthermore, according to SACENDU reports, adolescent substance abuse has been associated with academic difficulties, declining grades, absenteeism, truancy and school dropout (SACENDU, 1998). Thus, although substance abuse alone is related to some serious behavioural problems, the effects associated with it are also of a serious and concerning nature. Another important finding is that certain substances have been shown to predate entry into other substance abuse and as such, most substance abusers do not limit themselves to one particular substance but typically use two or more substances (Beman, 1995).

2.4 Theoretical conceptualisation of substance abuse

It has been acknowledged for many years now that a variety of factors play a role in the aetiology of substance abuse (O’Conner, 1983). In order to identify the factors that are the most significant agents linked with an adolescent’s behaviour, one needs a thorough understanding of the various aetiologies that exist. Herwig-Lemp (1996) maintained that “*there is no single overarching theory for alcoholism and drug addiction, instead there are a plethora of unfinished*

descriptions and explanations” (p. 26). Whether or not this is the case, is not of crucial concern; what is of concern is that an outline is given for the predominant descriptions and explanations that do exist. The biological, psychological and social factors will be reviewed as substance abuse is an intricate psychological, social, biochemical and possibly genetic problem (Matuschka, in Bratter & Forrest, 1985).

2.4.1 Biological factors

Gold (1991) states that most biological models of substance abuse assume a physiological or metabolic abnormality, often with a genetic basis as the central aetiological factor. However, in the case of substance abuse, even for an adolescent who may have an inherited vulnerability, abuse is not inevitable, but rather it requires the presence of several other precipitating factors (Barlow & Durand, 1999). For example, even though an adolescent may be genetically vulnerable he or she must still make a decision whether or not to use the substance. Furthermore, in order to abuse a substance the substance must obviously be available and accessible. Although recent research has focused on the particular DRD2 gene on chromosome 11 as related to alcohol abuse, findings to date show that no single gene is responsible for the development of alcohol abuse in individuals (Barlow & Durand, 1999). Furthermore, studies have shown that an enzyme called aldehyde dehydrogenase that breaks down a chemical called acetaldehyde, which is a by-product of alcohol, is naturally absent in certain people (Newlin, in Barlow & Durand, 1999). As a result these individuals have a physiological response to alcohol known as alcohol-flush-syndrome which is unpleasant and thus causes them to avoid such substances.

As can be seen, much of the research on substance abuse focuses on alcohol. This is due to the fact that alcohol is the most available and legal substance. The biological models are often criticised because of their emphasis on biological parameters and their focus on the substance’s pharmacological effects as this takes the control and responsibility away from the individual (Marlatt & Gordon, 1985). Ultimately genetic research to date shows that genetic factors may affect how individuals experience substances, which in turn determines which adolescents may have a tendency to reuse substances and how they will react to them.

2.4.2 Psychosocial factors

The psychological factors involved with the aetiology of substance abuse are numerous and may involve developmental, personality, affect and cognition, conditioning or learning and familial factors (Leigh, in Bratter & Forrest, 1985). (It should be acknowledged that many of these factors are not uniquely psychological factors, but that they may also be classified as social factors.) The family provides the adolescent with different and unique types of learning and conditioning and also constitutes the adolescent's social environment. (Thus, the boundaries between the social and psychological factors are occasionally blurred.)

Conditioning environment

In substance abuse, reinforcing factors may be described as those that become associated with a favourable outcome of substance use such that the event is more likely to be repeated on future occasions. The effect of the substances themselves namely whether or not they produce a "high" or not encourages or discourages the adolescent to use the substance again (Leigh, in Bratter & Forest, 1985). Human research has found that many adolescents are likely to use and abuse substances to escape from the unpleasantness of their lives. Thus this indicates that abuse of these substances will be determined not only by the pharmacological, euphoric effects generated by the substances, but by the escape from pain, stress or panic and anxiety that different substances offer as well (Barlow & Durrand, 1999). Thus the development of substance abuse is not only related to the event itself but to the after effects as well.

Psychodynamic viewpoints

The Psychodynamic Approach to the aetiology of substance abuse is often postulated to be based on a need to make up for fixation at the oral stage of development. These approaches assume that an unwarranted need for oral gratification is a result of dependency conflicts that arise from developmental difficulties. Substance abuse, among other behaviour, is viewed as providing such gratification (Leigh, in Bratter & Forrest, 1985). Although psychodynamic studies regarding the abuse of substances are a challenge to substantiate, a number of cultural studies have shown that societies with a high frequency of drinking also tend to be less indulgent to the dependency needs of children. This characteristic is thought to bring about oral frustrations. The converse in societies with a low consumption of drinking is also postulated

(Bacon, 1975). Other Psychoanalytic Approaches maintain that substance dependent individuals are predisposed to use and abuse substances, as a result of severe ego impairments and disturbances in their sense of self. They maintain that selection of specific substances is due to the distinct pharmacologic effects the substance has on interacting with the individual's unique personality organisation and reactive pattern (Khantzian, 1980).

In recent years the psychoanalytic field has made meagre contributions to the understanding of substance abuse. The reasons postulated for this are twofold. Firstly, substance abuse cannot solely be explained by psychoanalysis due to the fact that such disturbances and weaknesses in ego strength, as evident in individuals who misuse substances, are considered unsuitable for psychoanalysis. Secondly, poor treatment outcomes in numerous attempts left a widespread feeling that psychoanalysis was not in fact the treatment of choice for such a disorder (Morgenstern & Leeds, 1993). However, several psychoanalysts, namely Leon Wurmser, Edward Khantzian, Henry Krystal, and Joyce McDougall have made important contributions to the understanding of substance abuse (Morgenstern & Leeds, 1993). While they are all aware of physiological aspects of substance abuse they chose to focus their attention on the psychological aspects of the process. Current psychodynamic theories connect risky substance use with other oral traits and trace the origin of these traits to fixation in the oral stage of psychosexual development (Nevid, Rathus, & Greene, 1997).

Personality factor viewpoints

Research has shown that there is no evidence for a substance abusing personality per se. This might be because it is somewhat presumptuous to presume that some characteristics reported are inherent characteristics of a person prior to using a particular substance rather than the result of pharmacological effects of the substance itself. Research has however shown that children who possess a difficult childhood temperament with irritable, anxious mood states; temper tantrums; and social withdrawal are more likely to abuse substances in adolescence than their more easily managed counterparts (Shedler & Block, 1990). Similarly, personalities that exhibit hyperactive, aggressive and seemingly rebellious activity that reflects poor impulse control; an inability to delay gratification; sensation seeking; and low harm avoidance are also predictors of adolescent substance abuse (Shedler & Block, 1990). Other studies have focused on

the other side of the coin, namely the personality characteristics that are associated with resilience in terms of substance abuse. These studies maintain that self-efficacy, realistic appraisal of the environment, social problem solving skills, sense of direction, empathy and humour are all personality factors that make an adolescent more resilient to the use and ultimate abuse of substances (Norman, in Gullota, Adams & Montemayor, 1995).

Developmental viewpoints

Erikson's Developmental Theory maintains that adolescence is a time of identity formation in which the adolescent should have time for experimentation and rejection of certain roles or selves (Harter, 1990). Furthermore he proposed that at each stage of life a new strength was "*added to a widening ensemble and reintegrated at a later stage in order to play its part in a full cycle*" (Erikson, 1969, p. 38). Adolescence was therefore seen as the time in which one could first experience identity diffusion which would lead to experimentation and ultimate identity formation (Harter, 1990).

Although Erikson's Model consists of eight stages of development, the stage of adolescence involves concerns over identity versus identity confusion. Erikson maintains that at this stage adolescents need to try and comprehend the self in terms of what they have already been and what they may still become. Furthermore, they need to recognise the self as separate from others and as capable of making independent decisions; be able to discriminate between numerous societal roles from their sense of self and experience and to find one that fits; and to distinguish each step in any given task in order to work in incremental stages. If these objectives are not met, Erikson postulates that adolescents will expect satisfaction of immediate desires and may feel their sense of self depends on the external approval of others (Forisha-Kovach, in Shiel, 1999). It is when this happens that adolescents may begin to involve themselves in high risk behaviour such as substance abuse so as to gain acceptance.

Family Model viewpoints

On reviewing the literature pertaining to the role the family plays with regards to substance abuse, it seems that familial factors are important in fostering the development and maintenance of substance abuse. Several studies have found that parents and siblings are the

strongest influences on the decisions adolescents make whether or not to use substances (Williams, 2004). Early Family Models of substance abuse and more specifically alcoholism were derived from the Psychodynamic Models that predominated at the time. It was assumed that the wives of alcoholics were disturbed women who resolved neurotic conflicts through their marriage to an alcoholic man (Mc Crady & Epstein, in Rotgers, Keller & Morgenstern, 1996). Whalen (1953) went a bit further than most of her colleagues and hypothesised four different kinds of conflicts that could be resolved through marriage to an alcoholic and she gave each of these types of wives colourful names. She suggested conflicts with control (Controlling Catherine), conflicts with aggression (Punitive Polly), conflicts with masochism (Suffering Susan), and conflicts with ambivalence (Wavering Winifred).

At present the Family Systems Model, Behavioural Model and Family Disease Model dominate understanding of substance abuse (Mc Crady & Epstein, in Rotgers, Keller & Morgenstern, 1996). The Family Systems Model examines the functions the substance abuse serves for the family. The assumption is that if an alcoholic family has functioned as a stable family unit with a drinking member, introducing sobriety into the system would threaten the homeostasis of that family. Because all systems are assumed to operate to try and maintain homeostasis, factors that threaten to change the functioning of a family, threaten the homeostasis as well and as a result the family is viewed as functioning to avoid change. As a result this model attempts to change family roles, boundaries and rules. (This is the case with any abuse, not only alcohol abuse.)

Behavioural Family Models examine family behaviours as antecedents to substance use and ultimate abuse as reinforcing consequences. The model aims to examine the repetitive relationship themes and communication and considers the function that the substance may play in maintaining the stability of the relationship (Burger, 1981).

Finally Family Disease Models maintain that family members are seen as suffering from a disease just as the substance abuser is. The disease of the family member is codependence, thus a recognisable pattern of personality traits, predictably found within most members of chemically dependent families. Family members who are codependent are thought to engage

themselves in numerous behaviours that enable the substance abuser. Thus the family members either make it easier for the adolescent to abuse the substance or they provide positive responses to abusing substances and avoid limit setting responses.

Although all three models have their own unique characteristics, it should be acknowledged that most treatments provide some fusion of all three of the models. Family Models emphasise the multiple determinants of substance abuse, the multiple factors that maintain the substance abuse and the complex interrelationships between the substance abuser, their family and the greater interpersonal environment in which they exist.

2.4.3 Sociocultural factors

The social and cultural environment of substance abuse can be divided into two general aspects namely, the physical environment and the social environment. However, one has to allow for the fact that the one will always affect the other.

Physical environment

The physical environment can both constrain and facilitate various behaviours of an individual who abuses substances. Substances firstly need to be available to be used. Substances give rise to very different effects when used in different settings. For example, substances used in a hospital and those used at a party will result in different behaviours. As a result the physical environment is a crucial factor with regards to a substance's effects and to the user's behaviour (Lewis, Dana & Belvins, 1994).

Social environment

The sociocultural environment that is made up of both physical objects and social beings, can promote or hinder the effects of a substance. As a result an adolescent's substance related experiences play a vital role in shaping their attitudes, values and beliefs regarding the general use of substances. Each culture has their own, unique set of norms that affect the rate and dependence on substances in important ways (Barlow & Durrand, 1999). For example, at social occasions in Korea, individuals are expected to drink heavily. Frequent exposure may facilitate their abuse. In contrast, it is often thought that economically poorer countries have a limited

availability of substances and thus are not exposed as much to the effects.

In direct contrast with these thoughts, Nevania Moodley of the University of Johannesburg, who is involved in the schools programme in Meadowlands to combat substance abuse, suggests that in South Africa poverty and joblessness are contributing to drug use in schools. “*Most pupils who use drugs are from deprived backgrounds*”, he says. “*They resort to drugs and alcohol as a way to escape these problems. A lot of them also find that they can make quick money to support their families by selling drugs*”(The Star, 8 February, 2005). Thus, culture and socio-economic class seem to influence substance abuse rates. If one considers the fact that adolescents growing up in persistent and severe poverty are more likely to live in cramped homes lacking basic resources such as heating and ventilation; more likely to be excluded from social activities like school trips and leisure activities; more likely to have strained relationships with their parents; and less likely to be happy with their appearance and lives as a whole, then it is little wonder that adolescents in the lower income groups are three times more likely than adolescents from wealthy families to suffer from some type of psychological problem of which substance abuse is a part. Furthermore, customs pertaining to specific cultures or societies at large set the tone and feeling regarding the use of certain substances and naturally this will have significant effects on substance use and abuse. Obviously exposure to substances is a prerequisite to their use and possible abuse, and in certain cultures exposure is more common than in others.

