International Review of Social Sciences and Humanities
Vol. 5, No. 2 (2013), pp. 140-149
www.irssh.com
ISSN 2248-9010 (Online), ISSN 2250-0715 (Print)

The Role of Self-Esteem in the Diminution of Substance Abuse among Adolescents

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(Received: 4-3-13 / Accepted: 12-4-13)

Abstract

The study examined the role of self-esteem in the reduction of substance abuse among adolescents in Nigeria. A set of instruments measuring peer substance use, self-esteem and substance abuse were distributed to a sample of 352 adolescents between 13 to 18 years from

secondary schools in Somolu, Lagos, Nigeria. The results confirmed the partial mediation effect of self-esteem in the relationship between peer substance use and substance abuse. The findings indicated that self-esteem plays an important role in the diminution of substance abuse among adolescents. Recommendations of the study focused on the need for researchers to explore numerous other individual, family, and school factors that maybe correlated with adolescent substance abuse as possible mediators.

Keywords: Self-esteem, Peer relationships, Substance abuse, Mediation, Adolescents.

Introduction

Adolescent substance abuse is a life-threatening societal predicament, concomitant with increased illness, death and psychiatric co morbidity (Measelle et al., 2006). Numerous studies have therefore highlighted the phenomenon as a serious problem among adolescents, with varying degrees of prevalence depending on ethnic groupings (Hahm et al., 2008; Le, Goebert, & Wallen, 2009). Distinctively, substance abuse escalates an adolescent's vulnerability to suffering, via truncated public performance and excessive conduct ineptitude (Gil-Rivas, Prause, & Grella, 2009). Surveys conducted by the Indiana Preventive Resource Center (2003) indicated that adolescents are usually introduced to drug abuse through 'gateway' substances such as alcohol and cigarettes. Johnson, Cunningham-Williams and Cottler (2003) suggest that substance abuse can cause mental health disorders while Johnston, O'Malley, Bachman, and Schulenberg (2009) pin pointed late adolescence to early adulthood as related to the peak of the disorder. The above findings have ignited public interest on adolescent substance abuse and what the society can do to decrease it.

Literature Review

Peer Substance Use and Substance Abuse

Peer substance use is often mentioned as an influential factor in adolescent substance abuse (Andrews, Hops, & Li 2002). In this vein, a number of studies have suggested the general tendency for adolescents to overestimate peer substance use. In a study conducted by Gillmore et al. (2002), smokers and non-smokers differed in their perceptions of peer, parent, and teacher endorsement of smoking. Adolescents who either never drank or rarely drank were unlikely to see their peers as drinking, nevertheless, adolescents who drink with friends perceived their peers as drinking (Segrist, Corcoran, Jordan-Fleming & Rose, 2007).

The writings also suggested that peer behaviors vary depending on the precise substance in question. For example, Kobus and Henry (2010) found significant peer effects on alcohol use when measured through perceptions, with only marginal effects when gauged using peer self-reports. The study also found significant effects for tobacco use when assessed with peer self-reports, but not when measured by the perceptions of peer behavior. In another study, Gibbons et al. (2004) reported that willingness, intention to use, as well as the association with substance-using peers' all manifested significant changes during the transition to early adolescence. In this regard, Hawkins and Lam (1987) argued that low acceptance by peers puts adolescents at the risk of substance abuse.

Professionals in preventive care contend that, to be efficient, prevention programs should take into cognizance the needs and problems of adolescents (Conrod, Stewart, Comeau, & Maclean, 2006). Regrettably, there is little evidence to suggest that universally applied prevention programs are effective (Masterman & Kelly, 2003). The study by Thai, Connell and Tebes (2010) examined the influence of peer substance use, acculturation, ethnicity and academic achievement on substance abuse among Asian American adolescents. Findings of the study revealed peer substance use as a predictor of substance abuse among adolescents. Furthermore, in a research conducted by White, Fleming, Kim, Catalano and McMorris (2008) adolescents with friends who drink heavily were revealed as more likely to increase

their drinking pattern. The study thus provided a glimpse at pro-alcohol peer influences in drinking among adolescents.

