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**PSYCHOSOCIAL PREDICTORS OF SUBSTANCE ABUSE  
AMONG ADOLESCENTS**

done by

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I (Charmaine Pretorius) declare that the article hereby submitted by me for the M.Soc.Sc. degree in Counselling Psychology at the University of the Free State is my own independent work and has not previously been submitted by me at another university/faculty. I furthermore cede copyright of the article in favour of the University of the Free State.



Charmaine Pretorius

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# PSYCHOSOCIAL PREDICTORS OF SUBSTANCE ABUSE AMONG ADOLESCENTS

## Abstract

*A review of the literature indicates that the etiology of substance abuse amongst adolescents is still largely unclear. It is, however, generally accepted that the cause is usually not due to a single variable, but rather to a complex interaction between intrapersonal and interpersonal factors. The goal of this study was to determine whether there is a difference between substance-abusing adolescents and non-using adolescents with regard to the mentioned factors. A multicultural group of 302 Grade 11 learners completed questionnaires to assess these characteristics: a biographical questionnaire, the NEO Personality Inventory, the Adolescent SASSI-A2 and the Fortitude Scale. The various characteristics of these adolescents were compared concerning the three levels of substance use, namely low probability of use, abuse and dependence on substances. Significant differences in the mean scores concerning agreeableness, conscientiousness, self-appraisal, family support and general social support in the three levels of substance use groups were found. The results are discussed, the shortcomings of the study indicated and recommendations made.*

**Keywords:** Alcohol abuse, substance abuse, psychosocial predictors, adolescents, intrapersonal factors, interpersonal factors, fortitude, NEO Personality Inventory, Adolescent SASSI-A2, Fortitude Scale.

## Samevatting

*'n Oorsig van die literatuur dui aan dat die etiologie van substansmisbruik onder adolessente nog grootliks onduidelik is. Dit word egter algemeen aanvaar dat die oorsaak gewoonlik nie aan 'n enkele veranderlike toegeskryf kan word nie, maar eerder aan 'n komplekse interaksie tussen intrapersonlike en interpersoonlike faktore. Die doel van hierdie studie was om te bepaal of daar 'n verskil bestaan tussen adolessente wat substans misbruik en diegene wat nie substans misbruik nie, en wel ten opsigte van die genoemde faktore. 'n Multikulturele groep van 302 Graad 11 leerders het vraelyste voltooi ten einde hierdie eienskappe te assesseer: 'n biografiese vraelys, die NEO Persoonlikheidsvraelys, die Adolessente SASSI-A2 en die Fortaliteitskaal. Die onderskeie eienskappe is vergelyk rakende die drie vlakke van substansgebruik, naamlik lae waarskynlikheid van gebruik, misbruik en afhanklikheid van substans. Betekenisvolle verskille is gevind ten opsigte van die drie vlakke substansgebruik en wel ten opsigte van welgevalligheid, pligsgetrouheid, selfbeoordeling, gesinsondersteuning en algemene sosiale ondersteuning. Die resultate word bespreek, leemtes van die studie aangedui en aanbevelings gemaak.*

**Sleutelwoorde:** Alkoholmisbruik, substansmisbruik, psigososiale voorspellers, adolessente, intrapersonlike faktore, interpersoonlike faktore, fortaliteit, NEO Persoonlikheidsvraelys, Adolessente SASSI-A2, Fortaliteitskaal.

The increase in substance abuse among adolescents is a growing concern in society today, not only worldwide but also in South Africa. This concern is justified when the negative consequences of substance abuse and dependence are taken into account, for example, involvement in crime and other antisocial activities, impairment of academic and occupational performance, as well as an increased risk of suicide, accidents, contagious diseases and psychological distress (Allsopp, 1994; Barlow & Durand, 2001; Parry, et al, 2001; Serfontein, 1991). As a result, Iso-Ahola and Crowley (1991) and Parry, et al, (2002) view substance abuse and dependence as being one of the biggest problems facing South Africa today. According to Edmonds (1996), as many as 80% of high school pupils in some areas have experimented with psychoactive chemicals at least once in their high school career. Given the fact that 10–15% of these will develop dependency, it is quite possible that at least 10 out of every 100 high school pupils are dependent (Francis, 1994).

