ADOLESCENT SUBSTANCE USE: THE ROLE OF PEER PRESSURE AND SOCIAL INTELLIGENCE

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ABSTRACT

The study examined peer influence and social intelligence on substance use by adolescents. The study participants were 257 in-school adolescents randomly selected from comprised of 135 males and 122 females sampled from five secondary schools in Keffi, Nassarawa State. The age range of the participants was between 12-19 years. The study adopted the descriptive survey design of the ex post facto type. The Adolescent Peer Influence Scale (APIS) (Leary, Kelly, Cottrell & Schreindorfer, (2001) was used to measure peer pressure, while the Thomso Social Intelligence Scale (TSIS), (Silvera, Martinussen& Dahl 2001) was used to measure social intelligence, and the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) (WHO, 2002) was used to measure substance use. Three hypotheses were tested in the study with 2-way ANOVA and results revealed there was no significant influence of peer pressure on adolescent substance use, $F_{(1, 253)} = 1.032$, $p = 0.31$, results revealed that there was a significant influence of social intelligence on adolescent substance use, $F_{(1, 253)} = 5.596$, $p = 0.019$, furthermore, results also revealed there was no significant interaction of peer pressure and social intelligence on adolescent substance use, $F_{(1, 253)} = 1.977$, $p = 0.161$. The study concludes that a higher social intelligence level is a protective factor for the risk of substance use among adolescents. The study therefore recommended among others that intervention programs tailored toward developing the social intelligence of substance abusers should be encouraged.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

The period from childhood to adulthood is notable by a long transitory period known as adolescence. Adolescence is generally calculated to begin with puberty which signals the end of childhood, this results in rapid growth i.e., height and weight, public hair, body dimensional changes, and exploit of sexual maturity. Adolescents are seen as young individuals constantly seeking independence, particularly from parents and other authority figures. The need for these freedoms has led adolescents to take some sort of negative position and rebellious views different from those of their parents and care givers and to act in conformity with their peer group, however not conforming with societal norm.

Human beings can and are influenced by something at some time, this is human nature. Naturally people are eager to belong which is mirrored in every desire to form and maintain relationship with others. The need to belong like the need to be part of applies equally to both strangers and individuals in relationships (Sudraba, 2013). This means that social relationship as plays vital role in function for belongingness and needs in humans. Because of the pervasive will to belong it has force the people to engage more time cum energy in strengthening social relationships (Pieters, Burk, Van der Vorst, Dahl, Wiers, & Engels, 2015); those with a high social level and need for belonginess tend to focus more on general interest to belong and thereby increasing the risk of pressure or influence.

Peer pressure which is defined as pressure exerted by members of a group, friends or peers directly or subtly on an individual or member to engage in existing group activity or peer norm is easily associated with an individuals or people with high need to belong to such groups. Peer groups have that capability to influence attitudinal change customary beliefs and can shape individual's orientation and behavioural actions. In other to make sense of our social world, we often try to understand the causes of our own and other people's behaviour. Thus, we often ask; what kind of influence do we have on other people and what is the role of heredity; childhood experiences; and social forces, environment, on our attribution styles. Obviously, individuals vary in degree to which they pursue to explain the events of human behaviour and in some the degree of confidence they have in their own ability to do so (Edwards, 2014).

Understanding what determines vulnerability to substance use or abuse in respect to promoting suitable prevention programme. In other to understand the influence of our emotions in our everyday activity and how these emotions could affect our behaviour can be linked with the influence of emotional intelligence on substance use. Therefore, low emotional intelligence can lead to substance use while high emotional intelligence cannot lead to substance use. During developmental stage of adolescents, they face a lot of emotional problems if not well controlled can destroy their youth and adulthood. Youths start using substance when they cannot identify their emotional problems and solve it.

Social intelligence relates to power to perceive control and weigh emotions. Some researchers advocate that social intelligence can be learned and strengthened, while others claim it is an innate cognitive ability. Goleman, (1998) posits that in life one's success and will to avoid harm to self is possible i.e., self-control, awareness, motivation, empathy and social skills. Developing the above-mentioned skills will make adolescents and people in general more accurate at knowing and understanding their emotions, affording them the opportunity to

manage and regulate the expressions of themselves and those of their peers, family members and people around them.

Substance use may begin as a result of trying to ward off unpleasant feelings and emotions (for example, sadness, anger and stress). Those who feel perceived discrimination may result to the use of substance, and peer pressure also influences substance use. A substance is any natural or synthesized product that has psychoactive effect – it changes perceptions, thought, emotions and behaviours. When substances are used without prescriptions, and not for medical treatment by individuals but in other to change their moods, thoughts and perceptions, diverse members society start to get nervous; this is happening because some individual have a great difficulty in moderating the use of substance, thereby they build their everyday lives with support of substances (Pieters, et. al., 2015).

1.2 Statement of the Problem

Substance abuse is a crucial problem facing adolescents today. Adolescent drug addiction or substance abuse affects both the physical, psychological and social advancement. Several studies have shown that substance abuse is dangerous not only to individual health but to the society as well. It would be a futile effort to try elaborating the numerous conditions that have been linked with substance use; however, these effects are more damaging.

Over ninety percent of adolescents that abuse substances regularly also do other things that put them in "harm way", such behaviours as unsafe sex (Shaw, Forbes, Sitnick, & Hasler, 2016). These findings buttress the view that alcohol and other substances regularly also do other things that predisposes them to harming themselves, such behaviours include gambling, fighting, and carrying weapons and unsafe sex. These findings also support the view that alcohol and other substances of abuse are involved in a high percentage of violent, crime committed by both adolescents and adults.

Adolescents desire autonomous and independent life free from parental control, thereby feeling above the law and engaging in various delinquent acts such as (drug abuse, fighting, armed-robbery, rape, cultism and vandalism) that are dangerous to self and the society at large. The effect of drug and substance abuse among teens has been a reproach of moral decadence, fighting, rape, cultism, armed-robbery and vandalism. Substance use among youths has led to addiction were by when an individual does not have enough money to buy substance to become intoxicated they go about stealing, killing and doing all sorts of things to get money. Substance use can lead and has led to dropping out of school, mental health problem, inability to function in the society and being a burden to one's family for instance drug addicts may have problem in their education.