In another study conducted by Liu and Iwamoto (2007) peer substance use was identified as a predictor of substance abuse and was positively related with marijuana use, alcohol use and other illicit substances. On the other hand, Litt and Stock (2011) suggested that adolescents who viewed profile pages that showed older peers drinking reported favorable images of alcohol consumption, positive attitude towards drinking, and vulnerability to the consumption of alcohol. Hence, the researchers concluded that viewing profile pages that portrayed alcohol use as normative among older peers had an indirect effect on the willingness to drink. More so, in a recent study conducted by Henry, Oetting and Slater (2009) the association with substance using peers was also found a predictor of substance abuse among adolescents. Peer cluster theory opines that substance abuse is a social behavior that is dominated by the influence of peer clusters (small group of friend's dyads). Findings of Turrisi, Mastroleo, Mallett, Larimer and Kilmer (2007), further support the notion of peer influence on adolescent substance abuse.

Peer Substance Use, Self-Esteem and Substance Abuse

Available literatures confirm the role of peers in the achievement of developmental tasks such as autonomy and positive self-concept. However, in some earlier studies conducted in the 90's Urberg, Degirmencioglu and Pilgrim (1997) revealed that peers are not only paramount for the development of positive virtues, but also for problem behavior such as substance abuse. In this regard, a number of studies have found high levels of self-esteem associated with lower peer substance use (Dohnt & Tiggemann, 2006; Henry & Slater, 2007). The significance of peer substance use is also manifest in the papers on adolescents' well-being and psychosocial adjustment. In mitigating the influence of peer substance use, self-esteem becomes a necessary prerequisite because it encompasses beliefs about oneself as well as the emotional responses to those beliefs (Mann, Hosman, Schaalma, & De Vries, 2004).

In the opinion of Wang and Veugelers (2008), self-esteem is an important determinant of adolescent mental health and development. Dolcini and Adler's (1994) placed the relationship between peer substance use and self-esteem within the context of peer groups. Both earlier and later studies (Liem et al., 2010; Withya et al., 2007) have found significant negative correlations between self-esteem and substance abuse among adolescents. In a study conducted by James (2003), a significant negative correlation was found between self-esteem and substance abuse. However, Taylor and DelPilar (1992) in an earlier study conducted among adolescents in the 90's found a significant and positive correlation between self-esteem and substance abuse. Schroeder, Laflin and Weis (1993) contend that although relationships has been found between self-esteem and substance abuse among scholars, however these relationships were not sizable, hence implying it should be interpreted with caution.

In the submission of Zamboanga et al (2009), self-esteem is the most consistent predictor of the likelihood and extent of substance abuse. Available evidence therefore suggests that low self-esteem and peer influence contribute to adolescent alcohol abuse (Radin et al., 2006). In consonance with the above findings, Withya et al. (2007) revealed that one of the causes of substance abuse include low self-esteem. On the other hand, Kumpulainen and Roine (2002) noted that low self-esteem was potentially connected to later substance use. In the submission of De Bruijn, Kremers, van Mechelen and Brug (2005) self-esteem is one of the constructs with the ability to hamper or increase health behaviors'. With the above evidence, this study therefore investigated the effect of self-esteem in the relationships between peer substance use and substance abuse. In view of the foregoing, the study responded to the following research concerns:

Research Questions

1. What is the level of substance abuse among adolescents in Somolu, Lagos, Nigeria?
2. What is the relationship between peer substance use, self-esteem and substance abuse?
3. To what extent is the relationship between peer substance use and substance abuse mediated by self-esteem?

Materials and Methods

Participants

The participants of the study comprised of 352 eligible adolescent's between 13 to 18 years (M=15.48, SD = 1.53) from selected secondary schools in Somolu, Lagos, Nigeria. Of the number, 192 (54.5%) were males, while 160 (45.5%) were females. The specific age bracket was chosen because emerging studies from other parts of the globe highlight the importance of the period in the life course of adolescents.

Procedure

Ethical approval for the study was obtained from the Lagos State Ministry of Education. Multi-stage cluster sampling technique was used in the data collection process. Due to the problem associated with the listing of the target population, schools within Somolu Local Government were randomly selected from a list of schools, one each from the North and South of the sample area. Four research assistants supported the researcher in the process of data collection. Pertinent issues like confidentiality and the voluntary nature of respondent's participation were read to them after meeting the research sample criteria. In each class sampled, information regarding the study was collected during a two-hour period. To ensure the proper filling of the scales, the research assistants read the questions aloud, while other volunteer assistants inspected the measure filling process for clarity and understanding by the participants. However, despite the efforts of the research assistants in ensuring the proper filling of the instruments, 20 booklets were rendered void due to incomplete and in-consistent responses.