Substance abuse is a complex condition with multiple factors contributing to its development and maintenance (De Miranda, 1991; Joubert & Rech, 1993). Research done by the Molecular Neurobiology Laboratory of the National Institute on Drug Abuse in the USA, suggests that addiction rests on a foundation of 30% genetic predisposition and 70% environmental factors (Doweiko, 1996). This not only confirms the long accepted psychological theory of interactionism, but emphasises the importance of environmental factors. Another dimension of this interactive model applied to drug dependence, concerns the etiological role of inter- and intrapersonal variables (James & Gilliland, 2001; Terblanche, 1999). There is unfortunately a dearth of research information on these two potentially contributory factors in the unique South African context. The objective of this study is therefore to determine whether interpersonal variables (family support and general social support) and intrapersonal variables namely self-appraisal, neuroticism, extroversion, openness to experience, agreeableness and conscientiousness, differ significantly between adolescents who have a low probability of use, who abuse or who are dependent on substances. The findings will hopefully not only lead to a better understanding of the role of inter- and intrapersonal variables, but also provide important information that can help learners manage life challenges more effectively and reduce the need to turn to drugs.



In order to provide a background for the empirical part of this study, a review of the main inter- and intrapersonal variables will be briefly discussed.

## **INTERPERSONAL FACTORS**

The most important interpersonal variables mentioned in the literature include peer groups and specifically the need to be accepted, parental and family related factors (e.g. modeling, communication and conflict) and environmental factors such as a lack of stimulating activities.

Regarding peer groups, Hoberg (1993) rightly states: "The herd instinct is strong in adolescence, as is the desire to be accepted by the crowd". According to authors such as De Miranda (1991) and Pillay (1993), many adolescents are insecure and exhibit an overwhelming need for the approval of their group or clique. The peer group becomes increasingly significant relative to the family as a socializing context. This need for acceptance into a peer group is perhaps at its greatest during adolescence and initial substance use is often associated with the need for approval by a group that is already using drugs. Peer groups, each having their own unique and identifiable characteristics, determine to a large extent where, when and how drugs are used. These groups specifically help to shape adolescents' attitudes and beliefs about drugs as well as forming rationales that adolescents use to explain and excuse drug use. Adolescents comply with peer standards to achieve status and identity within the peer group, which can be a critical factor preceding youthful experimentation with substances (Sartor, 1990). Substance abusers seek social contacts for external stimulation thereby succumbing to peer influence (Iso-Ahola & Crowley, 1991). The situation is aggravated when they become part of a drug-using subculture and lose the social skills that would otherwise allow them to return to a non drug-using environment (Wilson, 1991). When adolescents withdraw and isolate themselves from their peers and experience problems in developing personal relationships, it could be a risk factor for drug abuse (Dednam, 1993; Willemse & Van Niekerk, 1991).

As far as parent and family-related factors are concerned, authors are in agreement that these variables often impact significantly on the causes of substance abuse and dependence (Gmeiner & Mabusela, 1997). One such variable is parental modeling: parents who abuse alcohol and other drugs give adolescents the impression that drugs are part of the adult world (Sartor, 1990; Van Zyl, 1994). It is therefore understandable that many adolescents identify with these norms and conduct. In this way, families and society pass the pathology from one generation to another (Dednam, 1993). Numerous other parent and family related variables have been identified as contributory factors to adolescent substance abuse, for example, negative communication patterns, inconsistent discipline regarding behavioural limits, absence of closeness to parents, lack of parents' involvement in their child's activities and weak parental control (Gmeiner & Mabusela, 1997; Rocha-Silva, 1998; Terblanche, 1999). The impact of these factors is aggravated if the school and community offer few substitute resources and models for success (Rhodes & Jason, 1990).