1.3 Research Questions

This study therefore will be guided by the following questions:

i.   What is the influence of peer pressure on substance use among adolescents?
ii. What is the influence of social intelligence on substance use among adolescents?
iii. Is there an interaction effect of peer pressure and social intelligence on substance use among adolescents?

1.4 Research Objectives

The main aim of the study is to look at the role of peer pressure and social intelligence on substance use among adolescents. The specific objectives of the study include the following:

   i.   To determine the influence of peer pressure on substance use among adolescents
  ii.   To investigate the influence of social intelligence on substance use among adolescents
 iii.   To examine the interaction effect of peer pressure and social intelligence on substance use among adolescents

1.5 Scope of the Study

This study is to examine the role of peer pressure and social intelligence on substance use among adolescents. The study will cover adolescents in secondary schools in Keffi, Nassarawa state. The adolescents' in the study will be limited to those in the senior class (SS 1 – SS 3).

1.6 Significance of Study

The study upon completion will contribute to related data on influence of peer pressure and social intelligence on substance use among the youth, thereby suggesting ways for more preventive intervention methods to drug addiction and substance use by government, non-governmental organizations and educational system.

In counselling practice, the study will provide more options in regards to counselling of young people on best way to prevent and resist peer influence and avoiding risky behaviours. More knowledge on social intelligence would better help develop knowledge for prevention programmes in future with focus on effective psychological rules and strategies and in maintaining positive health outcome. In the education sector, if social intelligence could be taught in schools, in other to shape and build the social intelligence of youth and adult to help prevent the negative effects of lack of social intelligence in our personal life.

Information on factors that negatively and positively influence and affect young people's maladaptive behaviours will be exposed, which will greatly further and enhance basic information about social intelligence and peer influence for parents, care givers and school teachers, which they can use to guide students for effective adherence to avoid substance use and improve social intelligence.

The study will enlighten adolescents and as well as the young adults to be aware of the dangers of substance use and its effect on youths and how it affects the entire body system and a wide implication for the family, society, school, ministries of health and government. It would enable parents have a better understanding about peers' influence on their children and how to educate their children on the influence of peers.

Findings from the study will help provide government and non-governmental organizations with information that could help them initiate effective community prevention and intervention programmes as one of the approaches that will enhance the prevention of substance use among youths in the society. Outcome from the study could add to existing literature on substance use by youths.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter examines relevant literatures regarding adolescent substance use, peer pressure to substance use; social intelligence to substance use, and the literature reviewed. Furthermore, this chapter review theories and also presents research hypotheses

2.2 Adolescent Substance Use

Adelekan, Makanjuola, Ndom, Fayeye, Adegoke, Amusan and Idowu (2001) in a research described the rain of use of substance amidst youths thereby comparing relevant data from some select senior secondary school students in Ilorin, Kwara State along 5 years gaps (1988-1998). In 1998, data was gathered from 750 in school senior students from six different schools in Ilorin using a self-report questionnaire. A number of substances investigated in the survey include alcohol, cigarettes, cannabis, stimulants, hypnosedatives, antibiotics, cocaine, heroin, organic solvents and hallucinogens. These data when related with alike ones gathered from other students with similar quality, from the same six secondary schools in 1988 and 1993. It was discovered that high used substances consist soft stimulants, i.e. Antibiotics and alcohol, while cigarettes, cannabis, heroin and cocaine remained low-use substances. The study showed that most resent users of all the substances were occasional users, apart for cigarettes and cannabis that were more frequently used (daily or weekly) as recorded.

Another similar study, by Fatoye and Morakinyo (2002) investigated rural and urban prevalence and form of drug use among senior secondary school students in south west of Nigeria. A survey of students using the World Health Organization (WHO) scale for substance use after a pilot study. The research done both in rural and urban communities in two local government areas of Ilesa, Osun State. A number of 600 students participated in the study. The result showed the prevalence rates and pattern of drug use ranging from sex, age, class, rural/urban location of the school. Outcome: 567 respondents to the questionnaire were analysed. Mean age showed 17.0 years (Standard Deviation +/- 1.69). The most commonly used drugs and their current prevalence rates were salicylate analgesics, 48.7%; stimulants, 20.9%; antibiotics, 16.6%; alcohol, 13.4%; hypnosedatives, 8.9% and tobacco, 3.0%. Current and lifetime use of alcohol as well as current, past and lifetime use of tobacco occurred significantly more commonly among the males. Past and lifetime use of tobacco was significantly more common in the rural school. For the majority of respondents, initiation into drug use started at a very early age (14 years or below). The majority were mild current users of the drugs, except tobacco for which the majority were daily users.

In another study, Lawoyin, Ajumobi, Abduul, Abdul, Adegoke, and Agbedeyi (2005) dole out an investigation on adolescents and youths from 3 out of the six senior secondary colleges in Igboora, Nigeria, designated by easy sampling. A cross-sectional study, victimization interviewer-assisted form to work out the prevalence of and establish factors related to drug use. 273 (69.3%) respodents were presently using one or more drugs, of that 123 (45.1%) were single drug users whereas a hundred and fifty (54.9%) were multiple drug users. Fourteen completely different mind-expanding substances were reportedly used of that Alabukun, a

popular, domestically factory-made analgesic (a mixture of ethanoyl radical 2-hydroxybenzoic acid and caffeine) was the foremost normally according drug presently used and ever used. Alcohol was subsequent normally according presently used drug whereas Kolanut was subsequent normally ever-used drug. Tobacco hierarchical low on the list with just one.5% current users, while 4.4% according having ever-used this drug. Following supply multivariate analysis, having peers (close friends) and first caretakers, considerably hyperbolic the probabilities of the students use drugs. Males compared with females were to significantly most likely to use drugs. Important relationship exists between drug use and poor role modelling.