There is little doubt that peer pressure during the adolescent period plays an important role on initial substance use. Peer influence reduces the possibility that the negative aspect of the drug will be considered, while the expected probability of the positive aspects of using the substance is related to the number of friends who use it. Interestingly peer group influences seem to cut across all levels of sociocultural status and other variables that affect consumption rates (Leigh, in Bratter & Forest, 1985). Stumphauer (1980) emphasised the importance of peers exerting influence by serving as models (who have had previous substance use experience) and by being present when the novice adolescent uses substances for the first time. He maintains that these effects of modelling, imitation and identification can be seen from an early age onward. Obviously the family is therefore one of the areas in which modelling begins. Research has

consistently shown that drinking and substance use in general is in fact learned behaviour and that it is learned from those who have the most social influence (Leigh, in Bratter & Forrest, 1985). In the case of adolescents this is usually their friends or family members. However, in a study conducted by Pierce & Gilpin (1995), it was found that advertising of substances via the media may be even more influential than peer pressure in determining whether or not adolescents initiate entry into substance use. This finding points to the very real role that marketing plays in the introducing young children and adolescents to substances of all types.

2.5 Conclusion

A review of the major theoretical conceptualisation of substance abuse confirms the fact that the reasons for abuse of any substance are diverse. Certain substances have been shown to predate entry into other substance use. A study by Schilling and McAllister (1990) found that many adolescents tend to begin with certain entry substances such as cigarettes and alcohol, but then they subsequently progress to cannabis and other harder substances. Furthermore, Schilling and McAllister also concluded that substance users usually use two or more substances and thus fail to limit themselves to one particular substance of choice. In a local study which examined stages of substance use among adolescents, it was found that there was a significant ordering effect, which was consistent across gender but not race classification. For Black and White students, the sequence was cigarettes or alcohol, followed by cannabis and then Mandrax, Ecstasy or crack. For Coloured students the sequence was cigarettes, followed by alcohol, cannabis and then Mandrax, Ecstasy or crack (Flisher, Parry, Muller & Lombard, 2002).

The adolescent years provide the ideal setting for the emergence of numerous high risk behaviours, including substance use. It seems that each adolescent has his or her own story and path to substance abuse and that a focus on any single factor as a main determinant of substance abuse would be to take a simplistic view of an extremely complex process. Unfortunately, regardless of the factors involved, those adolescents who become victims of the substance abuse cycle also find themselves involved in a multitude of other problems. The next chapter will examine how the use of substances relates to psychological well-being.

CHAPTER THREE

PSYCHOLOGICAL WELL-BEING

3.1 Introduction

This chapter will begin with an exploration of the term “psychological well-being”. The term is used consistently throughout this research and as such a thorough understanding of it needs to be put forward. The chapter will then look at two models of psychological well-being. Ryff’s Model will be looked at briefly and Bar-On’s Model will be reviewed in more detail. The constructs that make up psychological well-being will also be reviewed. A look at adolescence as a transitional period will serve to account for the multitude of reasons that adolescence is often a time of psychological disturbances. A Biopsychosocial Approach of psychological well-being and substance use will then be explored. Comorbidity during the adolescent period will be touched on and literature pertaining to substance use in relation to other psychological problems will be explored. Finally, Bronfenbrenner’s Ecological Model of Human Development will be used to link the micro-level of analysis of this research, namely the individual, with their environment at large, the macro-level of analysis.

3.2 Definition

Psychological well-being appears to be a relatively broad concept. For many years now, the term has been used interchangeably with the term “mental health”. In the past it seems that mental health was viewed as an individual concept. Mental health was thus defined as “an absence of illness or disease”. Obviously the absence of something does not specify what must be present and thus the term remained somewhat obscure for years. However, in 1948 the World Health Organisation (WHO) defined the term mental health as “*a complete state of physical, mental and social well-being*” and not merely the absence of disease. Where it is quite easy to assess physical health by taking health status measurements of the body, mental and social components of health are much more challenging to assess. This is possibly because mental

health and psychological well-being are multidimensional constructs, having not only objective dimensions, but subjective dimensions too. The subjective dimension is a result of internal states that are obviously subjective, and thus difficult to define and to quantify.

The Random House Dictionary of the English Language (1967) defines well-being as “*a good or satisfactory condition of existence, a state characterised by health, happiness and prosperity*”. Operational definitions of psychological well-being on the other hand maintain that the term refers to “avowed happiness” and that it is viewed as the difference between an individual’s position on two independent positions, namely positive affect and negative affect (Mangen & Peterson, 1982). However, these, like most definitions are not framed in normative terms and thus if the definition refers to feelings of happiness, the “happiness” is not further described because the term means different things to different people.

More recently, these narrow conceptions of well-being which tended to focus on short-term affective well-being at the expense of enduring effects have been replaced by conceptions which take into account both short-term and long-term measures (Ryff, 1989). In general it seems that psychological well-being has been associated with a variety of constructs, namely life satisfaction, happiness, adjustment, affect, morale and subjective well-being (Ryff, 1989). Although the term psychological well-being is often used interchangeably with the term “mental health”, for the purpose of this research the term “psychological well-being” is the preferred option and it will refer to one’s overall psychological condition.

The overall psychological condition of an individual was more appropriately defined in a report for the Psychological Association of South Africa (PASA) in 1989. The report described mental health in what seems to be a more multifaceted way where the context of the individual was also taken into account. Mental health was described as “*those conditions in society leading to a situation where people in their individual capacities (irrespective of age gender, or colour), and in interaction with one another as members of groups and communities are able to live lives of quality in all contexts of their existence, and where the options for actualising their potential are present*” (p. 5). With this definition in mind, one can see how psychological well-being can be seen as far more than an absence of pathology. This is certainly a far more holistic

perspective of psychological well-being.

For the purpose of this research, psychological well-being will be addressed from such a holistic perspective. As such it will take into consideration the numerous dimensions of existence that undoubtedly affect an individual's well-being (PASA, 1989). These dimensions include biological factors which serve to promote human bodily well-being, psychological factors which contribute to an individual's subjective interpretation of reality in terms of their cognitive, perceptual and emotional capacity and their ability toward self-evaluation and self-awareness. Finally the definition will not deny the importance of an individual's social dimension that includes the individual's physical context, their need for meaningful relationships, their membership within a group context and the community from where they come. Thus this more encompassing view of psychological well-being maintains that well-being is directly influenced by factors like one's standard and quality of living, the economical and political processes of the time as well as the individual's family of origin and socio-economic circumstances.

A look at the methodology chapter will serve to explore this term further within the context of Bar-On's Model of Emotional Intelligence.

Numerous psychologists have attempted to theorise about and define psychological well-being (Maslow, Rogers, Jung, Erikson, Buhler, Neugarten, Jahoda and many more (Ryff, 1989)). The construct of psychological well-being has been a focus of a growing body of research over recent years (Pavot & Diener, 1993). Instruments such as the Affectometer (Kammann & Flett, 1983) and the Positive and Negative Affect Schedule (Watson et al., 1988) have generally been used to measure the affective component of subjective well-being. However, more recently two of the most compelling works seem to be of Ryff (1989) and Bar-On (1988, 1997, 2000).

3.3 Ryff's Model of Psychological Well-Being

Ryff's Model (1989) proposes that psychological well-being encompasses six dimensions of wellness, namely: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. She maintains that a critical element of

psychological well-being is the belief that gives an individual a feeling of purpose in and meaning of life. Furthermore, she suggests that specific life goals, intentions, and sense of direction all contribute to the feeling that life is in fact meaningful. The Purpose in Life Scale was developed as Ryff's measure of psychological well-being. The scale was derived from theories about positive psychological health and lifespan development (Ryff & Keyes, 1995).

3.4 Reuven Bar-On's Model of Psychological Well-Being

Besides conceptual differences in origin, a few common factors of psychological well-being seem to have emerged among all theorists. Bar-On (2000) currently defines his Model of Psychological Well-Being in terms of an array of traits and abilities related to emotional and social knowledge that influence our overall ability to effectively cope with environmental demands. As such, it can be viewed as a Model of Psychological Well-Being. This model includes (1) the ability to be aware of, to understand, and to express oneself; (2) the ability to be aware of, to understand and relate to others; (3) the ability to deal with strong emotions and control one's impulses; and (4) the ability to adapt to change and to solve problems of a personal or social nature. The five main domains in this model are intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood (Bar-On, 1997b). Bar-On's 1988 study aimed to identify and explore the personality factors which most accurately describe psychological well-being. Bar-On understood personality factors as the different ways in which people in general, and in most situations, and at most times think, feel and act. As a result he maintained that these personality factors were a reliable means for measuring psychological well-being. From all the existing psychological theories, he identified personality characteristics associated with well-being. He developed a questionnaire assessing these characteristics. Through factor analysis he identified the main constructs involved in psychological well-being and built his model around these factors (Bar-On, 1988). The EQ-I, which Bar-On constructed to measure the model, is a Self Report Measure that specifically measures emotionally and socially competent behavior that estimates an individual's emotional and social intelligence, as opposed to traditional personality traits or cognitive capacity (Bar-On, 2000). Bar-On (1997) states that psychological well-being is a complex and dynamic interaction between psychological and

personality factors, and biological and sociocultural determinants. As a result one's psychological well-being will change according to different situations and circumstances.

3.5 A Biopsychosocial Approach of adolescent psychological well-being

The persistence of problem behaviour during adolescence throughout the centuries combined with the magnitude of contemporary problems suggests that there is an inherent risk in being an adolescent. As a result it is of great importance to pay careful attention to the psychological well-being of adolescents so as to try and prevent accidents and to promote both mental and physical health of adolescents in their second decade of life.

Plato described the adolescents of his time as “*argumentative and easily excitable*” and Aristotle found adolescents to be “*impulsive, prone to excess and exaggeration and lacking self-restraint*”. Thus for many years now, adolescence has been characterised as a risky and somewhat problematic time (Dryfoos, 1990). This is possibly due to the fact that there are many stressors in the lives of an adolescent including school transitions, pubertal development and family disruption to name a few. Recent research has shown that it is the accumulation of multiple stressors that may be particularly detrimental to the psychological well-being of the adolescent (Forehand, 1990). For example, Simmons, Burgeson, Carlton-Ford & Blyth (1987) found that adolescent self-esteem deteriorated as the number of stressors increased. Studies have shown that the majority of mental and addictive disorders develop within the adolescent years. Psychological disorders are common within the adolescent population, with an overall prevalence of up to 15% (Roberts, Attkisson & Rosenblatt, 1998). Youths aged 15-24 years have a greater risk for multiple disorders than all other age brackets and with respect to substance abuse. Data suggests that adolescents who abuse substances have a greater risk of experiencing other psychological disorders when compared to their adult counterparts (Beitman et al., 2001). Needless to say, rates of comorbidity between substance use disorders and psychiatric disorders are high in the adolescent years.

The relationship between substance abuse and psychological well-being is a complex one. A Biopsychosocial Model is often adopted when looking at the dynamics of well-being

(Tarter, 2002). Thus the Biopsychosocial Model, proposed by Engel (1977) will be used as a theoretical framework from which to work. The Biopsychosocial Approach views well-being as the result of the interaction of biological, psychological and social factors (Green & Shellenberger, 1991):

- Biological factors comprise of genetics; environmental factors that affect physiological functioning; and behaviours that affect biological functions such as exercise, diet and smoking.
- Psychological factors comprise of stress management, life goals, perceptions, feelings, personality and health and sickness behaviours.
- Finally social factors comprise of all social systems affecting the individual such as their family, school, work, church, social values, customs and governments.

Although biological, psychological and social factors can be studied independently, the model assumes that an individual can only be examined when biological signs and symptoms, feelings and psychological states and social factors such as the individual's relationships with their families and the larger community are taken into consideration (Engel, 1977). The importance of the Biopsychosocial Approach lies in its realisation that these factors are not independent of each other. Psychological well-being therefore results from a complex interaction of all three factors (Green & Shellenberger, 1991).

The Biopsychosocial Model can be equally applied to the dynamics of disease and illness such as substance use and abuse. The Biopsychosocial Approach is contrasted to the Biomedical Model of disease that highlights only the biological factors and ignores psychological and social factors (Green & Shellenberger, 1991). Although it might be a great deal easier to study factors in isolation, Engel's Model acknowledges the basic reality, namely that biological, psychological and social factors are involved in well-being and disease and illness, and together they create a total picture. The three factors are therefore inseparable and mutually determining. With regards to understanding substance use/abuse, one would study the addictive qualities of a specific drug (biological); the personality characteristics of the addicted person (psychological); and finally the incentives of the environment, such as peer pressure (social). The notion that anyone can simply

say no to substance use denies the complex influences of social systems. The Biopsychosocial Model also states that the workings of the body can affect the mind, and the workings of the mind can affect the body, both of which affect the social environment in which an individual is contextualised.