Measures

The respondents were provided a booklet containing a number of validated scales and demographic questions. These questions include: age, gender, number of siblings and other relevant personal information. The measures used are as follows:

Peer substance use was measured with the Peer Substance Use Sub-Scale (PSUS) of the Communities that Care Youth Survey developed by Hawkins, Catalano and Miller (1992). The 4item scale measured the level or the rate to which an adolescents peers use substances, it is rated on a 6point scale ranging from 0 to 5. The scale is commonly used in the evaluation of peer substance use. Examples of items in the scale include: "In the past year, how many of your best friends have smoked cigarettes"; "In the past year, how many of your best friends have tried beer, wine, or hard liquor that their parents did not know about"; and "In the past year, how many of your best friends have used marijuana". The scores range from 0 to 20. High scores indicate high peer substance use. In the opinion of Hawkins et al. (1992), the PSUS has acceptable internal consistency, with a Cronbach alpha coefficient of .84. In the current study, the Cronbach alpha reliability obtained was .75

Self-esteem was measured with the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The 10-item Likert Scale is rated on a 4-point scale ranging from strongly dis-agrees to strongly agree. The scale has been used globally in the assessment of self-esteem. Example of questions in the scale includes: "At times I think I am no good at all" "I feel I do not have much to be proud of" and "I certainly feel useless at times". The scores of the RSS were obtained by reversing items 1, 3, 4, 7 and 10 and then summing all the scores of the 10 items.

The scale has been widely used in several studies. The higher the score obtained in the RSS, the greater the level of self-esteem. The RSS has acceptable internal consistency, with a Cronbach alpha coefficient of between .85 - .88. In the current study, the Cronbach alpha reliability obtained was .90.

Substance abuse was measured with the Drug Abuse Screening Test (DAST: Skinner, 1982). The 20item self-report instrument is scored on a 2-point scale ranging from no to yes, "no" is scored as 0, and "yes" is scored as 1. The scale was used in evaluating the degree to which substances are abused. Example of questions includes: “Have you used drugs other than those required for medical reasons”? “Have you abused prescription drugs”? “Do you abuse more than one drug at a time”? The scores of DAST were obtained by reversing items 4 and 5 and then summing all the scores of the 20 item measure. The instrument has been extensively used in studies. The higher the score obtained in DAST, the higher the level of substance abuse. The internal consistency as reported by the authors was between .74-.92. In the present study, the Cronbach alpha reliability obtained was.86.

Results and Discussion

The data for all the instruments were numerically scored and quantified. Each of the quantitative scores was analyzed with SPSS version 20. Inferential, descriptive, and regression analysis were also performed. Descriptive statistics were used to calculate means, standard deviation (SD), and range. The interpretation of correlation was based on Cohen’s (1988) guideline r = .10 to .29 small correlation, r = .30 to .49 medium correlation and r = .50 to 1.0 large correlation. Respondent’s background information relates to some basic information pertaining to the respondent and his/her family. Some of this basic information include: age, gender and ethnicity, Table 1 exemplified the frequencies of the background information.

Of the 352 respondents examined for the study, 106(30.1%) were early adolescents (13-14years), 150(42.6%) were mid adolescents (15-16years), while 96 (27.3%) were older adolescents (17-18years). The mean age of the respondents was 15.48years with a standard deviation of 1.53. Of the total respondents, 192 (54.5%) were males, while 160(45.5%) were females. The 2006 Nigerian population census data had shown almost equal proportions of males and female in the general population (NPC, 2006). Table 1 further revealed that based on ethnicity, 110 (31.3%) of the respondents were Igbo’s, 60(17.0%) were Hausa’s, 162(46.0%) were Yoruba’s and 20(5.7%) were from other ethnic groups in the country.

Table 1: Age, Gender, and Ethnicity of Respondents (N = 352)

Variables	n (%)	M	S.D	Min	Max
Age		15.48	1.53	13	18
Early Adolescence (13-14years)	106 (30.1%)				
Mid Adolescence (15-16years)	150 (42.6%)				
Older Adolescence (17-18years)	96 (27.3%)				
Gender					
Male	192 (54.5%)				
Female	160 (45.5%)				
Ethnicity					
Igbo	110 (31.3%)				
Hausa	60 (17.0%)				
Yoruba	162 (46.0%)				
Others	20 (5.7%)				

Further evidence from the study revealed that 2% of the adolescents in the study had no substance abuse problems, 19% were low level substance abusers, 15.1% were moderate

substance abusers, 36.9% were substantial substance abusers, while 27% were severe substance abusers.