Similarly, Nnoruka and Okoye (2006) studied prevalence, motives and observed complications of steroid use as a depigmenting agent amongst African blacks in southeast Nigeria. Consecutive new patients attending the dermatology clinic of the University of Nigeria TeachingHospital, Enugu, from June to December 2004 were recruited. Active substances of products used were determined from packages, while unknown concoctions were analyzed. Chi-squared and Fischer tests were used for statistical analysis, with a significant threshold fixed at 5%. Females aged 18-69 years accounted for 75% (414) of patients. Main topical steroids used by both women and men were class-1 steroids, and these were often compounded with other bleaching products. Median duration of usage was 9 years +/- 1.3. Disorders observed included steroid-induced acne, macular hyperpigmentation of face, mycoses, striae, telangiectasis, hypertrichosis and diabetes mellitus. Duration of utilization of these topical steroids was significantly associated with severe local and systemic consequences, while withdrawal of the offending steroids usually resulted in severe withdrawal dermatitis that was unpleasant to patients.

Furthermore, Gureje, Degenhardt, Olley, Uwakwe, Udofia, Wakil, Adeyemi, Bohnert and Anthony (2007) examined the use of psychoactive substances among selected groups in Nigeria extending the description to include the features of substance dependence. A stratified multi-stage random sampling of households was used to select respondents in 21 of Nigeria's 36 states (representing 57% of the national population). In-person interviews with 6752 adults were conducted using the World Health Organization Composite International Diagnostic Interview, Version 3. Lifetime history and recent (past year) use, as well as features of dependence on, alcohol, tobacco, cannabis, sedatives, stimulants, and other drugs were assessed. RESULTS: Alcohol was the most commonly used substance, with 56% ever users and 14% recent (past year) users. Roughly 3% were recent smokers. Next most common were sedatives, 4%, and cannabis smokers, 0.4%. Males were more likely than females to be users of every drug group investigated, with male preponderance being particularly marked for cannabis. Prevalence of both alcohol and tobacco use was highest among middle aged adults. Moslems were much less likely to use alcohol than persons of other faiths, but no such association was found for tobacco, non-prescription drug use, or illegal drug use. Features of abuse and dependence were more common at the population level for alcohol; but among users, these features were just as likely to be experienced by alcohol users as they were by other drug users.

Osungbade and Oshiname (2008) examined the determinants of cigarette smoking among youth of a rural Nigerian community and suggested intervention measures which have potential for the control of smoking among in-school population. It was a cross-sectional study carried out among 416 students selected through a multi-stage sampling procedure. Determinants of

smoking among the study participants and their knowledge were assessed with the aid of a pre-tested structured questionnaire. Results showed that the proportions of ever-smokers who could associate cigarette smoking with known health problems were generally low compared to the never-smokers. The mean knowledge score, 4.05 +/- 0.4, obtained by the ever-smokers was also lower than the mean score, 6.41 +/- 0.2, obtained by the never-smokers. This was found statistically significant ($p < 0.05$). Smoking behaviour was significantly associated with friends ($p = 0.00518$) and parents ($p = 0.002856$) who smoke, and with cigarette advertisement ($p = 0.032989$).

Griffith-Lendering, Huijbregts, Mooijaart, Vollebergh, and Swaab (2011) examine the potential relationship between externalizing and internalizing issues and cannabis use in early adolescence. information were used from the paths study, a longitudinal cohort study of (pre)adolescents (n=1,449), with measurements at age 11.1 (T1), age 13.6 (T2) and age 16.3 (T3). Internalizing (withdrawn behaviour, physical complaints and depression) and externalizing (delinquent and aggressive behaviour) data assessed the least bit data waves, through the Youth Self Report. Participants reported on cannabis use at the second and third wave. Path analysis was accustomed establish the temporal arrangement of internalizing and externalizing issues and cannabis use. Path analysis showed no associations between cannabis use (T2-T3) and internalizing issues (T1-2-3). However, cannabis use and externalizing issues were associated (r ranged from .19-.58); path analysis showed that externalizing issues at T1 and T2 preceded cannabis use at T2 and T3, severally. In distinction, cannabis use (T2) didn't precede externalizing issues (T3).

Pieters, Burk, Van der Vorst, Dahl, Wiers, and Engels, (2015) in a longitudinal study explored bidirectional relationships between sleep issues, substance use, internalizing and externalizing issues in young adolescents. A prospective style was used incorporating 2 waves (approximately one year interval). a complete of 555 young adolescents (290 females, M age = 13.96) participated during this study. All participants completed self-report lives in lecture rooms throughout regular college hours (questionnaires regarding sleep quality and sleep hygiene were accustomed measure sleep problems). The results indicated that sleep issues foreseen changes in substance use, internalizing and externalizing issues over time, however downside behaviours failed to predict changes in sleep issues, adjusted for gender, age and time of life. One exception was that alcohol use negatively foreseen changes in sleep issues. This study suggests that sleep issues square measure necessary precursors of substance use, internalizing and externalizing issues in adolescence.