It seems that recent findings of The National Institute of Mental Health Epidemiological Catchment Area Program (ECA) indicate that the comorbidity of mental disorders and substance use is more widespread than previously assumed (Kessler, Nelson, McGonagle, Edlund, Frank & Leaf, 1996). Their findings concluded that mood, anxiety, antisocial personality disorder and substance use disorders are highly comorbid in a general population sample ranging from the ages of 15-54 years. Furthermore it was found that there was a 50% lifetime co-occurrence of mental disorders with addictive disorders and that the mental disorder preceded the addictive disorder in 83,5% of the cases (Kessler et al., 1996).

Many studies have shown how the presence of psychological disturbances within an adolescent seems to contribute significantly to their development of substance use and abuse (Tarter, 2002). Psychological variables, including self-esteem, executive cognitive functioning and temperament, all play a role in the risks for developing a substance use disorder or initiating substance abuse (Beitman & Young, 1997). Furthermore, studies have found the existence of a relationship between measures of low self-esteem, depression, antisocial behaviour, rebelliousness, aggressiveness and adolescent drug use and abuse (Jessor & Jessor, 1977). Similarly, Barrett (1990) found that adolescents with poor self-concepts have a greater propensity for alcohol and other substance abuse than do those with positive self-concepts. It has been suggested that adolescents who have a difficult time with the developmental tasks of adolescence, use substances to a greater extent than their counterparts who progress smoothly through their developmental transitions (Casemore, 1990). A possible theory is that substances can be used to escape from the negative feelings adolescents have about themselves due to these psychological and developmental difficulties. Research has shown that for many young people, adolescence can be a time of emotional extremes, conflicting feelings, uncertainties and fears (Forehand, in MacMahon & Peters, 1990). Self-medication and using substances is therefore a means to forget unpleasant experiences, or to fulfil a need that cannot otherwise be gratified

(Mainous, 1996). On the other hand, some researchers have found that substance use leads to the deterioration of psychological well-being. For example, Blum (1987) found in a study that comprised of a wide age range (18-65), that the effect of smoking cessation tended to lead to better psychological well-being, cognitive functioning, energy levels and sleep adequacy. Thus individuals who stopped smoking reported improved psychological well-being when compared to their smoking counterparts. Similarly, Kandel (1978) found that high levels of depression in adolescents were associated with an increased probability of marijuana use. However, overall, contemporary research generally views substance use as a consequence rather than a cause of decreased psychological well-being.

Various studies concerned with adolescent psychopathology have found a striking relationship between emotional or behavioural problems and substance abuse. Hechtman, Weiss and Perlman (1984) found a relationship between hyperactivity in childhood and substance use. Cadoret, Troughton, O’Gorman & Heywood (1986) found that antisocial behaviour was associated with vulnerability to substance use. Similarly, it has been shown that from infancy onward, a disturbance in psychological self-regulation is evident in children who are at high risk for initiating substances and developing substance use disorders (Tarter, 2002). Low psychological self-regulation that encompasses facets of cognition, affect and behaviour are apparent as temperament and personality. In a study conducted by Shedler and Block (1990) it was found that signs of emotional disturbances at a young age distinguished those who were to become heavy marijuana users. At age seven these children were described as not getting along with other children, unconcerned with fairness, untrustworthy, unreliable, indecisive, unable to admit negative feelings, lacking in both confidence and self-esteem and demonstrating signs of stress. At age 11 those who were to become heavy marijuana users were distinguished by characteristics such as emotional instability, inattentiveness, inability to concentrate, stubbornness and a lack of involvement in activities.

However, although the findings pertaining to the prevalence of co-occurring emotional and behavioural problems and substance use disorders during adolescence are numerous, methodological differences make it difficult to generalise findings and thus prevalence estimates are conflicting. Where it seems that environmental factors tend to account for a large proportion

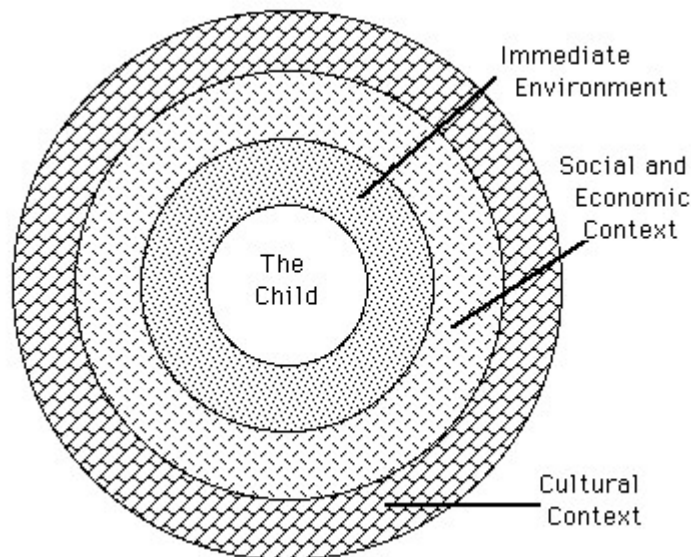
of the risk for substance use, psychological and biological factors appear to be more influential in the risk for developing substance abuse disorders (Armstrong & Costello, 2002). Furthermore, adolescence as a developmental stage alone contributes to various biological and psychological factors being especially salient in predisposing an individual to substance use and abuse. According to Tarter (2002) cognition, behavioural factors and emotional factors, which are incredibly sensitive during the adolescent period, all play an integral and important role in the initiation of substance use and abuse during the adolescent period of development.

As previously mentioned an important finding pertains to the fact that clinical studies have generally concluded that the onset of other psychological disorders usually precede that of substance abuse (Armstrong & Costello, 2002). Thus, substances are often used to self-medicate pre-existing psychological symptoms, or to cope with psychological distress (Ford, 2001). In turn, adolescent substance abuse, may lead to deteriorations in psychosocial functioning, characterised by impaired psychological and social development. As such it has been theorised that a psychological state is typically seen to trigger substance abuse, which then affects the initial psychological condition (Ford, 2001). This Tension Reduction Theory acknowledges that although these psychological characteristics do not manifest themselves at a clinical level during adolescence, they can still hinder functioning and impact poorly upon an individual's quality of life which in turn may direct them to use substances. The causal relations and direction ultimately remain to be clearly expounded, but the coexistence of substance use and psychological well-being remains an ongoing observation. Ultimately, from a review of the literature regarding psychological well-being and substance abuse, it seems that comorbidity is the rule rather than the exception (Beitchman et al., 2001).

In this study, indicators of psychological well-being will be related to substance abuse. However, although the study will focus predominantly on the individual or micro-level of analysis, the study cannot be seen in isolation from the larger social, political, cultural and economic environment or macro-level in which it occurs. As a result the meso-level of analysis will attempt to link the two levels or to operate as an intermediate level. As a result, for the purpose of this study, Bronfenbrenner's (1979) Ecological Model of Human Development will be employed. From this perspective, the human individual and in this case the adolescent, is

considered to be at the centre of a series of concentric circles. Due to the fact that the study will focus primarily on the individual, this perspective seems appropriate. However, the elements in each circle influence the circles inside it. Thus, in this model of development, a person consisting of their unaffected biological makeup is most directly influenced by their immediate environment. The immediate environment is influenced by the social and economic context that is in turn influenced by the cultural context. In Bronfenbrenner's Model of human development, the adolescent interacts with these contexts as part of a system. Thus, the adolescent and the context are in mutual interaction, impacting on each other. All the contexts therefore interact with each other.

Figure 1: Bronfenbrenner's Ecological Model of Human Development



According to this model, risk behaviour, of which substance abuse is a part, can be related to individual psychological factors such as self-esteem, locus of control, need for

acceptance, anxiety levels, sensation seeking and eagerness to act like adults (Shiel, 1999). However, substance abuse is also closely linked to social and community factors such as access and exposure to substances; social norms that tolerate risk behaviour; peer pressure; socio-economic status; educational opportunities; social support and involvement with a social network. Although the focus of the research will be on the micro-system (the individual), the impact on and interactions with the wider system such as the school, family and social support systems are still acknowledged. As such, the model is consistent with Engel's Biopsychosocial Model in that both models allow for the existence of numerous levels of interaction and the acknowledgement that these numerous levels affect the individual. Both models therefore realise that reliance on only one factor or level of interaction is somewhat incomplete and opt for a more comprehensive picture of the individual. Both models assume that to understand the reasons for certain behaviours, it is imperative to examine the individual as well as both the cultural and familial contexts that support these behaviours. This model further compliments the Biopsychosocial Model in that it too gives great importance to the multiple dimensions that make-up an individual, namely biological, psychological and social aspects. There are many environmental factors that influence human development and as such human development is multidimensional. Thus, Bronfenbrenner's Ecological Theory of Human Development and Engel's Biopsychosocial Model will form the theoretical basis of this study. As such, psychological well-being, substance abuse and the environments affecting the two will be taken into account. The findings of the study will therefore provide information about the individual, who is largely influenced by their larger social, cultural and political context.

3.6 Conclusion

This chapter has defined psychological well-being and provided an in-depth review of existing literature with regards to substance use and psychological variables. Furthermore, the basics of Bronfenbrenner and Engel's Models have been highlighted so as to establish the reasons for the theoretical basis of this study. The next chapter will focus on the specific methodology used in the study.

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This chapter will examine the methods used in this research. The chapter will commence with a presentation of the research aims. The hypotheses set out for the study will then be reviewed and the sampling design will be presented. The procedure and instruments used for data collection will be explained, including information about the psychometric properties of the instruments. Ethical considerations will then be pointed out and the chapter will conclude with a brief explanation of the statistical procedures that were used.

4.2 Research aims

The study was part of a larger study that aimed to discover the impact of peer support on high risk behaviour of secondary school learners. The results of the pre-test of this study were used to understand the alcohol and drug use among adolescents.

A correlation study design was employed. The aims of the research are:

- To report on the psychometric properties of selective items from the Emotional Quotient Inventory and the Life Satisfaction Questionnaire within a South African context as measures of psychological well-being.
- To relate indicators of psychological well-being to substance abuse.

- To interpret psychological well-being and substance abuse with reference to the sample as a whole as well as with reference to age, gender and cultural subgroups of the sample.

4.3 Hypotheses

The following hypotheses were set out for the research:

- That a negative relationship exists between psychological well-being and substance use.
- That membership to different race groups, ages and genders has an effect on the level of substance abuse and psychological well-being.

4.4 Sample and subjects

The sample consists of 1 918 adolescents who attend schools in the Tshwane area. Adolescent in this case is defined as a boy or girl between 10 and 19 years of age (WHO, 2000-20004). The 12 participating schools were identified by the Gauteng Education Department as schools where they thought a peer support project would contribute to the well-being of learners in the schools. Schools were chosen as representative of the population distribution of the area. Within each school a stratified sample was used to identify the individuals who would participate in the study. One class from each grade, at each of the respective schools was used to complete questionnaires. This was done rather than to choose learners randomly from all the classes because of an agreement with the principals of the schools not to disrupt the normal school day. The participants were White, Coloured, Black and Indian males and females in Grades 8-11.

4.5 Data collection procedure

Permission from the Education Department was obtained and arrangements were made with the principals of each school to collect data at the schools on a specific day. The guidance teachers selected the classes from each grade group that had guidance on that specific day. In the classroom situation the purpose of the study was briefly explained to the participants during their guidance classes at their respective schools in the Tshwane area. The self-report, paper and pencils, and forced choice questionnaires were then distributed to those participants who were

willing to take part in the study. They completed the questionnaires in the presence of their guidance teacher and a field worker so that any queries could be dealt with. The majority of the participants were fluent in English. For those individuals that were not fluent in English, a field worker was provided in order to translate and deal with any queries regarding the questionnaire. Completed questionnaires were placed in a sealed box to be opened at the university.

4.6 Psychometric instruments used for assessment

The data gathering instruments used consisted of two scales and measures of high risk behaviour. The following instruments used in this study were included in the Self-Report Questionnaires.

4.6.1 Bar-On's Emotional Quotient Inventory (EQ-I)

Based on 19 years of research by Dr Reuven Bar-On and tested on over 120 000 individuals worldwide, the Bar-On's EQ-I is the first scientifically developed and validated measure of emotional intelligence. It measures one's ability to deal with daily environmental demands and pressures. A growing body of research suggests that psychological well-being is a key determinant of success in life.