As far as environmental factors are concerned, three major areas are especially conducive to adolescent substance abuse. Firstly, the youth find themselves in a social environment in which there is a fair degree of social support for, exposure to and relatively limited discrimination against the use of substances such as especially alcohol and "soft drugs" (Rocha-Silva, 1998). This inconsistent attitude towards alcohol (regardless of its extremely dangerous properties) and lenient attitude towards "soft drugs" creates a "drug-friendly" environment which could be a catalyst to entice many adolescents. Secondly, the easy way that drugs are obtained in our society contributes to the maintenance of a drug culture. The importance of this variable was emphasised in a study done amongst Eastern Cape adolescents (Wilson, 1991). Thirdly, boredom, is one of the most underrated pressures in our society. It seems to be a major cause of distress and is associated with anxiety, hopelessness and depression. Drug abuse amongst adolescents is often ascribed to under-stimulation in schools and neighbourhoods, which causes frustration and discontent (Pillay, 1993). It is therefore understandable that drug use occurs most often during leisure time and in leisure settings. Adolescent substance abusers are more likely to experience leisure time as boredom than non-substance abusers. If leisure activities fail to satisfy their need for

optimal arousal as well as to match skills with challenges, boredom results and drug abuse may be the only alternative to lessen this negative state. A positive correlation between boredom susceptibility and both frequency and quantity of alcohol abuse among male and female college students was found (Iso-Ahola & Crowley, 1991). On the other hand, there are indications that constructive behaviour can increase an adolescent's sense of control and meaning in life. Sports and recreational activities have typically been promoted as "deterrents" to antisocial activities such as substance misuse (Iso-Ahola & Crowley, 1991).

## **INTRAPERSONAL FACTORS**

Important intrapersonal factors that play a role in adolescent substance abuse include personality traits, conduct disorders, negative emotions, emotional pain, reward potential and self-appraisal.

Regarding personality traits, evidence suggests that substance-abusing adolescents differ from non-abusers concerning a number of intrapersonal factors. The most researched personality trait that contributes to substance abuse is extraversion. It seems that extraversion manifests itself in the need for excitement and stimulation. In this regard, Iso-Ahola and Crowley (1991) states that there is evidence that substance abusers are more likely to be sensation seekers, and have a low tolerance for repetitious or constant experiences. It is thus not surprising that they tend to be generally active and particularly seek thrills and adventures (cf. Francis, 1994). Another personality trait that has been correlated with substance abuse is neuroticism, which includes negative feelings and especially expecting the worst about themselves and their environment. This could lead to the abuse of substances for the relief of the negative emotions associated with this personality trait. Next to these personality traits, defense mechanisms such as denial, projection, rationalization and minimization are often part of substance abusers' personality functioning to protect them from the painful awareness of the addiction (Dednam, 1993; Pillay, 2000).

It is not strange that there seems to be a correlation between conduct disorders and substance abuse. The irresponsible, indiscriminate and self-destructive characteristics of these disorders not only cause personal distress, but also disturbances in the community (Wilson, 1991). Studies done on men in a chemical dependency treatment program and adolescent drug abuse centers revealed a tendency toward poor impulse control, impulsive behaviour and low ego strength (Holmes, 2001; Rocha-Silva, 1998).

Negative emotions such as depressive features (including feelings of rejection, low self-esteem, hopelessness and a sense of failure), anxiety, tension and confusion increase the risk for substance abuse. The need to escape from emotional pain, loneliness and unhappiness were some of the personal reasons for drug abuse and dependence reported by adolescents in the Eastern Cape (Joubert & Rech, 1993; Keable-Elliott, 1990; Taylor, 1995). Adolescents self-medicate with alcohol and illegal substances, which frequently aggravates underlying disorders. The relationship between mood disorders such as anxiety or depression and substance abuse are so strong that authors hold the opinion that these conditions identify adolescents who are at "high risk" for later drug abuse disorders (Holmes, 2001; Pillay, 2000).

Emotional pain is often combated by using mood-altering substances. Many adolescents have turned to drugs in response to social pressure, to relax, to express feelings and to control anger. After using drugs for many years for relief of psychological pain and confusion, they continue using drugs from force of habit and to prevent the unpleasant withdrawal symptoms (Barlow & Durand, 2002; Rhodes & Jason, 1990). Wilson (1991) emphasized that giving up drugs exposes adolescents to internal conflicts and emotions with which they are ill equipped to cope.