Following Baron and Kenny (1986), three conditions must exist for mediation to occur. As indicated in Table 2, there is a direct effect of peer substance use on substance abuse (*B* = .769, SE = .072, *t* = 10.730, *p*<.05) and self-esteem (*B*= -1.529, SE = .089, *t* = -17.116, *p*<.05). The relationship between self-esteem (mediator) and substance abuse (dependent variable) was also significant (*B* = -.366, SE =. 031, *t* = -11.868, *p*<.05). In the fourth regression step (Table 2), after fixing the effect of peer substance use, the result corroborates the notion of partial mediation. This is so because the initial relationship between peer substance use and substance abuse was still significant (*B* = .386, SE = .092, *p*<.05) even after fixing peer substance use (see Figure 1). These results confirm earlier findings indicating a relationship between peer substance use and substance abuse (Liu & Iwamoto, 2007), self-esteem (Henry & Slater, 2007) and between self-esteem and substance abuse (Liem et al., 2010).

The magnitude of mediation was obtained by subtracting the unstandardized coefficient (*B*) in the fourth step of the multiple regression (*B* = .386) (when peer substance use was controlled for) from the first step (*B*=.769) (Direct effect of peer substance use on substance abuse). The result therefore was .769 - .386 = .383. As recommended by Baron and Kenny (1986), the mediation effect was tested using Sobel criterion.

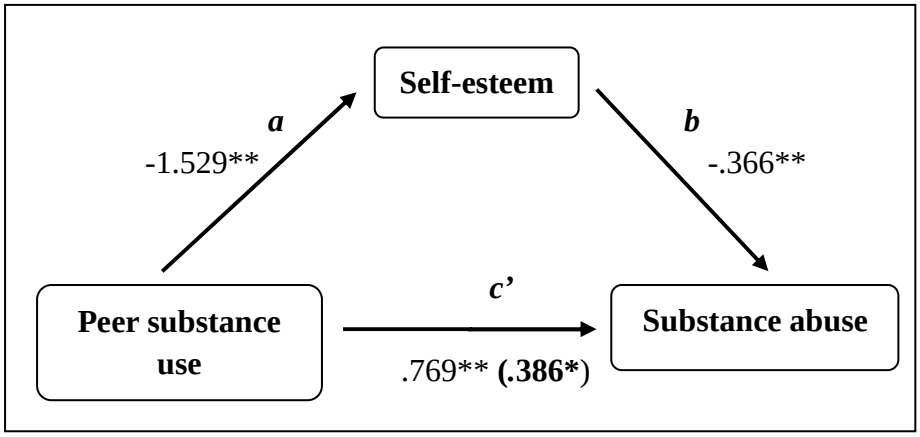

Fig. 1: The mediator role of self-esteem in the relationship between peer substance use and substance abuse

In conducting Sobel test, the unstandardized coefficients and standard errors of path (***a*),** peer substance use and self-esteem (*B* = -1.529, SE = .089) and path ***b*,** self-esteem and substance abuse (*B* = -.366, SE = .031) were computed (Soble, 1982; Soper, 2013). The z-value for the indirect path was 9.73, $p < .05$, confirming the partial mediation effect of self-esteem in the relationship between peer substance use and substance abuse. Consequently, self-esteem was found to partially mediate the relationship between peer substance use and substance abuse among the sampled adolescents. The results are therefore in line with available evidence in the literatures (Liem et al., 2010; Thai et al, 2010) confirming the relationship between self-esteem, peer substance use and substance abuse.