Mike, Shaw, Forbes, Sitnick and Hasler (2016) examined the potential association between the period and quality of sleep at age eleven and alcohol and cannabis use throughout adolescence. Participants were drawn from a cohort of 310 boys participating in an exceedingly longitudinal study in Western Pennsylvania, includes 186 boys whose mothers completed the kid Sleep Questionnaire; sleep period and quality at age eleven were calculated supported these reports. At ages 20 and 22, participants were interviewed concerning time period alcohol and cannabis use. Cox proportional hazard analysis was wont to confirm the association between sleep and substance use. Results disclosed that when accounting for race, socioeconomic standing, neighbourhood danger, active distraction, internalizing issues, and externalizing issues, each the period and quality of sleep at age eleven were related to multiple earlier substance use outcomes. Specifically, less sleep was related to earlier use, intoxication, and recurrent use of

each alcohol and cannabis. Lower sleep quality was related to earlier alcohol use, intoxication, and recurrent use. in addition, lower sleep quality was related to earlier cannabis intoxication and recurrent use, however not initial use

2.3 Peer Pressure and Substance Use

A significant body of analysis has targeted on the associations between peer pressure and substance use. as an example, Simons-Morton and Chen (2006) argued that the connection between peer pressure and adolescent substance use isn't totally understood. They additional report that though the association between substance use and peer pressure is extremely related, the progression of adolescent substance use is critical from grade seven to grade eight. Simons-Morton and Chen (2006) contend that peer influence is commonly a mix of each socialisation and choice. They argued that aspects of socialization compete a much bigger role than the choice of peers within the relationship between peer pressure and substance use (Simons-Morton & Chen, 2006). In alternative words, they found that socializing with friends accounted for a rise in substance use and it had been finished that once peers pressured their friends, they were a lot of seemingly to use substances.

Moreover, Urberg, Pilgrim, and Degirmencioglu (2003) rumored that adolescents, United Nations agency selected substance-using peers and United Nations agency valued acceptance from peers, were a lot of seemingly to adapt to look pressure, and people United Nations agency valued college and oldsters were less seemingly to be influenced. Lundborg (2006) substantiated that happiness to a generation needs conformity toward alternative peers, and for several adolescents, activities involving substance use could also be efforts to try therefore. though the generation maintains a very important biological process cornerstone among adolescents, it should conjointly result in sources of risky behaviours like substance use (Simons- Morton & Chen, 2006; Westling et al., 2008).

According to South African analysis by Peltzer, Ramlagan, Mohlala, and Matseke (2007), most people begin exploitation illicit substances with friends. Employing a mixed ways approach, they reported that 43% of friends, 21% of college mates and 7% of relations abused substances. They additional urged that an equally vital challenge is that the high prevalence rates of adolescent substance use in Republic of South Africa (Peltzer et al., 2007). Once conducting focus cluster sessions, adolescents were asked what would encourage them to prevent exploitation substances. They reported that constructive modification in factors like family care and support, socio-economic conditions and enforcement would stop them from exploitation substances. it had been additional evident from this analysis that adolescents were a lot of seemingly to start out exploitation substances through peers. in an exceedingly study to see whether or not the employment of tobacco, alcohol and alternative illicit medication foreseen dropout among adolescents in Cape Town, peer influence was known as a contributive issue (Flisher, Lombard, & King, 2010). They projected that older students coming back from a lower grade were a lot of seemingly to drop out of college than peers WHO came from a better grade, indicating that peer influence contend a task. Factors like impoverishment and state contend a very important role in substance use furthermore (Flisher et al., 2010).

A study administrated by Ramirez et al. (2011) geared toward examining the roles the family surroundings and peer networks play in abstinence from alcohol and alternative substances over a year. in an exceedingly survey of 419 adolescents between thirteen – eighteen years,

they found that peer networks influenced substance use; and once fewer friends used substances, people were less seemingly to use substances. Exploitation supplying regression, they examined the characteristics predicting annual abstinence and predicting having fewer than four substance exploitation friends. Adolescents with fewer substance exploitation friends were a lot of seemingly to abstain than those with four or a lot of substance exploitation friends. In alternative words, they established that less interaction with peers and having but four friends' exploitation substances predicts abstinence for a year. Even so, Allen et al. (2012) reported that a weak autonomy by families is related to weak social skills in handling matters with peers. They propose that adolescents who area unit a lot of likable by peers, have issue managing peer connected problems and area unit a lot of seemingly to use substances.

Piehler, Veronneau, and Dishionn (2012) investigated the measuring of substance use and peer influence to predict escalations to early-adult tobacco, alcohol and marijuana use of a sample of 998 ethnically numerous adolescents. With the use structural equation modelling, they disclosed that adolescent substance use and peer substance use extremely correlate and along square measure strong predictors of a problematic pattern of the usage for all substances in early adulthood. They any state that their findings highlighted the importance of addressing adolescent self-regulation in interventions geared toward treating and preventing early-adult abuse (Piehler et al., 2012).

Also, Ukwayi (2012) examined peer pressure and tobacco smoking among students of the University of Calabar, Nigeria. knowledge were obtained through the administration of a structured form to at least one hundred and twenty respondents in 2 well-known and patronised restaurants and bars directly opposite the University of Calabar tiny gate. Result indicated that forty sixth of tobacco use among collegian students were accounted for by peer pressure, whereas analysis of variance result indicated that peer pressure had important influence on collegian students use (F = 4.069, P < 0.05); the model any unconcealed that a unit increase in peer influence issue would end in 62% unit in rise within the proportion of undergraduates that use tobacco substance.

Notwithstanding the assorted demands of peers, a study by Lai et al. (2013) examined factors related to substance use and delinquency among South African adolescents. Though AN association exists between substance use and delinquency, they found that delinquent peers pressured each other into victimization pep pill and inhalants. They all over that adolescents, who yeild to peer pressure simply accepted delinquent peers, were additional vulnerable to the use of bad drugs.

Hendricks (2015) examined the result of peer pressure and leisure dissatisfaction on substance use among adolescents in low-income communities in Cape Town South Africa. Non-probability sampling was used to choose 296 adolescents between the ages sixteen – eighteen years from faculties settled in 2 low-income communities. Information analysis techniques enclosed descriptive statistics, t-test, and regression toward the mean and multiple regressions. Regression toward the mean unconcealed that leisure tedium isn't| a major predictor of substance use whereas peer pressure may be a significant predictor of substance use. Multiple regressions showed that the combined influence of peer pressure and leisure tedium expected substance use, whereas peer pressure emerged as a stronger predictor than leisure tedium of

substance use among adolescents. Gender didn't moderate the link between peer pressure, leisure tedium and substance use among adolescents.