Self-appraisal has been identified as an important inner resource to help the adolescent avoid substances. The risk for substance abuse increases when adolescents are uncertain about their own values, goals and priorities regarding the use of alcohol and drugs (Pillay, 1993; Van Zyl, 1994). Some individuals abuse drugs to camouflage perceived inadequacies and give them courage and confidence to master their inhibitions and shyness (Chetty, 2000; Hoberg, 1993). Feelings of low self-esteem,

worthlessness and little self-confidence are common during adolescence. Young people who do not overcome these feelings in a constructive and acceptable way are at a higher risk for drug use (Roberts, 1999; Weiten & Lloyd, 1997).

Virtually all substances of abuse have a high reward potential. One of the basic principles of behavioural psychology is that if something either increases the individual's sense of pleasure or decreases his or her discomfort, the person is likely to repeat that behaviour. It is therefore understandable that the pleasurable effect of substances can create a pattern of functioning in which the drug taking behaviour is strengthened every time the positive (rewarding) effects of substances are experienced (cf. Prochaska & Norcross, 1999).

From the foregoing it is clear that intra- and interpersonal variables can play a significant role in adolescent substance abuse. Drugs offer a ready escape for the adolescent who does not have the required inter- and intrapersonal skills necessary to cope with life.

## **METHODOLOGY**

In order to attain the objective of this study, namely to determine whether intrapersonal and interpersonal variables differ significantly between adolescents with different levels of substance abuse, the following procedure was followed.

### **Participants and Information Gathering**

The sample consisted of 302 Grade 11 learners in the East London region of the Eastern Cape. The schools and learners in the schools were selected randomly by the Eastern Cape Department of Education. The main biographical characteristics of the group were as follows:

- The mean age of the group was 17 years (ranging from 16 – 21 years).
- The participants consisted of 117 males (39%) and 184 females (61%).
- There were 157 (52%) black learners, 82 (27%) white learners, 36 (12%) Coloured learners and 27 (9%) Asian learners.

- There were more English-speaking (263=87%) than Afrikaans-speaking learners (39=13%).

Questionnaires were available in either English or Afrikaans. After selecting the subjects and after obtaining their consent, they completed the questionnaires in groups in the schools. The learners were assessed in groups of about 25 to maximize rapport.

Using the criteria of the Substance Abuse Subtle Screening Inventory (SASSI Institute, 2001), the participants were divided into three groups of substance use, low probability of use, substance abuse and substance dependence. The three groups have been divided according to criteria of the SASSI Inventory. Table 1 reflects more information in this regard.

Table 1: Frequency distribution of the group regarding their substance abuse level

Substance abuse level	N	%
Low probability of abuse	190	62,9
High probability of abuse	64	21,2
High probability of dependence	48	15,9
Total	302	100,0

From Table 1 it is clear that the majority of the adolescents (63 %) had a low probability for substance abuse. Thus 112 (37 %) fall in the high abuse and dependence group.

### Measuring Instruments

The measuring instruments consisted of a biographical questionnaire, a NEO-PIR (personality inventory) shortened version (Costa & McCrae, 1996), the Adolescent SASSI-A2 (Substance Abuse Subtle Screening Inventory) (SASSI Institute, 2001) and the Fortitude questionnaire (Pretorius, 1997).

- Biographical Questionnaire. This self-compiled questionnaire consists of items that gather information regarding the age, gender, race, family structure and socio-economic variables, as well as the type of drug used and the frequency of drug use.

- *Substance Abuse Subtle Screening Inventory (SASSI)–A2* (SASSI Institute, 2001). The questionnaire is designed to screen for the presence or absence of substance use disorders. It contains 100 multiple-choice questions that ask adolescents to report how frequently they have had certain experiences related to substance misuse. The SASSI distinguishes between adolescent drug use in three categories, namely low probability of use, drug abuse and drug dependence. In the results of this study, the alpha coefficient for the SASSI Inventory was 0,60 which is acceptable for a non-cognitive measurement.
- *NEO–Personality Inventory - Revised* (shortened version) (Costa & McCrae, 1996). This version consists of 60 items and has five subscales: Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness. The alpha coefficient for the NEO – PI-R was 0,73 which is considered satisfactory.
- *Fortitude Scale* (Pretorius, 1997). (Fortitude is the strength derived from appraising ourselves and our world positively which enables us to cope with life stress.) This measuring instrument consists of 20 questions and measures three subscales, namely self-appraisal, family appraisal and appraisal of general social support. Pretorius (1997) reported 0,85 as a reliability score of the total scale. In the present study, the reliability of the total fortitude scale was 0,84 which is considered very satisfactory.