Bar-On's Emotional Quotient Inventory was developed and standardised during the time period 1988 to 1996. The inventory was originally compiled in order to empirically explore the theory of psychological well-being. It is based on the Biopsychosocial Model and thus incorporates all dimensions of an individual's psychological well-being. Bar-On (1988) used an eclectic theoretical and multifactorial method of exploration in order to operationalise and define the complex factors of psychological well-being. Bar-On's Emotional Quotient Inventory describes the most valid and reliable factorial components of psychological well-being as self regard, interpersonal relationships, independence, problem solving, assertiveness, reality testing, stress tolerance, self-actualisation and happiness. Bar-On hypothesises that those individuals with higher than average psychological well-being are in general more successful in meeting environmental demands and pressures. He also notes that a deficiency in psychological well-

being can mean a lack of success and the existence of emotional problems. Problems in coping with one's environment is thought to be especially common among those individuals lacking in the subscales of reality testing, problem solving, stress tolerance, and impulse control (Bar-On, 2000).

Table 2: Bar-On's Model of Psychological Well-Being

Components	Sub-components
Intrapersonal	Self regard Emotional self-awareness Assertiveness Independence Self-actualisation
Interpersonal	Empathy Social responsibility Interpersonal relationship
Adaptability	Reality testing Flexibility Problem solving
Stress Management	Stress tolerance Impulse control
General Mood Components	Optimism Happiness

In 1995 the EQ-I was translated into Afrikaans by Professor G.J. Smit from the University of Pretoria as part of an international cross-cultural study exploring psychological well-being. The EQ-I has been translated into English, French, Spanish and Hebrew and by 1997 it had already been completed by over 2 000 subjects within seven different countries (Flett, 1997). The Multi-Health Systems in Toronto registered and published the EQ-I in 1997. Many other clinicians such as Milon, Coan, Offer and Kleiss have agreed that the EQ-I is a comprehensive and reliable way to evaluate psychological well-being.

The Emotional Quotient Inventory (EQ-I) was normed on approximately 4 000 respondents from the United States and Canada. Earlier versions of the Emotional Quotient Inventory (which relied on 12 subscales rather than the current 15) were normed internationally (Bar-On, 2000). Stability estimates of the Emotional Quotient Inventory in the form of test-retest reliability after 1 and 4 months, respectively were reported as 0.85 and 0.75. It should be noted that no stability estimates were reported for the North American sample; these figures reflect the South African sample. Based on seven population samples, the authors report internal consistency in the form of Cronbach's alpha as ranging from 0.69 to 0.86 for the 15 subscales and an overall average internal consistency of 0.76 (Bar-On, 2002).

While correlations between the EQ-I and subscales of other established measures of personality, especially ones that are thought to draw upon closely related constructs, have been moderate to high, overall the EQ-I seems to provide a valid and reliable estimate of an individual's ability to effectively cope with the pressures and demands of daily life, as conceptualised by Bar-On (Bar-On, 2000). The EQ-I can be employed in many ways and in a variety of settings to assess a client's general degree of emotional intelligence, potential for emotional health, and present psychological well-being. Due to the fact that one of this study's aims is to explore whether a relationship exists between psychological well-being and substance use, selected items of Bar-On's (EQ-I) are used. This particular instrument was chosen for this study as it examines different aspects of psychological well-being and thus it can give a comprehensive indication of the relationship between substance use and psychological well-being.

Questions from Bar-On's EQ-I were used to measure some of the individual dimensions of psychological well-being. Questions regarding self-confidence, self-regard and happiness were used as indicators of psychological well-being. In a factor analysis the underlying structure of the 36 items used in this research will be reported for this sample. As a result, the study is able to determine whether or not the questions used in this study are reliable within a South African context.

The Psychological Well-Being Scale used in this research consisted of 36 questions and participants responded to the questions on a three point Likert Scale ranging from "agree" to "in between" and "disagree". Babbie (1992) maintains that these types of Likert Scales provide a systematic and comprehensive way of presenting questions. Responses consisted of statements such as "It's hard for me to accept myself the way I am" and "I know how to deal with upsetting problems" (Bar-On, 2000). The use of a self-report measure to assess individuals' psychological well-being is consistent with established practice within personality psychology, where self-report measures represent the dominant, though certainly not the only, method of assessment.

4.6.2 Diener's Life Satisfaction Questionnaire

Diener's Life Satisfaction Questionnaire consisting of five items was also used. This scale assesses the cognitive component of a subjective experience of well-being (Pavot, Diener & Sandvik, 1991). Life satisfaction can be defined as a global evaluation of a person's life. Each person constructs a standard for him or herself of what an acceptable life is and compares his/her own life with this standard. Life satisfaction is a subjective value (Diener, Emmons, Larsen & Griffen, 1985). Exploratory factor analytic studies have suggested that the scale is unidimensional. In a few studies done with students, Diener et al. (1985) found that the scale measures a single factor of global life satisfaction with high internal consistency. In validity studies, it was found that the scale correlated highly with other wellness questionnaires and clinical reports. Using principal axis factor analysis, Diener et al. (1985) found a single factor accounting for 66% of the variance. Similar findings have been reported by Pavot et al. (1991). A single factor was also found for translations in French and Dutch. In terms of reliability, the scale has been found to be internally consistent and temporally stable. Diener et al. (1985) found

a coefficient alpha of 0.87 and a test-retest correlation coefficient of 0.82 with a two month interval. Similar findings have been reported by Pavot (1991) as well as by Yardley and Rice (1991). Diener et al. (1985) concluded, “*the satisfaction of life scale is shown to be a valid and reliable measure of life satisfaction*” (p.149).

Diener used a 7-point Likert Scale to answer the questionnaire. In this research a Three Point Scale was used to simplify the completion of the questionnaire. In a study done by Visser (2001) with 856 respondents, an item analysis was done to investigate the suitability of the questionnaire for a group of South African adolescents of different race groups. Item-scale correlations varied between 0.51 and 0.70 and the reliability of the scale was 0.654, which can be seen as acceptable if the number of items is taken into account (Antonioti, 2001).

4.6.3 Reported substance abuse

There is a difference between substance use and abuse. In this questionnaire the focus was on substance use. Because the adolescents in the study are under 18 years of age, all substance use is defined legally as substance abuse, therefore the terms use and abuse are used interchangeably in this research.

Questions were asked regarding high risk behaviour such as alcohol use, drug use and sexual behaviour. Substance abuse was assessed using self-reported behaviour with regard to alcohol and drug use. Questions were developed for the study, based on the guidelines put forward by the Center for Substance Abuse and Mental Health Services (Kumpfer, Shur, Ross, Bunnell, Librett & Millward, 1993) and the US Department of Health and Human Services (Hawkins & Nederhood, 1995). The following questions were asked:

- How many of your friends drink alcohol?
- Did you drink alcohol during the past 30 days – more than just a sip?
- Did you drink five or more drinks with alcohol on one day during the past 30 days?
- How many of your friends use drugs such as dagga (zol), cocaine, crack, mandrax (white pipe), LSD?

- Have you ever used drugs such as dagga (zol), cocaine, crack, mandrax (white pipe), LSD during the past 30 days?
- If your parents or caretakers find out that you were drinking alcohol or smoking dagga, do you think you would get into trouble?

4.6.4 The use of Self-Report Questionnaires

The Self-Report Questionnaires served to represent the experience of the respondent. The advantage of using a Self-Report Questionnaire was that the responses were not revealed to the teacher, field worker or other people present at an interview. Self-Report Questionnaires are particularly useful for enhancing honest reporting of risk behaviours by adolescents (Turner, Lessler & Gfoerer, 1992). However, in spite of the techniques used to minimise circumstances that might impair the reliability of the responses such as promises of anonymity and confidentiality, there is always a possibility of over or under-reporting in Self-Report Questionnaires. Furthermore, Tarter (2002) has stated that the possibility of problems in reliability seem even greater when the behaviours on which the respondents are being asked are labelled as deviant or illegal. Even so, findings indicate that in general the reliability of these self-reports is high with only a small tendency toward over and under-reporting and that self-reports provide distinct and very powerful measures (Ford, 2001). Perhaps more importantly, Schwarts and Strack (2003) found that the type of response scale that is used, the response options, and the order and presentation of questions can all influence the levels of honesty when reporting high risk behaviour such as substance use. Furthermore they found that momentary mood can also influence reports of well-being, however Diener and Pavot (1993) found that these influences of current mood were minimal.

4.7 Ethical considerations

Permission to conduct the research was obtained from the Educational Department. Furthermore, permission was given by the principals and guidance teachers of the respective schools to conduct the research. The parents were informed about the research at a parents' meeting due to the fact that all the participants were 19 years or younger. Parents could withdraw their children from the study. Informed consent was obtained from all of the participants

involved in the study. A field worker from the University of Pretoria explained the purpose of the study to them and they were informed that participation in the research project was entirely voluntary. Anonymity of the subjects together with confidentiality was also ensured. Thus the participants were not required to write their names on the questionnaires and any information that could link the adolescents to their specific responses was kept confidential.

4.8 Data analysis

Frequency tables were initially used to give an overall impression of the data that was collected. The frequencies looked at the biographical details of the respondents. Aron & Aron (1997) maintain that frequencies provide descriptive statistics and thus should be used for a first look at collected data.

The second statistical procedure that was used on the data was a factor analysis. Antonioti (2001) states that the goal of such an analysis is to find and then describe the underlying structure within a set of relations. It does this in two ways: firstly by reducing the number of original variables to a smaller set of variables that become known as factors, and secondly these factors acquire meaning due to the structural properties that exist between the set of relationships (Ferguson & Takane, 1989). Because only a selected number of items of the Psychological Well-Being Scale were used, the factor analysis was carried out to determine the underlying structure of the items. It was decided that variables would contribute meaningfully to a factor if they had a factor loading of more than 0.25. The Direct Quartimin Rotation for Simple Loadings was performed. A reliability analysis was then carried out. This was done using the reliability coefficients of the factor analyses. A Cronbach Alpha of 0.7 or higher is considered to be an adequate reliability. To ascertain whether or not the two scales, namely the Life Satisfaction Scale and the Psychological Well-Being Scale “go together” or covary, a

Pearson's Correlation Coefficient, which is the most commonly used measure of correlation, was employed.

To investigate the significance of differences in substance use patterns, Chi-Square analyses were performed. Chi-Square has two different uses. Firstly, it can be used as a measure of association in descriptive statistics and secondly it can be used in inferential statistics (Neuman, 1997). In this situation Chi-Squared served to express the strength of the relationship between substance abuse and age, gender and language.

The responses to the Life Satisfaction Questionnaire were observed and the frequencies for life satisfaction were graphically represented in order to put forward the average score of the scale for the sample as a whole. A multivariate analysis of variance (MANOVA) was conducted with life satisfaction as the dependent variable and gender, age, language, alcohol use, binge drinking and drug use as the independent variables. The MANOVA procedure serves to highlight how well the set of independent variables explain the dependent variable (Bohrstedt & Knoke, 1994). Furthermore, the results measure the size of the effect of each on the dependent variable. A Tukey's Test was done in order to control the Type I Experimentwise Error Rate.

As with Life Satisfaction, the responses to the Psychological Well-Being Scale were observed and the frequencies were graphically displayed. As a result the average score for the group as well as the standard deviation was visually depicted. A MANOVA was performed with well-being as the dependent variable and gender, age, language, alcohol use, binge drinking and drug use as the independent variables once again. The Tukey's Test was performed to control the error rate.

In the next chapter, the results obtained from these analyses are presented.

CHAPTER FIVE

RESULTS

5.1 Introduction

This chapter will start by reporting the biographical details of the respondents who made up the sample. The chapter will also provide a factor analysis of the Psychological Well-Being Scale so as to determine the reliability of this scale as a psychological measure appropriate for use in a South African context. Substance use patterns of the respondents will then be given and it will be explored whether or not age, gender or language have an impact on the extent of substance use. Responses to items on the psychological well-being and Life Satisfaction Scales will be reviewed and a multivariate analysis of variance will be employed to determine which independent variables are related to psychological well-being and life satisfaction.

5.2 Biographical details of respondents

A total of 1 918 adolescents took part in this study. The sample was made up of adolescents who were in Grades 9 to 11 in the selected secondary schools. Both male and female respondents participated. The biographical details of the respondents will be provided in the following section. In Table 3.1 the gender distribution of the sample is given.

Table 3.1: Gender

Gender	Total number (n)	Percentage (%)
Male	802	42%
Female	1 005	52%
Missing values	111	6%

Table 3.1 shows that the sample comprised of 42% male and 52% female respondents. Adolescents indicated their home language in the questionnaire. The language groups were

English (made up of Indian adolescents), Afrikaans (made up of Coloured and White adolescents) and African Languages (made up of Black adolescents speaking Zulu, Tsonga, Setswana, Xhosa, South Sotho, Ndebele and Sepedi). The language categories will be used in drawing conclusions about cultural groups. Table 3.2 gives an indication of the language demographics of the sample.

Table 3.2: Language

Language	Total number (n)	Percentage (%)
English	135	7%
Afrikaans	176	9%
African languages	1 485	77%
Missing values	122	7%

Table 3.2 shows that the majority of the respondents were in fact adolescents who spoke African languages. However a reasonable number of English and Afrikaans speaking respondents also completed the questionnaire.