Table 2: Multiple regression of peer substance use and substance abuse mediated by self esteem (N= 352)

Step	IV	DV	*B*	SE	Beta	*t*
1	Peer substance use	Substance abuse	.769**	.072	.498	10.730

2	Peer substance use	Self-esteem	-1.529**	.089	-.675	-17.116
3	Self-esteem	Substance abuse	-.366**	.031	-.536	-11.868
4	Peer substance use	Substance abuse	.386*	.092	.250	4.176
	Self-esteem		-.251**	.041	-.367	-6.141

Note: B = Unstandardized coefficient; Beta = Standardized coefficient

* $p<.05$, **$p<.01$

More so, the finding is novel because it highlighted the important role played by self-esteem in the amelioration of peer influence in cases of substance abuse. The findings suggested that adolescents with high self-esteem have a lesser tendency of been influenced by peers in the abuse of substances. The present study on substance abuse is significant and distinctive in a number of respects. First, the study provided the awareness on the dangers of adolescent substance abuse in Nigeria and by so doing have prompted deliberations on the topic among policy makers and interested parties in the nation. Bandura (1999) asserted that substance abuse is a social problem; as such stake holders in the Nigerian polity must be involved through enlightenment campaigns and academic writings such as this. The inquiry was specifically a cross sectional study. Though longitudinal analyses offer great significance, however the examination of cross-sectional analyses within a cautiously hypothesized model is of equivalent importance, especially when no such study has been done before (Thai et al., 2010). Therefore, the option of cross-sectional study did not present any precarious flaw.

Although some recent studies examined self-esteem as a mediator (Taylor, Budescu & McGill, 2011), however none used the construct in the way it was used in the present study. In the contention of Radin et al. (2006), inconsistencies in studies relating to self-esteem were due to the divergent opinion among scholars on the actual meaning of the term. The situation was made worse with the proliferation of measures used in the assessment of the construct. Essentially, measures of self-esteem basically tap global self-esteem. In the submission of Rosenberg (1965), self-esteem is the judgmental evaluation of one's self that entails the judgment of personal worth, approval and disapproval. Based on the definition proffered by Rosenberg (1965), the term can best be described as essential because it comprises many other issues. There are essentially three types of self-esteem, these self-esteem include: high, low and inflated self-esteem (Easy course, 2011). The import of the finding therefore is that self-esteem is a necessary prerequisite in the amelioration of substance abuse particularly among adolescents.

Conclusion

This article outlined the important role self-esteem plays in the reduction of the effect of peer substance use in substance abuse among adolescents. The results demonstrated that 15.1% were moderate substance abusers, 36.9% were substantial substance abusers, while 27% were severe substance abusers. The findings also indicated significant correlation among the main variables examined in the study. Further, the results confirmed the role of self-esteem as a partial mediator in the relationship between peer substance use and substance abuse among adolescents, indicating that adolescents with high self-esteem are less affected by their peers in relation to substance abuse. Researchers are therefore encouraged to further explore the role of the individual, family, and school factors correlated with adolescent substance abuse, with the view of identifying other ameliorative techniques in cases of substance abuse among adolescents.

References

[1] A. Bandura, A socio-cognitive analysis of substance abuse: An agentic perspective, *Psychological Science*, 10(3) (1999), 214-217.

[2] B.L. Zamboanga, S.J. Schwartz, L.H. Jarvis and K.V. Tyne, Acculturation and substance use among Hispanic early adolescents: Investigating the mediating roles of acculturative stress and self-esteem, *Journal of Primary Prevention*, 30(2009), 315-333.

[3] D.J. Segrist, K.J. Corcoran, M.K. Jordan-Fleming and P. Rose, Yeah, I drink . . . but not as much as other guys: The majority fallacy among male adolescents, *North American Journal of Psychology*, 9(2007), 307-320.

[4] D.M. Litt and M.L. Stock, Adolescent alcohol-related risk cognitions: The roles of social norms and social networking sites, *Psychology of Addictive Behavior*, 25(3) (2011), 1-7.

[5] D.N. Taylor and J. Del Pilar, Self-esteem, anxiety and drug use, *Psychological Representation*, 71(3) (1992), 896-898.

[6] D. Schroeder, M. Laflin and D. Weis, Is there a relationship between self-esteem and drug use? Methodological and statistical limitations of the research, *Journal of Drug Issues*, 23(1993), 645-664.

[7] D.S. Soper, *Sobel Test Calculator for the Significance of Mediation*, (2013), Retrieved from http://www.danielsoper.com/statcalc.

[8] Easy-course, *Types of Self-Esteem*, (2011), retrieved from http://www.easycourse sportal.com/Selfesteem/Lecc-2.htm.