## Hypothesis

After considering the goals of this study, the following research hypothesis was formulated:

*There is a significant difference in intrapersonal variables (extraversion, neurotism, openness to experience, agreeableness, conscientiousness and self-appraisal), as well as in interpersonal variables (family and general social support) of adolescents with different levels of substance use (low probability, high abuse, high dependence).*

Considering that three groups' average scores will be compared, the research hypothesis will be presented in statistical terms as follows (Everitt, 1996):

$$H_0 : \mu_1 = \mu_2 = \mu_3.$$

$$H_1 : \mu_1 \neq \mu_2 \neq \mu_3$$

Where:

$\mu_1$  = Averages of personality traits and fortitude of the population adolescents with a low probability level of substance abuse.

$\mu_2$  = Averages of personality traits and fortitude of the population adolescents with high levels of substance abuse

$\mu_3$  = Averages of personality traits and fortitude of the population adolescents with high levels of dependence

### **Statistical Procedure**

With reference to the research hypothesis, it is clear that one independent variable (substance abuse) and a number of dependent variables (personality factors and fortitude) are taken into account. According to Tabachnick and Fidell (1989) a multivariate analysis of variance (MANOVA) was the proper statistical technique to use in this situation.

If a significant result (F-value) was obtained with the MANOVA analysis, the analysis was succeeded by one-way analysis of variance on each one of the dependent variables. Considering that the independent variables came from more than two subgroups, a Scheffé-procedure was used to determine which of the subgroups' mean scores on the dependent variables were statistically significant.

In order to give an opinion about the practical importance of the statistically significant results that were found in this study, the practical significance of the results, and more specifically, effect sizes, were also calculated (see Steyn, 1999).



With the MANOVA, the three population means were compared and as indicated before, variance analysis was done. In this case, the effect sizes were determined as follows:

$$f = \sqrt{k-1/N-k} \cdot \sqrt{F}$$

In order to interpret these effect sizes, the following guideline values were used:

$f = 0,1$  : small effect

$f = 0,25$  : medium effect

$f = 0,4$  : large effect

All the statistical analyses were executed with the SPSS computer software program (SPSS Incorporated, 1983) and the 1%-level of significance used.

## RESULTS

Before the stated hypothesis is investigated, the descriptive statistics (means and standard deviations) with reference to the dependent variables of the total research group, will be reported in Table 2.

Table 2: Means and standard deviations of the NEO – PI-R variables

Variables	N	X	SD
Neo – Neuroticism	302	24,55	6,34
Neo – Extraversion	302	29,25	5,91
Neo – Openness	302	24,51	5,52
Neo – Agreeableness	302	27,45	5,15
Neo – Conscientiousness	302	29,94	6,26

These results will be discussed later.

Table 3: Mean and standard deviations of the Fortitude Scale variables

Variables	N	X	SD
Self-appraisal	302	19,95	3,96
Family support	302	18,03	4,59
Social support	302	17,21	3,79

The highest mean score of the total group was self-appraisal, followed by family support and social support.

The mean age reported for first use by the total group was 14,5 years. The mean age for first use of drugs or alcohol for the different subgroups was:

- Low probability – 14,5 years
- High abuse – 14,0 years
- High dependence – 13,6 years.

According to these results, it is clear that adolescents who start using substances earlier in life are more at risk to become dependent on a substance.

Another interesting finding was that 21% of the abuse group and 40% of the dependent group reported that their school marks had dropped due to alcohol or drug use.

In order to determine whether there were differences between the adolescents with low probability, high abuse and high dependence regarding the mentioned dependent variables (see Table 2 and 3), a multivariate analysis of variance (MANOVA) was performed. An F-value of 4,624 (for 16 and 582 degrees of freedom) was obtained on the 1%-level of significance. Consequently the results were followed by a one-way analysis of variance (see Table 4).