2.4 Social Intelligence and Substance Use

In a research carried out by Dennis and Trinidad, (2005) indicated that high social intelligence is related to diminished adolescent health risk behaviours, like tobacco and alcohol use. This analysis additionally indicates that acculturation to the us is also associated with greater risk of adolescent smoking. The study examined whether high social intelligence may protect against the adolescent smoking risk factor of high acculturation to the United State. Participants were 416 sixth graders of different ethnicities from public middle schools in Los Angeles who completed surveys measuring smoking related risk factors, social intelligence, acculturation, and perceived social consequences of smoking. Results of multiple regression analysis indicated that for those who were more acculturated to the United States mainstream culture, having a high social intelligence contributed to the perception of greater negative social consequences associated with smoking.

2.7 Research Hypotheses

The following research hypotheses were tested in the study:

H1: There would likely be a significant influence of peer pressure on adolescent substance use

H2: There would likely be a significant influence of social intelligence on adolescent substance use

H3: There would likely be a significant interaction of peer pressure and social intelligence on adolescent substance use

CHAPTER THREE

3.0 METHOD

3.1 Design

The study adopted the descriptive survey design of the ex post facto type. The choice of the ex post facto design was because the independent variables were not manipulated but were present prior to the study in the participants. The independent variables are peer pressure (low and high), and social intelligence (low and high). The dependent variable is substance use.

3.2 Participants

The participants in this study comprised of 257 in-school adolescents in Keffi metropolis in Nassarawa State Nigeria. Simple random sampling technique was used to select three hundred senior secondary in-school adolescents comprising of male and female students from fifteen randomly selected secondary schools in Keffi, Nassarawa State Nigeria.

3.3 Research Instruments

Adolescent Peer Influence Scale (APIS)

This scale was developed by Leary, Kelly, Cottrell, and Schreindorfer, (2001). The Adolescent peer influence scale (APIS) measures peer group influence. The scale has eleven items measured on 5 point- likert scale, where 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree. Example of items on the scale includes, "my friends could push me into doing just about anything" "I give into peer pressure easily" "if my friends are drinking, it would be hard for me resist having a drink". The scale has a reliability of 0.82.

Thomso Social Intelligence Scale (TSIS)

The Thomso Social Intelligence Scale (TSIS) developed by Silvera, Martinussen & Dahl (2001), will be used to measure the variable of Social intelligence. The questionnaire consists 0f 21 self-evaluation items, which will be answered by respondents on a 7-point scale of agreement degree (1- describes me extremely poorly, 7- describes me extremely well). The questionnaire is divided into three subscales and enables to specify 3 factors: SP- social information processing (e.g. I can predict how others will react to my behaviour.) SS- social skill (e.g. I am good at entering new situations and meeting people for the first time.) SA- social awareness (e.g. I am often surprised by others' reactions to what I do.). The internal validity of these factors are presented as follows: SP- 0.79, SS- 0.85, and SA- 0.72 (Silvera, Martinis, & Dahl 2001).

Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST)

The Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) developed by the World Health Organization (WHO, 2002) identifies the utilization of 10 differing kinds of mind-blowing substances: tobacco, alcohol, marijuana, cocaine, amphetamine-type stimulants, inhalants, sedatives, hallucinogens, opioids, and alternative medication. It consists of eight questions: Q1- substance use ever; Q2- substance use within the previous 3 months; Q3- robust want or urge to use throughout the previous 3 months; Q4- Personal, social, financial, or legal issues related to use within the previous 3 months; Q5- failure to satisfy role obligations within the previous 3 months; Q6- expressions of concern by persons near the user regarding his/her use of medicine ever or within the previous 3 months, Q7-; makes an attempt to finish drug use; and Q8- use of blood vessel medication ever (WHOASSIST social unit, 2002). The ASSIST test's validity and dependability are rumored in international studies, with a test-retest constant of zero.58-0.90 and an inside consistency of zero.80. The take a look at determines a risk score for every substance which will be categorised into 3 levels: low risk (0-3 points), moderate risk (4-26 points), and high risk (>26 points) (Khan et al., 2011; Smith and others. 2010; WHO ASSIST Working Group, 2002).

3.4 Procedure

The researcher went to five secondary schools in Keffi town and sought permission from the various school management, to conduct the study. After permission was given the consent of the students was also sought. A total of 300 participants were randomly selected from the schools, after which questionnaires were administered to them. Completed questionnaires were collected and analysed.

3.5 Method of Data Analysis

The Analysis of Variance (ANOVA) was used as the statistical tool of analysis in the study. The choice of ANOVA resulted from the fact that the study has two Independent variables. Analysis of variance is a statistical test procedure for comparing multivariate (population) means of several groups; it uses the variance-covariance between variables in testing the statistical significance of the mean differences. Analysis of variance helps to answer questions such as: (1) do changes in the independent variable(s) have significant effects on the dependent variables? (2) What are the interactions among the Independent variables? Statistical reports, however, will provide individual p-values for each independent variable, indicating whether differences and interactions are statistically significant.

3.6 Ethical Consideration

Before commencement of the project, clearance and approval will be obtained from relevant authorities of the selected schools. Also, participants willing to partake in the study will be required to give their informed consents by filling consent forms before being enrolled. Participants will be assured that information given will be treated with confidentiality and will not affect their future interaction with members of their community in a negative way. Participants will be informed of the benefit of the study, and the fact that study holds no risk to them individually or otherwise.

CHAPTER FOUR

4.0 RESULTS

This chapter presents the results from the analysed data collected. The descriptive result presents the frequencies and percentages of the data, while the inferential results present the result of tested hypotheses.