The ages of the respondents were also provided. Table 3.3 shows the distribution of the age groups within the sample. Respondents who were 12 years of age were included in the thirteen-year old age grouping.

Table 3.3: Age

Age	Total number (n)	Percentage (%)
12-13 years	8	0.4%
14 years	285	15%
15 years	323	17%
16 years	397	21%
17 years	317	17%
18 years	230	12%
19 years	44	2%
Missing values	314	16%

The largest part of the sample was 15 to 17 year olds, who comprised 55% of the sample. The missing values were as a result of the respondents' failure to respond on the particular questions.

5.3 Factor analysis of Psychological Well-Being Scale

A factor analysis was done using the 36 items, which assess psychological well-being with the data from 1 918 respondents. Due to missing values in items on the scales the data of 36 respondents could not be included in the analysis. To uncover the underlying structure of the questionnaire, 5 factors, 3 factors and 2 factors were subtracted. It seemed that there was one predominant factor explaining the largest part of the variance. Fourteen items not contributing meaningfully to the total score were left out. In the final factor analysis 22 items were used in one factor, explaining 16% of the variance. Factor loadings varied from 0.268 to 0.585 as can be seen in Table 4.

Table 4: Factor loadings on items of the Psychological Well-Being Scale

Item	Factor loading
I do not feel good about myself	0.585
It is hard for me to accept the way I am	0.563
It is hard for me to enjoy my life	0.531
I feel lonely even when I am with people	0.500

I cannot concentrate when doing schoolwork	0.462
I feel life is not worth living	0.434
It feels impossible to deal with the problems I have	0.426
I enjoy the things I do	0.407
I really do not know what I am good at	0.395
I feel shy and unsure of myself when I am with other people	0.384
I cry every night	0.379
I trust in myself and in my own abilities	0.378
I worry about many things	0.358
People do not understand me	0.318
I have a feeling that something is wrong with me	0.317
I would like to change many things about myself to like myself more	0.306
I feel sure of myself in most situations	0.306
I do not believe people who say nice things about me	0.302
I think I am a good person	0.292
I have a good idea of what I want to do with my life	0.283
I know how to deal with upsetting problems	0.274
My classmates like me the way I am	0.268

The Cronbach Alfa Reliability Coefficient of this scale with 22 items was 0.794, which is relatively high for a psychological measure (Antonioti, 2001). A coefficient of 0.794 means that the items assess one construct because there is a high correlation between items in the scale. The scores of items in the Well-Being Scale were added up to get a total score for psychological well-being. The direction of the scale was such that a high score on the Psychological Well-Being Scale was reflective of increased psychological well-being, whereas a low score was reflective of low levels of psychological well-being. The total scores were then used in the analysis of data.

5.4 Correlation of Life Satisfaction Questionnaire and Well-Being Scale

In order to determine whether or not the Life Satisfaction Scale and Psychological Well-Being Scale were measuring similar constructs, the Pearson Correlation Coefficient was calculated. Table 5 shows the correlation between these two measures.

Table 5: Correlation of life satisfaction and psychological well-being

	Psychological well-being	Life satisfaction
Psychological well-being score	1.00000	-0.413 < .0001
Life satisfaction score	-0.413 <.0001	1.00000

A correlation coefficient indicates the extent to which the two measures tend to vary together. The coefficient is positive when increasing scores on test one are associated with increasing scores on test two, and the coefficient is negative when increasing scores on test one are associated with decreasing scores on test two. A correlation of 1 represents a perfect positive relationship, while a correlation of -1 represents a perfect negative relationship and a correlation of 0 means that no relationship exists between the two measures at all (Antonioti, 2001). This table shows that there is a correlation of 0.4 between the two scales, which is a statistically meaningful correlation. The negative correlation is a result of the fact that a high score on the Psychological Well-Being Scale is reflective of an increased level of psychological well-being, whereas in contrast a high score on the Life Satisfaction Scale is reflective of decreased life satisfaction. The directionality of the scales is therefore opposite. It can therefore be concluded that there is an overlap in the constructs measured.

5.5 Substance use patterns of respondents

In this section, substance use patterns of the adolescents will be explored. In the sample as a whole, 505 adolescents (26% of the sample) reported drinking within the past 30 days and 275 adolescents (14%) reported binge drinking within the last 30 days. Binge drinking in the questionnaire was defined as drinking five or more drinks with alcohol on one occasion during the past 30 days. Finally, a total of 144 of the respondents (7.5%) reported using drugs such as dagga (zol), cocaine, crack, mandrax (white pipe), and LSD within the past 30 days.

To understand the substance use behaviour, behaviour patterns were analysed according to age, gender and language group. Table 6.1 shows the patterns that exist between drinking, binge drinking, drug use and age.

Table 6.1: The relationship between age and substance use

Age	13 years (n=8)	14 years (n=137)	15 years (n=287)	16 years (n=398)	17 years (n=318)	18 years (n=230)	19 years (n=121)
Drinking	12.5%	22.5%	27.6%	31.5%	33.4%	43.5%	45.4%
No Drinking	87.5%	77.5%	72.4%	68.5%	66.6%	56.5%	54.6%
Binge Drinking	12.5%	10.5%	13.1%	17.1%	21.9%	21.5%	30.4%
No Binge Drinking	87.5%	89.5%	86.9%	82.9%	78.1%	78.5%	69.6%
Drug Use	0%	3.5%	8.3%	8.3%	13.4%	9.0%	22.2%
No Drug Use	100%	96.5%	91.7%	91.7%	86.6%	91.0%	77.8%

Missing data, n=419

Table 5 shows that the percentage of alcohol use, binge drinking and drug use, increase with age. For example only 12.5% of 13 year olds reported alcohol use, and this percentage increased consistently with age such that 45.4% of 19 year olds reported such behaviour. Similarly, 12.5% of 13 year olds reported binge drinking. At age 16, 17.1% reported binge drinking. It seems that between the ages of 16 and 19 there is a large escalation in binge drinking, with 30.4% of 19 year olds reporting binge drinking behaviour. Finally, although no 13 year olds report using drugs, 9% of 18 year olds and 22.2% of 19 year olds do. Although a much larger portion of the sample reported no substance use, a substantial portion of adolescents did report this behaviour. Taking into consideration their age group, these figures are alarming, especially considering any substance use in this age group is seen as illegal behaviour.

To investigate the significance of differences in the age groups' use of substances, a Chi-Square Analysis was done. The Chi-Square procedure tests differences between independent data using frequency scores, or between a sample and some set of expected scores (Reber & Reber, 2001). In this case the procedure serves to investigate if there is a significant difference between the substance use behaviour of different age groups. The Chi-Square results are reported in Table 6.2.

Table 6.2: Chi-Square results for age and substance use

Variable	Chi-square value	Level of significance and effect size
Drinking	34.2983	p=0.0001 C=0.145
Binge drinking	26.9369	p=0.0001 c=0.1281
Drug use	29.1959	p=0.0001 c=0.1333

According to Table 6.2, age has a highly significant impact on drinking, binge drinking and drug use ($p < 0.001$). Because of the large sample size normal statistics may show significant differences while the effect of the difference in the mean scores is very small. By calculating the effect size, in the form of the contingency value, this can be corrected (Antonioti, 2001). A contingency value of less than 0.01 indicates a small effect size. A contingency value of between 0.01 and 0.1 indicates a medium effect size and between 0.1 and 0.25 indicates a large effect size. It was found that the difference had a medium effect in this sample ($0.1 < c < 0.25$). A significant relationship therefore exists between age and substance use and the relationship indicates that substance use of all types (drinking, binge drinking and drug use) increases with age.

In Table 7.1 the differences that exist between genders with regard to substance use are explored. The table depicts the percentages of males and females who report drinking alcohol, binge drinking and drug use.

Table 7.1: Relationship between gender and substance use

Gender	Male (n=808)	Female (n=1006)
Drinking	40.9%	23.3%
No drinking	59.1%	76.7%
Binge drinking	23.6%	11.8%
No binge drinking	76.4%	88.2%

Drug use	15.1%	3.2%
Drug use	84.9%	96.8%

Missing data, n=104

From Table 7 it can be concluded that 41% of male adolescents and 23% of their female counterparts drank alcohol within the last 30 days. Furthermore, 24% of males have engaged in binge drinking behaviour within the past month, compared to 12% in the female group. Finally 15% of males and 3% of females in the adolescent group have used illegal drugs within the past month. Thus males tend to be far more prone to substance use than females.

To explore the significance of these differences, a Chi-Square Test was performed so as to determine whether or not the differences were statistically significant.

Table 7.2: Chi-Square results for gender and substance use

Variable	Chi-value	Level of significance and effect size
Drinking	64.5829	p=0.0001 c=0.1858
Binge drinking	44.6141	p=0.0001 c=0.1548
Drug use	81.5447	p=0.0001 c=0.2072

There was a high level of significant differences ($p < 0.0001$) between the behaviour of males and females with regard to substance use. To control the sample size, the effect size of the difference was explored by using the contingency coefficient. It was found that there was a medium effect size in the case of all three variables ($0.1 < c < 0.25$). The results indicate that males are more prone to substance use than females.

Table 8.1 shows the patterns that exist between language and substance use. The table shows the percentages of substance use within the three language categories, namely English, Afrikaans, and African languages.

Table 8.1: Relationship between language and substance use

Language	English (n=135)	Afrikaans (n=176)	African Language (n=1519)
Drinking	23%	35.8%	31.8%
No Drinking	77.0%	64.2%	68.2%
Binge drinking	9.6%	15.4%	18.2%
No binge drinking	90.4%	84.6%	81.8%
Drug use	7.4%	8.5%	8.9%
No Drug use	92.6%	91.5%	91.0%

Missing data, n=88

The table shows that more Afrikaans speaking respondents (36%), made up of Coloured and White adolescents drank alcohol in the past 30 days, than their African (32%) and English counterparts (23%). With regards to binge drinking however, a different pattern exists. Of the

African language speakers 18% reported binge drinking within the past 30 days, followed by 15% of Afrikaans speaking adolescents and 10% of English speaking adolescents. Drug use was reported by 9% of the African language speaking adolescents; by 8% of Afrikaans speaking adolescents and by 7% of English speaking adolescents. The English speaking adolescents, representing Indian adolescents were the group with the lowest substance use in this sample.

To investigate the significance of differences in the language grouping's use of substances a Chi-Square Analysis was done for drinking behaviour, binge drinking and drug use (Table 8.2). The Chi-Square Test, tested the association between language and substance use.

Table 8.2: Chi-Square results for language and substance use

Variable	Chi-value	Level of significance and effect size
Drinking	6.1188	p=0.0469 c=0.0583
Binge drinking	6.9153	p=0.0315 c=0.0618
Drug use	0.3781	p=0.8278 c=0.0145

There was a significant difference between drinking alcohol and binge drinking patterns between the three language groups ($p < 0,05$). The contingency coefficient shows that the effect of the difference was small in both cases ($c < 0,1$). In the case of drug use language did not play a significant role ($p > 0,05$). The conclusion can therefore be made that there is no significant difference in the drug use patterns of learners of different language groups in this sample.

5.6 Life satisfaction

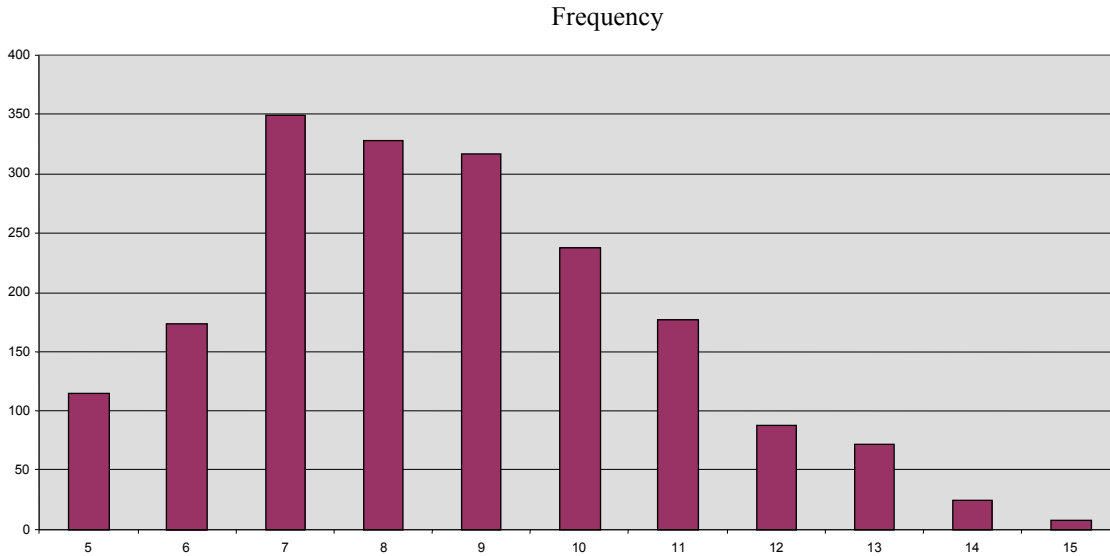
Life satisfaction was measured using the five items of Diener's Life Satisfaction Scale. Table 9.1 shows the responses of adolescents on items from Diener's Life Satisfaction Questionnaire.