Table 4: Results of the analysis of variance of the adolescents

Variables	Level of substance abuse						F	p	f
	low probability		high abuse		High dependence				
	X	SD	X	SD	X	SD			
Neo – Neuroticism	24,14	6,39	24,86	6,22	25,75	6,27	1,3304	0,2659	-
Neo – Extroversion	29,05	5,61	29,63	6,58	29,56	6,23	0,3064	0,7363	-
Neo – Openness	24,99	5,34	23,70	6,30	23,69	4,97	1,9442	0,1449	-
Neo – Agreeableness	28,26	5,00	26,47	5,31	25,52	4,88	7,1760*	0,0009	0,24
Neo – Conscientiousness	31,04	6,11	29,98	5,45	25,54	6,07	16,282*	0,0000	0,36
Self-appraisal	20,56	3,84	19,52	4,17	18,13	3,56	8,1252*	0,0004	0,26
Family support	18,86	4,40	16,80	3,73	16,35	5,53	9,1188*	0,0001	0,27
Social support	17,73	3,51	15,97	3,89	16,81	4,36	5,6188*	0,0040	0,21

\*  $p \leq 0,01$

According to Table 4, the mean scores of two of the five personality traits, as measured by the NEO-PIR, agreeableness and conscientiousness, differed significantly (1%-level) between the three groups of substance abuse. In Table 4 all three scales on the fortitude scale, namely self-appraisal, family support and social support scores of the adolescents were also significant (1%-level) between the three groups of substance abuse. The effect size of the difference in conscientiousness was large, which is indicative of a considerable practical significance, while the effect size for agreeableness was of medium effect. The effect size of all the fortitude variables, self-appraisal and appraisal of family and social support was of medium practical significance.

Considering that there were three groups, a *post hoc t-test* according to the Scheffé-procedure was used to determine which of the three groups' mean scores differed significantly from each other. In Table 5, the relevant dependent variables were reported together with the groups whose means of the specific dependent variables differed statistically significantly from each other according to the Scheffé-procedure.

Table 5: Scheffé-results regarding the concerned dependent variables

Dependent variable	Groups that differ according to Scheffé results
Neo – agreeableness	Group 1 from Group 3
Neo – conscientiousness	Group 1 from Group 3 Group 2 from Group 3
Self-appraisal	Group 1 from Group 3
Family support	Group 1 from Group 2 Group 1 from Group 3
Social support	Group 1 from Group 2
Group 1: low probability Group 2: high abuse Group 3: high dependence	

According to Table 5, the following differences were significant:

- Group 1 from Group 3: Agreeableness, Conscientiousness, Self-appraisal, Family Support.
- Group 1 from Group 2: Family Support and Social Support.
- Group 2 from Group 3: Conscientiousness

## RECAPITULATION AND DISCUSSION

The core finding of this study was the significant differences found between the three substance abuse groups (low probability, abuse and dependence) and their intrapersonal and interpersonal variables. According to the findings, it is clear that adolescents who start using substances earlier in life are more at risk to become dependent on a substance.

As far as intrapersonal factors are concerned, the characteristics conscientiousness, agreeableness and self-appraisal were found to differ significantly between the three levels of substance abuse. The result regarding conscientiousness corresponds with that of other South African researchers, namely Dednam (1993) and Pillay (1993). Both authors found that the lack of conscientiousness in the form of rebelliousness plays a significant role in many adolescents' substance abuse. Adolescents try to develop a sense of autonomy and independence, and they often rebel against authority figures such as their parents and teachers. This rebelliousness or lack of conscientiousness often manifests as the neglect of school work and other responsibilities. The finding that the abuse and dependent groups were less agreeable than the low probability group stems from the findings on conscientiousness. This also corresponds with the research results of Hoberg (1993) and Pillay (2000), in which they state that substance abusers are less inclined to think and act in agreement with societal norms. The finding that self-appraisal scores were higher amongst the low probability group, indicates that these adolescents have more self-confidence and inner resources to cope with difficult situations they could be faced with. This is supported by Pretorius' (1997) findings which indicates that people who have a higher appraisal of themselves tend to cope better with life and revert to inner strength rather than alternative means to cope, e.g. substance abuse.