4.1 Descriptive Results

Table 1: Socio demographic Characteristics of the Study Participants

	Frequency	Percentage %
Age Group		
12-14 years	46	17.9
15-16 years	99	38.5
17-19 years	112	43.6
Gender		
Male	135	52.5
Female	122	47.5
Religion		
Christianity	185	72.0
Islam	72	28.0
Class		
SS I	42	16.3

SS II	89	34.6
SS III	125	49.1
Peer influence		
Low	146	56.8
High	111	43.2
Social intelligence		
Low	117	45.5
High	140	54.5

Table 1 shows the socio-demographic characteristics of the study participants. The table showed the majority (43.6%) of participants are between the ages 17-19 years, also, the majority (52.5%) of the participants were males. Regarding the religious affiliation of participants, the results of the study showed the majority (72%) of participants are affiliated to Christian religion. Furthermore, majority (49.1%) of the participants were in their second year in senior secondary school. Based on scores on measures of peer influence and social intelligence, the majority (56.8%) of the study participants had low peer influence, and majority (54.5%) of the participants had high level of social intelligence.

Table 2: Substance Use by Study Participants

	Frequency	Percentage %
Tobacco products (cigarettes, cigar, chewable tobacco, etc.)		
No	198	77.0
Yes	59	23.0
Alcoholic beverages (beer, Spirit, wine, etc.)		
No	193	75.1
Yes	64	24.9
Cannabis (marijuana, weed, grass, pot, etc.)		
No	186	72.4
Yes	71	27.6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)		
No	225	87.5
Yes	32	12.5

Table 2 shows the substances used by the study participants. The table revealed that 23% of the participants use tobacco products such as cigarettes, 24.9% use alcoholic beverages like

beer, wine, and spirits. Furthermore, 27.6% of the study participants use cannabis, while 12.5% of the study participants use inhalants like glue, petrol, thinner and so on.

4.2 Inferential Results

The hypotheses been tested with 2-way Analysis of Variance (ANOVA) at 0.05 significance level. The result is presented below:

Table 3: ANOVA Source Table for Peer Influence and Social Intelligence on Substance Use

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	297.612	3	99.204	3.259	.022
Intercept	37336.579	1	37336.579	1226.702	.000
Peer influence (PI)	31.404	1	31.404	1.032	.311
Social intelligence (SI)	170.337	1	170.337	5.596	.019
PI*SI	60.164	1	60.164	1.977	.161
Error	7700.450	253	30.437		
Total	46558.000	257			
Corrected Total	7998.062	256			

Hypothesis I:

There would likely be a significant influence of peer pressure on adolescent substance use.

Results revealed that there was no significant influence of peer pressure on adolescent substance use, $F(1, 253) = 1.032$, $p = 0.311$ (table 3). The mean adolescent substance use score for adolescents with low peer influence was 12.61, and the mean substance score for adolescents with high level of peer influence was 11.90 (table 4). The hypothesis was not supported.

Table 4: Mean Score of Substance Use across Levels of Peer Influence

Peer influence	Mean of substance use	Standard Error	95% Interval Confidence	
			lower Bound	Upper Bound
Low	12.61	.46	11.71	13.51
High	11.90	.53	10.86	12.94

Hypothesis 2:

There would likely be a significant influence of social intelligence on adolescent substance use

Results revealed that there was a significant influence of social intelligence on adolescent substance use, $F(1, 253) = 5.596$, $p = 0.019$ (table 3). The mean adolescent substance use score for adolescents with low social intelligence was 13.08, and the mean adolescent substance score

for adolescents with high level of social intelligence was 11.43 (table 5). The hypothesis was supported.

This implies that adolescents with low social intelligence were more predisposed to substance use.

Table 5: Mean Score of Substance Use across Levels of Social Intelligence

Social intelligence	Mean of substance use	Standard Error	95% Interval Confidence	
			lower Bound	Upper Bound
Low	13.08	.52	12.06	14.11
High	11.43	.47	10.50	12.35

Hypothesis 3:

There would likely be a significant interaction of peer pressure and social intelligence on adolescent substance use

Results showed there was no significant interaction of peer pressure and social intelligence on adolescent substance use, $F(1, 253) = 1.977$, $p = 0.161$. Table 6 shows the details of the mean score for adolescent substance use across levels of peer influence and social intelligence interactions.

Table 6: Mean Score of Adolescent Substance Use across Levels of Peer Influence and Social Intelligence Interactions

Peer influence	Social intelligence	Mean of substance use	Standard Error	95% Interval Confidence	
				lower	Upper
Low	Low	13.93	.66	12.63	15.27
	High	11.29	63	10.04	12.54
High	Low	12.23	.81	10.65	13.82
	High	11.56	.69	10.20	12.92

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

Results revealed that there was no significant influence of peer pressure on adolescent substance use. This contrasts with the findings of Simons Morton and Chen (2006) which contends that peer influence is often a combination of both socialisation and selection. They found that aspects of socialization played a bigger role than the selection of peers in the

relationship between peer pressure and substance use. The study found that socialising with friends amounted to increase in substance use and it was discovered that when peer pressure exist, friends were more likely to use substances. Also, the results of the study of Ukwayi (2012) which examined peer pressure and tobacco smoking among undergraduates found that tobacco smoking among undergraduates was due to peer pressure; more so, Hendricks (2015) found that the combined influence of peer pressure and boredom predicted substance use, while peer pressure emerged as a stronger predictor than boredom in influence of substance use among adolescents.

The reason for the results in hypothesis one could be explained based on the premise that high social intelligence may help relieve the effect of exposure to peer-influence and help as protective gear in substance use. More so, participants easily get influenced in large groups than in small groups because of social constraints for example, accountability, personal identity, and perceive responsibility that promote cooperation are lesser in degree as present among large groups than it is in small groups. Therefore, members who belong to large groups may be more likely to act on their psychological needs or preferences; while those with high need of belonging will exhibit higher group oriented behaviours like cooperating in effort to meet their need to belong (De Cremer, 2002).

Results of the second hypothesis revealed that there was a significant influence of social intelligence on adolescent substance use, with individuals with lower social intelligence being more predisposed to substance use. This agrees with the study of Azzam and Elghonemy (2009) which evaluated the possible role of social intelligence on the degree of severity of substance abuse related problems and found that social intelligence regulation and attention to emotions were negatively correlated to the severity of drug problem. Also, Sudraba (2013) carried out a study to examine indicator of social intelligence on substance use disorder patients and found that a significant number of low socially intelligent substance use disorder patients.