Table 9.1: Responses to life satisfaction items

Item	Yes, agree	In between	No, disagree
In most ways my life is close to my ideal	552 (41%)	596 (45%)	188 (14%)
The conditions of my life are excellent	642 (47%)	540 (40%)	183 (13%)
I am satisfied with my life	825 (60%)	320 (23%)	220 (16%)
So far, I got the important things I want in life	667 (49%)	418 (31%)	282 (21%)
If I could live my life over I would change almost nothing	430 (32%)	418 (31%)	495 (37%)

Table 9.1 shows that more adolescents experience life satisfaction than those who do not. The finding that 60% of the adolescents reported being satisfied with their lives is an optimistic one. A total score for the scale was calculated. A high score represented a negative life satisfaction and a low score represented a positive life satisfaction. The average score on the scale for the group as a whole was 8.63 and the standard deviation was 2.14. The minimum value was 5 and the maximum value 15. This shows that the majority of learners had a positive life satisfaction. It should be noted that there is a group of learners who are very dissatisfied with their lives. Figure 2 shows the frequencies of responses for the Life Satisfaction Questionnaire.

Figure 2: Frequencies for life satisfaction responses



Life satisfaction score

To explore the relationships between life satisfaction, biographical data and substance use, a multivariate analysis of variance (MANOVA) was performed with life satisfaction as the dependent variable and the following variables as independent variables:

- Gender
- Age
- Language
- Alcohol use
- Binge drinking
- Drug use

Table 9.2 shows the MANOVA that was performed to explore the relationship between the biographical variables and substance use. A MANOVA was used because it serves as an

appropriate method to test the significance and interaction effect of more than two variables on a dependent variable.

Table 9.2: MANOVA for life satisfaction

Dependent variable: life satisfaction

Source	Mean square	F	p value	Partial eta squared
Corrected	153.696	2.744	.001	.023
Model intercept	12819.922	2746.212	.000	.661
Gender	.307	0.66	.798	.000
Age	32.968	1.177	.316	.005
Language	87.187	9.338	.000	.013
Alcohol use	3.132	0.671	.413	.000
Binge drinking	11.467	2.456	.117	.002
Drug use	26.474	5.671	.017	.004
Total	113693.000			
Corrected total	6740.555			

Significance level $p < 0.05$

Life satisfaction was affected by the independent variables, indicated by the significant value of the corrected model. To understand which variables affected life satisfaction the items of primary interest in Table 12 are the effects listed under the “Source” column and the values of significance. It can be seen that gender and age do not have an impact on the variable life satisfaction. There was a relationship between language and life satisfaction ($p < 0.001$). This relationship will be further explored in Table 9.3. Alcohol use and binge drinking did not have a significant impact on life satisfaction. There was a significant relationship between drug use and life satisfaction ($p < 0.05$). This relationship will be explored in Table 9.4.

A Tukey’s Test was done in order to control the Type I Experimentwise Error Rate and means were observed in order to explore the relationship between language group and life satisfaction. The Tukey’s Test is used after an analysis of variance has shown overall significance. It serves to enable one to compare all possible pairs of means while not changing

one's criteria for a Type I Error Rate at a given level of significance (Reber & Reber, 2001). Table 9.3 shows the mean score for all three language groups. Groups with similar codes were found not to differ statistically from each other, while groups with different codes were statistically different. A low mean score was found to be associated with increased life satisfaction.

Table 9.3: Means procedure for language and life satisfaction

Language group	Mean	Standard deviation
English	9.29 (a)	2.16
Afrikaans	9.05 (a)	2.23
African languages	8.56 (b)	2.15

It was found that the English and the Afrikaans groups were similar in terms of life satisfaction, but both differed from the African language group. Thus, the African language learners reported higher levels of life satisfaction than their English and Afrikaans counterparts.

A Tukey's Test was also done in order to explore the relationship between drug use and life satisfaction. It was found that drug use was associated with decreased life satisfaction. Table 14 shows the means for both drug use and non-drug use groups. A low mean score is reflective of increased life satisfaction and a high mean score is reflective of decreased life satisfaction. The results therefore show that those adolescents who use drugs report a lower level of life satisfaction.

Table 9.4: Means procedure for life satisfaction and drug use

	Mean	Standard deviation
Drug use	9.14	2.14
No drug use	8.61	2.17

In conclusion it seems that African language speaking adolescents report a greater life satisfaction than their English and Afrikaans speaking counterparts. Furthermore, those individuals who are more prone to drug use have a lower life satisfaction than their counterparts who refrain from any type of drug use.

5.7 Psychological well-being

The development of the psychological well-being questionnaire was discussed in section 5.3. The items of the Well-Being Scale, as well as the number and percentage of adolescents who reported specific feelings, can be seen in Table 10.1.

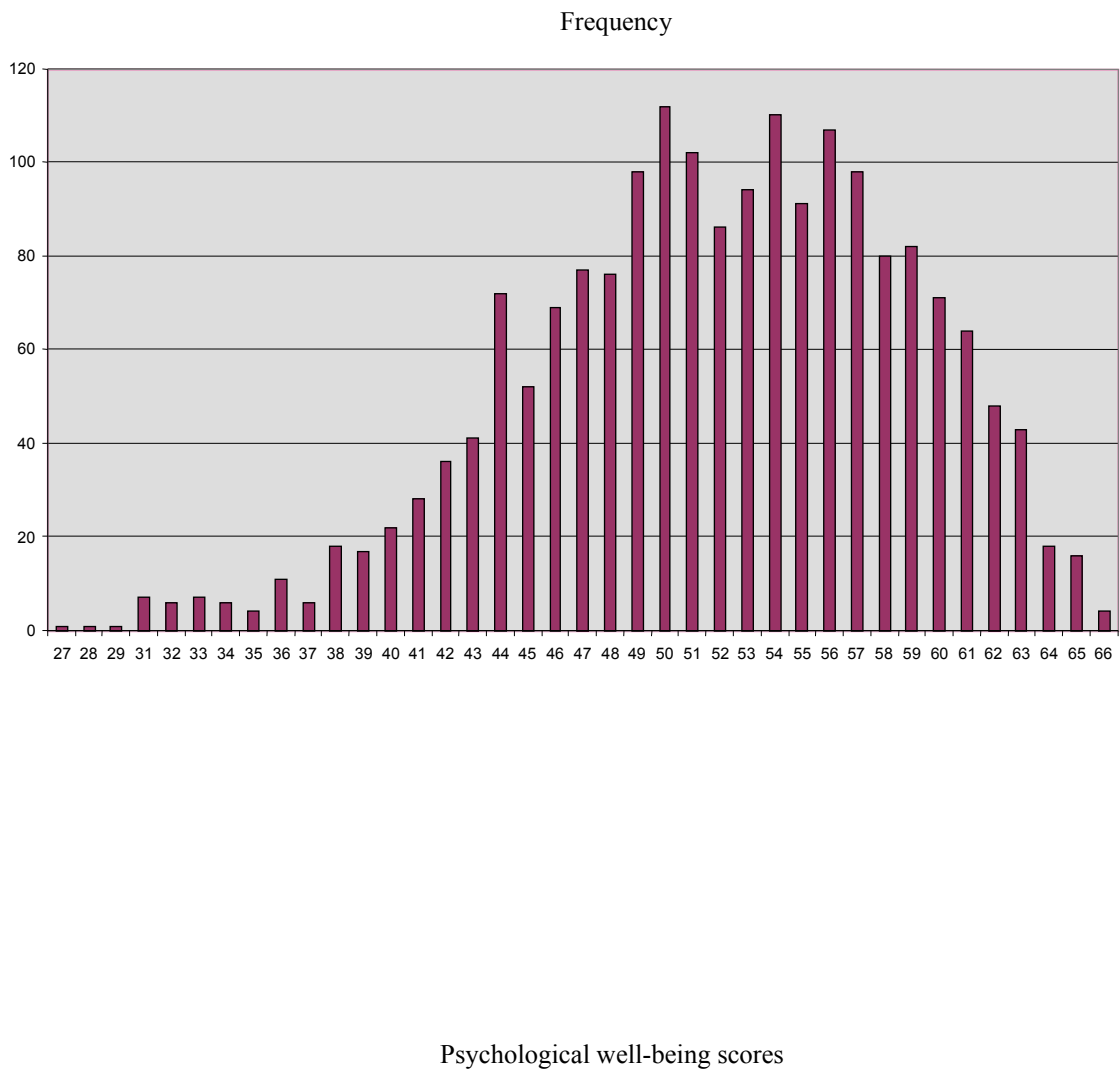
Table 10.1: Responses to psychological well-being items

Item	Yes, agree	In between	No, disagree
I feel sure of myself in most situations	739 (55%)	552 (41%)	47 (4%)
People do not understand me	280 (21%)	546 (41%)	522 (39%)
It is hard for me to enjoy my life	256 (19%)	258 (19%)	846 (62%)
I know how to deal with upsetting problems	610 (45%)	514 (38%)	233 (17%)
I really do not know what I am good at	348 (26%)	331 (24%)	673 (50%)
I worry about many things	583 (43%)	418 (31%)	349 (26%)
My classmates like me the way I am	816 (60%)	383 (28%)	154 (11%)
I do not feel good about myself	168 (12%)	232 (17%)	956 (71%)
I have a feeling that something is wrong with	431 (32%)	342 (25%)	584 (43%)

me			
I feel lonely even when I am with people	199 (15%)	274 (20%)	881 (65%)
I cannot concentrate when doing school work	301 (22%)	376 (28%)	688 (50%)
It is hard for me to accept myself the way I am	236 (17%)	232 (17%)	886 (65%)
I think I am a good person	1075 (79%)	234 (17%)	52 (4%)
I trust myself and my own abilities	1065 (78%)	225 (17%)	74 (5%)
I do not believe people who say nice things about me	334 (25%)	537 (40%)	481 (36%)
I feel shy and unsure of myself when I am with other people	367 (27%)	390 (28%)	615 (45%)
I would like to change many things about myself to like myself more	830 (61%)	232 (17%)	308 (22%)
It feels impossible to deal with the problems I have	356 (26%)	458 (34%)	550 (40%)
I feel life is not worth living	220 (16%)	321 (24%)	811 (60%)
I cry every night	101 (7%)	193 (14%)	1073 (78%)
I enjoy the things I do	1035 (76%)	254 (19%)	73 (5%)
I have a good idea of what I want to do with my life	1013 (74%)	264 (19%)	96 (7%)

The table shows that although many adolescents seem to report a sense of psychological well-being, it is concerning that 45% of adolescents do not feel sure of themselves when around other people; that 43% of adolescents worry about some or many things; that 32% of adolescents think that there may be something wrong with them; that only 50% can concentrate on their school work; that 61% would like to alter something about themselves in order to like themselves more; and that only 40% feel equipped to deal with the problems they have. The table provides insight into the possible areas of difficulty for this adolescent age group. Figure 3 shows the total scores of the Psychological Well-Being Scale. Scale scores for the Psychological Well-Being Scale were calculated. A high score represented a high level of psychological well-being and a low score represented a low level of psychological well-being. The average score for the group as a whole was 51.86 and the standard deviation for the group as a whole was 6.90. The maximum score was 66 and the minimum score was 27.

Figure 3: Frequencies for psychological well-being responses



To explore the relationship between psychological well-being, substance use and biographical variables, a MANOVA was done using the following independent variables:

- Gender
- Age
- Language
- Alcohol use
- Binge drinking
- Drug use

Table 10.2 shows that psychological well-being is affected significantly by some of the variables ($p = 0.003$). The following serves to highlight where the difference lies when psychological well-being is the dependent variable.

Table 10.2: MANOVA for psychological well-being

Dependent variable: well-being

Source	Mean square	F	Significance value	Partial eta squared
Corrected	119.362	2.529	.003	.021
Model intercept	399629.818	8466.416	.0000	.857
Gender	178.530	3.782	.0520	.003
Age	34.268	.726	.6287	.003
Language	62.818	1.331	.2659	.002
Alcohol use	149.676	3.171	.0752	.002
Binge drinking	60.723	1.286	.2569	.001
Drug use	330.731	7.007	.0082	.005
Total	3897340.000			
Corrected total	67845.237			

Significance level $p < 0.05$

The items of primary interest in this table are once again the effects listed under the “Source” column and value of significance. The psychological well-being of males and females differed slightly, however, the size of difference is not significant. The variable, psychological well-being, is almost significant for alcohol use, and it is affected by one of the independent

variables, namely drug use. To explore the difference with regard to drug use however, means were observed and a Tukey's Test was performed. Table 10.3 shows the mean values.