[9] F. Wang and P.J. Veugelers, Self-esteem and cognitive development in the era of the childhood obesity epidemic, *Obesity Review*, 9(2008), 615-623.

[10] F.X. Gibbons, M. Gerrard, L.S.V. Lune, T.A. Wills, G. Brody and R.D. Conger, Context and cognition: Environmental risk, social influence and adolescent substance use, *Personality and Social Psychology Bulletin*, 30(2004), 1048-1061.

[11] G.J. De Bruijn, S.P.J. Kremers, W. Van Mechelen and J. Brug, Is personality related to fruit and vegetable intake and physical activity in adolescents? *Health Education Research*, 20(2005), 635-644.

[12] H.A. Skinner, Assessment of substance abuse: Drug abuse screening test, In R. Carson-DeWitt (Ed), *Encyclopedia of Drugs, Alcohol & Addictive Behaviour (Second Edition)*, (2001), Durham: North Carolina: Macmillan Reference USA.

[13] H.C. Hahm, F.Y. Wong, Z.J. Huang, A. Ozonoff and J. Lee, Substance use among Asian Americans and Pacific Islanders sexual minority adolescents: Findings from the national longitudinal study of adolescent health, *Journal of Adolescent Health*, 42(2008), 275-283.

[14] H. Dohnt and M. Tiggemann, The contribution of peer and media influences to the development of body satisfaction and self-esteem in young girls: A prospective study, *Developmental Psychology*, 42(5) (2006), 929-936.

[15] H.R. White, C.B. Fleming, M. Kim, R.F. Catalano and B.J. McMorris, Identifying two potential mechanisms for changes in alcohol use among college-attending and non-college- attending merging adults, *Development Psychology*, 44(6) (2008), 1625-1639.

[16] Indiana Prevention Resource Centre (IPRC), *Gateway Drugs*, (2003), Retrieved from www.drugs.Indiana.edu/publications/iprc/fotline/gateway.html.

[17] J.A. Andrews, E. Tildesley, H. Hops and F. Li, The influence of peers on adult substance use, *Health Psychology*, 21(4) (2002), 349-357.

[18] J. Cohen, *Statistical Power Analysis for Behavioural Sciences*, (1988), Hillsdale, NJ: Erlbaum.

[19] J.D. Hawkins, R.F. Catalano and J.Y. Miller, Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention, *Psychological Bulletin*, 112(1992), 64-105.

[20] J. D. Hawkins and T. Lam, Teacher practices, social development and delinquency, In *Primary Prevention of Psychopathology, l (10), Prevention of Delinquent Behavior*, Edited by J.D. Burchard and S.N. Burchard, (1987), Newbury Park, California: Sage.

[21] J.H. Liem, E.C. Cavell and K. Lustig, The influence of authoritative parenting during adolescence on depressive symptoms in young adulthood: Examining the mediating roles of self-development and peer support, *The Journal of Genetic Psychology*, 171(1) (2010), 73-92.

[22] J.R. Measelle, E. Stice and D.W. Springer, A prospective test of the negative affect model of substance abuse: Moderating effects of social support, *Psychology of Addictive Behaviors*, 20(3) (2006), 225-233.

[23] K.A. Urberg, S.M. Degirmencioglu and C. Pilgrim, Close friend and group influence on adolescent cigarette smoking and alcohol use, *Developmental Psychology*, 33(1997), 834-844.

[24] K. Kobus and D. Henry, Interplay of network position and peer substance use in early adolescent cigarette, alcohol and marijuana use, *Journal of Early Adolescence*, 30(2010), 2*25*-245.

[25] K. Kumpulainen and S. Roine, Depressive symptoms at the age of 12 years and future heavy alcohol use, *Addictive Behaviors*, 27(2002), 425-436.

[26] K.L. Henry and M.D. Slater, The contextual effect of school attachment on young adolescents' alcohol use, *Journal of School Health*, 77(2) (2007), 67-74.

[27] K.L. Henry, E.R. Oetting and M.D Slater, The role of attachment to family, school and peers in adolescent's use of alcohol: A longitudinal study of within – person and between-persons effects, *Journal of Counseling Psychology*, 56(4) (2009), 564-572.

[28] K.M. Withya, W. Leeb and R.F. Renger, A practical framework for evaluating a culturally tailored adolescent substance abuse treatment, *Ethnicity and Health*, 12(5) (2007), 483-496.