Results of the third hypothesis revealed that there was no significant interaction of peer pressure and social intelligence on adolescent substance use. The result of the third hypothesis could be explained based on the problem-behaviour theory, which proves a descriptive behavioural outcome, like substance use, deviant behaviour and other risky behaviours (Zamboango et al., 2004). Assumes that substance use results from an interaction of individuals and their environment. It posits that adolescents who are more engaged in substance use are susceptible to other problem behaviours that is, delinquency.

Adolescents who are exposed to use of cannabis for example, are likely more sexually active, tend to like fighting and exibiting defiant behaviour, and are less seemingly to have interaction in health-promoting behaviours. The substance use structure involves the relationships of people and interactions with their own environment. Also, outcome to the third hypothesis could have resulted from the fact that social intelligence is not a trait but a skill that could be learnt and improved upon (Palmer, Donaldson, and Stough, 2002), as such differences in social intelligence among participants could have influence the current outcome.

5.2 Limitations of Study

The findings from this study has some limitations, there is need therefore to exercise caution in generalizing the research finding. As with many other research on substance use behaviour,

self-report questions may create a kind of bias because participants may tend to exaggerate, and or underreport level of substance use, may misunderstand questions and respond inaccurately, due to lack of orientation, or may answer questions in ways they think are socially desirable. Despite these limitations, self-report questionnaire is more relevant in large-scale studies due to feasibility and cost management.

5.3 Conclusion

This study examined the role of peer group pressure, social intelligence and substance use amidst adolescents. The discovery revealed that participants with low level of social intelligence were more predisposed to substance use. Researchers have come to the conclusion that social intelligence is a multidimensional construct (Vasilova & Baumgartner, 2004).

A general overview from the many theories is that from today's perspective the concept of social intelligence encompasses perceptual, cognitive, analytical, and behavioural (skills) these components determine individual differences in social behaviour which manifests publicly as personality, and seen as product of individual differences in their social interactions. The study therefore concludes that the higher one's social intelligence therefore the reduce risk of substance use and could lead to preventive effects. The inculcation of these skills can help adolescents' manage other relative aspects of their everyday lives.

5.4 Recommendations

Based on findings of these study, the following recommendations are made:

  i. Government policies should be tailored towards checkmating the activities of illicit substance and alcohol beverages in rural areas and urban cities in Nigeria.
 ii. More research should be conducted on social and psychological constructs such as social intelligence and environmental factors that could impact on substances among youths
iii. Intervention programs tailored towards developing social intelligence of substance abusers should be encouraged
 iv. Social intelligence skills should be inculcated in treatment programes of problematic substance users.

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APPENDIX I

Study Questionnaire

Department of Psychology,

Faculty of Social Sciences

Nassarawa State University, Keffi

Dear respondent,

I am an M.Sc student of above named institution undertaking a research project. The questionnaire below seeks your honest response. Please respond appropriately to the options that best relates to you. All responses are strictly for research purposes and shall be treated as confidential.

Thank you for your response.

SECTION 1

Gender: Male ☐   Female ☐

Age: 12-14 ☐   15-16 ☐   17-19 ☐

Marital status: Single ☐   Married ☐   Divorced ☐

Class: SS1 ☐   SS2 ☐

SECTION II

INSTRUCTION: Read each of the statements below and choose whether you Agree or Disagree and to what degree. Strongly agree, circle SA, strong disagree circle SD, and if you feel you are average or somewhere in between, circle (D) disagree or (A) agree the answer that best describes you how you fee

		Strongly disagree	Disagree	Agree	Strongly agree
1	My friends could push me into just doing about anything.				
2	I give into peer pressure easily.				
3	I usually do what I am told.				
4	At school, if group of friends asked me to do something, it would be hard for me to say no.				
5	At times, I've broken rules because others have urged me to.				
6	I do almost anything to avoid being seen as a 'loser'				
7	At times, I have done some dangerous and foolish things because friends dared me to.				
8	I often yield to pressure to do things I wouldn't normally do.				
9	When my friends are drinking, it would be hard for me not to partake drinking.				
10	I've felt pressured to get drunk at parties				

INSTRUCTION: Below are a list of statements, indicate the options (1 = Describes me extremely poorly to 7 = Describes me extremely well) by ticking (√) the responses that are applicable to you.

1 = Describes me extremely poorly - 7 = Describes me extremely well

1	I can predict other peoples' behaviour	1	2	3	4	5	6	7
2	I often feel that it is difficult to understand others' choices	1	2	3	4	5	6	7
3	I know how my actions will make others feel	1	2	3	4	5	6	7
4	I often feel uncertain around new people who I don't know	1	2	3	4	5	6	7

5	People often surprise me with the things they do	1	2	3	4	5	6	7
6	I understand other peoples' feelings	1	2	3	4	5	6	7
7	I fit in easily in social situations	1	2	3	4	5	6	7
8	Other people become angry with me without me being able to explain why	1	2	3	4	5	6	7
9	I understand others' wishes	1	2	3	4	5	6	7
10	I am good at entering new situations and meeting people for the first time	1	2	3	4	5	6	7
11	It seems as though people are often angry or irritated with me when I say what I think	1	2	3	4	5	6	7
12	I have a hard time getting along with other people	1	2	3	4	5	6	7
13	I find people unpredictable	1	2	3	4	5	6	7
14	I can often understand what others are trying to accomplish without the need for them to say	1	2	3	4	5	6	7
15	It takes a long time for me to get to know others well	1	2	3	4	5	6	7
16	I have often hurt others without realizing it	1	2	3	4	5	6	7
17	I can predict how others will react to my behaviour	1	2	3	4	5	6	7
18	I am good at getting on good terms with new people	1	2	3	4	5	6	7
19	I can often understand what others really mean through their expression, body language, etc.	1	2	3	4	5	6	7
20	I frequently have problems finding good conversation topics	1	2	3	4	5	6	7
21	I am often surprised by others' reactions to what I do	1	2	3	4	5	6	7

SECTION III

INSTRUCTION: Below are series of questions bordering on substances used. Please tick (√) responses that are applicable to you.