Table 10.3: Means procedure for psychological well-being and drug use

Psychological well-being	Mean-substance use	Mean-no substance use	f-value	p-value
	49.888	52.123	7.01	0.0082

From the table it can be seen that there is a relationship between drug use and psychological well-being. A high mean score is reflective of better psychological well-being. It can be concluded that individuals who refrain from using drugs report higher psychological well-being than adolescents who reported use of drugs.

5.8 Conclusion

In this chapter it was shown that the Psychological Well-Being Scale is a reliable measure of well-being in the South African population and that the scale correlates with the Life Satisfaction Scale. The patterns of substance use within the adolescent population were explored and it was highlighted that both life satisfaction and psychological well-being have a positive relationship with drug use. This was concluded because those adolescents who had lower scores on the Psychological Well-Being Scale, and thus a lower sense of psychological well-being were found to be more likely to abuse drugs. Similarly, those adolescents who had high scores on the Life Satisfaction Scale, and thus a lower sense of life satisfaction were also found to be more likely to abuse drugs. A relationship between language and life satisfaction was observed, however no such relationship was evident when psychological well-being and language were related. A discussion about the observed results will be undertaken in the next chapter.

CHAPTER SIX

DISCUSSION AND CONCLUSION

6.1 Introduction

The aims of this research are, as discussed in chapter two, threefold. The first aim was to report on the psychometric properties of selective items from the Emotional Quotient Inventory and the Life Satisfaction Questionnaire within a South African context. This is important so as to determine the reliability of a Psychological Well-Being Scale for South African populations. The second aim was to relate indicators of psychological well-being to substance use of adolescents. The presence of such a relationship highlights the importance of educating adolescents about the relationship between the two constructs. Finally the research aimed to relate substance use and psychological well-being to subgroups such as gender, age and cultural groups. The importance of these aims lies in the fact that should a relationship be found to exist between psychological well-being and substance abuse, future interventions possibly need to be revised. Furthermore, should the psychometric properties of the Emotional Quotient Inventory be valid and reliable within a South African context, it can be utilised in order to identify those adolescents most at risk for substance abuse.

The purpose of this chapter is to interpret and discuss the results of this study in light of these aims. This will begin with a look at the biographical details of the sample as a whole. It will then be explored whether the two psychological measures namely the Emotional Quotient Inventory and the Life Satisfaction Questionnaire were reliable indicators of psychological well-being in the South African sample. The chapter will then address the hypotheses put forward in chapter four with a look at the relationship between substance abuse and psychological well-being. Patterns of substance use that emerged with reference to age, gender and language will

then be reviewed and it will be explored whether or not culture, based on language group has an influence on one's level of psychological well-being.

6.2 A review of the sample in question

Before the results of the statistical analyses are observed, the sample in question needs to be reviewed so as to ascertain from what specific population the results were generated. The number of female subjects was 10% greater than the number of male subjects. The 15-17 year age groups were the largest groups in the study. This was as a result of the stratified sampling procedure. The 12 year old age groups were added to the 13 year old age group. This was done in order to minimise the effect that small cell sizes have on skewing the frequency distributions. As previously mentioned any respondent over the age of 19 was not included in the sample as they did not meet the definition of "adolescent". All five grades of the school participated in the study. The largest grade was Grade 11. This is congruent with the fact that the largest age group was the 15-17 year olds, who are mostly in Grades 11 and 12. The majority of the respondents spoke African languages. Afrikaans speaking adolescents who were Coloured and White, and English speaking adolescents who were Indian made up the remainder of the sample. Thus the sample was a representative sample of the community composition.

6.3 Characteristics of measuring instruments

As discussed in chapter three, psychological well-being has been addressed from a holistic perspective in this research. As such this suggests that any measure of psychological well-being will take into consideration the numerous dimensions of existence, which undoubtedly affect an individual's well-being (PASA, 1989). It has been highlighted that biological, psychological and social dimensions contribute to an individual's overall psychological well-being and thus any measure of psychological well-being should incorporate all these dimensions. Bar-On's Psychological Well-Being Scale is based on the Biopsychosocial Model and thus incorporates all these dimensions of an individual's psychological well-being.

One of the aims of this study was to report on the psychometric properties of selective items from the Emotional Quotient Inventory. In this study only a small number of items from Bar-On's Scale, focussing on self-esteem, self-acceptance and interpersonal relationships were used. A factor analysis was done using the 36 items selected for this research. 22 items, which were selected, loading on one general factor explained 16% of the variance with a Cronbach Alpha of 0,794. Loewenthal (1996) states that any correlation of around 0.8 or 0.9 is desirable. Thus, one can conclude that with a coefficient of 0.794 the 22 item scale can be used as a reliable measure in a South African population in terms of measuring aspects of psychological well-being.

In order to be able to reflect on the psychometric properties of the Life Satisfaction Questionnaire, it was observed in comparison to the Psychological Well-Being Scale. Although the theoretical difference between the Emotional Quotient Inventory and the Life Satisfaction Scale lies in the fact that the Emotional Quotient Inventory measures the ability to cope effectively with the pressures and demands of daily life, and the Life Satisfaction Scale measures a more cognitive component of the subjective experience of well-being, the correlation between the two scales was -0.4. (The negative correlation between the two can be explained by the fact that the directionality of the scales was opposite. Therefore a high score on the Psychological Well-Being Scale reflected a better psychological well-being and a low score on the Life Satisfaction Scale reflected a better psychological well-being.) There was a moderate correlation between the two scales and therefore one can assume that they both measure aspects of the similar construct. It is therefore not surprising that both life satisfaction and psychological well-being yield the same results when reviewed in conjunction with substance use. This will be discussed further on in the chapter.

6.4 The relationship between psychological well-being and substance abuse

A review of the results reveals that the majority of the sample reported high levels of psychological well-being. The positive skewed distribution of scores reflects this as well as the mean score of 51.86. The "fit" between the two scales explains the similar results for life satisfaction. The average life satisfaction score of 8.63 indicated a more positive life satisfaction of the sample.

Although these findings are extremely optimistic, concern lies in the fact that a minority of adolescents did not report high levels of psychological well-being and life satisfaction. A closer look at the relationship between psychological well-being and substance abuse exposes to what extent this portion of adolescents are placed at risk for other problems.

The MANOVA procedure showed that psychological well-being was associated with drug use. The directionality of the scale showed that those adolescents who refrain from using drugs tend to have higher levels of psychological well-being than their drug using counterparts. Although one would have thought that alcohol use too would have had an impact on psychological well-being, these results prove that for this sample of adolescents there is a tendency, yet not a significant relationship between psychological well-being and alcohol use at the 0.05 level. In conclusion, one can say that there is only a significant relationship between psychological well-being and drug use. The results therefore suggest that those adolescents who have lower levels of psychological well-being, use drugs to a greater extent than those who report higher levels of psychological well-being. This is congruent with Barlow and Durand's (1999) theoretical opinion that individuals often use substances as a means to escape when life poses too many challenges. In explaining this though, the "chicken or egg" question plagues research. Thus whether or not poor psychological well-being leads to drug use, in an effort to escape painful feelings and to feel more at ease in difficult social situations, or whether drug use leads to a deterioration in overall psychological well-being, remains an area of blurred opinions. However the prior option seems to have gained more weight in recent years (Armstrong & Costello, 2002). The hypothesis outlined in chapter four suggests that a relationship exists between psychological well-being and substance abuse in general. The results are more specific in this regard as they confirm that such a relationship exists between drug abuse and psychological well-being, but they refute the idea that a significant relationship exists between psychological well-being and all substance abuse. Drinking as well as binge drinking behaviour had no such relationship with psychological well-being.

The "fit" between the Life Satisfaction and Psychological Well-Being Scales explains the fact that the Life Satisfaction Scale yielded the same results when analysing drug abuse in this sample. Thus it is not surprising that the MANOVA results showed that life satisfaction had a significant relationship with drug use and more specifically, that adolescents who use drugs are

more likely to have a more negative life satisfaction and that those who abstain from using drugs are more likely to be satisfied with their lives. Life satisfaction was not related significantly to drinking or binge drinking.

6.5 The relationship between psychological well-being and language/culture

It was hypothesised that membership to different language groups and therefore cultural groups would have an effect on one's psychological well-being. The suggestion of this hypothesis was made on the basis that language groups in South Africa still reflect distinct socio-economic classes to a large extent. Past studies have shown that because of various disadvantages, adolescents in poorer families have more psychological problems than their adolescent counterparts from wealthier families. In such an international study, The British Office for National Statistics reported that 16% of adolescents living in families with a weekly income of less than £100 have mental health problems, compared with around 6% of adolescents in families earning over £500 a week (Williams, 2004). The results in this particular study are conflicting because life satisfaction was shown to have a significant relationship with language, whereas psychological well-being and language revealed no such relationship. In theory this suggests that the more cognitive component of the subjective experience of well-being correlates with language. This can be explained by the fact that cultures vary with respect to the meaning they impart to life satisfaction, and their way of making sense of the subjective experience of life satisfaction (Kleinman, 1988). Cultural meanings of life satisfaction have very real consequences in terms of how people cope with their problems. Furthermore, in South Africa specifically, factors often linked to certain cultures such as poverty, violence, racial discrimination, and lack of basic resources may certainly contribute to psychological distress and therefore lead to lower levels of life satisfaction. Ultimately this hypothesis remains to be completely expounded because the two correlating scales yielded different results.

6.6 Patterns of substance use

The patterns of substance use observed in this study seem to be consistent with local and international patterns described in the literature. Alcohol was shown to be the most popular substance of use. This is consistent with recent international and local statistics that reveal that alcohol is still regarded as the most popular used substance (NIAAA, 2000; SACENDU, 2002). In this study, 26% of the sample reported drinking alcohol within the past 30 days and a further 14% reported binge drinking within the past 30 day period. In a recent SAMHSA study, approximately 25% of adolescents reported using alcohol within a 30 day period and thus the results are extremely consistent. Other drug use was reported at 7.5% which is fairly consistent with SAMHSA findings in 2001 which reported that 10% of adolescents reported the use of marijuana, cocaine, crack, inhalants, hallucinogens or heroin. Past, local research however, suggests that cannabis would be the illicit substance most likely to be used by high-school attending adolescents and thus the drug use percentage is probably largely accounted for by cannabis (Parry et al, 2004). This is concerning because while the so called “Gateway Theory” – the idea that experimenting with “soft” drugs like cannabis will inevitably lead to heroin addiction and squalid death – has been discredited, there is evidence to show that adolescents who start drinking, smoking and using cannabis at an earlier age are more likely to take “hard” drugs than those who start later (Degenhardt, Hall & Lewinsky, 2001). As the literature highlights, adolescents involved with any form of substance use are more likely to be involved in other risky behaviours; they are more likely to have academic problems; and they are more likely to initiate use in other substances. As a result the 26% of adolescents who reported alcohol use and the 7.5% of adolescents who reported drug use are a cause of huge concern. It was hypothesised that, membership to different race groups, age and gender have an effect on one’s level of substance abuse. Age, gender and culture will be looked at individually in order to see the trends involved with substance abuse.

6.6.1 Substance abuse and age

The use of the Chi-Square procedure confirmed that in general a significant relationship exists between age and substance use of all types (drinking, binge drinking and drug use). More specifically, the results point to the fact that the percentage of alcohol use, binge drinking and drug use increase with age. Where at age 13 only 12.5% of the adolescents reported alcohol use, at age 19 this percentage had dramatically risen to 45.5%. Similarly 12.5% of 13 year olds

compared to 30.4% of 19 year old adolescents reported binge drinking. Where no 13 year old adolescents reported drug use, 22% of their 19 year old counterparts did. This means that almost a quarter of the 19 year old adolescents in the sample were experimenting with drugs. The findings in the study are consistent with past data as many researchers have suggested that the average age for using substances begins at around 11-14 years, and that substance use increases with age during the adolescent years (Crome, 1997; Morgan, Eiser, Budd, Gammage & Gray, 1986, Adelekan, 1994).

The results of this study in terms of substance use patterns are consistent with the literature discussed in chapters two and three. The finding that 26%, 14% and 7,5% of the sample are drinking, binge drinking and using drugs respectively is one of concern in light of the fact that all of the respondents are 19 years or below and that drinking and drug use are illegal for these age groups. What is also of concern is that although the majority of the substance abusers use alcohol, it is known that alcohol use predates entry into many other forms of substance use (Weinberg, 2001). Furthermore, studies have found that among adolescents enrolled in substance abuse treatment programmes, 96% are polydrug users, and that 96% of the polydrug users also use alcohol (Kaplan & Sadock, 2003). As such it should be realised that the 26% of alcohol abusing adolescents are possibly on the road to more dangerous and illicit drug use.