[29] L.D. Johnston, P.M. O'Malley, J.G. Bachman and J.E. Schulenberg, *Monitoring the Future: National Results on Adolescent Drug Use: Overview of Key Findings, 2008*, (NIH Publication No. 09-7401), Bethesda, (2009), MD: National Institute on Drug Abuse.

[30] M.E. Sobel, Asymptotic confidence intervals for indirect effects in structural equation models, In S. Leinhardt (Ed.), *Sociological Methodology*, (1982), Washington DC: American Sociological Association.

[31] M.M. Dolcini and N.E. Adler, Perceived competencies, peer group affiliation and risk behaviour among early adolescents, *Health Psychology*, 13(1994), 496-506.

[32] M. Mann, C.M. Hosman, H.P. Schaalma and N.K. De Vries, Self-esteem in a broad-spectrum approach for mental health promotion, *Health Education Research*, 19(2004), 357-372.

[33] M.R. Gillmore, E.A. Wells, E.E. Simpson, D.M. Morrison, M.J. Hoppe, A.A. Wilsdon and E. Murowchick, Children's beliefs about smoking, *Nicotine & Tobacco Research*, 4(2002), 177-183.

[34] M. Rosenberg, *Society and the Adolescent Self-Image*, (1965), Princeton, NJ: Princeton University Press.

[35] N.D. Thai, C.M. Connell and J.K. Tebes, Substance use among Asian American adolescents: Influence of race, ethnicity and acculturation in the context of key risk and protective factors, *Asian American Journal of Psychology*, 1(4) (2010), 261-274.

[36] National Population Commission of Nigeria, (2006), Retrieved from http://www.population.gov.ng/index.php/state-population.

[37] P.J. Conrod, S.H. Stewart, N. Comeau and A.M. Maclean, Efficacy of cognitive behavioral interventions targeting personality risk factors for youth alcohol misuse, *Journal of Clinical Child and Adolescent Psychology*, 35(2006), 550-563.

[38] P.W. Masterman and A.B. Kelly, Reaching adolescents who drink harmfully: Fitting intervention to developmental reality, *Journal of Substance Abuse Treatment*, 24(2003), 347-355.

[39] R.D. Taylor, M. Budescu and R.K. McGill, Demanding Kin relations and depressive symptoms among low-income African American women: Mediating effects of self-esteem and optimism, *Cultural Diversity and Ethnic Minority Psychology*, 17(3) (2011), 303-308.

[40] R.L. James, *Correlation between Adolescent Self-Esteem, Religiosity and Perceived Family Support*, (2003), Retrieved from http://clearinghouse.missouriwestern.edu/manuscripts/247.php.

[41] R.M. Baron and D.A. Kenny, The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations, *Journal of Personality and Social Psychology*, 51(1986), 1173-1182.

[42] R. Turrisi, N.R. Mastroleo, K.A. Mallett, M.E. Larimer and J.R. Kilmer, Examination of the meditational influences of peer norms, environmental influences and parent communications on heavy drinking in athletes and non-athletes, *Psychology of Addictive Behaviors*, 21(4) (2007), 453-461.

[43] S.J. Johnson, R.M. Cunningham-Williams and L.B. Cottler, A tripartite of HIV-risk for African American women: The intersection of drug use, violence and depression, *Drug and Alcohol Dependence*, 70(2003), 169-175.

[44] S.M. Radin, C. Neighbors, P.S. Walker, R.D. Walker, G.A. Marlatt and M. Larimer, The changing influences of self-worth and peer deviance on drinking problems in urban American Indian adolescents, *Psychology of Addictive Behaviors*, 20(2) (2006), 161-170.

[45] T.N. Le, D. Goebert and J. Wallen, Acculturation factors and substance use among Asian American youth, *Journal of Primary Prevention*, 30(2009), 453-473.

[46] V. Gil-Rivas, J. Prause and C.E. Grella, Substance use after residential treatment among individuals with co-occurring disorders: The role of anxiety/depressive symptoms and trauma exposure, *Psychology of Addictive Behaviors*, 23(2) (2009), 303-314.

[47] W. Liu and D. Iwamoto, Conformity to masculine norms, Asian values, coping strategies, peer group influences and substance use among Asian American men, *Psychology of Men & Masculinity*, 8(1) (2007), 25-39.