Question 1

In your life, which of the following substances have you ever used?

Substances	Yes	NO
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)		
Alcoholic beverages (beer, wine, spirits, etc.)		
Cannabis (marijuana, pot, grass, hash, etc.)		
Cocaine (coke, crack, etc.)		
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)		
Inhalants (nitrous, glue, petrol, paint thinner, etc.) 0 3		
Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)		
Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)		
Opioids (heroin, morphine, methadone, codeine, etc.)		
Other - specify:		

Question 2

In the past three months, how often have you used the substances you mentioned?

0 = Never   1 = Once or Twice   2 = Monthly   3 = Weekly   4 = Daily or Almost daily

Substances	0	1	2	3	4
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)					
Alcoholic beverages (beer, wine, spirits, etc.)					
Cannabis (marijuana, pot, grass, hash, etc.)					
Cocaine (coke, crack, etc.)					
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)					
Inhalants (nitrous, glue, petrol, paint thinner, etc.) 0 3					
Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)					
Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)					
Opioids (heroin, morphine, methadone, codeine, etc.)					
Other - specify:					

0 = Never   1 = Once or Twice   2 = Monthly   3 = Weekly   4 = Daily or Almost daily

Substances	0	1	2	3	4
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)					
Alcoholic beverages (beer, wine, spirits, etc.)					
Cannabis (marijuana, pot, grass, hash, etc.)					
Cocaine (coke, crack, etc.)					
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)					
Inhalants (nitrous, glue, petrol, paint thinner, etc.) 0 3					
Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)					
Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)					
Opioids (heroin, morphine, methadone, codeine, etc.)					
Other - specify:					

APPENDIX II

SPSS OUTPUT

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Peer influence	257	14	38	25.18	7.147
Social intelligence	257	43	170	94.18	17.790
Substance use	257	1	20	11.54	5.303
Valid N (listwise)	257				

Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12-14 years	46	17.9	17.9	17.9
	15-16 years	99	38.5	38.5	56.4
	17-19 years	112	43.6	43.6	100.0
	Total	257	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	135	52.5	52.5	52.5
	Female	122	47.5	47.5	100.0
	Total	257	100.0	100.0	

Religion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Christianity	185	72.0	72.0	72.0
	Islam	72	28.0	28.0	100.0
	Total	257	100.0	100.0	

Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	257	100.0	100.0	100.0

Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SS 1	42	16.3	16.3	16.3
	SS 2	89	34.6	34.6	51.0
	SS 3	126	49.0	49.0	100.0
	Total	257	100.0	100.0	

Tobacco products (cigarettes, chewing tobacco, cigars, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	198	77.0	77.0	77.0
	Yes	59	23.0	23.0	100.0
	Total	257	100.0	100.0	

Alcoholic beverages (beer, wine, spirits, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	193	75.1	75.1	75.1
	Yes	64	24.9	24.9	100.0
	Total	257	100.0	100.0	

Cannabis (marijuana, pot, grass, hash, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	186	72.4	72.4	72.4
	Yes	71	27.6	27.6	100.0
	Total	257	100.0	100.0	

Cocaine (coke, crack, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	257	100.0	100.0	100.0

Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	257	100.0	100.0	100.0

Inhalants (nitrous, glue, petrol, paint thinner, etc.) 0 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	225	87.5	87.5	87.5
	Yes	32	12.5	12.5	100.0
	Total	257	100.0	100.0	

Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	257	100.0	100.0	100.0

Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	257	100.0	100.0	100.0

Opioids (heroin, morphine, methadone, codeine, etc.)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	257	100.0	100.0	100.0

Other - specify:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	257	100.0	100.0	100.0

Peer influence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive	146	56.8	56.8	56.8
	Negative	111	43.2	43.2	100.0
	Total	257	100.0	100.0	

Social intelligence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	117	45.5	45.5	45.5
	High	140	54.5	54.5	100.0
	Total	257	100.0	100.0	

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Peer influence	1	Positive	146
	2	Negative	111
Social intelligence	1	Low	117
	2	High	140

Descriptive Statistics

Dependent Variable: Substance use

Peer influence	Social intelligence	Mean	Std. Deviation	N
Positive	Low	13.93	5.475	70
	High	11.29	5.525	76
	Total	12.55	5.640	146
Negative	Low	12.23	5.669	47
	High	11.56	5.439	64
	Total	11.85	5.522	111
Total	Low	13.25	5.592	117
	High	11.41	5.468	140
	Total	12.25	5.589	257

Tests of Between-Subjects Effects

Dependent Variable: Substance use

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	297.612ᵃ	3	99.204	3.259	.022
Intercept	37336.579	1	37336.579	1226.702	.000
Peer influence	31.404	1	31.404	1.032	.311
Social intelligence	170.337	1	170.337	5.596	.019
Peer influence*social intelligence	60.164	1	60.164	1.977	.161
Error	7700.450	253	30.437		
Total	46558.000	257			
Corrected Total	7998.062	256			

a. R Squared = .037 (Adjusted R Squared = .026)

Estimated Marginal Means

1. Peer influence

Dependent Variable: Substance use

Peer influence	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Positive	12.609	.457	11.709	13.509
Negative	11.898	.530	10.855	12.942

2. Social intelligence

Dependent Variable: Substance use

Social intelligence	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Low	13.081	.520	12.057	14.106
High	11.426	.468	10.504	12.348

3. Peer influence * Social intelligence

Dependent Variable: Substance use

Peer influence	Social intelligence	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Positive	Low	13.929	.659	12.630	15.227
	High	11.289	.633	10.043	12.536
Negative	Low	12.234	.805	10.649	13.819
	High	11.563	.690	10.204	12.921