6.6.2 Substance abuse and gender

Gender too has been found to be one of the main factors that account for substance use (Newburn & Shiner, 2001). In terms of gender, the results of this study also revealed large discrepancies: 40% of the male adolescents compared to 23% of the female adolescents reported alcohol use, and 23% compared to 12% reported binge drinking. Thus males tend to be twice as likely to engage in drinking or binge drinking behaviour than females. Furthermore, only 3% of the female respondents reported drug use, whereas 15% of the male respondents reported such behaviour. Past literature with reference to illicit drugs confirms that men are far more likely than women to have taken illicit drugs (Thom, 2003). For example, a study of Glasgow's adolescents, found marked differences in the level of drug use between males and females aged 16-19 years. 41% of men reported having taken an illicit drug, compared to 19% of women

(Barnard, 1996). Therefore, as past research has suggested (Rocha-Silva et al., 1995) and this research confirms, males are far more likely than females to engage in substance use activities. According to past research, gender differences seem to widen with increasing age and the gap has been found to be widest among those in their mid to late 20s. Armstrong (1983) maintains that such gender differences may be as much a product of social roles and social expectations of male and female behaviour as they are a result of differences in biological vulnerability.

6.6.3 Substance abuse and language

Culture has in past literature been shown to affect levels of substance use (Glendinning, Shucksmith & Hendry, 1994). The results of this study showed that different language groups, and thus cultural groups yielded significantly different patterns of drinking and binge drinking behaviour. In both instances the English speaking adolescents, who in this sample were Indian adolescents, reported the lowest rates of drinking behaviour. Afrikaans speaking adolescents, thus Coloured and White adolescents, reported the highest rates of drinking, and Black adolescents speaking African languages reported the greatest amount of binge drinking. These significant differences with regards to culture are consistent with past research. With regard to alcohol use, the National Institute of Alcohol Abuse and Alcoholism (NIAAA) found that rates of alcohol abuse varied among major U.S. ethnic groups. Furthermore, Humphrey, Stephens and Allen (1983) confirmed that culture differences affected levels of alcohol use. In their study of college students they found that 84% of Whites and 60% of Black students used alcohol and that 27% and 9% respectively abused alcohol. Thus more White adolescents used alcohol than Black adolescents. In 1983 a South African study found that patterns of alcohol use were enormously influenced by the cultural context in which drinking occurs and that the largest portion of drinkers were White South Africans followed by their Black, Coloured and finally Indian counterparts. (van der Burgh, 1983). More recently in a study done by Routledge and Killian (2001) these findings were supported, thus suggesting that these differences according to culture are long-standing. Ethnicity, perceived membership in a cultural group, cultural identification and the strength of one's affiliation with a group seem to develop primarily through interactions with the primary socialisation sources, namely the family, the school, and peer clusters. Cultural norms for substance use are therefore transmitted as part of these interactions. Substance use differs across cultures - in different cultures some forms of substance use are culturally required, others are tolerated, and others are sanctioned. The general consensus is therefore that ethnicity

and cultural identification, relates to levels of substance use (Kaplan & Sadock, 2003).

Perhaps a possible explanation for cultural differences is that substance use can be regarded as a social act embedded in a context of values, attitudes and conceptions of reality which often vary from one cultural group to another (van der Burgh, 1983). Indian adolescents for example may not engage in substance use activities due to religious reasons (van der Burgh, 1983). Another possibility for the results yielded could be that Black, White and Coloured adolescents may be more conformist to peer pressure than their Indian counterparts.

The results of this research highlight the fact that although alcohol use is affected by culture, drug use is generally consistent in the various cultural groups. Although 7.5% of the total sample did report drug use, one can assume that because deviant behaviours are often underreported that this number may in fact be significantly higher.

6.7 The hypotheses revisited

It was hypothesised that a relationship exists between psychological well-being and substance use; that membership to different race groups, age and gender have an effect on levels of substance abuse; and that membership to different race groups has an effect on an adolescent's level of psychological well-being. The importance of the corroboration of the hypotheses lies in the fact that such conclusions reflect the Biopsychosocial Approach to understanding both substance use and psychological well-being.

Ultimately the confirmatory finding of the hypotheses that culture, age and gender have an effect on one's level of substance use acknowledges the impact of the adolescent's environment on their substance use behaviour. The findings confirm Bronfenbrenner's perspective that the adolescent is at the centre of their world, constantly being affected by their immediate environment, social and economic context and cultural context. With this in mind, the substance use patterns that emerged in the study can be more appropriately explained. As the results showed, age, gender and especially culture play important roles in determining an adolescent's substance abuse behaviour. The social, economic and cultural contexts of the

adolescent are made up of peer group, access and exposure to substances, social norms that either tolerate or frown upon risk behaviour such as substance abuse, socio-economic status, education and social support networks. Furthermore, the period of adolescence lends itself to egocentrism in a sense that young people feel they are unique in the world and that no one will ever understand them (Williams, 2004). They therefore view themselves as special, invulnerable and marked out for greatness. As a result these feelings encourage them to take risks, not believing that any harm can come to them. One can therefore see how being an adolescent, between 12-19 years of age, where peer pressure is at its peak, is more likely to become involved in substance abuse behaviour. Being male, surrounded by societal stereotypes and pressures can also lead to risk of engaging in substance use. Finally, belonging to certain cultures that condone substance use, or cultures where substance use is accepted as a result of political hardships can also increase the likelihood of becoming involved in substance abuse. The lengthy suggestions serve as a way to highlight the fact that all these contexts of the adolescent need to be taken into account and that to look at any adolescent in isolation would be denying the very nature and aetiology of the substance abuse.

The finding that one's culture plays a determining role in one's level of psychological well-being, as well as the verification of the principal hypothesis that a relationship does exist between psychological well-being and substance use, emphasises the Biopsychosocial Approach that psychological well-being too is the result of an interaction between biological, psychological and social factors (Green & Shellenberger, 1991). Although it is therefore of crucial importance to pay very careful attention to the psychological well-being of an adolescent, the social and biological components cannot be ignored. Adolescents who have a social environment in which their family, friends, work, customs and social systems condone substance use will be far more likely to abuse substances than their counterparts also suffering psychologically, but who have social systems that frown upon substance abuse. Similarly an adolescent with negative psychological well-being and who is genetically at risk for substance abuse, has a far greater chance of abusing substances than their adolescent counterpart who is not genetically predisposed. Thus, one needs to bear in mind that although having a negative psychological well-being puts one at greater risk for substance abuse, that there are an overabundance of other factors that play a contributing role. Psychological well-being too results from an interface of

biological, psychological and social factors and to see psychological well-being in isolation of these other factors would be to deny the importance of biology as well as of society in the make-up of an adolescent.

It can therefore be seen why the relationship between psychological well-being and substance abuse is such a complex one. Both psychological well-being and substance abuse are influenced by numerous overlapping and interacting factors and as such, any psychometric scales trying to identify adolescents at risk for psychological problems and substance abuse would have to look at them in interaction. Fortunately it seems that the Psychological Well-Being Scale used for the purpose of this research can serve this dual purpose, namely to identify adolescents with a negative psychological well-being and consequently identify those adolescents at risk for substance abuse.

6.8 Possible limitations of the study

There are a number of limitations that need to be highlighted. The first limitation pertains to the fact that the measuring instruments used in the study were developed for non-South African populations. Although an attempt was made to analyse the characteristics of the scale through the use of factor analysis, one cannot be certain of the validity of the scale. Secondly, the Life Skills Questionnaire was a self-report measure and thus it provides no potential for assessing whether respondents were faking good, or faking bad or neither. It also relied on their self knowledge and subjective experience of situations and this may impact the accuracy of the results. Research has however shown that even when illegal behaviours are being reported on, that the reliability of these self-reports are high with only a small tendency toward over and under-reporting and that overall self-reports provide distinct and very powerful measures (Ford, 2001).

The measuring instruments were administered to 14 school populations. The schools were multi-racial and co-educational and there was no exclusive use of any one language at any of the schools. As a result one can generalise back to the research population that consisted of Black, Indian, White and Coloured adolescents. Although, the study is rich in the fact that

numerous cultures were included, the large majority of the sample was Black adolescents. White and Coloured adolescents were underrepresented and a more equally representative sample would have simply added to the accuracy of the study.

Perhaps the most felt limitation of the study was the fact that illegal drugs were grouped together as a whole. The literature gives a clear idea that the epidemiology with regards to different drugs varies dramatically, and because drug use was grouped together no individual inferences about specific drugs could be generated from this research. If illegal drugs were however separated, the percentage of each drug would have been very small and conclusions would possibly not have been made of the results. Nevertheless, the study serves to give a more generalised idea of substance abuse as a whole.

6.9 Recommendations

As research has found, it is the accumulation of multiple stressors that are particularly detrimental to the health of adolescents (Forehand, 1990). By identifying adolescents at risk for substance abuse early, and providing them with necessary skills to cope effectively, one can hopefully minimise the amount of stressors these adolescents have at a very transitional stage in their life. The early initiation into substance use, as well as the increase in percentage with age suggests that prevention approaches should be targeting the youth.

Similarly the fact that drug use is related to psychological well-being highlights the importance of mental health during the adolescent period. As mentioned the latest research suggests that the onset of psychological disorders usually precedes that of substance abuse (Armstrong & Costello, 2002). As such the Psychological Well-Being Scale can perhaps, in future research be utilised to identify those adolescents who have low psychological well-being levels and thus who are at a greater risk of developing substance abuse problems and associated disorders. The vicious tension-reduction circle of psychological problems leading to substance use and then further psychological deterioration needs to be stopped at an early point. Adolescents who have decreased psychological well-being should be made aware of the higher risks they face in developing substance abuse behavior. The knowledge about substance use

should be given to them and the devastating consequences involved as a result should be highlighted.

Tackling the underage substance abuse problem is indeed extremely complex, but it seems education may play a key role. A British study found that adolescents who had received effective substance abuse education were less likely to use illegal substances (Williams, 2004). Furthermore adolescents should be helped to overcome their psychological problems so as to prevent entry into substance abuse. With reference to the above mentioned findings, it seems that South Africa still has much work to do in terms of substance abuse prevention within the adolescent period. Because the findings indicate that substance abuse is beginning at age 12-13, prevention programmes need to be implemented at an even younger age so as to highlight the risks involved. Furthermore, the results highlight the importance of psychological well-being in children and adolescence. The findings show how psychological difficulties can cause enormous stress on their own, but more importantly how psychological difficulties can lead to a plethora of other undesirable consequences.

Findings from SACENDU (2004) suggest that costs related to substance abuse are on the increase as reflected by the increasing need for adolescent treatment services. The costs involved in these services are massive and they place an immense burden on South Africa's health system and economy. The results of this study would suggest that apart from the essential programmes targeted at preventing substance abuse, that programmes aimed at identifying and then advising adolescents who have low levels of psychological well-being would possibly also be an effective method of decreasing substance abuse.

6.10 Summary of findings

Theorists who have studied the period of adolescence agree that it is a developmental period fraught with numerous emotional and behavioral difficulties for the adolescent. Since they were identified as a distinct social grouping in the 1950s, adolescents have been marked out by their rebellious behaviour (Williams, 2004). One such rebellious behaviour that has become a huge focus to research is the apparent heightened tendency to engage in substance abuse

activities. To this end the study focused on identifying the possibly aetiologies of substance abuse. The emotional difficulties adolescents face during this period have also led to a focus on the mental health of adolescents during this time. Psychological well-being of adolescents was therefore also explored.

Both substance abuse and psychological well-being emerged to be extremely complex phenomena during this period. Due to the fact that both decreased psychological well-being and the propensity to abuse substances during the adolescent years emerged as common phenomena, the study aimed to determine whether or not a relationship existed between the two situations.

In summary, the results found that the patterns of substance abuse are affected by numerous variables including age, gender and culture. Substance use in general was shown to increase with age during the adolescent years. Males were found to be almost twice as likely to engage in substance abuse activities than their female counterparts and culture was shown to play a determining factor with regards to drinking and binge drinking. The findings showed that culture did not seem to significantly affect drug abuse in this sample. With a more detailed analysis of the type of drugs used, a difference may have been found. Thus the patterns of abuse observed were relatively consistent with past research. The study also highlighted the high use of substances in the adolescent sample especially with regard to alcohol. Although alcohol is a legal substance and easily obtainable, it is still illegal for the sample in question, and concern lies in the fact that alcohol use is known to lead to more serious drug abuse.

The Psychological Well-Being Scale originally developed by Bar-On was used for this research population. The 22 items used were found to be relatively reliable for this sample. When related to variables such as age, gender, language, drinking, binge drinking and drug use, it was found that a relationship existed between drug use and psychological well-being. Although the directionality of this relationship was debated, the most current literature reflects that it is perhaps decreased psychological well-being that leads to an increased risk of substance abuse rather than vice versa.

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