The finding that there were no significant differences between the three groups as far as neuroticism was concerned, is in contrast with the viewpoint of Hoberg (1993) and Pillay (2000) who are of the opinion that certain neurotic traits may increase the risk of abuse and dependence. A possible explanation for this discrepancy might lie in the different interpretations of the concept neuroticism. The term neuroticism was discarded by the academic world because of its diverse and therefore confusing meaning. As Hoberg and Pillay did not base their viewpoints on NEO results, it is possible that the construct validity of the concept did not correspond. Another unexpected finding was the absence of significant differences between the three groups concerning extraversion and openness to experience, as the literature leans toward a correlation between these characteristics and drug abuse (Doweiko, 1996). Differences in the way the concepts extraversion and openness to experience were measured and interpreted could be responsible for the present finding. It therefore seems that the role and construct validity of the variables neuroticism, openness to experience and extraversion should be further investigated. This is especially true in the unique multicultural situation in South Africa where various cultural and geographical variables might have a significant influence on factors such as the aforementioned.

Regarding interpersonal factors, significant differences were found between the three groups of substance abuse (low probability, abuse and dependence) and the adolescents' family support and general social support. The literature on the fortitude characteristics family appraisal and appraisal of general social support underlines that these variables play a role in adolescent substance abuse. When adolescents have a positive appraisal of the family and general social support systems, these characteristics tend to serve as important sources of strength and resilience. This is in contrast with adolescents who do not possess these characteristics and tend to view themselves as being alone; they often turn to alternative means to cope with life challenges (Pretorius, 1997). The present findings differ from that of Pretorius (1997) who reported slightly lower scores concerning family support. This could be explained by the fact that the participants in Pretorius' study came from the previously disadvantaged communities where the incidence of family disruption and dysfunction are significantly higher than in the rest of the South African society. It is therefore

understandable that the family support in these families would not be as high as expected. However, the undergraduates in Pretorius' study appraisal of general social support was higher, which could indicate that the students found alternative support systems, including new friends.

## CONCLUSION

The results of this study confirm findings of other researchers that emphasized the importance of intra- and interpersonal variables that contribute to the adolescents' decisions about substance abuse.

However, the etiology of substance abuse should always be interpreted against the background of certain core principles in psychology. Firstly, the multidimensionality of the etiology of basically all human behaviour is widely accepted. Secondly, the same applies to the general acceptance that there is a unique interaction between all variables involved. Thirdly, every individual, and therefore also substance abuser and dependant, is unique and does not fit into a single formula for the explanation of behaviour. The aforementioned also applies to the domains of life in which substance abuse and dependence manifests itself. This viewpoint and the results of the present study support a more holistic view of substance abuse, looking at the individual as a whole, and in the process underlining not only intrapersonal and interpersonal factors, but also the interaction between them.

The current findings could help to identify characteristics in adolescents which might make them more prone to substance abuse. However, as a result of certain limitations of this study the results should be interpreted with care:

A major hindrance concerned the language barrier. This was experienced in the black schools in the Mdansané area, which resulted in many questionnaires being discarded due to incompleteness. Another shortcoming was that the sample did not sufficiently represent the demographics of the national population. This skewness hampers the generalisability of the findings of this study.

Next to correcting the aforementioned shortcomings, a longitudinal study needs to be done to shed light on the cause-effect relationship between variables which have been identified in the etiology of substance abuse. It is also recommended that the longer version of the NEO should be used, as this version could bring forth important additional information, especially on impulsivity. This variable, as suggested by literature, could play a role in adolescent substance abuse.

As the findings of this study emphasise the importance of family variables in resisting substance abuse, it is important that further research be done regarding additional family related variables such as communication, support, openness and family structure in the promotion of well-being of the adolescent. Self-discipline needs to be promoted by encouraging goal-directed behaviour and helping adolescents plan and set realistic goals and to work towards them. This recommendation is supported by the present results in which adolescents with low scores on conscientiousness and goal-directed behaviour are at a higher risk for substance abuse.

It is also proposed that the field of substance use, especially concerning the adolescents intrapersonal and interpersonal functioning, ought to become part of life-skills training in educational curricula. This has important implications in practice and is essential to promote the well-being of the adolescent in all aspects of his or her life. Future substance abuse by adolescents could be significantly prevented if they are trained in effective coping behaviour from a young age.

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